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Ten trends to watch in the coming year

A letter from Tom Standage, editor of "The World Ahead 2023"

Nov 14th 2022

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By Tom Standage: Editor, The World Ahead 2023

1. All eyes on Ukraine. Energy prices, inflation, interest rates, economic growth, food shortages—all depend on how the conflict plays out in the coming months. Rapid progress by Ukraine could threaten Vladimir Putin, but a grinding stalemate seems the most likely outcome. Russia will try to string out the conflict in the hope that energy shortages, and political shifts in America, will undermine Western support for Ukraine.

2. Recessions loom. Major economies will go into recession as central banks raise interest rates to stifle inflation, an after-effect of the pandemic since inflamed by high energy prices. America's recession should be relatively mild; Europe's will be more brutal. The pain will be global as the strong dollar hurts poor countries already hit by soaring food prices.

3. Climate silver lining. As countries rush to secure their energy supplies, they are turning back to dirty fossil fuels. But in the medium term the war will accelerate the switch to renewables as a safer alternative to hydrocarbons supplied by autocrats. As well as wind and solar, nuclear and hydrogen will benefit too.

4. Peak China? Some time in April China's population will be overtaken by India's, at around 1.43bn. With China's population in decline, and its economy facing headwinds, expect much discussion of whether China has peaked. Slower growth means its economy may never overtake America's in size.

6. Flashpoints to watch. The intense focus on the war in Ukraine heightens the risk of conflict elsewhere. With Russia distracted, conflicts are breaking out in its backyard. China may decide that there will never be a better time to make a move on Taiwan. India-China tensions could flare in the Himalayas. And might Turkey try to nab a Greek island in the Aegean?

7. Shifting alliances. Amid geopolitical shifts, alliances are responding. NATO, revitalised by the war in Ukraine, will welcome two new members. Will Saudi Arabia join the Abraham accords, an emerging bloc? Other groupings of growing importance include the Quad and AUKUS (two American-led clubs intended to deal with China's rise) and I2U2—not a rock band, but a sustainability forum linking India, Israel, the United Arab Emirates and the United States.

8. Revenge tourism. Take that, covid! As travellers engage in post-lockdown "revenge" tourism, traveller spending will almost regain its 2019 level of $1.4trn, but only because inflation has pushed up prices. The actual number of international tourist trips, at 1.6bn, will still be below the pre-pandemic level of 1.8bn in 2019. Business travel will remain weak as firms cut costs.

9. Metaverse reality check. Will the idea of working and playing in virtual worlds catch on beyond video games? 2023 will provide some answers as Apple launches its first headset and Meta decides whether to change its strategy as its share price languishes. Meanwhile, a less complicated and more immediately useful shift may be the rise of "passkeys" to replace passwords.

10. New year, new jargon. Never heard of a passkey? Fear not! We've rounded up the vital vocabulary that will be useful to know in 2023. NIMBYS are out and YIMBYS are in; cryptocurrencies are uncool and post-quantum cryptography is hot; but can you define a frozen conflict, or synfuel? We've got you covered.

In retrospect, the pandemic marked the end of a period of relative stability and predictability in geopolitics and economics. Today's world is much more unstable, convulsed by the vicissitudes of great-power rivalry, the aftershocks of the pandemic, economic upheaval, extreme weather, and rapid social and technological change. Unpredictability is the new normal. There is no getting away from it. But we hope that reading will help you face this new reality with confidence. ■

This article appeared in the From the editor section of the print edition of The World Ahead 2023 under the headline "From the editor"

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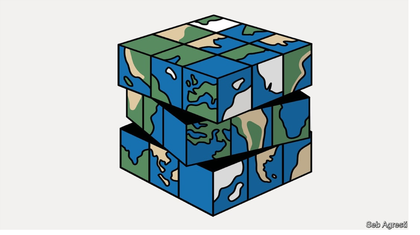
Why a global recession is inevitable in 2023

The world is reeling from shocks in geopolitics, energy and economics



Nov 18th 2022

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By Zanny Minton Beddoes: Editor-in-chief, The Economist

Three shocks have combined to cause this turmoil. The biggest is geopolitical. The American-led post-war world order is being challenged, most obviously by Mr Putin, and most profoundly by the persistently worsening relationship between America and Xi Jinping's China. The resolve with which America and European countries responded to Russia's aggression may have revitalised the idea of "the West", particularly the transatlantic alliance. But it has widened the gap between the West and the rest. The majority of people in the world live in countries that do not support Western sanctions on Russia. Mr Xi openly rejects the universal values upon which the Western order is based. Economic decoupling between the world's two biggest economies is becoming a reality; a Chinese invasion of Taiwan is no longer implausible. Cracks are also appearing in other longstanding geopolitical certainties, such as the alliance of convenience between America and Saudi Arabia.

> **Most people in the world live in countries that do not support Western sanctions on Russia**

The war in Ukraine, in turn, has led to both the biggest commodity shock since the 1970s and a warp-speed reshaping of the global energy system. Ukraine's importance as an agricultural exporter meant the war threatened mass global hunger, until a means was found to open the port of Odessa. Even now, for many countries the most immediate consequence of a far-off conflict has been dearer food and fertiliser at home. Mr Putin's willingness to weaponise his gas exports exposed Europe's chronic dependence on Russian hydrocarbons, rendered swathes of its energy-intensive industry unviable overnight, forced governments to spend billions cushioning consumers and prompted a mad scramble for new sources of supply. And all this in a year during which the consequences of climate change, from floods in Pakistan to heatwaves in Europe, became ever more violently visible. With soaring energy costs prompting even the greenest European politicians to turn mothballed coal plants back on again, stark trade-offs have appeared between ensuring energy supplies are affordable, secure and environmentally sustainable.

From spike proteins to spiking prices

Spiking energy prices, in turn, have exacerbated the third shock, the loss of macroeconomic stability. Consumer prices were already accelerating early in 2022 as stimulus-fuelled demand met post-pandemic supply constraints. But as energy and food prices rocketed, inflation went from seeming temporarily elevated to being a persistent, double-digit problem. Led by the Federal Reserve, which belatedly discovered its inner Volcker, the world's big central banks undertook the fastest and broadest set of global rate increases in at least four decades. Yet as 2022 draws to a close macroeconomic stability is still far off: global inflation remains close to double digits and comparisons with the 1970s are uncomfortably close.

A cold snap would send gas prices soaring and raise the real prospect of blackouts. So far European governments have protected consumers from the worst of the energy-price shock with massive subsidies and price caps. That cannot continue indefinitely. Britain is in the worst shape, thanks both to the lasting damage from Brexit and the self-imposed harm done by Liz Truss's plan for massive unfunded tax cuts. To rebuild market confidence after the irresponsibility of her premiership, Britain will have to undertake the biggest fiscal tightening in the G7 club of big rich countries, even as it suffers the deepest recession. Italy, the long-standing European laggard which Britain now rivals, is also a worry.

The biggest geopolitical risk is that Mr Putin, unable to succeed on the battlefield, tries harder to exploit these European vulnerabilities. This strategy is already evident in Ukraine itself, where Russia is doubling down on trying to destroy the country's energy infrastructure as winter approaches. So far Mr Putin's attempts to break the solidarity of backing for Ukraine in western Europe by weaponising gas have failed. But he could go much further, by cutting off all (rather than some) gas exports or by sabotaging Europe's own gas pipelines. Escalating in this way would result in less opprobrium from the rest of the world than the use of tactical nuclear weapons. But it would mean things getting much worse in Europe.

A second place where economic weakness could worsen geopolitical risk next year will be China. Its economy will enter 2023 enfeebled by its own set of home-grown policy mistakes, notably Mr Xi's determination to stick with his zero-covid strategy and the failure to deal with a vast, festering property crisis. At the same time Mr Xi has dialled up his aggressive, nationalist rhetoric, especially over Taiwan. At the five-year party congress in October that formalised his absolute concentration of power, Mr Xi warned of "dangerous storms" ahead and referred to "gross provocations" involving "external interference" in Taiwan. Prizing loyalty over competence, he no longer has any experienced economic technocrats around him. If China's economic woes worsen in 2023, sabre-rattling over Taiwan might prove a tempting distraction.

America's economy enters 2023 in fundamentally stronger shape than either China's or any in Europe. The Federal Reserve's aggressive rate increases will tip the economy into recession, but with the labour market still strong and household savings copious, it will be a mild one. Although high petrol prices have reinforced the inflation surge and hurt the Biden administration, the country is a big energy producer and has therefore benefitted from this year's commodity shocks. Paradoxically, in 2023 America's relative economic strength could prove more of a problem for the rest of the world than its weakness. The Fed will need to raise rates further for longer to quell inflation, in turn reinforcing the dollar's strength and obliging other central banks to keep up. Domestically, the danger is that divided government and even a mild downturn will mean legislative sclerosis and yet more poisonous politics than usual in Washington. In that environment, support for assisting Ukraine could fade and the appeal of performative toughness over Taiwan would rise. The former would embolden Mr Putin; the latter enrage Mr Xi.

> **Because every crisis spawns new possibilities, there is some good news amidst today's tumult**

In short, there are plenty of reasons why 2023 will be a grim and potentially dangerous year. But because every crisis spawns new possibilities, there is some good news amidst today's tumult. Some countries will prosper amidst the gloom. The economies of the Gulf are booming, for example, gaining not only from high energy prices but also their growing role as financial entrepots. India, which will overtake China to become the world's most populous country in 2023, will be another bright spot, buoyed by discounted Russian oil, growing domestic investment and rising interest from foreigners keen to diversify their supply chains away from China. Broadly, emerging economies will fare relatively better than in previous episodes of rising interest rates and global recession.

The shake-up will lead to some questioning of orthodoxy. As inflation is gradually and painfully brought under control, central bankers will question how far they should push their toughness. Few are likely to get anywhere near their 2% targets for inflation and there will be an increasingly vocal debate about whether this is really the right goal to aim for.

Ukraine's silver lining for the climate

Meanwhile, the energy shock will boost the shift to renewables: Fatih Birol, the head of the International Energy Agency has called it "a turning point in the history of energy" that "will accelerate the clean-energy transition". At the same time, the crisis will also encourage greater realism about the ongoing role of fossil fuels, and in particular the role of natural gas as a bridge fuel to a greener future. With luck, long-standing hypocrisies will at last be confronted—such as Europe's unwillingness to finance gas projects in poor countries, even as it scrambles to secure more gas supplies for itself—and the result will be a global energy system that is greener, more diverse and more secure.

The long-term geopolitical consequences of the shocks of 2022 are the hardest to foresee. Whatever transpires in Ukraine, it is evident that Mr Putin will fail in his strategic aim of denying the country's right to exist. Instead, Ukraine will be a Western-oriented country with the biggest and most battle-hardened army in Europe. Even if it is outside NATO, that will transform Europe's security calculus. And Ukraine's success should give other would-be aggressors pause for thought. Yet the refusal of most emerging economies to sign up to the West's sanctions regime against Russia suggests that the broader appeal of standing up for democratic freedoms and the right to self-determination is limited. As 2023 begins, the post-war order is not dead—but it has been transformed. ■

This article appeared in the Leaders section of the print edition of The World Ahead 2023 under the headline "Three shocks that shook the world"

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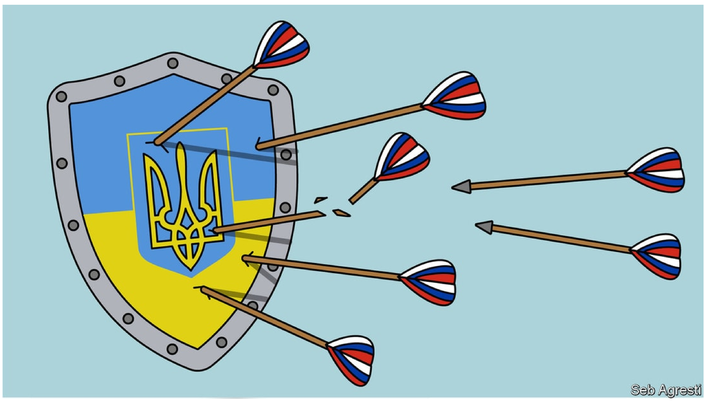
Ukraine has a fighting chance in 2023

But it is still not clear how the war will play out



Nov 18th 2022

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By Edward Carr: Deputy editor, The Economist

The first track is Ukraine's sustained advantage on the battlefield. Russia has more than three times the population of its neighbour and is trying hard to destroy infrastructure in Ukraine and degrade it as a functioning state, but Vladimir Putin will struggle to train, equip and supply an army capable of occupying the four Ukrainian provinces he has annexed. The more he presses reluctant Russians into combat, the more dead bodies he will have to account for and the more he will struggle.

By contrast, Ukraine is well placed to muster committed troops and tactically shrewd officers, supplied with arms and intelligence by NATO countries. Perhaps, after wearing down Russian defensive positions in the south and in the Donbas region, Ukrainian forces will repeat the lightning-fast seizure of occupied territory in the east and south that they managed in September and October. But even if they cannot, they should be able to continue their slow advance.

From a Ukrainian point of view, it is vital that they do. On its own, momentum will not win the war, but it is the foundation for everything else, including the second track: steadfast Western support for Ukraine's efforts. Mr Putin calculated that the West would abandon Ukraine, or at least force it to settle for an unequal peace. He has therefore tried to deal with battlefield reverses by cutting off gas supplies to Europe and warning of nuclear war.

These threats have backfired, by persuading Western governments that humouring Mr Putin would be dangerous. Giving in to the Kremlin today, as in 2014 when Russia first attacked Ukraine, would only set the stage for the next conflict. Western arms will therefore continue to flow eastward and Russian gas will never again flow westward in large amounts. This winter will be hard—and the next could be even worse, especially if Chinese demand for energy revives, pushing up the price of oil and gas. Yet, for as long as Ukraine is advancing on the battlefield, European resolve will last.

> **Neither the Russians nor the Ukrainians are yet ready to lay down their arms**

These first three tracks are converging on the fourth: growing international pressure to end the fighting. In these straitened times, the war is hard to afford. The OECD, a club of mostly rich countries, estimates that it will cost $2.8trn in 2023. Shortages of arms in the West will become an increasing concern. Expect, therefore, lots of talk in 2023 about the scenarios for peace.

The trouble is that neither the Russians nor the Ukrainians are yet ready to lay down their arms. Mr Putin will either want to fight on, betting that he can mount an offensive and regain the momentum, or freeze the conflict, with the aim of preventing Ukraine from becoming a prosperous and peaceful European democracy. Volodymyr Zelensky, Ukraine's president, flushed with success, has vowed to take back all the territory his country has lost since 2014. Western countries insist Ukraine alone should decide when to negotiate. In reality, though, they are the ones paying for the war. At some point they will apply pressure.

The war ends in Moscow

The timing of that moment will probably be determined by the fifth and most uncertain track. For peace to be stable, something must change in Moscow. Its nuclear weapons mean that a surrender cannot be imposed on the Kremlin by force of arms. Instead Russians will have to grasp the truth that Mr Putin is squandering their lives in a futile, unwinnable war.

Mr Putin could resort to chemical or nuclear weapons—though even that would not clear the path to a Russian victory. More likely he will cut his losses in a bid to cling to power, or be abandoned by the elites. The year will begin with Mr Putin hoping for something to turn up: momentum to shift on the battlefield, Chinese military aid, the splintering of European unity or the prospect of a re-elected Donald Trump abandoning Ukraine. Mr Putin knows anything is possible in war. But he must also know that the tide is against him. ■

This article appeared in the Leaders section of the print edition of The World Ahead 2023 under the headline "Ukraine's fighting chance"

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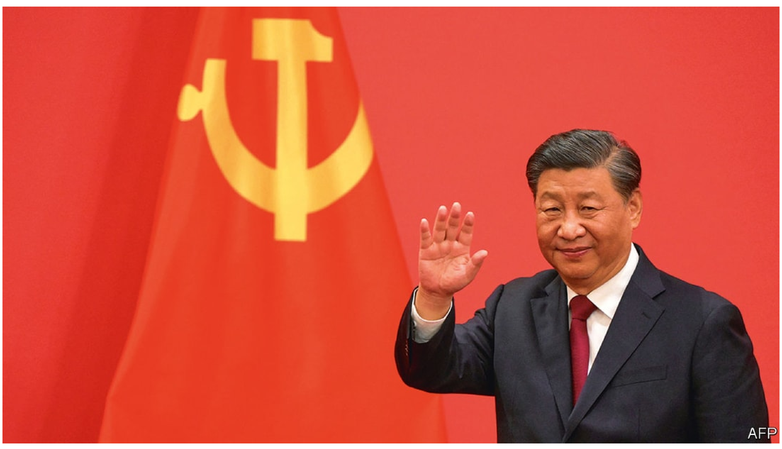
Has China reached the peak of its powers?

Xi Jinping has set himself up for a difficult year



Nov 18th 2022

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By Roger McShane: China Editor, The Economist

Mr Xi believes foreign powers, led by America, want to contain China. And not without reason. Many Western countries find China's rise alarming. President Joe Biden's administration has sought to hobble the Chinese technology industry with sanctions and export controls. Mr Xi wants to reshape the world order in a way that would please autocrats. He presents China's authoritarian model as a plausible alternative to the West. And he has more resources at his disposal than any despot in history.

Yet China is also weaker than it might otherwise be, thanks to Mr Xi's own choices. Problems at home are mounting. The helmsman will find them difficult to navigate in 2023.

> **China is weaker than it might otherwise be, thanks to Mr Xi's own choices**

Among the most pressing challenges is covid-19. Mr Xi has painted China into a corner with his zero-covid policy, which relies on local lockdowns and draconian restrictions to stem outbreaks. He is right that it has saved many lives. But now it is choking the economy and frustrating citizens, who live under the constant threat of quarantine. China shows few signs of loosening up. Much of the population has not received enough doses of a homegrown vaccine to greatly reduce the risk of severe illness and death; the state has not pushed jabs, preferring lockdowns. Nor, for political reasons, will it import more effective Western mRNA vaccines. The health system is weak. That leaves China ill-prepared to live with the virus. Models suggest that exiting the zero-covid policy would result in packed hospitals and hundreds of thousands of deaths.

Demographics are also working against China. In the 1980s its leaders enforced a one-child policy. The belief then was that the population was growing too rapidly. Now leaders fear the opposite. In 2023 China's population, currently about 1.4bn, will probably start to shrink, and India will surpass it as the world's most populous country. For years the share of old people in China has been rising, while the workforce contracts. That, too, has cut into economic growth and put a huge burden on the young. In 2015 China switched to a two-child policy. In 2021 it allowed three. But young people don't seem to want big families. The average number of births per woman is well below that needed to keep the population stable, let alone growing.

Some experts look at these problems, as well as China's heavy debt burden, and argue that it has reached the peak of its powers. Mr Xi, who will be re-confirmed as president at the annual session of the legislature in March 2023, is unwilling to change course. What might this mean? A slower-growing China will have fewer resources with which to challenge the West. But a weak China, fearing economic strangulation by America, could be more dangerous. If it is anticipating a decline and still wants to reshape the world—or seize Taiwan—some observers fear China will act soon, while it can.

Westerners must be careful not to predict an outcome—the Communist Party's collapse—just because it would be to their liking. Even a weaker Chinese economy will be among the world's largest. The state can mobilise vast resources in strategic areas, such as producing semiconductors or weapons. Other countries, including America, will face their own demographic challenges in the years ahead. China's continued ascent is not inevitable, but neither is its decline. ■

This article appeared in the Leaders section of the print edition of The World Ahead 2023 under the headline "Cloudy with a chance of pain"

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Prepare for rising tensions between fiscal and monetary policy

Central bankers will remain hawkish in 2023

Nov 18th 2022

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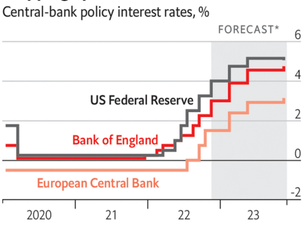
By Henry Curr: Economics editor, The Economist

The first half of 2023 may bring some relief. Europe has enough gas in storage to make it through a mild winter without a major crisis. Commodity prices will stay high and volatile, but merely not repeating their rapid ascent of 2022 will be enough to cause headline annual inflation to fall somewhat. The immediate pressure will come off the Fed.

Neither the inflation problem nor the energy crisis will be over, however. The Fed faces a rate of underlying inflation that is probably around 4%, in part because labour markets are so tight, with nearly two vacancies for every unemployed worker. Europe will once again need to refill its gas storage in preparation for winter, but with much less supply from Russia than flowed in 2022. If China rebounds, global growth will be higher, but that will also increase global demand for liquefied natural gas (LNG), the supply of which is unlikely to rise materially until the middle of the decade. Higher LNG prices could make the second winter of the energy crisis harder to bear than the first.

Stepping up
Central-bank policy interest rates, %



Sources: Refinitiv Datastream; Bloomberg *From December 2022
The Economist

The next conflict between monetary tightening and fiscal sustainability could take place in indebted Italy. The European Central Bank (ECB) is buying Italian bonds even as it raises interest rates to fight inflation. Nonetheless, ten-year Italian debt trades at a yield 2.2 percentage points higher than the German equivalent. Even if the spread falls, in the event that the ECB has to raise rates by as much as the Fed to contain inflation, Italy's budget will come under severe stress.

> **Central bankers will continue to be as hawkish as it takes to contain inflation**

Remarkably, it is also possible that monetary-fiscal conflict could strike Japan. Its enormous public net debts, of around 170% of GDP, have hitherto been sustainable because of the Bank of Japan's ongoing commitment to low interest rates amid below-target inflation. But now even Japanese inflation is rising, and the chasm between its loose monetary policy and Fed tightening is putting severe downward pressure on the yen. A turn towards monetary tightening is possible if inflation proves persistent.

Elsewhere in emerging markets the challenge is coping with a tightening Fed. Middle-income countries are on the whole more robust than during past episodes of rising rates. The biggest problems are found where economic policy has perennially offended, as in Argentina and Turkey. But in poorer parts of the world, especially in Africa, many countries continue to teeter on the edge of crisis, required to negotiate debt relief with China before a bail-out from the IMF is feasible. Reconciling rising interest rates with high public debts is even harder when it is someone else's policy decisions that matter most. ■

This article appeared in the Leaders section of the print edition of The World Ahead 2023 under the headline "Bankers v budgets"

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A whole new global energy system is emerging

It involves some uncomfortable compromises

Nov 18th 2022

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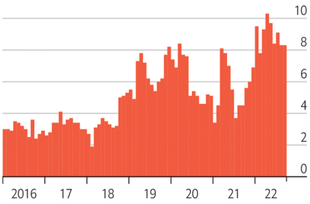
By Patrick Foulis: Business affairs editor, The Economist

The crunch caused by Russia's invasion of Ukraine has been painful. By September 2022 a third of the rich-world inflation rate of 9% was attributable to energy. President Vladimir Putin's strangling of gas supplies to Europe forced firms and consumers to cut consumption by a 10% year on year and sparked fears of deindustrialisation. Europe's scramble to import liquified natural gas (LNG) by sea sent its global price soaring, leading to brutal cutbacks in poorer countries such as Pakistan. Crude-oil prices stayed high and OPEC showed that it remains a menace by cutting production, ignoring the pleas of President Joe Biden to pump more. Coal demand returned to its all-time-peak.

The dash for gas
Europe, liquefied-natural-gas imports, tonnes m



Source: Cedigaz
The Economist

What will this look like? After the 1973 oil shock consumption and emissions dipped and high prices triggered an investment boom in new sources of supply such as Alaska, and in alternatives such as nuclear. This time there is a shock but so far no investment surge. In 2023 capital spending by the world's top 500 energy firms is forecast to be only 9% above pre-pandemic levels. Firms are put-off by geopolitics and the uncertainties of the green transition.

> **Momentum will build to create a better energy system**

The liberal ideal of a global energy market—governed by a common carbon tax and hyper-efficient cross-border supply chains for solar panels and batteries—is dead. An alternative organising principle, with two energy spheres of influence, one democratic and one autocratic, is a stretch. America is ambivalent about becoming Europe's main energy supplier, and may prefer to limit exports, keeping prices low at home for consumers and business. China indulges Russia and Iran despite Western sanctions, but is wary of depending on them.

The green transition creates a further source of uncertainty that inhibits investment. New gas projects may have their lives cut short by tighter emissions rules, unless they can be adapted for new technologies such as green hydrogen. Investment in renewables remains too low and price caps and windfall taxes on generators, introduced by many countries in 2022, are hardly incentives to ramp up spending.

Big problems, big government

Like all Faustian pacts the new energy deals will involve dangers that become clearer over time. The state backing of fossil-fuel deals will create a new generation of polluting assets that will have to be shut down prematurely in 5-10 years to meet emissions targets, at great expense. And the embrace of more nationalistic, protectionist philosophy will mean the $50trn global clean energy build-out over the next decade is less efficient. But those costs will only be weighed long after 2023—and the immediate energy crisis—is over. ■

This article appeared in the Leaders section of the print edition of The World Ahead 2023 under the headline "Faustian bargains"

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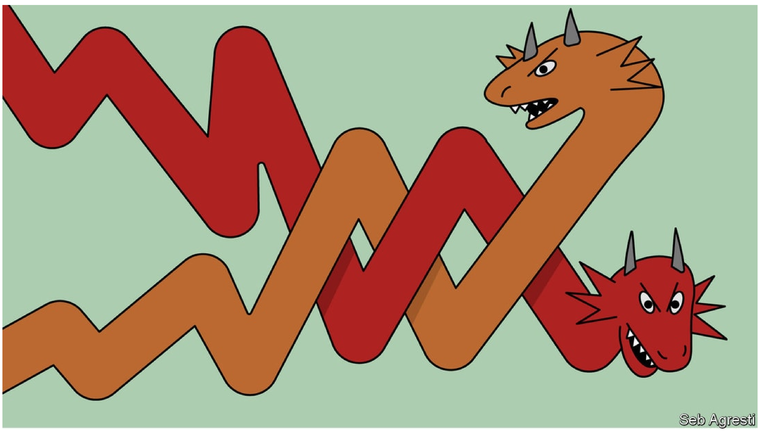
Companies must battle the beast of stagflation

They will face a toxic mix of high costs and low demand



Nov 18th 2022

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By Rachana Shanbhogue: Deputy business affairs editor, The Economist

Companies are already having to deal with soaring inflation. Share prices tumbled in 2022 as first one firm and then another warned of eye-watering cost squeezes. Ford reported that its costs in the third quarter of the year were $1bn higher than it had anticipated, for instance—an overshoot equivalent to about 25% of its adjusted operating profits in the second quarter. In the euro area, producer prices rocketed at annual rates exceeding 40% on the back of jaw-dropping increases in energy prices. Yet even as costs surged, consumer demand remained strong, still sustained by generous fiscal stimulus enacted during the pandemic. That helped American businesses' profits, as a share of GDP, reach a record high during the year.

In 2023 managers will face the daunting task of defending these sky-high profit margins from two sources of pressure. The first is still-elevated costs. Though energy prices may stop rising quite so quickly, they will remain at high levels, as will wages and other costs. And the "gigantic corporate tapeworm of inflation", as Warren Buffett, a celebrated investor, once described it, risks gobbling up dollars that were meant for investment, too. Companies will be forced to shell out more on inventories and receivables simply to maintain a given level of production, to the detriment of capital spending.

> **The best-placed companies will be those with strong pricing power**

The second squeeze on margins will come from faltering demand. Although governments in Europe are trying to cushion the blow from the energy shock, consumers will buy less as they lose purchasing power. In America rising interest rates will start taking a toll on the economy. No wonder, then, that 39% of chief financial officers surveyed by Deloitte, a consulting firm, in August 2022 said they expected America to be in a period of stagflation in 2023, and 46% expect a recession.

Not all firms are blessed with such pricing power; and in any case, there are limits to just how high prices can go before customers start turning away. Some companies will resort to the ruse of "shrinkflation"—making chocolate bars smaller, for example, while leaving prices unchanged. Others will seek to hold down costs through efficiency gains. Already, higher energy bills in Europe have started to reshape some companies' supply chains: BASF, a chemicals giant, is making more energy-intensive ammonia for fertiliser in America and Belgium, for instance, rather than at home in Germany, where the exorbitant cost of natural gas makes it uneconomic.

Perhaps the trickiest attempts to hold down costs will involve workers' wages. With labour in short supply for much of the pandemic, bosses tripped over themselves to court employees, sprucing up their offices and encouraging remote work. But with costs rising and demand wobbling, managers may shift from suitors to adversaries. As the cost of living soars, unions in America and Europe have been demanding big wage increases. But pay rises will be harder to agree on as demand flags, and the threat of lay-offs will begin to loom. Even in mid-2022, half of American businesses surveyed by PWC, another consultancy, said they were planning to reduce headcount.

As with the other challenges that have been faced in recent years, some companies will emerge in better shape than others. Bosses who preside over spiralling costs and collapsing market share will be booted out by unhappy investors. But those who emerge victorious from this latest corporate struggle will find their reputations enhanced. Let battle commence. ■

This article appeared in the Leaders section of the print edition of The World Ahead 2023 under the headline "Battling the beast of stagflation"

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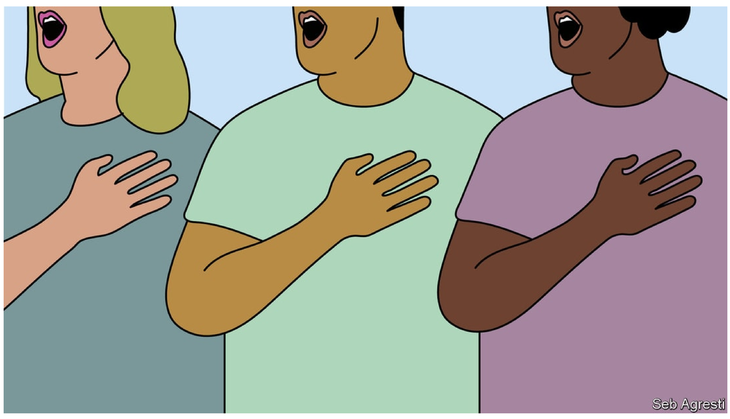
National anthems have fallen behind the times

The time has come to update them



Nov 18th 2022

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By Catherine Nixey: Britain correspondent, The Economist

Britain's anthem offers other thorny problems. When sung in full, it includes a second verse in which God is called upon to "scatter his enemies" and frustrate their "knavish tricks". When the anthem was first sung in 1745, its sentiments were considered so splendidly sensible that they were greeted by "repeated Huzzas", encores and "universal Applause", according to the , a newspaper. In the more sensitive atmosphere of 2022, however, and in front of an international audience, such lyrics seemed rather less splendid. That verse was judiciously edited out.

The coronation of King Charles III, which will take place in May 2023, is a perfect opportunity for further updates. And Britain's is not the only anthem that could do with a little editing. Many were written in the 19th century; few champion equality and diversity as modern minds might wish; and an improbably large number drip with blood. This variously streams generously (Algeria); spills purely (Belgium); dyes the flag red (Vietnam) or waters the furrows impurely (France).

> **The British national anthem is not the only one that could do with a little editing**

Indeed, few nations present their best selves in their anthems. Consider the anthem of the contested region of Western Sahara. With its bright F-major key and jolly marching rhythm, it encourages patriots to "Cut off the head of the invader!"—and not just once, but twice, which is surely the very definition of overkill. Meanwhile the Vietnamese anthem also assures its people that "the path to glory is paved with the corpses of our enemies"; while the Algerian one opts for musical metaphor to explain (fortissimo) that the Algerians have taken "the sound of machineguns as our melody". Simon and Garfunkel it ain't.

There are other challenges. Many anthems promote self-harm; some would benefit from trigger warnings. Italy's romanticises death, while the "Children's verse" in the Marseillaise encourages French infants to die like their elders and "share their coffins" rather than accept defeat. (This mingles suicidal ideation with a touch of historical revisionism—the French having a bit of a track record of preferring defeat to death.) Turkey's anthem, meanwhile, vividly depicts how fallen patriots will one day rise from their graves: "Tears of blood shall spill out from my every wound," it runs, "and my lifeless body shall burst forth from the earth."

Indeed, read several anthems in a row and it's hard to escape the thought that their authors are a troubled lot. Many seem depressed; several seethe with paranoia; others show a clear tendency to catastrophise. Take the Marseillaise, whose first verse contains the charming and apparently bucolic line: "Do you hear, in the countryside…" it begins. What can the sound be? Cows lowing? The wind in the vine leaves? No: it is "the roar of those ferocious soldiers. They're coming…to slit the throats of your women and children."

There is, in short, much room for improvement. Anthems could, perhaps, focus more on positive national traits. France's could, for example, hymn its gastronomic prowess, high-speed trains and nuclear energy, while Turkey's could note its agricultural self-sufficiency and astonishing geopolitical flexibility.

This will not always be easy: national anthems are often held dear and people have fought and died for them. Yet change is possible. After the second world war, Germany decided to stop singing about being "über alles". And when Stalin died, Russia's anthem praising his inspiring leadership died with him—and Vladimir Putin later retooled and reinstated it. For the most part, however, the blood-curdling words found in many anthems are rarely heard and little known. It is tempting to conclude that few people would notice if their outmoded sentiments were quietly consigned to the cutting-room floor of history. ■

This article appeared in the Leaders section of the print edition of The World Ahead 2023 under the headline "Not the same old songs"

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What the "superforecasters" predict for major events in 2023

The experts at Good Judgment weigh in on the coming year

Nov 18th 2022

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How much will global GDP grow in 2023 relative to 2022, as measured by the IMF?

Less than 0%	2%
Between 0% and 1.5%	20%
Between 1.5% and 3%	62%
Between 3% and 4.5%	15%
More than 4.5%	1%

The Economist

Will the Justice and Development Party (AKP) candidate win the Turkish presidential election in 2023?

Yes 71%	No 29%

Will there be a general election in Britain before January 1st 2024?

Yes 10%	No 90%

The Economist

How much will China's GDP grow in 2023 relative to 2022, as measured by the IMF?

Less than 2%	1%
Between 2% and 3.5%	26%
Between 3.5% and 5%	58%
Between 5% and 6.5%	14%
More than 6.5%	1%

The Economist

Will either China or Taiwan accuse the other of using a weapon against its military or law-enforcement forces before January 1st 2024?

Yes 17%	No 83%

Will Russia detonate a nuclear device in Ukrainian territory, territorial waters or airspace before October 1st 2023?

Yes 5%	No 95%

Will Vladimir Putin cease to be the president of the Russian Federation before October 1st 2023?

Yes 9%	No 91%

The Economist

When will Russia and Ukraine sign or announce an agreement to end the conflict in Ukraine?

Before April 1st 2023	2%
April 1st to September 30th 2023	9%
October 1st 2023 to March 31st 2024	15%
April 1st to September 30th 2024	19%
After October 1st 2024	55%

Who will win the Nigerian presidential election in 2023?

All Progressives Congress (APC)	53%
Peoples Democratic Party (PDP)	16%
Someone else	30%
No election will take place	1%

The Economist

Forecasting winner

Congratulations to Jared Leibowich from San Francisco, who has won forecasting challenge organised in collaboration with Good Judgment. He took up forecasting during the pandemic as a way to maintain his mental health in a time of uncertainty. Could you be a superforecaster, too?

Last year's predictions

The superforecasters scored 5/8 with their predictions for 2022, correctly calling election results in France and Brazil; the lack of a Winter Olympics boycott; the outcome of America's midterm elections; and that global covid-19 vaccinations would reach 12bn doses in mid-2022. The Omicron variant was to blame for the three misses. A new dominant variant was not anticipated until later in 2022; Omicron meant GDP growth was weaker than expected; and it hindered the resumption of air travel in America.

This article appeared in the Superforecasts section of the print edition of The World Ahead 2023 under the headline "The experts' best bets"

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Our cartoonist sketches the geopolitical birds to watch for in 2023

From Putin Horribilis to Zelenski Valourus

Nov 18th 2022

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Can Rishi Sunak bring much-needed stability to Britain in 2023?

Britain's fifth Conservative prime minister in six years settles in

Nov 18th 2022

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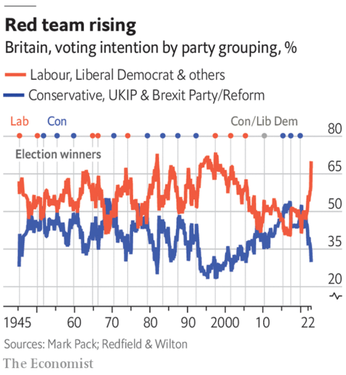
By Duncan Robinson: Political editor and Bagehot columnist, The Economist

So imagine that the weather gods smile on Mr Sunak. Come spring, he finds that things look a little better than expected. When he took over in October 2022, Labour enjoyed a 30-point lead. Now, in some polls the Conservatives are only five points behind, even after a painful round of tax rises and spending cuts imposed by the chancellor, Jeremy Hunt.

Having successfully shunted the blame for rocketing mortgage costs onto his hapless predecessor, Liz Truss, Mr Sunak enjoys a higher approval rating than his party and is more trusted on the economy than Sir Keir Starmer, the Labour leader. With the next general election not due until January 2025 at the latest, his advisers start to mutter about calling an early one. But, after weeks of speculation, Mr Sunak decides not to risk it.



A summer of discontent begins in June when doctors start a series of strikes, with all non-essential procedures cancelled. To cap off a miserable summer, a Conservative MP with a majority of less than 3,000 crosses the floor and joins the Labour party. "Sir Keir's Labour Party represents the values extolled in the Conservative's 2019 manifesto on which I was elected," he declares, with a box-fresh red rosette pinned proudly to his chest.

Conservative attacks on Labour fall short. They try to frame Sir Keir as "Continuity Corbyn" (after his hard-left predecessor, Jeremy Corbyn). But Mr Sunak refuses to stoop to the tactics used by Boris Johnson, who once wrongly accused Sir Keir of failing, while head of the Crown Prosecution Service, to prosecute Jimmy Savile, a celebrity who was revealed to be a paedophile after his death.

> **A summer of discontent begins in June when doctors start a series of strikes**

On the backbenches, a view that Mr Sunak is too weedy to beat Labour takes root. Tory rebels led by Suella Braverman, a former home secretary who was fired after a calamitous few months, reduce the government's effective majority to almost zero.

This article appeared in the Britain section of the print edition of The World Ahead 2023 under the headline "Things can only get better"

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Britain is the sick man of Europe once again

The country will struggle to pep up its sluggish investment

Nov 18th 2022

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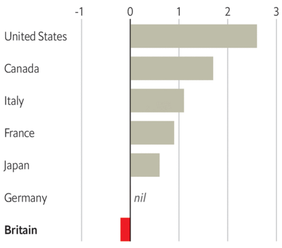
By Soumaya Keynes: Britain economics editor, The Economist

Mr Sunak is acutely aware of the problem: Britain's productivity during the 2010s was dismal. According to the Office for National Statistics, the country's growth in output per hour was the second fastest among G7 countries between 1997 and 2007. But between 2009 and 2019 it slumped to second slowest. By 2019 British workers produced 18% less per hour than French ones. That contributed to feeble wage growth: adjusted for inflation, pay (including bonuses) in 2019 was up by just 1% from 2009.

To deal with this, one obvious priority is perking up Britain's sluggish investment performance. According to calculations from the Resolution Foundation, a think-tank, the difference in GDP per hour worked between British and French workers is almost entirely explained by differences in capital. Among members of the OECD, a club of mostly rich countries, gross fixed capital formation was, on average, 22% of GDP in 2019. In Britain it was just 18%.

Fool Britannia
GDP, real % change, Q4 2019-Q2 2022



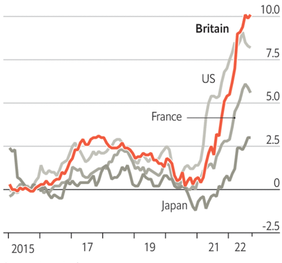
Source: ONS
The Economist

Alas, those high hopes have been crushed. A botched mini-budget has decreased ministers' appetite for the public finances to absorb the huge shocks hitting the economy. In September 2022 Liz Truss, Mr Sunak's short-lived predecessor, announced a six-month plan to help firms with energy bills, but it is unclear what will happen after that. That means more volatility and uncertainty for business executives.

> **With pricier mortgages and higher energy bills, consumer confidence is in the doldrums**

Gloom among households means the outlook for demand is uncertain, too. The Bank of England is so concerned about the risk of inflation becoming embedded that it is raising interest rates sharply, cooling the housing market and choking off demand. The government has said it will fix average annual energy bills for households at £2,500 ($2,890) until April, but concerns about cost mean that intervention after that will not be so generous. With the double threats of pricier mortgages and higher energy bills, it is no surprise that consumer confidence is in the doldrums.

Inflation nation
Consumer prices, % change on a year earlier



Source: Haver Analytics
The Economist

The risk is that this leaves Britain's businesses in a funk. The challenge of boosting investment highlights a circularity noted by Giles Wilkes of the Institute for Government, another think-tank: investment is both a cause and a consequence of a healthy economy. It is both a product of robust demand and a driver of stronger supply. That means even the best-intentioned policies can be derailed by external shocks. Another awkward truth is that investing more for tomorrow means consuming less today—a particularly tough trade-off when other costs are biting sharply.

Mr Sunak no doubt recognises that stronger investment would plump up growth, and help the health of the public finances too. But lingering uncertainty, weak demand from the rest of the world and interest rates moving in the wrong direction will make this difficult to deliver, disappointing a population in sore need of a pay rise. ■

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The British government will prioritise new energy streams

That means renewables and nuclear, but more oil and gas, too

Getty Images

Nov 18th 2022

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By Hal Hodson: Special projects correspondent, The Economist

The winter will still be painful and expensive, but once it is over, attention will turn in 2023 to expanding domestic energy supplies in order to keep prices down. The government's energy-security strategy, published in 2022, presents a plan for the construction of new energy infrastructure for the next three decades—and 2023 is the year it all gets started.

The location of a new nuclear-power station is due to be chosen by 2024, but rising interest rates will make such projects pricier. The cost of capital already makes up over half of the cost of Hinkley Point C, a nuclear plant being built in Somerset. That cost is set to rise.

Britain will also build on its successes using offshore wind turbines to generate electricity. It plans to quadruple offshore wind capacity by 2030, to 50 gigawatts. That is enough power (when the wind is blowing) to supply every home in Britain. To accomplish this, from March 2023 it will begin holding auctions annually (not, as now, every two years) in which energy firms bid to offer the government the best price for the installation and operation of new turbines. Solar-power contracts, which hitherto were offered only at some auctions, will also be available every year from 2023.

Renewables are not the only piece of the energy-supply puzzle that will expand. New oil- and gasfields, such as Jackdaw, off the Scottish coast, will be under construction all year. Drilling is due to start on Jackdaw's first wells in the second half of 2023. The Rough gas-storage facility, off England's east coast, will be back in action, having been retired in 2017, storing enough natural gas for Britain to weather weeks of supply constraints.

Politics will remain deeply entwined with energy supply in Britain in 2023. The government will have to be involved with the financing of any new nuclear plants if they are to get off the ground. The Labour Party has promised to go even further if it wins power, and set up a publicly controlled energy company, like France's. Both main parties agree on the need to spend heavily to create an energy system less vulnerable to global shocks. ■

This article appeared in the Britain section of the print edition of The World Ahead 2023 under the headline "Not in the pipeline"

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A momentous year looms for the cause of Scottish independence

Will Scots get a second vote?

Nov 18th 2022

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By Matthew Holehouse: British political correspondent, The Economist

THERE ARE two very different roads that Scotland could take in the coming year. Down one route, October 19th 2023 becomes a monumental date, known to every future Scottish schoolchild as the day on which the United Kingdom came to an end and a new nation was born. Down the other, the day passes unremarked. A few Scots might note it bitterly, but to future generations, it is nothing more than a piece of pub-quiz trivia: on this day, nothing happened.

For October 19th is the day on which Nicola Sturgeon, Scotland's first minister, hopes to hold a second referendum on independence. In the first, held in 2014, Scots voted 55% to 45% in favour of the union. Polls now show they are split down the middle.

If the separatists prevail, a long and painful divorce negotiation would follow, which would consume the energy of governments in Edinburgh and London for a decade. The Brexit negotiations, handling the European gas crisis, the stretched public finances—all would look like a highland picnic compared with the challenge of an advanced economy splitting itself in two. Precisely how those negotiations would work, what the compromises would be and what the new state would look and feel like are still hazy. Even this close to the possible day of destiny, the Nationalists have been too coy to produce a blueprint of their proposed new country. They will be under pressure to say more.

> **If the Tories are out of power, the case for separation may look less urgent**

As went to press, the Supreme Court was still deliberating. But a ruling in Ms Sturgeon's favour, giving approval to a referendum without the British government's approval, would be a shock. The court has, in recent years, taken a noticeably limited view of the powers of the devolved parliaments and, critics claim, a deferential approach to the British state.

Ms Sturgeon wants her referendum to be legally watertight and so, if the Supreme Court does indeed say no, she will hold fire and use the next British general election, due in 2024, as a proxy referendum on Scottish independence. During 2023, in this scenario, there would simply be another prolonged skirmish, each side grinding away with their own arguments. The Supreme Court's refusal of a referendum would be heralded as yet more proof that Scotland is a prisoner of a jealous British state.

What may change Scottish minds is what is happening in Westminster, and not necessarily in Ms Sturgeon's favour. The Supreme Court heard the case just a week before the collapse of Liz Truss's short-lived government and the selection of Rishi Sunak as Tory leader and prime minister. For Nationalists, recent events are proof that only independence can free Scotland from the chaos of Westminster.

Yet the drop in support for the Conservatives gives the SNP a headache. For years, independence has been advertised as a way to free Scotland from Conservative rule. If—as looks increasingly likely—the Tories will be voted out at the next election, and perhaps for a long time, then the case for separation may look much less urgent to many Scots. The advent of a stable, social-democratic Labour government led by Sir Keir Starmer might be more palatable to all but the most committed nationalists. If the Tories' polling continues to slide in 2023, watch carefully to see if support for Scottish independence softens, too. ■

This article appeared in the Britain section of the print edition of The World Ahead 2023 under the headline "You take the high road"

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Many Britons expect an outbreak of civil disorder in 2023

Confidence in the police is declining

Getty Images

Nov 18th 2022

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By Joel Budd: Social-affairs editor, The Economist

Martin Lewis, a popular consumer champion, has suggested that the sharply rising cost of energy and food means civil disorder is "not far away" in Britain. But bad behaviour does not follow inexorably from bad economic times. It is true that Britons rioted in 1981 and 2011 following nasty recessions. But they also rioted when the economy was humming along, in 1985 and 2000.

Half a century ago E.P. Thompson, a radical historian, ridiculed the "spasmodic view" of riots—the assumption that pitchforks come out when the price of bread goes up. Two other explanations hold up better for riots both past and present. First, people riot because they feel that the authorities (and especially the police) are behaving intolerably. Second, they riot because they think they can get away with it. Warning lights are flashing above both possibilities.

London is the city that matters most, because rioting often breaks out there before spreading. So it is worrying that Londoners' attitudes to the police have deteriorated sharply in the past few years. Surveys conducted by the mayor's office show that the share of Londoners who feel the police can be relied upon dropped from 77% in December 2014 to 57% in March 2022. The share who believe the police treat everyone fairly has fallen, too.

Nobody is quite sure why. A reorganisation of the Metropolitan Police in early 2018 probably made things worse, by weakening the link between coppers on the beat and local communities. A string of crimes, including the kidnap and murder of Sarah Everard by a police officer in 2021, surely contributed.

Many things can trigger riots—police shootings, unpopular laws, sporting triumphs or defeats, rioting elsewhere. But they grow and spread because people calculate that the benefits of joining in (from looted goods, a heightened feeling of power or the sheer fun of destruction) outweigh the likely costs. Criminologists who have studied the 2011 riots argue that British cities shifted suddenly from a low-crime equilibrium to a high-crime equilibrium as the police appeared to stand by, unable to prevent the looting and burning.

The participants in those disturbances miscalculated badly. Using security-camera footage, the police eventually rounded up thousands of rioters and the courts handed them stiff prison sentences. The looters learned a painful lesson. But the events and punishments of 2011 have gradually faded from memory. Rioting is likely to occur over the coming year simply because it has not happened for more than a decade. ■

This article appeared in the Britain section of the print edition of The World Ahead 2023 under the headline "The fire next time"

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Britain's NHS faces huge challenges in 2023

Bed-blocking and staffing are some of the biggest problems

Nov 18th 2022 Share

By Catherine Nixey: Britain correspondent, The Economist

Fears of a collapse are more than just a metaphor. A £9bn ($10.4bn) backlog of building repairs has been ignored in favour of paying for frontline services. At Queen Elizabeth hospital in Norfolk, 1,528 steel and timber supports had to be used to hold up the ceiling.

It is all a far cry from the optimism of 1948 when, as part of a government plan to rid the nation of "Want…Disease, Ignorance, Squalor and Idleness", the NHS opened its doors, providing health care for all, free at the point of use. Aneurin Bevan (pictured), the founding father of the service, observed that the rush for treatment "exceeded all expectations". Eight million pairs of glasses were provided in the first year alone.

> **Part of the NHS's problem is bad circulation**

But as life expectancy rose over the ensuing decades, a system designed to deal with acute problems has proved badly suited to dealing with the increasing number of chronic ones. The pandemic may have delivered the final blow.

Another big problem is staffing. Almost 11,000 medical posts and 46,000 nursing ones are unfilled. This situation may well worsen in 2023, but no one knows for sure, as the government, reluctant to fork out for training, does not plan the NHS workforce. EU countries in the OECD, a club of mostly rich countries, have an average 3.7 doctors per 1,000 people (Austria has 5.4). Britain has 2.9. Empty posts are filled by painfully expensive locums.

"The NHS", says Jeremy Hunt, a former health secretary who is now chancellor of the exchequer, "is a monopoly that has lost control of its labour market." It is not even clear that throwing money at it will solve the problems. Sooner or later, radical structural changes may be necessary. The NHS will continue to be a political problem for the government. As with any elderly, ailing body there is no quick fix. ■

This article appeared in the Britain section of the print edition of The World Ahead 2023 under the headline "Unhealthy"

King Charles III's coronation is a real marketing opportunity

But which products will get the biggest sales boost?

Nov 18th 2022

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By Catherine Nixey: Britain correspondent, The Economist

The royal family has remarkable power to make things fly off the shelves. Elizabeth II's coronation in 1953 prompted a surge in sales of television sets. It also did wonders for curry powder, used in "coronation chicken", a still-popular dish created for the event. When the queen died, after 70 years of regally discreet product placement, the cost of buying a corgi (her favourite type of dog) doubled, and Dubonnet (her preferred tipple) sold out across Britain.

> **The royal family has remarkable power to make things fly off the shelves**

Perhaps most influential, however, is the Royal Warrant—a sort of knighthood for products, which is bestowed upon goods and services regularly supplied to senior members of the royal family. It permits a firm to sport a royal coat of arms on its whisky bottle, horse-feed or tomato ketchup, with the words "By Appointment".

What products might benefit from Charles's coronation? Given current attitudes to empire and the new king's green credentials, his coronation feast is less likely to feature curried food than humble (but definitely organic) pie. As for Royal Warrants, more healthy, plant-based products seem likely to receive the royal stamp. Fountain pens, less so. A video went viral in September of him signing a visitors' book with a pen that leaked all over his hand. "Bloody thing," the king exclaimed. ■

This article appeared in the Britain section of the print edition of The World Ahead 2023 under the headline "Earning royalties"

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Nicola Sturgeon on the push for another Scottish referendum

Recent events in Britain strengthen the case for independence

Nov 18th 2022

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When I wrote previously for this publication, back in 2015, it would have been all but impossible to predict the course which global events have since taken. We have witnessed Brexit, the election of Donald Trump in the United States and its toxic legacy, a global pandemic, the return of war to the European continent with Russia's brutal, illegal invasion of Ukraine—and, in the United Kingdom, a cost-of-living and general economic crisis on a scale unseen in many decades.

Any one of these things would have the capacity to be unsettling. Taken together, though, these events have thrown the world around us into a state of flux of a kind rarely seen in modern times.

In Scotland, the government I lead is doing its utmost to protect people in the face of the severe economic challenges we face. However, those challenges have been exacerbated by the reckless actions of the British government, whose policies have sent sterling plummeting to record lows against the dollar, while prompting central-bank interventions to prop up the economy and leading to surging interest rates which are having a punitive impact on ordinary citizens at a time when inflation had already risen to its highest level in around 40 years.

> **No one can seriously claim that Scotland's future is safe if we remain subject to rule from Westminster**

When people last voted on the issue, back in 2014, they were told by the British government of the day that the only way to protect Scotland's place in the European Union was to reject independence.

That pledge, like so many other promises of the No campaign in 2014, has proved to be empty. Scotland has been taken out of the EU against our will and removed from the world's largest single market—a market around seven times bigger than Britain's.

No one can now seriously claim, given the chaotic nature of British governance in recent times, and especially in light of the turmoil of recent months, that Scotland's future is in safe hands for as long as we remain subject to rule from Westminster. The fact that the UK is now predicted to have the slowest growth of any G20 economy in 2023, with the exception of sanctions-hit Russia, is further proof.

At the time of writing, Scotland's ability to hold a referendum without agreement from Westminster—in line with the overwhelming democratic mandate for one secured in the 2021 Scottish Parliament election—is in the hands of the UK Supreme Court. The court is having to rule at all only because the British government is seeking to block that electoral mandate.

We will continue to make the positive case for independence, and the Scottish government is currently engaged in outlining the prospectus for an independent Scotland in a range of papers which show the opportunities it will bring.

We have already shown that the UK, and therefore Scotland, is outperformed in a range of league tables on social and economic performance by numerous neighbouring countries. Many of them are similar to Scotland in size and population—though most are not blessed with the same natural resources. So, increasingly, the question is: if other nations can make such a success, why not Scotland?

Independence will give us the chance to create an economy that works for everyone, where workers' rights are protected, environmental standards are safeguarded and the climate crisis is treated with the urgency it merits—all things that are being cast aside as post-Brexit Britain seeks to compensate for losing the trade links it has depended on for decades.

Independence will not be a panacea. An independent Scotland will still be confronted by the challenges of the 21st century, which are buffeting economies large and small around the globe. Unlike the situation we face now, however, we will tackle those challenges with the ability to take decisions for ourselves in our own national interest.

That would be good not only for Scotland, but also for the rest of the UK and the international community. An independent Scotland, in a true partnership of equals with the other nations of the British Isles and anchored firmly in the EU, would be a model of cooperation, common sense and stability—qualities which have all been lacking in the recent governance of Britain. ■

This article appeared in the Britain section of the print edition of The World Ahead 2023 under the headline "It's time for Scotland to break free"

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Three scenarios for how war in Ukraine could play out

The best one for Ukraine is also the most dangerous

Nov 14th 2022

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By Shashank Joshi: Defence editor, The Economist

In the first, Russia snatches victory from the jaws of defeat. Russia's army stabilises the front lines over the winter months, while building new battalions with freshly mobilised recruits. Meanwhile, Republicans in America block new arms packages for Ukraine, as supplies from Europe run out. Russia's defence industry is starved of semiconductors and specialised equipment, but churns out enough basic armour and artillery to equip the new forces.

By the spring, the new Russian units go on the attack, forcing back a Ukrainian force that is weary from months of offensive action. Russian drones continue to hammer Ukraine's energy and water infrastructure. As summer arrives, Ukraine is on the back foot. Russia captures Kryvyi Rih, a key industrial town north of Kherson, and Slovyansk and Kramatorsk in Donetsk. Western countries urge Ukraine to accept a Russian offer of a ceasefire. Volodymyr Zelensky, Ukraine's president, has little choice but to accept. In the months, perhaps years, that follow, Russia assiduously rearms for another attempt on Kyiv.

> **A Putin ultimatum: stop, or face the use of nuclear weapons**

Far more likely is a second scenario: stalemate. Russia mobilises hundreds of thousands of young men, but cannot turn them into effective fighters. All the best trainers are on the front lines. Experienced officers are dead or already deployed. The recruits are fashioned into basic light-infantry units, lacking armoured vehicles and unfit to go on the offensive—but able to fill trenches and man fortifications.

The Economist

Unable to win the war on the battlefield, Mr Putin then tries to prolong it long enough to undermine Ukraine's economy, sap its morale through strikes on civilian infrastructure and exhaust its partners. Europe struggles to fill its gas-storage sites during 2023, causing blackouts as winter arrives. Mr Putin aims to hold out until late 2024, when he hopes Donald Trump will retake the White House and end support for Ukraine. But it is a high-stakes gamble: Russian opinion turns against the war, its economy shrivels and Mr Putin looks ever more vulnerable.

The third scenario is the most encouraging—and perhaps the most dangerous. Ukraine keeps the initiative and the momentum, inflicting heavy damage on Russian forces as they leave Kherson and then bringing its long-range HIMARS rockets within range of Crimea for the first time. Russian lines in Luhansk collapse, with Ukraine recapturing Severodonetsk and then quickly moving farther east. As Russian casualties mount, new recruits refuse to fight. Western countries rush new air-defence systems to Ukraine, blunting the impact of Russia's terror tactics, based on its rapidly dwindling arsenal of precision missiles.

In the spring Mr Zelensky orders his army to open a new front in Zaporizhia. Five brigades slice through Russian lines, cutting Mr Putin's land bridge to Crimea and encircling Mariupol by the summer. Ukraine moves its HIMARS rocket launchers into the south, targeting ports, bases and depots in Russian-occupied Crimea. Ukraine threatens to enter the peninsula. Mr Putin issues an ultimatum: stop, or face the use of nuclear weapons. Victory is within sight. But so, too, are the risks that it brings. ■

This article appeared in the Europe section of the print edition of The World Ahead 2023 under the headline "Conflicting possibilities"

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Russia risks becoming ungovernable and descending into chaos

There is growing opposition to President Putin at home

Nov 18th 2022 Share

By Arkady Ostrovsky Russia editor, The Economist

Mr Putin's war is turning Russia into a failed state, with uncontrolled borders, private military formations, a fleeing population, moral decay and the possibility of civil conflict. And though confidence among Western leaders in Ukraine's ability to withstand Mr Putin's terror has gone up, there is growing concern about Russia's own ability to survive the war. It could become ungovernable and descend into chaos.

Consider its borders. Russia's absurd and illegal annexation of four regions of Ukraine—Kherson, Donetsk, Luhansk and Zaporizhia—before it could even establish full control over them, makes it a state with illegitimate territories and a fluid frontier. "The Russian Federation as we know it is self-liquidating and passing into a failed-state phase," says Ekaterina Schulmann, a political scientist. Its administration, she notes, is unable to carry out its basic functions. The annexation will not deter Ukrainian forces, but it will create precedents for Russia's own restive regions, including the north Caucasus republics, which are likely to head for the exit if the central government starts loosening its grip.

Another feature of a failing state is a loss of monopoly on the use of physical force. Private armies and mercenaries, although officially banned in Russia, are flourishing. Evgeny Prigozhin, a former convict nicknamed "Putin's chef" and a front man for the Wagner Group, a private mercenary operation, has been openly recruiting prisoners and offering them pardons in exchange for joining his forces. Wagner, he says, has no desire to be "legalised" or integrated into the armed forces. The same could be said of the force controlled by Ramzan Kadyrov, a Chechen former warlord and now Chechnya's president. Even Russia's government security agencies are increasingly serving their own corporate interests.

The Russian state is failing in the most basic function of all. Far from protecting the lives of its people, it poses the biggest threat to them, by using them as cannon fodder. On September 21st, faced with military defeat on the battleground in Ukraine, Mr Putin ordered a mobilisation of some 300,000 people. Ill trained and ill equipped, their only function is to stand in the way of the advance of the Ukrainian forces. Many are unlikely to be alive this time next year.

> **There is growing concern about Russia's own ability to survive the war**

The mobilisation caused a shock in Russia far greater than the beginning of the war itself. Some of its effects are already visible: recruitment centres were set ablaze, and at least 300,000 people fled abroad (on top of the 300,000 who left in the first weeks of the war). Most of them are young, educated and resourceful. The full impact of their departure on the country's economy and demographics is yet to show, but social tension is rising.

While urbanites flee, tens of thousands of their poorer compatriots are being rounded up and sent into the trenches. By bringing his "special military operation" home Mr Putin has broken the fragile consensus under which people agreed not to protest against the war in exchange for being left alone. Now they are being told to fight and die for the sake of his regime.

Mr Putin cannot win, but he cannot afford to end the conflict either. He may hope that by making so many people collude in his war, and subjecting them to more of his poisonous, fascist propaganda, he will be able to drag things out. Whether he succeeds, or whether the flow of body bags, coupled with the discontent of the elite, results in his downfall, will determine how many more people will die and how far Russia falls.

As Alexei Navalny, Russia's jailed opposition leader, said in one of his court hearings: "We have not been able to prevent the catastrophe and we are no longer sliding, but flying into it. The only question will be how hard Russia will hit that bottom and whether it will fall apart." The coming year will give some indication of an answer to that grim question. ■

This article appeared in the Europe section of the print edition of The World Ahead 2023 under the headline "What next for Russia?"

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Fallout from the war in Ukraine will bedevil European diplomacy

An important country in the debate will be Italy

Nov 18th 2022

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By Christopher Lockwood: Europe editor, The Economist

In one depressingly likely scenario, it will drag on through 2023, with Russia progressively forced back, but Ukraine unable to reclaim all its lost territory. In that case, expect voices within Europe to start applying gentle pressure on Ukraine to move towards a negotiated peace.

Some will be lured by the idea of a resumption of gas sales and a reduction in the cost of subsidising energy. Others will fear America's presidential election in 2024 and a possible scaling back of its military and economic support for Ukraine, leaving Europe to take up the burden. And some, perhaps Emmanuel Macron of France, will stress that Russia will always be next door, so channels of communication should be re-opened. Europe, they will say, cannot have continual war on its doorstep. Though these voices are not expected to prevail, they have the potential to cause tension within Europe, especially if the leaders of front-line countries such as Poland or Lithuania start to fear that others, such as Mr Macron or Germany's Olaf Scholz, are less committed to the idea that Mr Putin must be seen to be decisively defeated.

> **Italy may well flip, and start to extol the virtues of negotiation**

A key country in the debate will be Italy. At the moment, the new prime minister, Giorgia Meloni, is firm in her support for NATO and Ukraine. But Italy also faces a deeply precarious economic situation. It is laden with €2.5trn ($2.4trn) of debt—more than 150% of its GDP. It has a large manufacturing sector, which is hamstrung by high energy prices. And unlike Germany, which is easily able to raise the cash to support its companies and help them through the crisis, Italy will struggle to protect its own. So Italy may well flip, and start to extol the virtues of negotiation. Ms Meloni's coalition partner, Matteo Salvini, already does.

And what if the conflict does come to an end? That cannot happen on the battlefield, but might happen as a result of a change of leader or a change of heart in the Kremlin, as it becomes ever clearer that the cost in blood and treasure of Mr Putin's war far outweighs any possible benefit. That will set the scene for another kind of European tension: over who pays for the rebuilding of Ukraine, and how much to spend on it.

America will say, truthfully, that it paid the lion's share of the cost of arming Ukraine (and supporting its economy through the months in which it almost collapsed). Now it will be Europe's turn, though multilateral organisations like the World Bank and the imf will also do their bit. But this will cause all sorts of international arguments. Rebuilding Ukraine will eat up funds that are badly needed for poorer countries in the developing world. Arguments within the multilateral organisations will be sharp, and accusations of developed-world bias will fly. One way or another, Europe will be grappling with the consequences of the war for many years to come. ■

This article appeared in the Europe section of the print edition of The World Ahead 2023 under the headline "The cost of peace"

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The scourge of inflation means a tough year ahead for Europe

Economies face a problems as energy prices and interest rates rise

Nov 18th 2022

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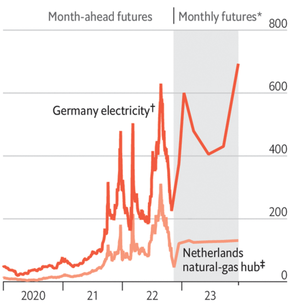
By Christian Odendahl: European economics editor, The Economist

Exactly 100 years later, Europe is grappling again with high inflation, caused by a European war. Hyperinflation is, fortunately, a very remote prospect: the economies of Europe are strong, and policymakers are committed to keeping debt sustainable and tackling inflation. But in 2023 the full economic impact of price rises, and the energy crunch that largely caused them, will be felt across Europe—leading first to a recession and then to a painfully slow recovery.

Start with energy. In its war against Ukraine, Russia has wielded energy as a weapon against Kyiv's Western backers, slashing gas exports to Europe and sending gas prices skywards. Unfortunately, many French nuclear-power stations were offline for repairs, and a drought across Europe reduced the availability of hydroelectric power. Plants running on eye-wateringly expensive gas had to fill the gap.

Electric shock
Price of gas and electricity on futures markets
€ per megawatt-hour



Source: Refinitiv Datastream *At Nov 1st †EEX peakload ‡TTF
The Economist

That will leave inflation higher than many had hoped. True, as raw energy prices stop rising, year-on-year comparisons mean inflation will shrink almost mechanically throughout 2023. But some energy prices are capped or set using long-term contracts, and so have yet to rise fully. In the rest of the economy, the energy-price shock will continue to push prices up. Wages will increase to make up for lost real income, adding to firms' costs. Businesses will pass higher costs on to customers to protect profit margins. And rising prices for services, which are largely unrelated to energy, will take time to slow.

Consumers and businesses will feel the brunt and start to hold back. In 2022, a year of post-covid recovery, pent-up demand for sunny holidays and fancy restaurants boosted the economy. Industry benefited from overflowing order books from the post-covid surge in demand and the supply-chain disruptions that came with it. But in 2023, household budgets will face a double whammy: higher energy bills and increased mortgage payments as interest rates remain high to fight inflation. Firms will also be squeezed, and so will cut back on investment. All of this will tip Europe's economy into recession.

> **Unlike in previous slumps, the global economy cannot come to Europe's rescue**

Unlike in previous slumps, the global economy cannot come to Europe's rescue. Export orders for its industry will remain low during 2023, as higher interest rates, the global energy crunch and the strong dollar weaken growth and demand throughout the world. Only once energy prices have come down, and inflation in America has been brought under control, will global growth be able to support Europe's recovery. But that will not happen in 2023.

Public support for households and businesses will help prevent a deeper recession in Europe in 2023. Governments across the continent are trying to shield their voters from the impact of unaffordable energy bills. That will put a floor under their real incomes and limit the economic fallout of the energy crisis. It should also help reduce the political divisions that history teaches inflation can bring. ■

This article appeared in the Europe section of the print edition of The World Ahead 2023 under the headline "The scourge of inflation"

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Turkey's centenary could mark the end of the Erdogan era

The president faces elections just before the celebrations

Nov 18th 2022 | Share

By Piotr Zalewski: Turkey correspondent, The Economist, Ankara

The economy, as well as concerns over corruption and institutional integrity, may be Mr Erdogan's undoing. Presidential and parliamentary elections are set for June. The opposition has not yet put forward its candidate for the presidency, but polls show Mr Erdogan would lose to each of the putative contenders in a run-off. His ruling Justice and Development (AK) party and its coalition partner, the Nationalist Movement Party, are on course for a drubbing by an opposition alliance. The president's political obituary has been written before, but even allies admit these elections will be his toughest.

Many Turks worry that Mr Erdogan may resort to extreme measures to avoid defeat. He is likely to try to spend his way out of a hole. Starved of hard currency, Turkey is courting new investments from Russia, Saudi Arabia and the UAE. It has already rolled out a debt-amnesty programme and dramatically raised the minimum wage. More stimulus spending could propel the official inflation rate into triple digits.

Mr Erdogan may also try to reverse his flagging fortunes through confrontation, either with Kurdish insurgents in Syria, or with old enemy Greece over airspace and maritime rights. With Greek elections round the corner, too, the risk of escalation is real.

Yet even that may not save Mr Erdogan. There is a real chance that, by October, when the official celebrations take place, the Erdogan era will be over. But do not underestimate the lengths to which he will go to prevent this happening. ■

This article appeared in the Europe section of the print edition of The World Ahead 2023 under the headline "Turkey turns 100"

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A change of government in Spain is likely but not inevitable in 2023

And the People's Party will probably not win a majority

Nov 18th 2022

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By Lane Greene: Spain correspondent, The Economist, Madrid

The government took power when the Socialist party led a vote of no confidence against the centre-right People's Party (PP) government in 2018. The Socialists' Pedro Sánchez became prime minister. But in two elections in 2019, the Socialists failed to secure a majority of seats. The party was forced to take the far-left Podemos into coalition, after promising never to do so, and still lacked a majority. Spain's first modern real coalition government has been awkward at times. But reasonably deft dealmaking with smaller parties has seen the passage of laws on climate, education, the labour market, gender relations and more.

That said, as elsewhere in Europe, 2022 was hard. Just as the pandemic was receding, inflation sparked by the war in Ukraine clobbered consumers. The government responded with a grab-bag of remedies, some wiser than others.

> **The centre-right People's Party is widely expected to take power**

The PP, meanwhile, ditched its combative leader, Pablo Casado, for Alberto Núñez Feijóo (pictured), the longtime leader of Galicia in the north-west. Mr Feijóo's businesslike tone and the government's struggles with inflation have put the PP ahead in polls, and it is widely expected to take power in 2023. In a debate in September, Mr Sánchez attacked Mr Feijóo almost as if the PP leader were prime minister. Mr Feijóo replied: "If you want to be in the opposition, you only have to wait until the next elections."

The year-long campaign will overlap with Spain's holding of the EU presidency, beginning on July 1st. Though this job is not as important as it once was (since the EU now has a permanent president of the European Council), Spain will try to use it to bolster relations with Latin America, a perennial Spanish priority which is much less important to its European partners.

Closer to home will be efforts to improve Europe's energy union. Spain and Portugal are an "energy island", hardly connected to other countries. But Spain, Portugal and France agreed in late 2022 to build an undersea connection between Barcelona and Marseille, to carry gas first, and later hydrogen. The hard part will be the budgeting and planning of the project.

Catalonia may be unstable in the coming year. After an unconstitutional independence referendum in 2017, two pro-independence governments have followed. But the one that emerged from 2021's elections collapsed in late 2022. The Republican Catalan Left (ERC) had been negotiating, cautiously, with the national government, which caused Junts, the more stridently pro-independence party, to quit the government in Barcelona. Leaders in Madrid are trying to keep the ERC close, splitting the independence camp. But a minority ERC government could fall, triggering elections. ■

This article appeared in the Europe section of the print edition of The World Ahead 2023 under the headline "The terrain in Spain"

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Italians will soon discover who the real Giorgia Meloni is

But her government is seriously constrained

Nov 18th 2022

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By John Hooper: Italy correspondent, The Economist, Rome

She heads a party, the Brothers of Italy, whose origins date back to post-war neo-fascism. It dominates a right-wing alliance infused with populism. Will she turn out to be the Trumpian firebrand who has set out an unequivocally alt-right agenda in some of her past speeches, especially while abroad? Or will she be the sensible, if unabashedly conservative, leader who has fallen in line with Italy's NATO partners over Ukraine, sought advice from her respected predecessor, Mario Draghi, and has argued for prudent management of the public finances?

> **What does she really believe—and how long will her government last?**

A further question is whether it even matters what Ms Meloni thinks. The constraints on her new government are so great, some argue, that it can only go in one, conventional, direction. It is reliant on the goodwill of Brussels for the disbursement of the bulk of Italy's vast, €200bn ($201bn) share of the EU's post-pandemic recovery fund. And it needs the approval of the markets to avoid the kind of storm that ravaged Britain's finances in the autumn. With so much else on her plate—inflation, a cost-of-living crisis and a war at the EU's frontier—Ms Meloni, the argument runs, would be crazy to start a culture war, let alone impose the kinds of restrictions on civil liberties seen in Poland and Hungary.

Whether that view proves correct may depend on the answer to another question that could be answered in 2023: how long will her government last? In the past 30 years, the average duration of an Italian administration has been less than 20 months. However mad, bad or indifferent the people at the top, there is a limit to what can be achieved in that time.

This article appeared in the Europe section of the print edition of The World Ahead 2023 under the headline "Quo vadis?"

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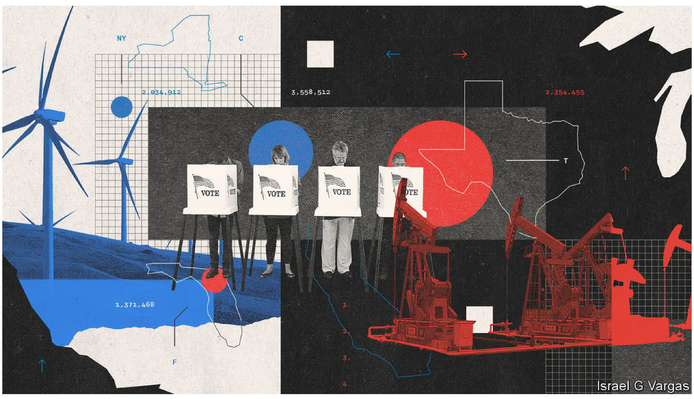
The World Ahead | The World Ahead 2023

To understand America' future, watch the four mega-states

California and New York on the left, Florida and Texas on the right



Israel G Vargas

Nov 18th 2022

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By Alexandra Suich Bass: Senior correspondent for politics, technology and society, The Economist, Dallas

It is not just their size that makes them consequential. The mega-states are pioneering trend-setting policies, which can spread to other states and to Washington, DC. Dividing along ideological lines, the mega-states offer opposing visions for the country's direction and therefore embody the idea that America is becoming increasingly split.

By design, the federalist system enables states to run their own experiments, serving, in the words of Louis Brandeis, a former Supreme Court justice, as "laboratories of democracy". California and New York have similar models, with high taxes and high regulations, and a generous social-safety net. Florida and Texas have low taxes and low regulation.

California and New York are run by Democrats, Florida and Texas by Republicans. All four are "trifecta" states, meaning that a single political party controls both chambers of the state legislature and the governor's office. This trend of one-party control has become widespread. Today there are 37 "trifecta" states, about double the number in 1992. This helps explain why the states create partisan policy experiments that do not reflect voters' will. For example, Texas now has a law banning abortion from conception, with no exception for rape or incest, although most Texans oppose such severe restrictions.

Like the country, the mega-states are heading towards different poles, and the policies they are spinning out are in direct confrontation with one another. For example, California and New York have advanced green-energy policies, with California going so far as to ban the sale of petrol-powered automobiles from 2035. Meanwhile, Texas recently banned financial firms that are not supportive enough of oil and gas extraction from doing business in the state, and Florida has barred investment decisions based on environmental, social and governance principles.

> **Watch for direct confrontation between the mega-states on a range of issues**

Three things are worth watching in the mega-states. First, follow the people. There have been large migration flows out of high-tax states like California and New York and into states with no income tax, such as Florida and Texas. Winning the contest for people will shape the future, because population growth is the engine of the economy and determines political power in Washington, DC. After the 2020 census, California and New York each lost a congressional seat, while Texas gained two and Florida one.

Second, pay attention to the policy issues the states take up, which often foreshadow national debates. California and, to a lesser extent, New York see themselves as blue beacons of the Democratic agenda. Having already pioneered policies on access to abortion, climate change and benefits for undocumented immigrants, in 2023 they are likely to push to new extremes on the environment, social welfare and labour law. Florida and Texas see themselves as pioneers of cutting-edge Republican policy and will serve up divisive new laws on social issues and elections.

The third thing to watch for is direct confrontation between the mega-states. Florida's and Texas's busing of recently arrived immigrants to Democratic cities is one example. The battlefronts will be numerous, from immigration enforcement to abortion. Expect to see plenty of jousting between the governors and attorneys-general of the mega-states in 2023.

Nowhere will this be more visible than in the rivalry between Gavin Newsom, California's governor, and Ron DeSantis, the governor of Florida. Both are likely to be presidential contenders and will look to use their states as "symbolic representations of what they would offer the American people," says Ken Miller of Claremont McKenna College in California. Voters may have to choose between the Golden State and the Sunshine State as a vision for the whole country in 2024. ■

This article appeared in the United States section of the print edition of The World Ahead 2023 under the headline "The big four"

American politics will be on a knife-edge in 2023

A divided government was not always a recipe for gridlock

Getty Images

Nov 18th 2022

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By Idrees Kahloon: Washington bureau chief, The Economist, Washington, DC

It used to be that having the Speaker of the House and the president from opposing parties was not necessarily the death knell for worthy legislation. But lately the role of Speaker has morphed from being an occasionally conciliatory legislator—as Tip O'Neill was with Ronald Reagan—to more of a chief tormentor.

There is little reason to hope that Kevin McCarthy, the presumptive Republican successor to Nancy Pelosi, would exceed expectations. There is vanishingly little that Democrats and Republicans agree on beyond a shared scepticism towards Big Tech and China. Republicans appear to be held together not so much by policy preferences as by a disdain for Democrats and their allies in the business and cultural elites.

The important but little-noticed work of Congress, like the cobbling together of appropriation packages for defence spending, may proceed. But everything else will slow to a crawl under divided government. Whatever Mr Biden has not got done by the end of 2022 is unlikely to be achieved.

> **Whatever Mr Biden has not done by the end of 2022 is unlikely to be achieved**

Mr Biden will probably pivot to issuing sweeping new regulations on pollution and big business as a substitute for legislation. But that is unlikely to mollify those in the party who expected, in Senator Elizabeth Warren's words, "big structural change". Those internal tensions, relentless investigations from Republicans in Congress and plain old age may push many in the party to consider the president unviable for the 2024 election.

If so, that would kick off a succession contest. The deep cracks that emerged between the Democrats' moderate and progressive factions in the 2020 primary election would appear once more. And jostling between contenders—Kamala Harris, the vice-president, is an unappealing heir-apparent—would come to dominate Democratic circles in 2023. ■

This article appeared in the United States section of the print edition of The World Ahead 2023 under the headline "Knife edge"

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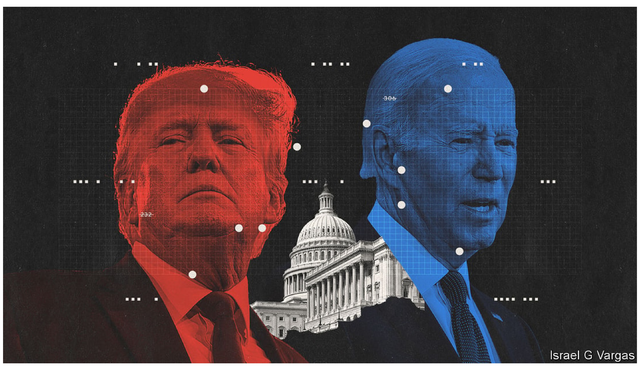
Donald Trump and Joe Biden both want to run again

But their parties may have other ideas



Nov 14th 2022

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By James Bennet: Lexington columnist, The Economist, Washington, DC

In the near term Mr Trump's narcissism will remain the black hole around which American politics will revolve. For motives that are at least as much legal and psychological as they are political, Mr Trump feels he has no choice but to run for president again. Not doing so would leave him more vulnerable to the many criminal and civil cases being built against him—and, even worse from his perspective, would doom him to creeping irrelevance, helpless to prevent first the spotlight, then his donors and perhaps even his hard-core supporters from drifting away.

But the results of the midterm elections showed Mr Trump, once again, to be a loser, as many of the candidates he endorsed were rejected by voters. Meanwhile a potential primary opponent, Governor Ron DeSantis of Florida, emerged as a new Republican powerhouse. Republican donors and officeholders, many of whom were yearning to be free of Mr Trump, will turn to Mr DeSantis.

Others will look to Glenn Youngkin, the governor of Virginia, who offers a kinder, gentler version of the Republican cultural and social crusade than Florida's governor. And still others will turn to Mike Pence, who served as Mr Trump's vice-president but, thanks to his refusal to accede to that president's demands that he corrupt the 2020 election, can present himself to the Republicans' evangelical voters as actually having integrity. It will be interesting to learn how much that matters.

Possibly not much, because it is impossible to count Mr Trump out. He understands leverage, and that has long allowed him to play weak hands to devastating effect. He has often wielded his militant supporters as a club to intimidate potential opponents and critics, with particularly destructive effect on January 6th 2021. From his perspective, the more opponents who split the anti-Trump vote in a primary, the better.

> **Donald Trump feels he has no choice but to run for president again in 2024**

Yet Mr Trump's approach will also continue to limit him in a general election. His famous assertion about his backers' loyalty—that he could shoot someone on Fifth Avenue without losing their support—is only half the story. He has, in return, also found it necessary endlessly to prove his loyalty to them. He cannot even safely boast about his success in securing vaccines for covid-19; when he said at a rally that he had received a booster shot, he was booed. This obsession with cultivating his fanatics explains why Mr Trump has never had majority support, and has no hope of it now. Most Americans are heartily sick of his whole act.

In the Democratic camp, meanwhile, President Joe Biden will come under pressure not to run for another term because of his age and his low approval ratings. Once another Democrat—Gavin Newsom, the governor of California, Gretchen Whitmer, the governor of Michigan, or Jared Polis, the governor of Colorado—announces that they are running, other Democrats will pile in. History has not been kind to presidents who faced serious primary challenges, but Mr Biden may soldier on. If so, Americans may be confronted with a choice between two elderly antagonists that they overwhelmingly say they do not want.

Should Mr Biden have the wisdom to step back, Kamala Harris will point to her role as vice-president and her identity as a black woman as reasons Democrats should rally to her. Some will. But other members of the administration, including Pete Buttigieg, the transport secretary, and Gina Raimondo, the commerce secretary and a favourite of centrists, will compete, and a vigorous debate over the direction of the Democrats will ensue.

Americans have been fearful about the health of their democracy. But as a new generation of leaders jockey for position in both the Republican and Democratic parties, they may well be in for an inspiring demonstration of it. ■

This article appeared in the United States section of the print edition of The World Ahead 2023 under the headline "Questions of leadership"

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A Ukrainian victory could bring benefits for America

It would also bring complications and dangers

Nov 18th 2022

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By Anton La Guardia: Diplomatic editor, The Economist, Washington, DC

In what Mr Biden calls the "decisive decade" to shape the world, he also has other potential conflicts to worry about. He has vowed to act if China invades Taiwan. He has pledged not to let Iran acquire nuclear weapons, though it is close to being able to do so. North Korea already has nukes, and has intensified its testing of missiles to deliver them, prompting America and South Korea to step up military drills and raising the risk of accidental war.

This is not the world Mr Biden was hoping to deal with. He took office wanting to invest in America's economy, strike a nuclear deal with Iran, get out of wars in the Middle East, stabilise ties with Russia and, like others before him, pivot to Asia. Vladimir Putin, though, has forced America to pivot back to Europe.

> **As Ukraine's most important backer, Joe Biden will have an important say in when the fighting should stop, and on what terms**

Mr Biden has rediscovered that America, as the world's predominant power, has global interests. Chaos in one part of the world weakens America elsewhere, according to his national-security strategy, published in October. So his hope is that success in Ukraine will reap benefits: Russia diminished, NATO strengthened, Europe more resilient, American power affirmed and autocrats everywhere put on notice.

Assuming Ukraine keeps pushing forward in 2023, an approaching victory will raise new problems, chief among them the danger of nuclear escalation. The closer Ukraine comes to defeating Russia, the stronger the lure of nukes. What would push Mr Putin over the brink? Nobody knows.

If instead Mr Putin tries to consolidate his gains through a diplomatic settlement, Ukraine is in no mood to concede anything. It wants a full Russian withdrawal to the international border of 1991, as well as reparations and war-crimes trials. Some allies in Europe worry about such maximalist demands. Mr Biden has not shown his hand, but as Ukraine's most important backer, he will have an important say in when the fighting should stop, and on what terms.

Any agreement, though, is likely to be a fragile ceasefire rather than a lasting peace. NATO and the NATO would have to decide whether to accept Ukraine's request for fast-track membership. Its bravery will make it hard to deny it integration with the West. But NATO membership would mean America extending its nuclear umbrella to Ukraine. Would that help secure peace, or raise the risk of direct conflict with Russia?

Russia, says Team Biden, poses an "immediate and persistent threat". But the greatest challenge is China: the only country with the intent and power to reshape the world. Even as he prosecutes a proxy war against Russia, Mr Biden has intensified the "chip war" against China. Given China's rapid military build-up, and fears that it might attack Taiwan in the coming years, some strategists worry that Ukraine is a dangerous distraction.

The Biden administration retorts that it can fend off both Russia and China thanks to its unrivalled network of alliances . Militarily, protecting allies in Europe is a task mainly for the army, whereas supporting those in Asia requires air and naval power. But military budgets, even those as large as America's, always have limits.

Republican gains in the midterms may lead to America's armed forces receiving above-inflation increases in funding. And a success in Ukraine might also ease America's geopolitical dilemmas. Even a points victory against Russia, rather than a knock-out, may be enough to convince China that the risk of losing a war over Taiwan is not worth the gamble. ■

This article appeared in the United States section of the print edition of The World Ahead 2023 under the headline "Re-asserting authority"

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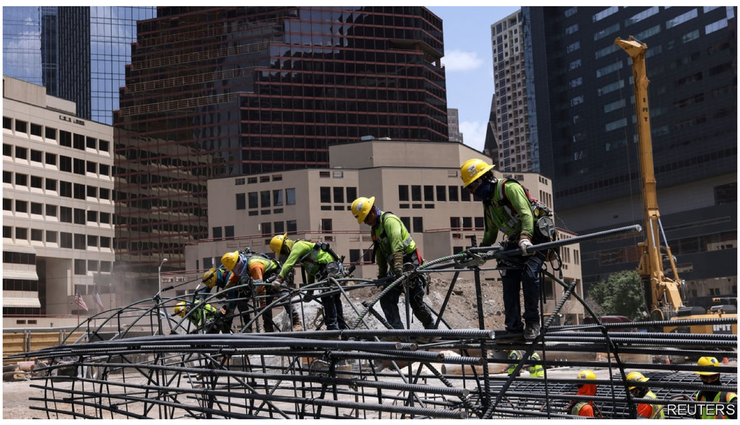
The American economy is set for a downturn, not a crisis

The coming recession looks likely to be mild



Nov 18th 2022

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By Simon Rabinovitch: US economics editor, The Economist, Washington, DC

Like clockwork
United States, consumer prices
% change on a year earlier

Sources: Bureau of Labour Statistics; NBER; Wolters Kluwer Blue Chip Economic Indicators
The Economist

The proximate cause of the recession will be the Federal Reserve, which is set to continue tightening monetary policy in 2023. In September 2022 the median forecast of Fed officials was that they would raise interest rates to a floor of 4.6% in 2023, up from 3% now. But inflation will still be frustratingly persistent early in the new year, so they will probably go beyond that, taking rates up to about 5%. Financial markets, already under stress from all the rate rises in 2022, will face fresh worries as indebted companies and spendthrift households struggle to cover their elevated interest costs.

But it will not be all gloom. There is reason to think that the coming recession will be mild. Throughout the past year the number of open jobs has far outstripped the number of available workers. The implication is that even if a growth contraction leads companies to pare back their hiring plans, they are likely to refrain from large-scale lay-offs. The unemployment rate will inch up from the lows of 2022, but it will not rocket up, as has typically been the case in previous recessions.

> **By the end of 2023 the American economy will be climbing out of its mild recession**

America has plenty of additional buffers that will help cushion the impact of a downturn. That is thanks in large part to the long half-life of pandemic-era stimulus programmes. At the end of 2021 state governments were sitting on cash reserves of more than $250bn, roughly twice as much as in 2019. Households have about $1.5trn in excess savings compared with before covid. Businesses have also built up solid rainy-day funds. All of these reserves will be whittled down by a recession but they should be sufficient to forestall giant spending cuts, even as growth slows.

The picture for the American economy will change markedly over the course of 2023. Disinflation will eventually take hold, turning into outright month-on-month deflation when the recession strikes. That ought to spell the end of the Fed's rate-increase cycle by the middle of the year, with the focus instead shifting to when it might start to loosen policy. The Fed will be in no haste to make big rate cuts, having fought so hard to rein in prices. But the combination of a recession and fast-diminishing inflation will lead it to trim rates before the end of 2023, in an attempt to ease the downside pressures.

Although America's short-term vicissitudes of growth will dominate the headlines in 2023, the most important developments will have longer-term implications. President Joe Biden has achieved a series of major legislative victories with the passage of investment packages for infrastructure, climate and technology. The hard work of implementing these blueprints will really get under way in 2023.

By the end of 2023 the American economy will be climbing out of its mild recession, with inflation in retreat. Instead, the concern will be whether America's costly plans to re-engineer its industrial landscape, guided heavily by the government, amount to a clever strategy or a hubristic mistake. ■

This article appeared in the United States section of the print edition of The World Ahead 2023 under the headline "Rainy, with sunny breaks"

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America's school-choice movement is gaining steam

Plenty of people are not happy about that

Nov 18th 2022

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By Tamara Gilkes Borr: US policy correspondent, The Economist, Washington, DC

School choice is a term that describes policies that give families additional educational options at public expense. The lightest version keeps money within the state system. In most states, pupils are required to attend their neighbourhood school. Some allow pupils to transfer within the district or within the state. Some states, like Arizona in 1994, introduced laws requiring public schools to enrol any pupils wishing to attend from the state without charging tuition (within capacity constraints).

> **Republicans, opposed to what they see as left-wing public-school systems, are supporting school choice nationwide**

A stronger version allows parents to take money out of the public-school system for private purposes. In July 2022, Arizona's Republican governor, Doug Ducey, signed a law allowing families to take up to $7,000 per child per year from the system to fund their education elsewhere. The money can be used for tuition, homeschooling, tutoring and more.

This latest move from Arizona is an extension of a programme that has been expanding for over a decade. Called Empowerment Scholarship Accounts, such reimbursements were originally available only for certain pupils—those with parents in the armed forces, those in foster care or with other considerations. The older, more limited scheme was used by 11,800 pupils. The new law opens the system to all 1.1m school-aged children, making it the most expansive school-choice programme in the country.

So far it seems that Arizona's system is mostly benefiting existing private-school pupils. According to the Arizona Department of Education, 75% of the nearly 6,500 pupils whose families applied to use public funds for private use in August had never attended public school in the state.

Many Republicans, opposed to what they see as left-wing public-school systems teaching controversial positions on issues such as race and gender, are supporting school choice nationwide. In July 2021 Betsy DeVos, former secretary of education under Donald Trump, wrote an opinion piece for Fox News titled "Let's liberate kids from race indoctrination with school choice". A report in February 2022 by the Heritage Foundation, a conservative think-tank, said "the school-choice movement can gain significantly more supporters by wading into the current cultural battles to promote school choice as a solution."

This political push may be working. According to Gallup, the percentage of Americans with "a great deal or quite a lot" of confidence in public schools dipped from 41% in 2020 to 28% in 2022. For Republicans, the figure dipped from 34% to just 14%.

Inevitably, blue states are fighting back. California has launched a $124bn education programme which includes pre-kindergarten for all four-year-olds and universal free school lunches. The governor, Gavin Newsom, even bought ad slots in Florida to spread his message. Some saw this as a harbinger of a presidential bid, but Mr Newsom denies it. His deputy cabinet secretary, Ben Chida, says the new policies are designed to prove to families that public schools are worth supporting, in response to the Republican push against them. As both sides double down, expect to see the debate heat up in 2023. ■

This article appeared in the United States section of the print edition of The World Ahead 2023 under the headline "Vouch for us"

Democrats may benefit from the end of Roe v Wade

Many activists have been energised by the setback

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Nov 18th 2022

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By Mian Ridge: Social-affairs correspondent, The Economist

Decisions on abortion law returned to the states. By the end of July, 11 had banned abortion in most cases; 43 clinics had stopped providing it. In 2023 this trend will continue. It is expected that half of America's states will ban abortion or severely curtail access.

The burden will mostly be shouldered by low-income women, whose poor access to health care makes unintended pregnancies more likely. Organising an abortion hundreds of miles away from home is an expensive and time-consuming business. This will push more abortions later into pregnancy, where they become more expensive, thus deepening poverty. Because more women with medical conditions that might necessitate an abortion will not get one in time, America's maternal mortality rate, already the highest in the industrialised world, could rise.

Yet abortion-rights activists may retake some ground in 2023. The end of has sparked myriad court battles as efforts to end abortion provision have been met with legal challenges. Some courts will block bans, if only temporarily. Federal and progressive state governments will introduce policies to make contraception more easily accessible. The FDA, America's drugs regulator, is considering making the contraceptive pill available over the counter in 2023. It may also ease restrictions on the use of abortion medication, which allows women to have terminations more easily at home, though conservative states will do their best to prevent its use becoming more common.

The political fallout may slow the tide of anti-abortion legislation. Democrats have been energised by the end of . Days after the ruling, the share of women registering to vote rose from just under 50% to over 55%. That, and polling showing that voters are angry about the ruling, has led some Republicans to retreat from extreme anti-abortion positions. More may follow, given the Republicans' poor showing in the midterm elections.

This article appeared in the United States section of the print edition of The World Ahead 2023 under the headline "Backlash"

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Hackles have been raised in the wolf wars of America's west

Snarls and growls at the animal's reintroduction

Nov 18th 2022

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This article appeared in the United States section of the print edition of The World Ahead 2023 under the headline "Hackles raised in the wolf wars"

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America's reservoirs are drying up

This is complicating the transition to green energy

Nov 18th 2022

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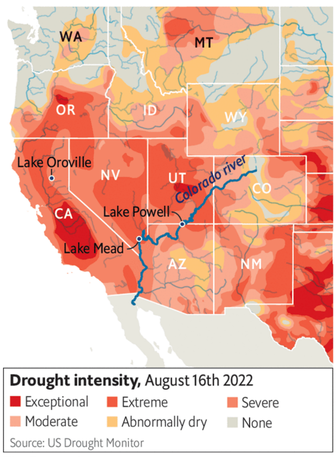
By Aryn Braun: West coast correspondent, The Economist, Los Angeles

The current drought is the driest 22-year period the south-west has seen in 1,200 years, according to a paper in . On August 16th, when the federal government announced another round of water cuts for Nevada and Arizona, 86% of the West was at least "abnormally dry", and half of the region was experiencing severe to exceptional drought (see map). Parts of the region have long been arid and unforgiving, but human-caused climate change has increased the severity of the dry periods.



The Economist

But as the water levels in the West's reservoirs decline, so too does the use of hydropower. A recent analysis by researchers at WWF, an NGO, found that hydropower projects in the American West were among the most vulnerable in the world to increased water scarcity.

> **As water levels in reservoirs decline, so too does the use of hydropower**

Some places are already feeling the effects. In 2021 California shut down a power station at Lake Oroville, one of the state's largest reservoirs, when water levels fell below what is needed for electricity generation. The plant can usually provide enough power for 80,000 homes. Lake Powell, on the border of Utah and Arizona, is inching towards a similar fate. Its colossal concrete dam, which straddles the Colorado river, can generate enough electricity to support 5m homes across seven states. A study from Oak Ridge National Laboratory warns that government-owned reservoirs in Idaho, Oregon and Washington could see hydropower generation decrease during summer months. In future, the researchers suggest, higher temperatures in the region will cause "severe" water loss from evaporation.

The loss of hydropower is no small matter. The power grid is already strained, and demand for energy will only increase as devices from stoves to cars go electric. Officials hope they will eventually be able to replace lost hydropower solely with other renewables and energy storage. But the short-term solution is dirtier. California's hydropower generation has fallen by 62% since 2019. The state is burning more natural gas to help make up for it.

This article appeared in the United States section of the print edition of The World Ahead 2023 under the headline "A new low"

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Eric Adams on how to end America's housing crisis

YIMBYism, not NIMBYism, is required

Nov 18th 2022

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Housing insecurity isn't just a big-city problem. America has a housing shortage of at least 3.8m units, which has sent rents and purchase prices soaring, far outstripping wage growth. This housing crisis affects us all—from people experiencing homelessness, to young adults who can't afford to move out of their parents' homes, to families crowding into too-small apartments.

Although many factors contribute to the problem, at its core we have a housing crisis because we are not building enough housing. The reason for that is simple: for generations, well-housed people across the country have fought efforts to build more homes in their neighbourhoods. It is time to shift the narrative—and say "yes" to new housing instead. That starts with first acknowledging how we got here.

Racism made us say no. Redlining housing policies discriminated against black and brown families, in effect excluding them from a pathway to prosperity. Practices like density caps, and bureaucratic and regulatory barriers, prevented the construction of high-density housing in suburban and urban neighbourhoods, and are part of that legacy of classism and racism.

Bureaucracy and inertia made us say no. In New York City, the process for changing our zoning rules has devolved into a byzantine ordeal that can take years to complete and adds millions in costs to new developments.

In New York City, we recently saw a small group of homeowners try to block a relatively modest plan to build 350 apartments in the Bronx, including affordable homes for pensioners and veterans. Community meetings turned into shouting matches full of racially charged language. Threats were made against local elected officials.

In May 2022, a plan to build more than 900 new apartments in Harlem was withdrawn after local opposition meant there were not enough votes to approve a required zoning change. Instead of providing affordable homes for hundreds of families, the site is now slated to be converted into a truck depot.

Since I took office, we have been charting a new course. We're becoming a City of Yes—yes in my backyard (YIMBY), yes on my block, yes in my neighbourhood.

> **We're becoming a City of Yes—yes in my backyard, yes on my block, yes in my neighbourhood**

We're proposing dozens of alterations to our citywide zoning rules to make it easier to build new homes that will support families of different economic means and right the racist wrongs of the past. We're using new technologies and innovative processes to speed approvals of new development by government agencies. And we're trying to amend the political process by which bigger projects are approved so that the entire city, and not just a small number of anti-development residents, has a voice in the decisions that determine whether a large swathe of New Yorkers can continue to live in the city they call home.

We're bolstering those changes with $22bn of public investment in housing over the next decade—the largest in city history. And we're accelerating construction of housing for individuals and families experiencing homelessness.

We're not alone. In Boston, Mayor Michelle Wu recently signed an executive order speeding up the construction of new housing. In California, Governor Gavin Newsom and the state legislature now require every county in the state to take responsibility for more housing production. And we're looking forward to working with our state legislature to spur more construction across our region.

But these efforts will only work if we all stand together. Voices saying no have always been the loudest—and they need to be answered with a chorus of yes, so we can overcome NIMBYism with YIMBYism. The housing crisis affects us all. We must work together to solve it. ■

This article appeared in the United States section of the print edition of The World Ahead 2023 under the headline "From NIMBYism to YIMBYism"

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Lula's second term as Brazil's president will be difficult

The situation is more challenging than when he first took office in 2003

Nov 18th 2022

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By Sarah Maslin: Brazil correspondent, The Economist São Paulo

In the lead-up to the election, Mr Bolsonaro had primed his fans to believe that anything other than his victory would signify "fraud". After the results were announced, he refused to speak for nearly two days, but eventually said he would abide by the constitution, paving the way for a transition of power.

His departure will put Brazil back on the world stage in the fight against climate change and in efforts to establish peace and democracy in Latin America, perhaps most importantly in neighbouring Venezuela. Meanwhile, Lula will seek to restore normality to Brazil's embattled institutions while pursuing left-wing economic and social agendas. But he will struggle to manage a conservative Congress and unite a polarised country. Many Brazilians still blame his Workers' Party for the massive corruption scandal known as Lava Jato ("Car Wash"), and for a recession in 2014-16 from which the economy has never fully recovered.

Lula says his priority is to help the poor. He has promised to expand cash transfers, forgive debts and launch a big infrastructure programme to boost growth and provide jobs. But Brazil's economy is in a much tougher spot than it was when he assumed office in 2003. If his government goes ahead with plans to replace a spending cap with a more flexible fiscal rule, he will have to convince markets that he is not planning to go on a spending spree—otherwise interest rates will shoot up and the currency will suffer. His plans to make taxation simpler and more progressive could help growth, but they are unlikely to pass Congress. Privatisations and public-sector reforms are even less likely.

> **Making Brazil's "green economy" real will require research and investment**

Although Lula is a skilled politician, he may struggle to maintain a governing coalition in Congress. Mr Bolsonaro's party is now the biggest in both chambers; his allies will attempt to block the leftist president's agenda at every turn. Lula will try to forge deals with centre-right parties, who will demand a slice of the budget and government jobs in exchange for their support. He will have a much easier time if elections in February, for the leaders of the Senate and the lower house, do not result in bolsonaristas at the helm.

Bolsonarismo will remain a powerful force in Brazilian society, probably far beyond 2023. Some 58m people voted for Mr Bolsonaro. In the wake of Lula's win, thousands of bolsonaristas blocked roads and asked for "military intervention", though the unrest seemed likely to give way to reluctant resignation. But Mr Bolsonaro has a mass of loyal followers who could be mobilised at his command—for instance, if he is prosecuted for his mishandling of the pandemic. Many of them no longer trust institutions such as the mainstream media and the supreme court, preferring instead to remain within right-wing echo chambers. Lula will struggle to win their favour. Brazil will stay polarised for years to come. ■

This article appeared in the The Americas section of the print edition of The World Ahead 2023 under the headline "Lula returns"

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Economic hardships mean that Cubans are voting with their feet

More are leaving as the Communist Party tightens its grip

Reuters

Nov 18th 2022

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By Sarah Birke: Bureau chief, Mexico, Central America and the Caribbean, The Economist, Havana

Only at the very earliest stages of elections do Cubans have any say. Half the members of the national assembly are nominated by municipal assemblies, whose constituents have previously been selected following community meetings. The rest of the candidates at the national level are put forward by official organisations such as labour unions, farmers' groups, and women's and students' associations. By the time ballot papers for the national assembly are printed, there is one candidate for each seat. All of them are approved by the party and need only a simple majority to take up their seat. They will then approve the party's choice for president. That is certain to be the incumbent, Miguel Díaz-Canel, who has been in the job since 2019.

> **In 2023 economic hardship, not political freedom, is likely to be at the forefront of Cuban minds**

Cubans may abstain from voting, or reject candidates, to show their disapproval. They know political changes do not result from elections but from machinations within the party (the national assembly meets only twice a year). Here there is scant change—only the Communist Party is allowed and political campaigning is illegal. But things may get more interesting as the old guard passes on. Fidel Castro died in 2016, and his brother, Raúl, took over as first secretary of the party, the most powerful post. In 2021 he made Mr Díaz-Canel first secretary, alongside his presidential role. That was the first time someone other than a Castro had been in charge, on paper at least, since the revolution in 1959. Mr Díaz-Canel is a stalwart member of the party, but was born after the revolution, a situation that will become the norm.

In 2023 economic hardship, not political freedom, is likely to be at the forefront of Cuban minds. A series of blows has hit hard in recent years, from hurricanes to the collapse of Venezuela, whose subsidised oil helps the Cuban government. American sanctions put in place by Donald Trump, followed by the covid-19 pandemic, dented tourism and remittances. The government's mismanagement has made things worse.

This article appeared in the The Americas section of the print edition of The World Ahead 2023 under the headline "Vote with your feet"

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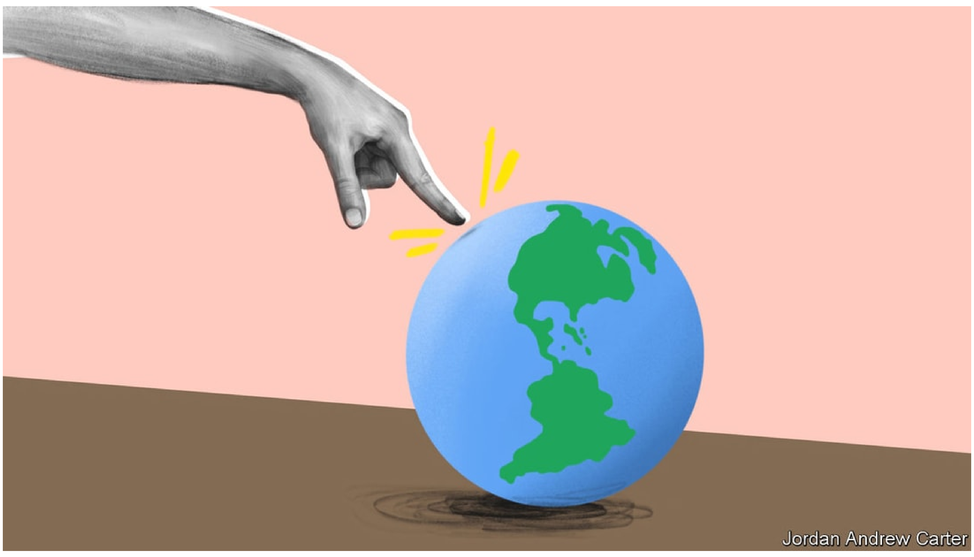
Parts of Latin America will shift to the right in 2023

Slow economic growth is a factor



Nov 18th 2022

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By Michael Reid: Senior editor and Bello columnist, The Economist

Political attention will focus on Argentina's presidential election in October. With the Peronist government divided and out of ideas, and with inflation raging, the centre-right opposition should win, provided it stays united. First it will have to decide on a candidate. Horacio Rodríguez Larreta, the mayor of Buenos Aires, is capable and moderate. He will be challenged by Patricia Bullrich, a former security minister whose tough message on crime is popular. In the background is Mauricio Macri, the president from 2015 to 2019, whose government ended in failure but who still harbours ambitions. And keep an eye on Javier Milei, a far-right gadfly. Cristina Fernández de Kirchner, the leader of Peronism's leftist-populist wing, will once again seek a proxy as a candidate but she is a divisive figure.

There are elections, too, in Paraguay in April and in Guatemala in June. In Paraguay the conservative Colorado party, which has ruled for all but five of the past 70 years, faces a strong challenge from a broad but disparate opposition. The party has been hurt by sanctions imposed by the United States on two of their leading figures for corruption (which they deny). Despite discontent, the likely Colorado candidate, Santiago Peña, a former finance minister, has a narrow edge.

> **With China now looming large, the European Union will hope to regain influence**

In Guatemala the election seems unlikely to be free and fair. Government allies control the electoral authority and the courts, and may ban leftist candidates, as happened in 2019. Mario Conde or Zury Rios would continue conservative rule; Sandra Torres, a centrist populist who lost last time round, is likely to run again.

On paper, 2023 offers an opportunity for international talks on Venezuela, ruled as a dictatorship by Nicolás Maduro. The United States could offer relief from sanctions in return for Mr Maduro's accepting a free and fair presidential election, due in 2024. But neither side has much room for manoeuvre. With China now looming large in Latin America, the European Union will hope to regain influence with a summit in late 2023, when Spain holds the union's presidency. As authoritarians advance, democrats in Latin America will once again have their work cut out. ■

This article appeared in the The Americas section of the print edition of The World Ahead 2023 under the headline "Edging to the right"

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Mexico's energy policy is bad for the country—and the planet

Uncertainty and a squeeze on private companies are deterring investors

Nov 18th 2022

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By Sarah Birke: Bureau chief, Mexico, Central America and the Caribbean, The Economist, Mexico City

The government has already spent billions of dollars building a new refinery and has decided to keep coal-fired power stations running. It has also bolstered the state-owned electricity and oil companies by giving them priority over private firms. Having co-opted the industry's regulatory agencies, the government has hampered the processes through which private companies apply for permits, making it harder for them to generate electricity or explore for oil. Mexico currently exports crude oil and imports natural gas. Now the plan is that the oil will be kept and used to generate the country's electricity.

The conflict in Ukraine has prompted a global shift towards energy self-sufficiency. But it is unclear that Mexico has the capacity to produce enough electricity. Power is also likely to become more expensive. Operating costs at CFE, the state electricity provider, are significantly higher than at private providers. Its old and inefficient plants are expensive to maintain. Those costs will have to be passed on to the consumer, either directly or by the government having to foot a larger bill in subsidies.

> **Energy reforms helped bring manufacturers to Mexico. Now uncertainty is deterring investors**

The environment will also suffer. CFE does produce some electricity from renewable sources, especially hydro-electric power. But the government has little interest in wind or solar power. Mexico will see less investment in renewables because of the squeeze on private companies, domestic and foreign, that did much of the investing. The change means Mexico is unlikely to meet its pledge to produce 35% of electricity from clean sources by 2024.

The opportunity cost is huge. Experts reckon that Mexico could produce almost half its electricity from renewable sources long before its target of 2050. Companies serving the American market are looking at Mexico as an alternative location to China, after the supply-chain problems that arose during the pandemic. But thanks to Mexico's backward-looking energy policy, in 2023 those companies are likely to go elsewhere instead. ■

This article appeared in the The Americas section of the print edition of The World Ahead 2023 under the headline "Reverse polarity"

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Is it the end of the war on drugs in Latin America?

The prohibition model espoused by the United States looks weaker than ever

Nov 18th 2022 Share

By Emma Hogan: Americas editor, The Economist

The erosion of democracy in the region is a long-standing problem for the United States, helping fuel a migration crisis at its southern border. Increasing numbers of people are fleeing from the "northern triangle" countries (El Salvador, Guatemala and Honduras) as well as from Cuba, Haiti, Nicaragua and Venezuela. More than 2m migrants were detained at America's southern border in the first nine months of 2022, a third more than in 2021.

> **Even a small-scale experiment in decriminalising cocaine production in Colombia would have huge global implications**

But the shifting tides of Latin American politics also complicate matters. With Pedro Castillo as Peru's president and Gabriel Boric in charge in Chile, the election of Luiz Inácio Lula da Silva in Brazil is the latest example of how the region has lately been swinging back to the left. Lula is expected to want to cement "south-south" ties, particularly with China. This is likely to irk Western leaders, not least President Joe Biden. Jair Bolsonaro, Brazil's populist president from 2018 to 2022, fanned anti-China sentiment, though his rhetoric was not always matched on the ground (the value of trade between Brazil and China grew to $135bn, a record, in 2021).

Main cocaine trafficking flows, 2016-20
Volume seized, estimated on the basis of reported seizures

Source: UNODC
The Economist

Others have proposed going further. Felipe Tascón, a member of Mr Petro's campaign team who was tipped to be his "drugs tsar", has mentioned the possibility of fully legalising cocaine. Nestor Ozuna, the justice minister, has argued that it must be regulated, but ruled out legalisation. Such ideas are new: it was only in 2020 that Iván Marulanda, a liberal senator, proposed a bill that would allow the Colombian state to buy up all the coca in the country at market prices. Now such ideas are gaining traction.

Even a small experiment in decriminalising cocaine production in Colombia would have huge implications. The country produces 60% of the world's supply of the drug. North America is the largest consumer: according to the UN's Office on Drugs and Crime, 2% of North Americans took it in 2020.

This means the "prohibition model" espoused by the United States for decades has never looked weaker, says Jeremy McDermott of InSight Crime, an investigative outfit: "Not only has Washington lost its most important ally in its counter-narcotics struggle in Colombia, but also Mexico, Venezuela and Chile." The Mexican government has made it very hard for America's Drug Enforcement Administration to operate, says a former American official. "Brazil is not particularly on board. Only Panama remains firmly in the United States's camp," says Mr McDermott. Five decades after Nixon launched his war, Latin America is listening less than ever. ■

Mia Mottley on how to fight climate change together

A change in the international financial system would help

Nov 18th 2022

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Signs of this looming crisis appeared in the second half of 2022, when the dollar rose strongly, raising the debt-servicing costs of many middle-income countries to unsustainable levels. The roots of the crisis lie in the divergent responses to the covid-19 pandemic. World economic activity slowed sharply in the middle of 2020 for almost 18 months. My country's GDP fell by 14% at the worst point, and unofficial unemployment touched 40%. After a successful debt restructuring in 2018, we were able to secure temporary finance for employment and welfare programmes, and loosen our budget. High debt levels constrained many other countries. Even the largest emerging markets, such as China and India, could not spend more than 5.5% of GDP on stimulus. Many spent less.

By contrast, the handful of countries that issue international reserve currencies had a very different pandemic. Additional spending and forgone revenues as a percentage of GDP exceeded 25% in America, 19% in Britain, 16% in Japan and 15% in Germany. What made this possible? While their treasuries sold bonds to finance the spending, their central banks bought government bonds with printed money. The value of such quantitative easing during the worst two years of the pandemic amounted to more than $12trn.

These "stimulus countries" recovered first. By the middle of 2022, American unemployment was back to cyclical lows of 3.6%. When supply bottlenecks and inflation emerged, the Federal Reserve began withdrawing monetary stimulus and raising interest rates. The Fed's unusually dramatic tightening in 2022 pushed up the dollar. In an attempt to stop their currencies from falling against the dollar, amplifying inflationary pressures, other countries began raising interest rates in tandem. In this way, the stronger dollar transmitted America's tighter monetary policy worldwide.

> **Barbados, like other countries in the tropics, is on the front line of climate change**

That is not to say that the Fed should change course. But international policymakers should acknowledge the impact higher American rates and a stronger dollar are having internationally and provide as much liquidity as possible to countries that need it, so they are not locked into inappropriate policy tightening.

The IMF should return its rapid-financing facilities to covid-crisis levels, temporarily suspend interest-rate surcharges for heavy borrowing and re-channel at least 30% of unused special drawing rights (SDRs) to countries that do not issue an international reserve currency. SDRs are a curiosity in countries that issue a reserve currency, but for the rest of us, they are helpful. They grant one IMF member the right to borrow the reserves of another at overnight interest rates. African and Caribbean countries, for instance, have used more than 75% of their recent allocation of SDRs.

This approach could be used to finance global public goods: things that benefit us all, regardless of who provides them, such as climate-change mitigation. Barbados, like other countries in the tropics, is on the front line of the climate crisis. We are deeply concerned that mitigation is proceeding too slowly, and want to break the logjam.

A Global Climate Mitigation Trust, capitalised by a new $650bn issue of SDRs, could auction cheap finance for public and private mitigation projects, with the winners being those projects that reduce global warming fastest, triggering a contest of science, technology and money. The IMF and the UN's Green Climate Fund would vet applications to check they are technically and financially sound.

This idea forms part of the "Bridgetown Initiative" for reform, which I will be championing in 2023. If we continue with paralysing, country-by-country finger-pointing, rather than finding ways to act collectively, we will sink together. I dare to hope otherwise. ■

This article appeared in the The Americas section of the print edition of The World Ahead 2023 under the headline "A new way to fight climate change together"

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The Indian economy remains a bright spot in South Asia

Other countries in the region may continue to struggle

Nov 18th 2022

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By Leo Mirani: Asia correspondent, The Economist, Mumbai

Yet amid all this gloom there is one bright spot. By most standards, India sailed through 2022 relatively unscathed. The lifting of pandemic restrictions allowed normal life to resume and migrants to move around the country once more. The central bank's rate rises have been less brutal than those of rich countries. Inflation, at about 7%, looked positively cool compared with America and Britain, let alone Pakistan and Sri Lanka. The economy was forecast to expand by a respectable 6.8% for the full year, outstripping any major economy bar Saudi Arabia. Measured in dollars at current prices, India is now the world's fifth biggest economy, taking Britain's spot. The gap between the two will only widen in 2023, reckons the IMF.

> **The whole region is paying the price for Russia's war in Ukraine**

The ruling Bharatiya Janata Party's convincing re-election in Uttar Pradesh, a big state, and many smaller ones too, offers stability in a restive region. Abroad, Narendra Modi, the prime minister, managed a tricky balancing act between Russia, a historical ally, and the West, to which India is inching closer. His foreign minister, S. Jaishankar, deftly defended India's right to prioritise its national interests.

India's remarkable run looks set to continue in 2023. Even as China suffers from a self-inflicted slowdown, and parts of the West teeter on the edge of recession, India's growth will barely decelerate. Its economy is expected to expand by 6.1%. In part this is down to interest from abroad. As the West's relationship with China grows more hostile, companies are looking to shift their manufacturing bases elsewhere. India is a big beneficiary.

Yet India will not grow in splendid isolation. Like the rest of South Asia, it faces risks from events and trends beyond its control. Three factors threaten to destabilise the region in 2023. The first is the cost of living. Economic and climate crises had made life unaffordable for many in Sri Lanka and Pakistan, but the whole region is paying the price for Russia's war in Ukraine, which has sent the cost of food and fuel soaring. A super-powered dollar, turbo-charged by America's fast-tightening monetary policy, is driving up the price of everything else. Inflation in India may not be as bad as elsewhere, but it still pinches.

Another big worry is the increasingly unpredictable climate. In Pakistan and northern India, a record-breaking heatwave in March and April brought cities to a standstill as people were told to stay at home. Both countries also suffered from extreme rainfall. The region is particularly vulnerable to a changing climate. Expect more record-breaking heatwaves, droughts and floods. The third destabilising factor is geopolitics. India and China have still not resolved a border dispute that arose in the mountains in Ladakh in 2020. Amid mutual suspicion, small showdowns could turn into bigger ones, especially as India grows closer to the West.

South Asian countries battered by 12 months of upheaval will be hoping the new year is a quieter, more stable and more prosperous one. India, which has reached a turning point for its economy, will be hoping much the same. ■

This article appeared in the Asia section of the print edition of The World Ahead 2023 under the headline "Poster boy"

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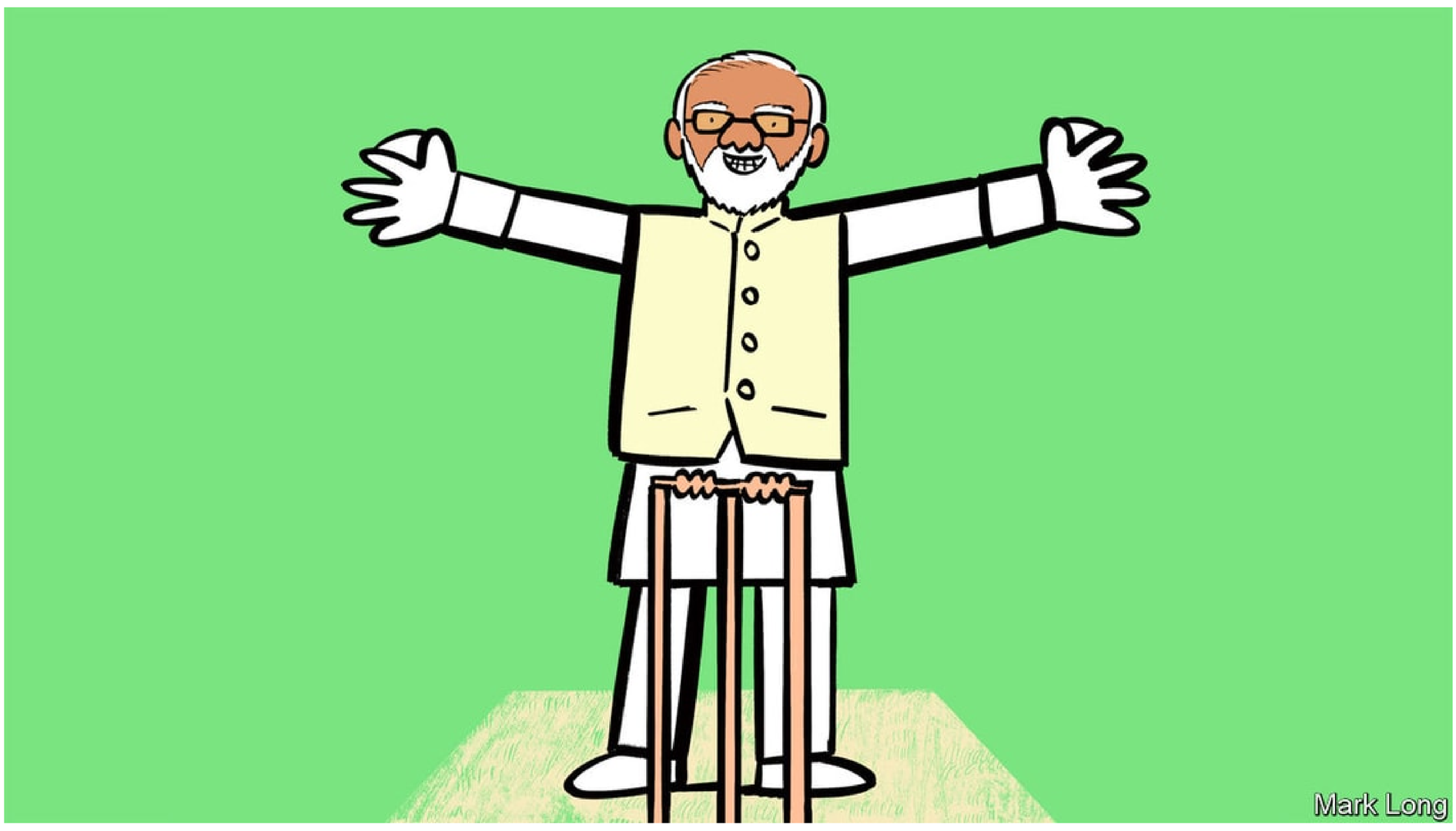
The cricket World Cup in India in 2023 will be more than just a game

It has become part of India's political economy



Nov 18th 2022

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By James Astill: Asia editor, The Economist

It was the first World Cup outside England and the crowds were vast and euphoric. Thanks in part to the contest's first title sponsor—a textiles firm called Reliance Industries—participating teams were paid an amazing £75,000 (then $127,000).

Cricket's biggest international contest (in which the games last one day) has been back to the subcontinent twice since 1987, each time revealing how India's new confidence and wealth is transforming both the country and its favourite game. In October 2023 the World Cup will return to India for the first time in 12 years. It will be the richest, glitziest and—six months before a general election—most politicised cricket extravaganza ever.

> **The investments of Indian firms are giving them control over how cricket is played globally**

India's vast cricket audience of 210m television households—90m more than in 2011—has become one of the great media prizes. Just the online streaming rights to India's biggest domestic tournament, the Indian Premier League (IPL), cost Reliance (now a $208bn oil-to-retail behemoth) $2.6bn. For foreign cricketers, the World Cup is an opportunity to audition for a life-changing IPL contract.

The game's absorption into India's political economy has costs. The investments made by Reliance and other Indian firms are giving them increasing control over how and where it is played globally.

Most Indian fans prefer the action-packed short format of the game used in the IPL—a two-hour slugfest known as T20. One-day cricket and the cherished five-day Test matches are therefore retreating before the juggernaut of Indian-backed, franchise-based T20 tournaments. Two more, the UAE T20 League and the South Africa T20 League, will launch (with Indian-owned teams) in 2023. Breathless marketing of the 2023 World Cup will not allay many cricket lovers' dread over these developments. ■

This article appeared in the Asia section of the print edition of The World Ahead 2023 under the headline "Cricket à la Modi"

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India is continuing on its path to majoritarian chauvinism

Narendra Modi will do everything to ensure a third term in office

Nov 18th 2022

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By Lena Schipper: South Asia bureau chief, The Economist, Delhi

Russia's war in Ukraine plunged Europe into an energy crisis and strained relations among Western allies. In India, by contrast, it facilitated the purchase of cheap Russian oil and lifted Mr Modi's international standing. As Western countries jostled to gain India's support, the prime minister succeeded in styling himself as an ostensibly neutral advocate of resolving the conflict peacefully, managing to scold Vladimir Putin while simultaneously resisting Western entreaties to join the anti-Russia coalition for good.

Yet Mr Modi's rising star abroad may not be good news for many Indians in 2023. The prime minister's growing clout in foreign relations will probably reduce Western leaders' already limited appetite for criticising his government. That removes one more check on Mr Modi's power at home. It will leave him freer than ever to reshape India in the image championed by his Hindu nationalist Bharatiya Janata Party (BJP) and its ideological ally, the Rashtriya Swayamsevak Sangh, a century-old paramilitary volunteer outfit.

Critics of Mr Modi's government spend nearly as much time complaining about the hopeless domestic opposition as they do about the man himself. At the start of 2022 they hoped that the Indian National Congress, the main opposition party, led by Sonia Gandhi, might manage to regroup and make a dent in the BJP's dominance in state-level elections. Yet nothing of the sort has happened.

As the BJP retained power in all elections it contested as the incumbent, and gained control of the government of the wealthy state of Maharashtra following a political crisis it helped to engineer, Congress lost an important election in Punjab to the Aam Aadmi Party (AAP). The AAP runs Delhi, the capital, and is seen as another potential rival to the BJP at the national level. But, since winning the elections in Punjab, it has struggled to govern, while also having to deal with multiple crises, including corruption investigations, in Delhi.

It will continue to stack the civil service and academic institutions with loyalists, and to shrink the space for political opponents and members of minority groups, particularly Muslims. Gautam Adani, a billionaire ally of Mr Modi's, may soon finalise his takeover of NDTV, India's last remaining major independent television channel.

The campaign to get Mr Modi's idea of India recognised as representative of the nation abroad will be stepped up, too. S. Jaishankar, India's foreign minister, says forces that are frustrated to be "no longer winning within India" are trying to shape the discourse abroad, and warned foreign observers against believing them. As Indian politics increasingly play out on the global stage, so do the attempts to stifle the voices of opponents. ■

This article appeared in the Asia section of the print edition of The World Ahead 2023 under the headline "Re-shaping the nation"

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More misery looms for Afghanistan

Skilled at insurgency, the Taliban are struggling to govern

Reuters

Nov 18th 2022

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By Avantika Chilkoti: International correspondent, The Economist

Since American troops left Kabul in August 2021 and the Taliban seized power, the economy has been plunged into turmoil. A mix of sanctions and curbs on international aid have caused a liquidity crisis. People cannot get their savings out of banks. Many businesses have shut or laid off workers. A shortage of banknotes has aid agencies flying in planeloads of cash and businessmen smuggling them over the border in suitcases. As Scott Guggenheim, an adviser to Ashraf Ghani, president from 2014 to 2021, says: "If anyone is worried about money-laundering or opium, close your eyes."

Almost the entire population is living in poverty and their lives will get even harder. Spiralling global food prices are taking their toll and there are murmurs about poor harvests. Women have it worst. Over the past year, the Taliban have refused to let girls back into secondary schools, made it difficult for women to work and even introduced new rules that prevent them from travelling without a male chaperone. A brave few have taken to the streets in protest, but have got nowhere.

The one consolation for many Afghans has been that the guns have fallen silent. Crisis Group, a think-tank, reckons that in the ten months to July 2022 the number of violent incidents dropped by 87% compared with the same period a year earlier. As people in big cities struggle with a rapid increase in poverty, a newfound peace in rural areas has allowed people to rebuild their homes and plant crops without fear of attack.

But in 2023 even that peace could come into question. Taliban rule has produced winners and losers. With millions plunged into poverty, analysts worry about civil unrest. Local insurgencies continue. An affiliate of Islamic State, and insurgent groups in the north of Afghanistan who oppose the Taliban have stepped up attacks, killing dozens of civilians in schools and mosques. Life will get even harder as the Taliban struggle to transition from insurgents to rulers. ■

This article appeared in the Asia section of the print edition of The World Ahead 2023 under the headline "Bad to worse"

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Where might conflict flare up in 2023?

Keep an eye on Taiwan and the South China Sea—and the Himalayas

Nov 14th 2022

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By Dominic Ziegler: Banyan columnist, The Economist, Singapore

Here, the contest is between the United States and China. Its roots go back decades, to the end of the second world war. The defeat of Japan in 1945 rendered America henceforth an Asian superpower. It let America project military force from the territory of its defeated opponent and shape events in the region. It also created, in Japan, a democratic outpost of the West. Today, the novelty is that a second superpower, communist China, vies for supremacy in Asia. But current tensions feed on old sources that spring from East Asia's post-war turbulence.

> **The coming year will be the next iteration of a great global struggle in Asia**

The chief example has to do with Taiwan. Viewed from Beijing, the island is the last, great unfinished piece of business in the civil war that the Communist Party won on the mainland in the late 1940s. The defeated Nationalists fled to Taiwan, which has been backed by America ever since and is now a thriving democracy and a semiconductor superpower. Retaking Taiwan is, for the party, a sacred goal. For an assertive China, Taiwan is also key to projecting power throughout East Asia and out into the western Pacific.

As Chinese power has grown, so has its bellicosity towards Taiwan. President Joe Biden has stated several times that America would defend Taiwan if it were attacked. This change from a long-standing policy of keeping China guessing about America's intentions worries some in Washington, who fear it might provoke China to act sooner rather than later.

Another cold-war hangover is North Korea, a family-run nuclear thuggocracy protected by China. In 2022 its leader, Kim Jong Un, asserted the right to conduct a pre-emptive nuclear strike should North Korea feel threatened with attack. Before the end of 2023, and possibly much sooner, he will provoke condemnation by exploding a nuclear device, the state's seventh test and the first since 2017. The device will be smaller than previous ones. Mr Kim will once again help underline the world's paucity of options in the face of a despotic ruler, with China and Russia at his back, who is prepared to immiserate his people in favour of spending on a programme of nuclear blackmail.

A disputed border in the Himalayas has even older provenance and will provide another potential Asian flashpoint in 2023. The high-altitude dispute between China and India has its roots in the hazy frontiers drawn when Britain was India's imperial power. A border war erupted in 1962, which India lost. In 2020 a bloody brawl left 24 soldiers from both sides dead. Neither country is itching for a fight. Mr Xi wants to concentrate on Taiwan, while Narendra Modi, the Indian prime minister, knows that, in the mountains, India is outgunned. But new roads on both sides risk eroding the buffer zones separating the two armies. Once-warm personal relations between the two leaders have grown frosty. It all raises risks in the hair-trigger Himalayas.

Meanwhile, conflict will continue in Myanmar. Since post-war independence, the country and its many ethnic groups have never fully been at peace. The cruelty and incompetence of the army, which seized power in a bloody coup in February 2021, will further fuel a sprawling conflict in which ethnic armies and the democratic opposition have teamed up against the junta. But the generals have the guns—and the backing of China. Neither it nor America wants Myanmar to be another cockpit of great-power competition. Even so, the country's conflagration is likely to burn for years. ■

This article appeared in the Asia section of the print edition of The World Ahead 2023 under the headline "Flashpoints to watch"

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Asian housing markets are looking precarious

It's not just China

Nov 18th 2022

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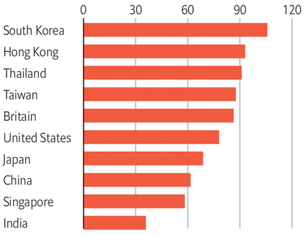
By Mike Bird: Asia business and finance editor, The Economist, Singapore

House prices in the countries and cities once known as Asian Tigers have surged. In the capital cities of South Korea and Taiwan, average prices now sit at 19 times and 16 times local incomes respectively, according to the most recent financial-stability reports published by the countries' central banks. In Hong Kong the multiple is 20.7, according to data published by the Urban Reform Institute, a Texas-based think-tank. Those levels are even higher than the most expensive in the Western world: the figures for San Jose and Greater London, the most expensive places in America and Britain respectively, are 12.6 and 8.

I owe, I owe
Household debt as % of GDP, 2021



Sources: BIS; national statistics
The Economist

Leverage has surged, too. Household debt, mostly accounted for by mortgages, has reached record highs in several corners of Asia. At 94% of GDP in Hong Kong, 97% in Taiwan and an eye-watering 105% in South Korea, debt levels now far surpass the 77% and 85% recorded in America and Britain respectively.

But the forces that drove housing booms in East Asia are abating, and rapidly so. Inflation is rising in Asia, though to lower levels than in much of the West. Hong Kong, South Korea and Taiwan, all have currencies either pegged to the dollar directly, or carefully managed by the central bank. Interest rates have been raised rapidly by the region's central banks and monetary authorities, to keep in step with the Federal Reserve's own rapid increases.

Ominous signs of a change are already visible. Local banks have begun raising mortgage rates. The average new interest rate on a household loan in South Korea reached 5.2% in September, up from 3.2% a year earlier. Joseph Tsang, chairman of JLL Hong Kong, a property firm, has suggested that the two-decade bull run in house prices in Hong Kong could be followed by a 20-30% drop in the years to come.

Some countries are also losing one of their lines of defence against financial threats. Both South Korea and Taiwan, with their exports of semiconductors, electronics and industrial goods, typically boast large current-account surpluses. But the surging price of imported energy has erased those surpluses.

Many economists hold the view that deficits make countries more dependent on flows of international capital. Those flows are notoriously flighty, and in moments of panic, capital flight can cause asset prices to plunge. Ahead of the Asian financial crisis of 1997-98, many of the worst-affected countries had unusually large current-account deficits. For now, the imbalances are modest in comparison.

But Japan provides a worrying example of how tumbling asset prices can derail growth. In 1989-90, the country's stock and property prices began to slump, bringing to an end a multi-decade boom. The declining value of land and buildings, which had been used as collateral during the lending boom of the late 1980s, drove a cycle of frugality by consumers and corporations, which all but halted the economy's growth. The similarities that are currently emerging among Japan's neighbours should therefore be a source of apprehension. ■

This article appeared in the Asia section of the print edition of The World Ahead 2023 under the headline "Dismounting the tiger"

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The World Ahead | The World Ahead 2023

Authoritarians are making a comeback across South-East Asia

And holding elections does not always stop them

Nov 18th 2022 Share

By Charlie McCann: South-East Asia correspondent, The Economist, Singapore

But over the past decade the region was buoyed by a newfound hope that democracy was, at long last, taking root. In a remarkable run of elections starting in 2014, voters demanded change and—surprisingly—seemed to get it. That year Indonesians chose as their president Joko Widodo, known as Jokowi. He was a political outsider who did not hail from an army family or the elite, and therefore seemed to embody the spirit of reform that had brought the era of dictatorship to an end 16 years before.

In 2015 the electorate in Myanmar overwhelmingly voted for the party of Aung San Suu Kyi, a champion of democracy. The army, which had ruled the country for nearly 50 years, allowed her to take office. Three years later Malaysians booted from government the United Malays National Organisation (UMNO), a party which had dominated politics since the country gained independence in 1957. Again and again, South-East Asian voters appeared to deal body blows to their political masters.

Yet the pummelling was far from fatal. In fact, South-East Asia's autocrats now seem to be staging a comeback. Sometimes they return to power illegitimately. Uneasy about ceding influence to Ms Suu Kyi, the commander-in-chief of Myanmar's armed forces launched a putsch in 2021. Sometimes they manage to wrest power from their rivals through backdoor manoeuvres, as UMNO did in Malaysia in 2021. (UMNO is likely to return to power in elections held at the end of 2022.) Sometimes they even win elections legitimately. In May 2022 "Bongbong" Marcos, the son of Ferdinand Marcos, a former dictator, won a presidential election in the Philippines by a landslide.

In Indonesia, Jokowi has been a democratic disappointment, eroding checks on presidential power, riding roughshod over the rights of minorities and professing his admiration for Suharto, the dictator who ruled Indonesia for 30 years until 1998. Now an even more worrying twist may be in store. A front-runner to replace Jokowi as president in 2024 is Prabowo Subianto, Suharto's former son-in-law, who served as a general under the dictator and was dogged by allegations of rights violations in the 1990s. He has spoken of his desire to reverse the decentralisation of political power in Indonesia and return more of it to the central government.

Sometimes, despite such trickery, voters still manage to elect the "wrong" candidate. When that happens the old guard can simply launch a coup and demand a re-run of the election, as the armed forces have done repeatedly in Myanmar and Thailand. In 2023, the Thai army may repeat this trick if opposition parties win an election in May. For the region's autocrats, democracy is a figleaf, destined to be tossed away as soon as it has served its purpose. ■

This article appeared in the Asia section of the print edition of The World Ahead 2023 under the headline "We're back!"

Jokowi is carving a new Indonesian capital out of the Borneo jungle

The planned size of Nusantara reflect the president's ambitions

Nov 18th 2022

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By Charlie McCann: South-East Asia correspondent, The Economist, Singapore

In January 2022 the Indonesian parliament passed a law approving President Joko Widodo's proposal to move the capital from Jakarta, the current seat of government, to eastern Borneo. Halfway through his second and last term in office, the president, known as Jokowi, hopes that Nusantara will secure his legacy as the country's builder-in-chief. Although it will not be finished until 2045, the city already says a lot about its founder, a man of lofty ambitions and, at times, shoddy workmanship.

A former furniture-maker, Jokowi has dedicated his presidency to building things that are very large indeed. His government has constructed scores of airports, ports and dams and thousands of kilometres of toll roads. Nusantara—which will be three and a half times the size of Singapore—is not just the grandest infrastructure project of Jokowi's presidency. It is "perhaps the biggest undertaking—both technocratically and politically—in Indonesian history," write Yanuar Nugroho and Dimas Wisnu Adrianto of the ISEAS-Yusof Ishak Institute, a Singaporean think-tank.

> **Nusantara is the grandest infrastructure project of Jokowi's presidency**

Its scale reflects Jokowi's ambitions for it. He hopes that it will be the motor behind Indonesia's future economic growth, creating more than 4m jobs in 20 years, as well as becoming the world's greenest city and an inclusive symbol of the nation. By moving the capital from Java, an island which dominates the country's politics and business, to the geographical centre of Indonesia, Jokowi wants to signal that he governs in the name of all Indonesians.

It is safe to assume that the government failed to consider the effects of all this construction on the rainforest, given that its environmental-impact assessment was published only after it decided to move the capital. Moreover, while deliberating over the move, parliament did not consult the public, as it is legally required to do.

Nothing captures the government's top-down approach better than its decision to deny the new capital representative democracy. Jokowi has appointed a city chief who is accountable only to him. That is characteristic of a president who throws himself into a frenzy of building—but who has neglected the democratic foundations of the country. ■

This article appeared in the Asia section of the print edition of The World Ahead 2023 under the headline "Jokowi-opolis"

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Mori Masako on why Japan's economic future depends on women

More Japanese women are continuing to work after having children

Nov 18th 2022

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In Japan there is a strong belief that women's participation in the workforce contributes to the declining birth rate. But the two agendas —promoting gender parity and raising the birth rate—are by no means contradictory.

Japan ranks 116th out of 146 countries in the Global Gender Gap Index. Across the index's four dimensions, it has particularly low scores in the areas of political and economic participation. We are lagging significantly behind other countries when it comes to gender equality.

By contrast, Japan's scores in the areas of health and education are among the highest in the world. This means that half of our population is made up of healthy, well-educated, high-potential and ready-to-work women. In fact, when it comes to education, the percentage of women entering higher education in Japan is 78.2%, the third highest among OECD countries whose data are available.

Among rich countries, those with smaller gender gaps tend to have higher fertility rates, which shows how gender inequality and population decline are linked. Recognising that link is key to solving both problems. I believe the same minister should be in charge of women's empowerment and the declining birth rate. That would bolster the synergy between such policies, and make them more effective.

To date, the Japanese government has had some successes in promoting women's advancement. For instance, in 2016 it pushed companies to disclose information under the Act for the Promotion of Women's Advancement in the Workplace, increased the number of female workers (by 3.4m over the past decade) and fixed the M-shaped curve in the female employment rate (the rate of 25- to 44-year-olds is now around 80%).

The government has also expanded child-care facilities to accommodate more than 3m children, improved the maternity-leave benefit system (such benefits are now exempt from tax and social insurance costs) and amended the paternity-leave system to allow more flexibility.

These efforts have created an environment that is more conducive to raising children while working. As it has become easier to balance child care and work, more women have decided to give birth while carrying on with their jobs. A recent survey showed that for the first time in 19 years, the number of children of couples in which the wife has a college degree or higher rose, to 1.74 in 2021.

> **We believe that new disclosure requirements will help reduce the gender pay gap**

Many Japanese would like to have more children. One survey found that more than 80% of married couples wanted to have two or more children. The next step to making that possible is to promote women's economic empowerment. We must create an environment where women can have children and still shine as individuals.

Kishida Fumio's administration, of which I am a member, has placed women's economic empowerment at the core of its "new capitalism" agenda. Specifically, starting in July 2022, the government is requiring private companies that employ more than 300 workers to disclose information about wage gaps between male and female employees. Japanese companies care about reputational risk, so we believe this measure will be effective in reducing the wage gap.

I strongly believe that the future of Japan's economy depends on women. That is why I set up a study group on "Women and the Economy" in 2022. I am now applying the knowledge I gained from it in my current role, as a special adviser to the prime minister.

Women are Japan's "hidden asset". We must eliminate factors that hinder their success, and ensure they reach their full potential. This will be good for women, and it will raise the birth rate and help Japan overcome its demographic challenges, too. ■

This article appeared in the Asia section of the print edition of The World Ahead 2023 under the headline "Why women are Japan's hidden asset"

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China is struggling to adjust to new realities

Is Xi Jinping bold enough to set a new course?

Nov 18th 2022

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By David Rennie: Beijing bureau chief, The Economist

In his first two terms as Communist Party chief from 2012 to 2022, Mr Xi's interventionism was offset by China's vast scale, its dominant position in many global supply chains, and the economic momentum built up over decades of market reforms and opening to the world. China's rise seemed inexorable, even as Mr Xi asserted the party's authority over everything from China's legal system to its universities, news media and entertainment industries, seeking to build a more stable, less unequal economy.

National security has become a pillar of Xi-era policymaking. Huge sums are spent on industrial policies to make China self-reliant, so that America and other adversaries cannot cut off supplies of "choke-hold" technologies. Most disruptively, in response to the covid-19 pandemic, Mr Xi's China has built the most ambitious surveillance system in history, involving border closures, relentless testing, lockdowns of entire cities for weeks, movement-tracking smartphone apps and armies of enforcers.

Defenders of all this meddling say that Mr Xi is taking a long view, and that a bit of disruption today is the price of future stability. An export boom made China the only large economy to manage substantial growth in 2020, before it clocked up a roaring 8% real GDP growth in 2021. Mr Xi and Chinese officials proclaim that this has demonstrated the superiority of their one-party system to the world.

> **Consumer demand is weak and property sales have plunged**

The effects on morale are unmistakable. Consumer demand is weak. Property sales plunged in 2022. Mr Xi's report to the party congress called for policies to raise birth rates, for the young are starting fewer families. The property crisis has hit local-government revenues just as bills for covid surveillance come due, leading to pay cuts for officials across the country.

In the spring of 2023 the annual session of China's pliant legislature, the National People's Congress, must confirm new state leaders. At the party congress Mr Xi packed the seven-member Politburo Standing Committee with loyalists and long-time aides, including the likely next prime minister, Li Qiang. The parliamentary session will reveal which ministries will be given to experienced technocrats—including scientists from China's space programme—who will be added to the wider Politburo. The elevation of hawks from the security services has been a hallmark of the Xi era, "replacing engineers with policemen", as one businessman puts it. This will continue, with senior roles for veterans of the feared state security ministry. The world should brace for more assertive, "wolf warrior" diplomacy, with promotions likely for such foreign-policy officials as Qin Gang, China's ambassador to America. Mr Qin is close to Mr Xi and capable of switching from urbane charm to withering, menacing scorn towards foreign envoys.

"Zero-covid" policies cannot change rapidly. Even if China stocks up on effective anti-viral treatments and increases vaccination rates, it cannot open up until it prepares its public to live with widespread, mild infections. To drive compliance with draconian controls, covid has been stigmatised. Those who catch and pass on the virus are pilloried as selfish and ill-disciplined. To convince ordinary citizens that no good alternatives exist, media play up reports of covid deaths in America and other foreign countries. Even if milder variants bring the pandemic to a benign end worldwide, China's security services may be loth to dismantle systems that currently let them track hundreds of millions of Chinese wherever they go.

Time and again the Xi era has seen top-down control justified as a key to lasting prosperity. But China is now in a funk. Orders from the top to be more optimistic will not work. ■

This article appeared in the China section of the print edition of The World Ahead 2023 under the headline "Uncharted waters"

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Will China's economy ever overtake America's in size?

Perhaps not, as the population peaks earlier than expected

Nov 18th 2022

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By Simon Cox: China economics editor, The Economist, Hong Kong

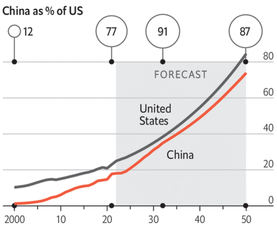
In 1987 Deng Xiaoping, then China's paramount leader, said that China would strive to quadruple its GDP per person in the last two decades of the 20th century, then quadruple it again within the first 30-50 years of the 21st. More recently, Xi Jinping said in November 2020 that it was "entirely possible" for China to double its GDP between 2020 and 2035. If he is right, then China could overtake America to become the world's biggest economy by the middle of the next decade. That prospect makes many in America nervous.

These projections are bold because they can go dramatically wrong—even when they are made by powerful leaders with some influence over how things turn out. Deng himself was scathing about Nikita Khrushchev's boast in 1961 that "according to scientific calculations" the Soviet Union would essentially finish building communism by 1980, providing its people with a living standard far surpassing that enjoyed by America's workers. Forecasts of a tripling in milk production and a quadrupling of meat appeared on Soviet stamps at the time.

> **China has become worryingly dependent on property**

Since Mr Xi spoke, four threats to the economy have become more evident: the costs of fighting the pandemic, the tech war with America, the overstretched property market and demographic decline. The arrival of more transmissible variants has played havoc with China's zero-covid policy, reducing its effectiveness and raising its costs. But China is reluctant to abandon it for fear that a wave of infections will quickly overwhelm its hospitals and devastate its vulnerable elderly population, many of whom remain unvaccinated or unboosted. (China's predicament is made worse by Mr Xi's refusal to import Western-designed vaccines which seem to last longer than homegrown alternatives.)

So near, and yet
Size of economy, nominal $trn



Source: Capital Economics
The Economist

A third vulnerability is China's faltering homebuilders. They sold over 1.56bn square metres (16.8bn sq ft) of new housing in 2021, the equivalent of flogging the entire housing stock of Manhattan 12 times over in a single year. Many economists think that figure marks the peak of China's property market.

The default of Evergrande, a big developer, at the end of that year was a symptom of the trouble to come. In 2022 financial distress among developers hampered construction and spread unease among homebuyers. Sales were down by 27% in the first half of 2022 compared with the same period in 2021. Even if the confidence of homebuyers can be revived, their number will dwindle in the decade ahead, as urbanisation slows and the population peaks.

Indeed, the population is peaking earlier than expected. China was supposed to have a population of 1.51bn by now, according to UN projections made in the early 1990s. In fact it has almost 100m fewer people than that. The UN now thinks that China's working-age population could decline by 10% by 2035 and by almost 30% by 2050, relative to its current level.

If China does not manage that feat by the early 2030s, it never will, according to Capital Economics, a consultancy. In one scenario China's GDP might surpass America in the early 2030s, vindicating China bulls, only to fall behind again as its workforce shrinks, vindicating the China bears. Mark Williams of Capital Economics likens this scenario to Italy's temporary overtaking of Britain in 1987, known as . A "short-lived " for China would be the "most pleasing outcome," he quips. "Everyone gets to be right." ■

This article appeared in the China section of the print edition of The World Ahead 2023 under the headline "China's sorpasso"

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China's tricky foreign relations pose a challenge to Xi Jinping

Tensions with America and Europe are just the start

Nov 18th 2022

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By Jeremy Page: Asia diplomatic editor, The Economist, Delhi

The world in 2023 is a far more challenging place for Mr Xi as he starts his third five-year term. Relations with America are so fraught that there is talk of war over Taiwan. Chinese support for Russia's invasion of Ukraine has alienated much of Europe. A border dispute with India has erupted anew. And much of the global South is struggling to pay off Chinese loans. Moreover, China's reputation for good governance has been tainted by its handling of covid-19. Mr Xi will face the biggest test of his leadership so far as he confronts these concurrent crises amid rising public discontent at home over his "zero-covid" strategy and its worsening economic consequences.

Start with America. China's most important bilateral relationship will be dominated by tensions over Taiwan, which spiked in August when Nancy Pelosi, the Speaker of the House of Representatives, visited the island. China, which claims Taiwan, responded with massive military drills.

China will also be incensed by the Taiwan Policy Act, which is moving through Congress and will enhance American support for the island, designating it as a "non-NATO ally". As well as making it riskier for American ships to use the Taiwan Strait, China is likely to increase pressure on nations with diplomatic ties to Taiwan. With an American presidential election looming in 2024, and anti-China sentiment prevalent throughout Congress, Mr Xi will not expect the Biden administration to change course. The challenge will be to prevent actual military confrontation.

> **With limited prospects in the West, Chinese diplomacy in 2023 is likely to focus on the global South**

The outlook for commercial ties with Europe is, perhaps, rosier. Two-way trade and investment has continued to expand in the past two years and the environment for Chinese business in Europe is still less hostile than America's. If the war in Ukraine winds down, China could salvage its image by helping to broker peace and rebuild the country. But commercial ties will still be hampered by covid restrictions in China and heightened European scrutiny of Chinese transactions.

With such limited prospects in the West, Chinese diplomacy in 2023 is likely to focus on the global South. Taiwan and Ukraine are marginal concerns there and many developing countries still see China as a valuable source of trade and investment. But even on that front, China faces new challenges, as many poorer countries are in debt distress, due in part to Chinese infrastructure loans. China's own largesse is limited, too, by its own economic problems. Mr Xi had an unexpectedly rough 2022. The year ahead is likely to be rougher still. ■

This article appeared in the China section of the print edition of The World Ahead 2023 under the headline "A whole new world"

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Will Taiwan be the Ukraine of Asia?

The status quo is breaking down, making war more likely

Nov 18th 2022

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By Roger McShane: China editor, The Economist

New concerns were raised in 2022, after Nancy Pelosi, then the Speaker of America's House of Representatives, travelled to Taiwan. In the eyes of Chinese officials, Ms Pelosi's trip, though not unprecedented, upset the status quo on which the uneasy peace rests. America does not recognise Chinese sovereignty over Taiwan, but it also does not recognise Taiwan as an independent state. It has diplomatic relations only with the mainland (though it arms Taiwan). Ms Pelosi was the most senior American politician to visit Taiwan in decades. After she left, China expressed its outrage in dramatic fashion. It fired ballistic missiles over the island, sent dozens of military ships and aircraft towards its territory, and conducted live-fire drills all around it, as if rehearsing for a blockade.

If war seems inevitable, it is in part because China sees Taiwan drifting away. Two generations ago the island was a military dictatorship, ruled by that same Nationalist party—the Kuomintang, or KMT—which agreed, at least in theory, that Taiwan was part of China. Today it is a vibrant democracy led by President Tsai Ing-wen and her pro-independence Democratic Progressive Party. Its GDP per person is nearly three times that of the mainland. The freedoms and prosperity of Taiwan, with its 24m people, nearly all Han Chinese, are an implicit challenge to the autocrats in Beijing. China's promise of autonomy for Taiwan, under a "one country, two systems" model, has looked hollow since the mainland stomped on Hong Kong, which previously had the same deal. According to polls, less than 7% of Taiwanese desire unification.

> **The freedoms and prosperity of Taiwan are an implicit challenge to the autocrats in Beijing**

America's attitude is changing, too. It has no formal defence treaty with Taiwan. In the 1970s, as America moved to recognise the government in Beijing, Richard Nixon even pondered abandoning the despotic KMT leader, Chiang Kai-shek. Recent presidents have adopted a policy of "strategic ambiguity", meant to stop provocations on all sides. But Taiwan's transformation has made it more likely that America would come to its aid in the event of an attack. President Joe Biden has promised as much (though each time he does, his advisers walk back his remarks). Allies see any conflict as a potential test of America's resolve to uphold the security order in the Asia-Pacific.

America hopes the conflict will convince Taiwan to show greater willingness to defend itself—and to adopt a better strategy. It has already decided to rely less on conscripts and build more professional armed services. But it could increase its military budget, now just 2% of GDP. And it could adopt a "porcupine" strategy, based on mobile and concealable defensive weapons, especially missiles for use against ships and planes, rather than the expensive jets, ships and submarines favoured by its military planners. Such fancy hardware is unlikely to last long if and when the shooting starts.

For its part, China sees Russia's invasion as a useful challenge to the West. But some in Beijing draw comparisons to Taiwan and wonder if it, like Ukraine, could turn an invasion into a quagmire, with disastrous consequences for the Communist Party. Maintaining an attack across 160km of water would be harder than crossing a land border, for a start.

In Beijing, war with Taiwan is seen as a bad outcome, so long as other options remain on the table. But many experts believe the mainland's options are shrinking. An anti-secession law passed in 2005 compels China's rulers to act militarily if they believe peaceful unification is no longer possible. But Russia's struggles in Ukraine will have given them pause. ■

This article appeared in the China section of the print edition of The World Ahead 2023 under the headline "The Ukraine of Asia?"

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China's women are struggling to make their voices heard

New legislation is unlikely to help

Nov 18th 2022

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By Alice Su: Senior China correspondent, The Economist, Taipei

In the first months of 2022, the case of a mother of eight, found chained in a shack in rural Jiangsu province, shocked the public. In June 2022, a video of several men beating women who refused their advances at a late-night barbecue joint in Hebei province also went viral. Both incidents sparked nationwide discussion and demand for accountability, despite heavy censorship in a politically sensitive year. Chinese authorities eventually sacked or investigated officials and arrested the male abusers in both provinces. They also stifled public discussion and stopped Chinese journalists from digging deeper.

Women's rights will remain a hot topic in 2023. China's legislature, the National People's Congress, passed a revision of the women's protection law in October 2022, which will come into force in January 2023. It drew intense public debate. More than 80,000 people submitted suggestions on its amendment during a public consultation. It includes new measures against sexual abuse in schools and trafficking. Sexual harassment is better defined. Authorities who receive complaints must give faster, more specific responses. And workplace discrimination, including hiring or promotion on the basis of female employees' marriage or maternity status, is forbidden.

These changes suggest progress. But they do not guarantee that women's lives will improve. Under Xi Jinping, China's president, authorities have cracked down on women who have pushed for new laws to be enforced. The party has imprisoned feminists such as Huang Xueqin, one of China's first #MeToo activists. Women's groups that used to organise on university campuses and among migrant workers have been disbanded or forced underground. Women have also been squeezed out of China's leadership: the party's new Politburo, announced in October, has no female members for the first time in 25 years.

The passage of the new law means tensions will increase in 2023. The party wants to look as though it is taking steps to provide greater protection for women's rights. But it also wants to ensure that women are not too politically empowered to protect themselves.

This has led to a belated loosening of birth controls (Chinese women can now have three children) as well as official discouragement of divorce. Couples seeking a divorce must go through a 30-day "cooling-off period" before they can split up. That change led to a 43% drop in divorces in 2021. One county government even pressured rural women to stay in their villages and marry local bachelors rather than leaving for the cities. They called the move Operation Bed Warming, causing online uproar. The state will keep on pushing women to become submissive wives and mothers. But don't expect Chinese women to go along quietly. ■

This article appeared in the China section of the print edition of The World Ahead 2023 under the headline "Xi said, she said"

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Feng Yuan says Chinese women's anger is a force for change

The government is worried about too much activism

Nov 18th 2022

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By Feng Yuan, co-founder of Equality

Chinese women have long been told that they are equal with men, and used to feel relatively safe. But now this feeling is fading. They are angry not only about the physical violence against them, but also about the way the authorities respond to such incidents. Officials may eventually act against the perpetrators but only after huge public outcries. They do little to support women's daily rights on the ground. Women's social-media accounts may vanish at any time. Activists may be visited, if not detained, by police for simply posting or re-posting some "sensitive words" about what is happening to them. So Chinese women go into 2023 asking many questions.

Will their anger be addressed in the coming year? Perhaps partly, because officials are making encouraging noises. Protecting women's rights was touched on at the recent Communist Party congress. However, the authorities' goal is stability and they will say whatever it takes to maintain it. The point is that women are demanding more than that. They demand action. Young women, especially, are more and more aware of their rights, and they are very upset that their needs and rights are being sidelined.

> **"The government says it wants us to be equal, but when we publicly demand it, they shut us down**

The pandemic has not helped. Fully 90% of the 10,000 respondents to a survey of women in October 2020 expressed dissatisfaction with their treatment. They focused on the impact of marriage and childbirth on their careers, the lack of equal work opportunities and the lack of autonomy in marriage decisions. They also spoke of insufficient opportunities in education and inadequate measures against domestic violence and sexual harassment.

For instance, the revised law does not define discrimination against women in a comprehensive manner, nor bring in enough accountability for those who abuse women's rights. It also lacks concrete measures regarding punishment for officials and public institutions who abuse their power towards women.

Will women feel safer in 2023? This is unlikely. On the one hand, women are more willing to seek help now. However, we are getting more hate speech and misogynistic pushback from Chinese men who accuse us of creating confrontation between the sexes, demanding a superior status over them and being manipulated by hostile foreign forces.

In the middle of the night recently, I received a threatening phone call from an anonymous man. Women's rights advocates increasingly receive this kind of abuse. We have been working in fear since 2015, when five young feminists were detained for planning a campaign for International Women's Day against sexual harassment on public transport. The government insists that we are equal with men, but when we publicly demand that equality, they shut us down.

China will have new representatives in the National People's Congress and new senior government officials in March 2023. Can women expect these leaders to address their concerns with more than just window-dressing? It is unlikely. There is not a single woman in the new party leadership revealed in October, even while 21% of government ministers worldwide are women.

Chinese women believe that no country can have a bright future if its women are oppressed. And the government realises this. Look at its anxiety at the declining birth rate, as more women decide not to marry and have children. Now is a perfect opportunity for the new party leaders to initiate real change, to enable women's participation in policymaking and public life, and to make sure our voices are actually heard. Nothing about us without us. ■

This article appeared in the China section of the print edition of The World Ahead 2023 under the headline "Nothing about us without us"

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The Middle East's complex web of alliances is evolving

Not least in relation to Israel

Nov 18th 2022

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By Xan Smiley: Editor at large, The Economist

As Israel's peace treaties with Jordan and Egypt hold firm, the country to watch is Saudi Arabia, whose backdoor connections with Israel are expected to grow. Muhammad bin Salman, the kingdom's crown prince and de facto ruler, is said to have allocated $2bn to invest in Israeli startups, for example. But while Saudi Arabia is widely considered to be next in line to join the Abrahamic club, improved relations will probably fall short of formal recognition as long as the ageing King Salman is on the throne—and as long as there is no progress towards a two-state solution between Israel and Palestine.

The Economist

The most dangerous schism in the region remains the one that divides Sunni Islam, the dominant variant among Arabs, and the Shia alternative espoused by Iran and vigorous Shia offshoots in Syria and Yemen. But this age-old conflict is not immutable. Some Arabs in the Gulf who have long been hostile to Iran may seek an accommodation with it. Watch, in this respect, the UAE and Qatar, whose merchants have ancient ties across the water. Saudi Arabia, by contrast, is likely to remain adamantly opposed to stretching out the hand of friendship.

> **The chances of a revival of the nuclear deal with Iran are low, but not zero**

The chances of a revival of the deal between Western powers and Iran over Iranian nuclear plans are low, if the ayatollahs stay in charge. Assuming Binyamin Netanyahu manages to assemble a ruling coalition after Israel's election on November 1st 2022, the chances will be lower still. But if Iran's regime were to fall in the face of persistent mass protests, tensions across the Gulf would lessen, to everyone's benefit. Israel might even talk again to Iran, too.

Iran's key protégé in the region, Syria's Bashar al-Assad, is likely to survive as long as the West is distracted by the war in Ukraine. He will continue to reaffirm his grip over the country, most of which is now under his sway, though the borderlands with Turkey and Iraq may periodically erupt in violence. Arab rulers who sought to topple him, such as those in the UAE and Qatar, are becoming friendlier again. So is Turkey. Though bogged down in Ukraine, Russia will be loth to let its Syrian ally fall.

Relations between Algeria and next-door Morocco, the most populous Arab countries after Egypt, Sudan and Iraq, will stay frozen thanks to a long-standing row over phosphate-rich Western Sahara, whose sovereignty Morocco claims and Algeria disputes. Morocco may be gaining diplomatic ground globally, but Algeria is unlikely to give way. It is absurd that citizens of neighbouring Arab countries cannot even cross each others' borders. But old animosities across the region do not tend to fade easily. Except, just for the moment, those with Israel. ■

This article appeared in the Middle East section of the print edition of The World Ahead 2023 under the headline "Shifting sands"

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Several oil-importing Arab states face debt crises in 2023

They will probably have to deal with growing unrest

Nov 18th 2022

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By Gregg Carlstrom: Middle East correspondent, The Economist, Dubai

Debt will be a dominant issue in 2023, as several states either seek or start IMF programmes (two are repeat customers). Even with external support, though, the region will struggle to extract itself from a debt trap. The coming year will bring tight budgets, more shortages, and hardship for tens of millions of Arabs.

Egypt announced a $3bn deal with the IMF in October, a much-needed infusion for a country where debt service alone will swallow almost half of revenue in 2023. But it will need more. The government will sell some state-owned firms to raise capital and will seek to cut electricity consumption to boost natural-gas exports. It will also continue throttling imports, although not as aggressively as in 2022. There will be little to spend on education or health care.

To fulfill the terms of the IMF agreement Egypt devalued its currency, which lost 35% of its value in 2022. That should help cut the import bill as foreign goods become ever more unaffordable. Some investors think the pound may have a bit further to fall. Inflation peaked in September at 15%, and 22% for food. Prices will climb much higher in 2023.

Lebanon reached a staff-level agreement with the IMF in April. To unlock the $3bn loan, though, it must pass a budget, impose capital controls, overhaul its bank-secrecy law and clean up its financial sector. It has done almost none of those—the 2022 budget was passed only in late September—and it will probably make little progress in 2023. Neither its corrupt politicians nor its insolvent banks want to face reality.

> **Gone are the days of oil-rich states providing lavish handouts to allies**

The country will subsist on handouts. Remittances from the sprawling diaspora will inject a modicum of hard currency; Iran will send fuel shipments to provide a couple of hours of electricity each day. Poverty and crime will continue to rise. More citizens will emigrate: the middle class on planes, the poor risking their lives on boats.

Tunisia will fall somewhere in between. An IMF deal will face continued opposition from the UGTT, the powerful public trade union, which fears it will impose wage and subsidy cuts that will worsen poverty. Kais Saied, the authoritarian-minded president, will try to cow and co-opt the union into compliance. He will not have much choice. The country is struggling to import staples; unrest is a real possibility.

Everyone will hope for help from the Gulf states. If oil prices stay high, they will have billions of dollars to spend around the region. Gone are the days, though, of lavish handouts to allies. Instead they see countries like Egypt as distressed assets. Sovereign-wealth funds will snap up stakes in strategic sectors, but monarchs will be far less eager to cut cheques.

Egypt buried itself in debt to build questionable megaprojects; Tunisia, to pay one of the world's largest public wage bills. Lebanon turned its economy into a giant Ponzi scheme. None of them has a plan for serious reform. The best that any of them can hope for in 2023 will be to muddle through. ■

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Russia's influence in the Middle East is declining

The war in Ukraine has been bad for business

Nov 18th 2022

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By Gregg Carlstrom: Middle East correspondent, The Economist, Dubai

Fast forward a year, and Russia's armed forces are bogged down. Mubadala paused investments. Mr Prigozhin is busy dragooning convicts into front-line military service in Ukraine, leaving little time to analyse Libyan politics. The invasion of Ukraine has diminished Russia's role in the Middle East. It will continue to wane in 2023.

Start with economic ties, which were never deep. Even before the invasion Saudi Arabia only imported half as much from Russia as from the Netherlands, a country with a smaller economy and one-ninth the population. Wartime Russia has even less to offer. Gulf states will be wary about investing. Countries like Egypt, which used to draw sun-starved Russians, are seeking to attract new tourists.

Ironically, one of the few growth markets will be hydrocarbons. Russian oil and refined products will be banned from the European Union but find eager customers in the Middle East. Firms in the region will buy them at a discount, either for domestic use or to resell abroad, with a new certificate of origin, at market prices.

As for weapons, Russia is the region's second-biggest arms dealer, behind America, but its war will be bad for business. The fact that some of its weapons have performed poorly in Ukraine may not deter Arab buyers; the appeal of Russian kit was never its quality but the lack of conditions attached to its sale. Instead, the problem is that Russia will have fewer arms to sell. Sanctions will hobble parts of its war machine. What weapons it can produce will be needed in Ukraine. Arab armies will have to look either to America or to alternatives such as China or Turkey.

Relations with Iran will be complicated. Trade will increase, especially as Russia's depleted army turns to Iran for drones and other kit. But both need to sell illicit oil at below-market prices. The resulting price war will be painful for Iran.

Arab states looking to hedge against a disinterested America will invest more effort in ties with China. Recep Tayyip Erdogan, the Turkish president, will also try to capitalise on a diminished Russia. In Libya, where they back opposing sides, he will push for dialogue. In Syria, meanwhile, he may re-establish ties with Bashar al-Assad's regime. Neither Russia nor Turkey wants Iran to fill the void. ■

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It is hard to see a middle way prevailing in Iran

Either a crackdown or an opening up will come

Nov 18th 2022

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By Nicolas Pelham: Middle East correspondent, The Economist

Many mullahs will have fled. Some will seek protection from the militias they fostered in Iraq, Syria and Lebanon. The better connected will head to Oman or the United Arab Emirates. The outgoing and visibly ailing Supreme Leader, Ayatollah Ali Khamenei, will flee to Beijing. A council of young Iranians will draft a new constitution and replace the symbol at the heart of the flag—a stylistic rendition of "God is greatest"—with the revolution's slogan: "Women, Life, Freedom".

The regime's former foreign minister, Javad Zarif, will remain as a caretaker president after Ebrahim Raisi steps down, in a bid to ensure a smooth transition. He will curry favour abroad by stacking his government with exiles boasting doctorates from Western universities. He will halt the supply of Iranian drones to Russia and seek direct negotiations with America, not just on Iran's nuclear programme and an end of sanctions, but on the reopening of an American consular office in Tehran for the first time in four decades. Western energy companies will be invited back to tender for contracts.

At home, Mr Zarif will try to placate protesters by abolishing the dress restrictions the mullahs imposed on women. "It's a cultural matter," a newly appointed spokeswoman (wearing no headscarf), will explain. Mr Zarif will also undertake to hold a referendum on whether Iran should remain an Islamic Republic. Western media outlets will pronounce Mr Zarif a new Gorbachev.

Iranians, though, will be less forgiving. Many will want no truck with apologists from the old regime. "For trial," they will chant, as protesters continue to mass in the street. Some who tried to negotiate with the reformers, including Mohammad Qalibaf, the speaker of parliament, will be forced to make public confessions.Others may be less fortunate. Even after Mr Raisi recants his work as a judge sentencing thousands to death in the late 1980s, many Iranians will still demand his blood. Outside the capital, mobs will hound and, in some cases, lynch hapless seminarians, and molest women garbed in chadors. The words of Ali Ansari, an Iranian political scientist in Britain, will reverberate. "Iran's leadership has rarely shown compassion," he said on the eve of its collapse. "When the time comes, it can expect little in return."

The crackdown will also be felt abroad. With its back to the wall domestically, the regime will launch a series of regional military operations to divert attention from domestic dissent and promote unity against foreign foes. Targets could include border incursions into Azerbaijan, accused of harbouring Israeli intelligence networks; a flare-up of fighting around the oil fields of southern Iraq, where pro-Iranian militias hold sway; or unleashing missiles on Tel Aviv, Saudi pipelines or America's fifth fleet in Bahrain. The price of a barrel of oil will surge above $200.

Many will wish for a middle path. But, given Iran's polarisation, hardliners on both sides will have eased out the gradualists. Whoever wins, men with guns will exact a price as guardians of the Islamic or secular revolution. In the uneasy equilibrium between the three pillars of Iranian politics—the clerics, the people and the armed forces—it will be the military men who will have the casting vote on whether Iran's future lies with the ayatollahs or the revolutionary women. ■

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Demand for new sources of energy could help African economies

It could provide much-needed new revenue as hunger spreads

Nov 18th 2022

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By Jonathan Rosenthal: Africa editor, The Economist

At first glance that seems odd. More than 60% of sub-Saharan Africans eke out a living by tilling the soil on small farms, eating mainly what they grow. In some countries, such as Malawi, 80% of the population are subsistence farmers. If larger-scale farmers are included, sub-Saharan Africa as a whole produces 94% of the food it needs. And the region trades very little grain internationally, which ought to insulate it from higher international prices.

To be sure, some countries such as Nigeria are big food importers and so vulnerable to swings in global markets. Egypt and Sudan are particularly affected because they rely on imports of wheat to provide about half of what they eat. Yet food prices have surged not just in these countries, but also across almost all of sub-Saharan Africa. The IMF reckons that between 2020 and 2022 the prices of staple foods in the region increased on average by 24%. This includes foods that are locally grown. In Ghana, for instance, the price of cassava jumped by 78%.

> **Africa now holds 13% of the world's natural-gas reserves**

Dearer food is contributing to more widespread hunger, most often in places that were already finding their pickings lean. By mid-2020 one in eight people in Malawi was already extremely short of food, or just one step below the level at which the UN would declare a humanitarian emergency on its food-security scale. That number is rising quickly. By early 2023 roughly one in five people in Malawi will be desperately short of food until the national harvest begins in April or May. A similar trend can be seen across much of the continent. By mid-2022 around 346m people in Africa were short of food to some degree. Most analysts expect that number to continue to rise sharply in 2023.

Yet gas and fertiliser may also provide Africa with opportunities in 2023. Between 2010 and 2020 no less than 40% of all the natural gas discovered worldwide was found in Africa. As a result, the continent now holds 13% of the world's natural-gas reserves. But it has struggled to exploit more than a small fraction, says the International Energy Agency, a club of mostly rich energy-importing countries.

Europe's efforts to wean itself off supplies of Russian gas are already leading to action in Africa. Algeria is pumping more gas through a pipeline under the Mediterranean. Egypt has promised to send Europe more shipments of liquefied natural gas (LNG), and new LNG projects are being built in Mauritania and Senegal. Projects that had stalled are now being speeded up.

All in all, Africa could be in a position to meet about 20% of Europe's shortfall in coming years. Gasfields that might otherwise not have been developed are now viable, and with the right policies these could also increase the supply of gas within Africa. This gas could feed new fertiliser factories, such as Africa's largest, which opened in Nigeria in early 2022. It will also fire new power stations—offering glimmers of light in a difficult year. ■

This article appeared in the Africa section of the print edition of The World Ahead 2023 under the headline "A new source of sustenance"

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2023 will be a busy year for elections in Africa

Many incumbents will come under pressure

Nov 18th 2022

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By John McDermott: Chief Africa correspondent, The Economist, Johannesburg

It is little wonder that only around half of sub-Saharan Africans living in democracies express satisfaction with that form of government. Yet one promising shift is that opposition parties are increasingly competitive. From 2011 to 2022, 42 new African leaders took office after an election. Of these, 17 were successors from an incumbent party. The other 25 were opposition politicians, a higher number than in any of the three preceding decades. Such transitions have recently taken place in Kenya, Malawi and Zambia, among other places.

Even when opponents have not taken power, they have in many cases chalked up tallies that worry ruling parties such as those in Angola and South Africa. There is reason to believe that there will be further strong performances in 2023.

> **Africans are increasingly educated and informed, so less deferential towards politicians**

What is behind this trend? There are several contributing factors. Opposition parties are running smarter campaigns. Africans are increasingly educated, informed and urban, and so less deferential towards politicians. Young populations are unimpressed by the nostalgic propaganda of ruling parties that trace their roots to struggles for independence; instead they see corrupt and decadent elites. Most important, economic conditions are getting more difficult and Africans hold their leaders partly responsible.

Disenchantment does not mean opposition parties will triumph. Nigeria's ruling party, the All Progressives Congress (APC), is much better at machine politics than at operating the machinery of government. Despite having to attest that he is not dead, the ageing APC candidate, Bola Tinubu, is the man rivals must beat. In Madagascar, President Andry Rajoelina faces a divided opposition and will most likely win re-election.

In other countries, opponents risk being thwarted because the regime will not accept defeat. Zanu-PF, Zimbabwe's ruling party, is locking up rivals and fiddling the voters' roll ahead of elections it would otherwise lose. After more than four decades of calamitous kleptocracy the country desperately needs a change of government. But as long as Zanu-PF retains the support of the security forces, and of South Africa, the regional hegemon, its people will suffer. In the misnamed Democratic Republic of Congo, Félix Tshisekedi, who took office after a rigged election in 2018, is expected to hold on to power despite polls suggesting he is increasingly unpopular. The importance of the country's mineral wealth means that outsiders will downplay chicanery.

In several countries, overdue elections may not even take place. South Sudan was meant to hold a vote in 2015 but its leaders have repeatedly chosen to fight each other instead. After coups in 2020 and 2021, Mali's junta said it would hold elections in February 2022; Malians are still waiting. In Chad, another junta (led by the son of Idriss Déby, the longtime dictator who died in 2021) promised elections in the second half of 2022. But in October it extended its "transitional" military rule for another two years

These cases are not, however, representative of all of Africa, a complex, diverse continent of 54 countries. In many African nations, citizens are voting for change. In others, restless millions wish they had the chance. ■

This article appeared in the Africa section of the print edition of The World Ahead 2023 under the headline "Get up, stand up"

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Nigeria's economy will continue to struggle in 2023

A new leadership needs to implement widespread reform

Nov 18th 2022

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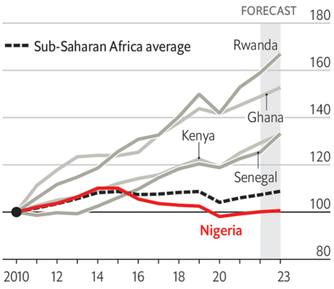
By Kinley Salmon: Africa correspondent, The Economist, Abuja

A commodity-price plunge in 2015 was part of the problem. Yet plenty of damage was self-inflicted. In 2019 the government closed Nigeria's land borders to all goods, purportedly to stop smugglers competing with local producers. The result was higher inflation. Efforts to prop up the exchange rate by restricting access to dollars made it hard for businesses to import basic inputs. The central bank was forced to repeatedly devalue the naira anyway. Then came the pandemic.

Treading water
Real GDP per person, 2010=100



Source: IMF
The Economist

> **Ditching fuel subsidies would free up spending for infrastructure and education**

Yet economic stars are too few and too centred on Lagos to lift many of the country's 220m people up with them. Unleashing a broader boom would require serious economic reform. Presidential elections in February promise the end of Muhammadu Buhari's failed presidency. Yet barring a shock win for Peter Obi, a third-party candidate, the victor will come from the same clique of kleptocratic elites. Both major parties pursue similar "statist, protectionist, often self-defeating policies", warns Matthew Page of Chatham House, a think-tank.

Widespread insecurity also hampers growth. In the first six months of 2022, 6,000 Nigerians were killed in conflict. In the north-east the Islamic State West Africa Province, a jihadist group, has expanded towards the capital, Abuja. Militias in the north-west regularly target civilians for extortion and kidnapping.

All this might one day prompt the government to ditch subsidies, freeing money to spend on things with a better chance of boosting growth, such as infrastructure and education. In the long term the declining importance of oil might shift Nigeria away from its current model, in which elites squabble over oil money while ignoring their citizens. Without easy oil cash they would need to expand the rest of the economy. Yet 2023 will witness halting steps, at best, towards all this. More probable, alas, is a year of sluggish growth punctuated by devastating violence. ■

This article appeared in the Africa section of the print edition of The World Ahead 2023 under the headline "A sluggish, suffering giant"

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Vanessa Nakate says fighting climate change can cut poverty in Africa

The continent needs more renewable energy

Nov 18th 2022

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By Vanessa Nakate, climate activist, UNICEF goodwill ambassador and author of "A Bigger Picture"

Energy poverty, which is already at high levels across the continent—about 600m people in sub-Saharan Africa lack access to electricity—will be worsened. That will cause ripple effects through people's everyday lives, leading to poor health, lost education and damaged livelihoods.

On top of this, Africa is also suffering from a global food crisis, driven by a four-year drought in parts of the region and by the war in Ukraine, which is leaving millions hungry. The resulting instability is pushing many African countries to the brink. These twin problems are predicted to continue into 2023 and beyond.

The phenomenon of African countries being plagued by fluctuations in fossil-fuel prices is, however, not just a recent development. In Ivory Coast, which is highly reliant on gas for power, increases in electricity prices in 2016 led to protests in which police killed and injured many demonstrators. When the poorest communities are reliant on commodities, the prices of which are so volatile, they end up suffering the most.

In response, some African leaders are encouraging their citizens to go electric. Policies such as switching to electric vehicles are proposed as a way to reduce vulnerability to oil-price shocks. Although electrical grids and charging infrastructure are a long way from where they need to be to support this, calls to switch to clean technologies will grow as a result of this energy crisis.

> **Renewable energy is best positioned to combat high levels of energy poverty across sub-Saharan Africa**

But the greatest potential for transformation lies in renewable energy. Electricity from solar and wind is, and will continue to be, cheaper than electricity from gas—and its prices are not, for the most part, subject to such dangerous fluctuations.

Calls are already growing, including from the International Energy Agency (IEA), for more investment in renewable energy in Africa to provide protection against the unexpected price swings being caused by this energy crisis—and future ones. The same logic applies around the world, but in Africa heeding such calls is even more critical, to combat high levels of energy poverty. Renewable energy is best positioned to help achieve that goal. Renewable power sources, located near the point of use in rural Africa, have been found to be more economically viable than building long-distance transmission lines for electricity generated in gas-fired power stations (which, in the long term, are unsustainable in any case).

Indeed, renewable-energy development is also a vital step Africa needs to take in order to have a chance of a stable climate. António Guterres, secretary-general of the UN, has called the development of any new infrastructure for fossil-fuels "moral and economic madness".

Despite all this, Africa receives only 2% of global investment in renewables, even though the continent possesses 39% of the world's potential for renewable energy. African countries need massive private and public investment from rich countries in the global North to fund the expansion of renewable capacity. The International Renewable Energy Agency estimates that $70bn of investment in renewable projects will be needed in Africa each year until 2030, if access to clean energy across the whole continent is to be provided.

In September 2022 I had the opportunity to travel to Kenya with UNICEF to visit communities suffering from the harrowing drought there. Even as they have to deal with brutal, extreme weather, they are having to face the same inflated food and energy prices as the rest of the world. The influence of the climate crisis is evident across these overlapping events—and the world's poorest people, with the fewest resources to cope, are being hit hardest.

They are also the people who have done least to contribute to climate change. In a report in June, the IEA observed that "Africa accounts for less than 3% of the world's energy-related CO_2 emissions to date."

Clean-energy solutions that can fuel development and help make these communities more resilient to unrelenting crises, without producing more carbon emissions, are going to be in ever-greater demand. Countries, development banks and private institutions in the global North, where development was propelled by the extraction and burning of fossil fuels, including fuels from Africa, now need to answer the calls for investment. ■

This article appeared in the Africa section of the print edition of The World Ahead 2023 under the headline "When fighting poverty helps the climate"

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Eritrea is the most dangerous player in the Horn of Africa

The whole region is worse off than five years ago

Nov 18th 2022 Share

By Tom Gardner: Africa correspondent, The Economist

The Ethiopian leader was awarded the Nobel peace prize in 2019 for his efforts. Soon afterwards, change came to Sudan. Protesters toppled Omar al-Bashir in 2019, ending his 30-year-long tyranny. Sudan embarked on a hopeful democratic transition of its own—aided in part by Abiy, who helped negotiate a deal between civilians and the armed forces.

Fast forward to 2023, and the picture is much grimmer. Ethiopia has been mired in civil war for more than two years. Though a peace deal was signed in November, it is shaky—and much of the country remains wracked by conflict. It could yet spread, even across Ethiopia's borders into neighbouring countries.

> **Relations with Russia and China complicate matters**

In Sudan, the armed forces grabbed power in a coup in 2021 and seem determined not to relinquish it. Abdel-Fattah al-Burhan, Sudan's de facto president, aims to hold elections in July 2023, or possibly earlier. These will satisfy nobody except his patrons in Egypt and the Gulf. Yet they may also aggravate tensions between Mr Burhan and Muhammad Hamdan Dagalo, his chief rival. Mr Dagalo, the vice-president, heads a notorious paramilitary unit that Mr Burhan wants to integrate into the national army. Mr Dagalo is resisting, which could spell trouble. The only possible bright spot in the region is Somalia, where the new president, Hassan Sheikh Mohamud, has made progress beating back the jihadists of al-Shabab.

Issaias's menace goes beyond Tigray. Several thousand Somali troops, sent to Eritrea for secret training by Mr Mohamud's predecessor, have yet to return home. Issaias appears to want to use them as leverage over Mr Mohamud. Sudan's leaders fear that if Eritrean forces prevail in Tigray, Issaias may turn his sights on eastern Sudan. Eritrea has a history of supporting Sudanese rebels.

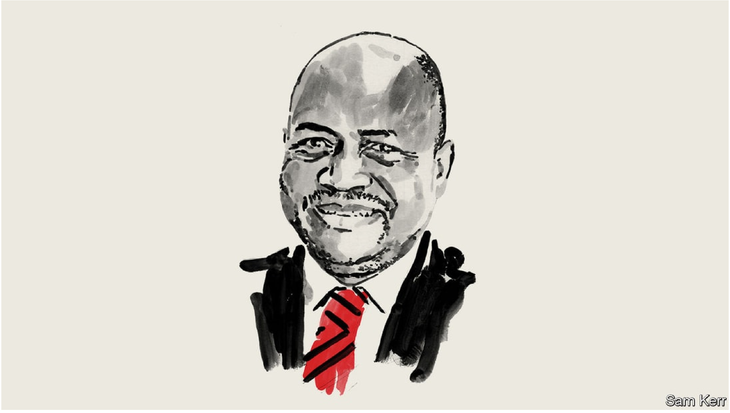
Western countries will be watching Issaias closely in 2023 and may step up economic sanctions. But relations with Russia and China complicate matters. China is Eritrea's most important foreign financial backer and is extending its control over the country's crucial mining sector. Russia, which seeks a naval base on the Red Sea, could be sending arms. The Horn's spoiler-in-chief is unlikely to change its behaviour while it enjoys the backing of such powerful friends. ■

This article appeared in the Africa section of the print edition of The World Ahead 2023 under the headline "Spoiler-in-chief"

The World Ahead | The World Ahead 2023

Kuseni Dlamini says Africa must better harness technology

It's time for a continental reset



Nov 18th 2022

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By Kuseni Dlamini, chairman of Massmart and Aspen Pharmacare

New technologies such as artificial intelligence and robots offer new possibilities. We must not be swept aside but must surf this technological wave. Ours is a young, dynamic continent, with a massive untapped market. We cannot and must not be judged by our past when our potential for greatness and inclusive prosperity is so enormous.

In previous technological revolutions, Africa was at best a spectator and not a player. Now, Africa's youthful population must provide an invaluable demographic dividend.

It is time to discard the inward-looking, tired notion that our focus must be on African solutions to African problems. Covid taught us that we are one humanity, intertwined. The key is to invest smartly in science and technology and to ensure Africans are at the forefront of progress. Africans can and must play an active and meaningful role in finding global solutions to global problems.

> **We must use our endowment of green minerals to build a solid industrial base**

Energy security looms large, and we must pivot our focus towards green energy in Africa—not just through the supply of minerals, but by tapping our own potential in solar and wind power, and in cutting-edge technologies like green hydrogen.

Meanwhile, it is unacceptable that just 1% of the vaccines used in Africa are produced there. Now that Africa has proved its capacity and capability to be a world-class vaccine manufacturer through Aspen Pharmacare's state-of-the-art facility in South Africa, why doesn't the world source and procure more of its vaccines from Africa?

Nobody is suggesting that implementing this continental reset will be easy. The challenges are daunting. We will need institutions that work, capable leaders, civil servants and private-sector professionals who are qualified, disciplined, capable and educated. And there should be no room for corruption. Impossible? Of course not. Look at countries like Singapore that deliver. They have the right people in the right jobs doing the right things, with proper management skills—not the political appointees who infest some parts of Africa.

We must improve our governance systems with institutions that inspire trust and confidence among Africans. For Africa to take off, the private sector also needs to be more actively involved. We need more private-sector solutions to Africa's public-sector problems—to get things moving at all levels, from local to regional to national.

Meanwhile, Africa must reset its relationship with the world, and move from being a historically inefficient and often corrupt recipient of aid to a strategic partner. Now is the time for Africa to pivot from aid to trade and investment, as the foundation for a new strategic and mutually beneficial partnership with the world at large.

Africa must become a magnet to attract and retain foreign direct investment. It is wrong that Africa receives the lowest share of global FDI. Through investment in science and technology, Africa can reset the terms of its engagement with the rest of the world. This will require the retention of African talent. Far too many of our brightest entrepreneurs move elsewhere to realise their professional dreams. In many cases they leave because they have lost faith in our institutions.

It is a fallacy that others must develop Africa. Europe, North America and Asia all developed internally, and now, with a little help from its friends, Africa must drive its own development. Our destiny is in our own hands. Africa can and will be a first-world continent in our lifetime—provided we have the vision and courage to do what it takes. ■

This article appeared in the Africa section of the print edition of The World Ahead 2023 under the headline "It's time for a continental reset"

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India will become the world's most populous country in 2023

China is now suffering from a demographic slump

Nov 14th 2022

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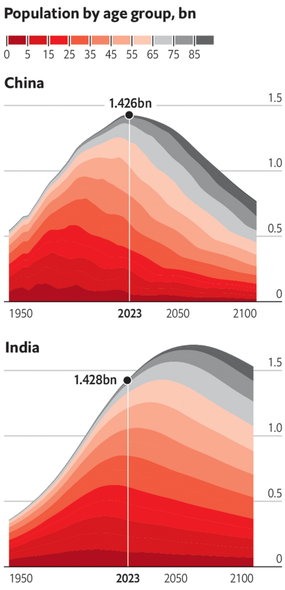
By Brooke Unger: Senior digital editor, The Economist

The crown itself has little value, but it is a signal of things that matter. That India does not have a permanent seat on the UN Security Council while China does will come to seem more anomalous. Although China's economy is nearly six times larger, India's growing population will help it catch up. India is expected to provide more than a sixth of the increase of the world's population of working age (15-64) between now and 2050.

China's population, by contrast, is poised for a steep decline. The number of Chinese of working age peaked a decade ago. By 2050 the country's median age will be 51, 12 years higher than now. An older China will have to work harder to maintain its political and economic clout.



Source: UN
The Economist

It paid dividends. China's economic miracle was in part the result of the rising ratio of working-age adults to children and oldsters from the 1970s to the early 2000s. With fewer mouths to feed, parents could invest more in each child than they otherwise would have. But having more parents than children, an advantage when the children are young, is a drawback as the parents age. The country will now pay a price as the economic-boomer generation retires and becomes dependent on the smaller generation following behind it.

> **India now has a chance to reap its own demographic dividend**

India's attempt to reduce fertility was less successful. It was the first country to introduce family planning on a national scale in the 1950s. Mass-sterilisation campaigns, encouraged by Western donors, grew and were implemented more forcefully during the state of emergency declared by Indira Gandhi, the prime minister, in 1975-77. Under the direction of her son Sanjay, the government forced men into vasectomy camps on pain of having their salaries docked or losing their jobs. Policemen nabbed poor men for sterilisation from railway stations. Around 2,000 men died from bungled procedures.

That will not spare China from suffering the consequences of the demographic slump it engineered. The government ended the one-child policy in 2016 and removed all restrictions on family size in 2021. But birth rates have kept falling. China's zero-covid policy has made young adults even more reluctant to bear children. The government faces resistance to its plans to raise the average retirement age, which at 54 is among the lowest in the world. The main pension fund may run out of money by 2035. Yet perhaps most painful for China will be the emergence of India as a superpower on its doorstep. ■

This article appeared in the International section of the print edition of The World Ahead 2023 under the headline "Fatter elephant, leaner dragon"

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Climate change is likely to increase migration

But three-quarters of such migrants stay within their own country

Nov 18th 2022

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By Rachel Dobbs: Asia news editor, The Economist, Singapore

Such scenes will become more common in 2023 and beyond. Sub-Saharan Africa, East Asia and the Pacific, and South Asia are most affected. The most visible migrants will be those forced from their homes by extreme-weather events exacerbated by rising global temperatures, such as the extraordinary floods in Pakistan in August and September 2022, which displaced 33m people. The natural climate system known as La Niña, which affects rainfall patterns across the world, is thought to have been a contributing factor. In poor countries, the accumulation of catastrophe chips away at resources and makes each successive disaster more damaging.

Climate change works in slower ways, too. Crops return ever-smaller yields; rising seas creep into villages. Global warming is a "threat multiplier", aggravating other drivers of migration such as poverty or conflict. The World Bank predicts that by 2050, as many as 143m people (or about 2.8% of the population) in sub-Saharan Africa, South Asia and Latin America will be internally displaced by slow-onset climate factors.

Contrary to the claims of scaremongers in the global North, the vast majority of such migrants—three out of every four—stay within their own borders. Their home countries will increasingly demand that migration is factored into "loss and damage" funding—essentially, reparations paid by the rich countries most responsible for emissions. (Previously, most migration-related requests were framed as adaptation measures.) Loss and damage funding will be a big theme in climate negotiations in 2023, with a three-year international "dialogue" on the issue meant to conclude the next year.

> **The vast majority of climate migrants—three out of every four—stay within their own borders**

Countries will also try to grapple with the rarer (but rising) phenomenon of cross-border climate migration, which has long existed in a bureaucratic blindspot. There is still no such thing as a "climate refugee": unlike war or persecution, people typically cannot claim asylum on the basis of climate change alone.

Yet recognition is growing, explains Jane McAdam, who directs the Kaldor Centre for International Refugee Law at the University of New South Wales in Australia. In 2020 the UN's refugee agency updated its guidance, making a broader case for the protection of those facing environmental risks. The issue will re-emerge at the Global Refugee Forum in December 2023. But an official change is unlikely—countries less vulnerable to climate change do not want the formal obligation of accepting more migrants.

Instead, progress will be piecemeal. In 2022, Argentina created a special visa for those displaced by natural disasters; Finland is mulling accepting refugees on climate grounds. Australia is introducing a scheme that will make it easier for Pacific Islanders—some of the populations most vulnerable to climate change—to go there for seasonal work. Similar measures are being discussed elsewhere. As ever, though, the best thing the world can do is tackle global warming by cutting emissions. ■

This article appeared in the International section of the print edition of The World Ahead 2023 under the headline "On the move"

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Climate diplomacy will continue to be a challenge in 2023

A third year of La Niña will cause problems, too

Nov 18th 2022

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By Catherine Brahic: Environment editor, The Economist

But although climate change is steadily raising average temperatures, natural sources of climate variability are also superimposed on that trend. One of the most powerful is the El Niño-Southern Oscillation (ENSO), which causes the climate around the tropics to oscillate between two states, known as El Niño and La Niña. Roughly speaking, El Niño causes more rainfall in the central and eastern Pacific and droughts in Australasia, while La Niña is associated with droughts in east Africa, and more rainfall in west Africa and South Asia.

Unusually, the current La Niña, which began in September 2020, in now in its third year—the first time this century that such a "triple dip" has occurred. Seasonal forecasts show a very strong likelihood that the rains will fail in east Africa towards the end of 2022, causing the drought and food scarcity in the region to deepen in 2023.

Whether and how ENSO cycles are affected by climate change is an area of active research, but what is clear is that the cycles sit on top of the overall warming trend, and that La Niña years tend to be slightly cooler than average. If the current cycle is succeeded in 2023 by a neutral period, global average temperatures are likely to rise slightly. If it is followed by an El Niño, which turns the thermostat up, then global average temperatures will be nudged closer to the totemic 1.5°C target of the un Paris agreement. That could lead to even more devastating extreme-weather events than those seen in recent years.

Curbing these devastating and costly events, and stabilising the climate by reducing global emissions, are the objectives of international climate negotiations, the latest round of which were held in the Egyptian resort of Sharm El-Sheikh in November 2022. The COP27 meeting came at a low point for climate diplomacy, at the end of a year overshadowed by the war in Ukraine and the related energy and food crises. Climate politics, which have often been treated somewhat separately from other geopolitical issues, were suddenly no longer isolated. Prioritising short-term energy security over longer-term emissions cuts has led to greater use of coal, for example.

The next round of talks, in November 2023, will take place in the United Arab Emirates. It is a controversial setting. The UAE's climate envoy, Sultan bin Ahmed Al Jaber, is a government minister who also heads the Abu Dhabi National Oil Company, the UAE's state-owned oil producer. He has spoken publicly and privately about his belief that oil and gas will continue to play a role in a net-zero carbon economy, and that oil and gas companies must be "active partners" in the global energy transformation. Expect a big argument about whether he is right.

On the one hand, it seems likely that some fossil fuels will still be burned in mid-century, even if global net-zero is reached. Electrifying cars and trains will be relatively simple; decarbonising aviation and shipping will be harder. Using some fossil fuels, and balancing the resulting emissions with carbon capture elsewhere, may be the least bad option.

On the other hand, limiting warming to 1.5-2°C, as set out in the Paris agreement, will require a dramatic reduction in fossil-fuel use, so that oil and gas end up playing only a marginal role in the global energy sector. The International Energy Agency has called for no new fossil-fuel development in order to meet net-zero targets. The UAE's climate summit will prompt a vigorous debate about the role of oil companies in the energy transition, and whether they really can be part of the solution, not just part of the problem. ■

This article appeared in the International section of the print edition of The World Ahead 2023 under the headline "More hot air"

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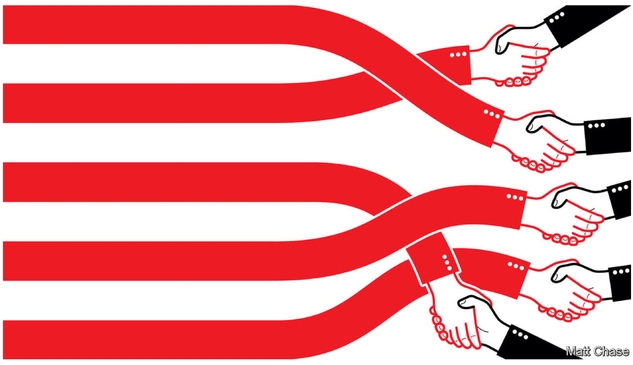
How the war in Ukraine is reshaping America's global alliances

There are signs of Europeans and Asian countries stepping up



Nov 14th 2022 Share

By Anton La Guardia: Diplomatic editor, The Economist, Washington, DC

In Europe, allies have joined America in sending help to Ukraine to halt Russia's invasion. Finland and Sweden are rushing to join NATO. In Asia, meanwhile, America's effort to constrain China relies heavily on its network of formal alliances and budding partnerships. In 2023 America wants to strengthen the "connective tissue" between its allies to the east and west. Mr Biden sees this as part of a global contest between democracies and autocracies. Another way to think of it is as a revival of old geopolitical notions of containing the Eurasian heartland by controlling the "rimland", in this case with a cordon of allies stretching from Japan to Britain.

But linking the pieces together is not easy. NATO is based on mutual defence: an attack on one is an attack on all. America's alliances in Asia, by contrast, are a "hub-and-spokes" system of bilateral defence treaties, with little common planning and training. America has tried to overlay its alliances in the Indo-Pacific with ad hoc partnerships: trilateral missile-defence exercises with Japan and South Korea; naval exercises with Japan and Australia; and multifaceted Quad collaboration with Japan, Australia and India on everything from vaccines to maritime piracy.

Some new tendons are linking European and Asian allies. Under the AUKUS deal, America and Britain will provide Australia with nuclear-propelled (but not nuclear-armed) submarines, and will collaborate in other fields such as cyber-security and hypersonic missiles. Relations with France, strained because AUKUS tore up an earlier French submarine contract, are being repaired. Allies in the Indo-Pacific have joined Western sanctions against Russia and attended NATO's summit in Madrid in June 2022. European countries have sent warships to operate in the Pacific.

Some prominent Americans would like to expand the G7 group of industrialised democracies into a "G12" by adding the likes of South Korea, Australia and New Zealand, as well as institutions such as NATO and the EU. There is also talk of more co-operation on joint military procurement, given the demand for weapons to help Ukraine, restock Western arsenals and build up allied forces.

> **Some prominent Americans would like to expand the G7 into a G12**

Emerging groups include "I2U2"—linking Israel, India, the United Arab Emirates and the United States—to develop technology for food security and clean energy. This is, in turn, an offshoot of the American-sponsored Abraham accords between Israel and several Arab states spurred by the fear of Iran.

There are weaknesses, however. One is Taiwan, perhaps the place most at risk of invasion and yet least integrated into America's network of official alliances. Another gap is India. It has moved closer to America but still clings to a long-established tradition of non-alignment and strong military ties with Russia. Expect America's long courtship to continue. One hope is that witnessing the underperformance of Russian weapons in Ukraine will speed up India's transition to Western arms supplies. The most serious weakness is the lack of an overall trade strategy to bind America's friends closer together and encourage "friendshoring", the shifting of sensitive supply chains from China to friendlier countries.

Farther afield, Asian countries are holding the door open for America to return to a trade deal known as the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP). Don't hold your breath: the legacy of Donald Trump's trade wars, and Mr Biden's own protectionism, is still potent.

China and Russia are building up their own clubs. Membership of the Shanghai Co-operation Organisation, a Eurasian group, is growing. So is that of the BRICS, a group of large emerging economies. At a time of energy shortages, Arab oil producers in the Gulf have made common cause with Russia in the OPEC+ group to keep oil prices high, angering America.

Mr Biden has softened his division of the world into democracies and autocracies, in part to rebuild ties with the global South. There is much work to do, to judge by voting at the UN in October 2022. In New York the UN General Assembly voted by 143 votes to 5 to denounce Russia's annexation of Ukrainian land. A few days earlier in Geneva, however, members of the UN Human Rights Council had voted to block debate on a UN report on China's human-rights abuses against Uyghurs in Xinjiang.

America says it does not seek a world of rival power blocs. But many countries fear that the rivalry between big powers is leading to a new cold war. ■

This article appeared in the International section of the print edition of The World Ahead 2023 under the headline "Of friends and foes"

How The Economist's predictions for 2022 stacked up

Two big misses, and some hits

Nov 18th 2022

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By Tom Standage: Editor, The World Ahead 2023

One of war's many consequences has been to stoke inflation by pushing up the cost of fuel and food. That put paid to the widely held view that the surge in inflation in late 2021 would prove to be transitory—a view we could, in retrospect, have been more sceptical about. The war means inflation will now be higher for much longer.

Those were our two big misses. On the other side of the ledger, many of our other predictions were nearer the mark. As expected, China's zero-covid policy hampered growth, but Xi Jinping refused to change course. We correctly warned of the danger of a more infectious coronavirus variant, of the risk that this would pose to China in particular, and of the impact that draconian lockdowns there could have on global supply chains and consumer prices, and thus inflation.

> **As expected, China's zero-covid policy hampered growth**

We correctly predicted Emmanuel Macron's win in France and Jair Bolsonaro's loss in Brazil, that "Bongbong" Marcos would prevail in the Philippines, that the MPLA would hold on in Angola and that Democrats would hold the Senate but lose control of the House in America's midterm elections. We also featured Giorgia Meloni as a person to watch, noting that she had "a fighting chance of becoming Italy's first female prime minister", as indeed she did after elections in September.

Finally, we correctly noted that it would be worth keeping a close eye on SpaceX and its Starlink satellite constellation, which can provide high-speed internet access in isolated locations. Starlink has become vital to the Ukrainian war effort, raising concerns over the power this grants SpaceX's mercurial boss, Elon Musk, who can turn it off at any time.

Farther away in space, NASA smashed its DART probe into a small asteroid as expected, successfully changing its orbit with a direct hit. Alas, events back on Earth lack the neat predictability of celestial mechanics. ■

This article appeared in the International section of the print edition of The World Ahead 2023 under the headline "Reality check"

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Global hunger is now more a problem of price than availability

As always, women and children are the worst affected

Nov 18th 2022

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By Avantika Chilkoti: International correspondent, The Economist

Until now, the problem has largely been spiralling prices rather than availability. Russia and Ukraine were among the top five global exporters of barley, maize and sunflower products in the world. So when war broke out, supplies of many staple foods were seriously affected. The countries worst affected were among the poorest in the world. Sudan, Tanzania, and Uganda, for example, relied on Russia and Ukraine for over 40% of their wheat imports. But the effects were felt everywhere. Global food prices soared as other countries, including Argentina and India, responded with trade restrictions. Emergency-relief efforts everywhere were hit because the WFP usually buys half of the wheat it distributes from Ukraine.

> **As many as 50m people will begin 2023 on the brink of famine**

As the war rolls on, shipments from Ukraine have restarted and then faced an on-and-off blockade. Weak economic growth is weighing on demand. And, in some areas, inflation is starting to ease. The food-price index of the UN's Food and Agriculture Organisation (FAO), which measures the monthly change in international prices for food commodities, has fallen gradually from its all-time high in March 2022.

António Guterres, the UN's secretary-general, has warned that the world may shift from struggling with food-price inflation to simply not having enough food. Production of nitrogen fertiliser has collapsed as Russian exports of natural gas, a crucial ingredient, are squeezed. Farmers are using less fertiliser, switching crops and cutting production.

The consequences of food shortages are grim. Going hungry raises the risk of chronic conditions, such as heart disease and diabetes. Malnutrition does not just mean people eat too little and get thin. Particularly in cities, those who cannot afford nutritious meals buy cheap, packaged foods instead, and the poor are increasingly in danger of obesity.

Women are worst affected. They are more likely to be poor and to forgo food in order to feed their families. The FAO says that in 2021, 31.9% of women in the world were moderately or severely "food insecure" compared with 27.6% of men, and that gap is widening. A survey by Care, an NGO, shows how gender inequality and food insecurity collide. In Somalia, men said they were eating smaller meals, but women said they were skipping meals altogether. The report quotes a woman in Nigeria. "We have reduced the amount of food for everyone," she says, "except my husband who is the man of the house."

In children, hunger stunts brain development and reduces immunity. Just a few months of poor nutrition in childhood can reduce a person's hopes of living a healthy, productive life. In a nursery for underprivileged children in São Paulo, the headteacher, Claudia Russo, sees more and more infants arriving for breakfast in the morning having eaten nothing since the lunch the nursery provided the day before. Those children are smaller, sicker and slower as a result. For them, the effects of the current food crisis will linger long after supply chains have been rebuilt and food prices have fallen. ■

This article appeared in the International section of the print edition of The World Ahead 2023 under the headline "No food on the table"

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Sal Khan says reinventing education will close the learning gap

Personalisation and mastery are the keys

Nov 18th 2022

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By Sal Khan, founder of Khan Academy

This is not just an intellectual debate about declining test scores. It is a leading indicator of hundreds of millions of young people not being able to lead purposeful lives that allow them to participate in the economy and society as a whole. What is more, a less educated population is one that is more susceptible to instability and demagoguery, which harms everyone.

Although this moment may be deeply unsettling, we can look to history for guidance on how to make things better. We have a toolkit that allows us to give broad access to best practices from the past: personalisation and mastery learning.

> **The tools now exist to alleviate the tension between personalisation, mastery and cost**

Few people received a proper education in the 4th century BC, but if you were, say, the son of the King of Macedonia, yours was better than most. Alexander the Great had Aristotle as his personal tutor. I imagine that Aristotle did what any great tutor would do: focus on discussion and practice, and tweak interaction based on what the student needs most. Young Alexander is still having some trouble understanding Pythagoras's theorem? No problem. We will just spend a little more time on it. Alexander already has a knack for military tactics? No need to bore him with things he already knows; we can move on to more stimulating things. Throughout most of human history, those lucky enough to get an education had some variation of this personalised, mastery-based experience.

The tools now exist to alleviate the tension between personalisation, mastery and cost. And pandemic-induced learning loss means that it has never been more crucial that people use these tools. For example, Khan Academy was started as a non-profit organisation to meet this exact need. Whether independently or as part of a classroom, any student with a smartphone or low-cost laptop can access free, personalised instruction and practice exercises. Teachers and districts can see in real time where students need help so they know where to provide extra support. Students with unfinished learning have the opportunity, incentive and support to catch up.

The benefits here are not just theoretical. For example, in a recent research collaboration, we found that students across 99 school districts doing an hour a week of personalised, mastery maths practice during the 2020-21 school year improved, on average, by 19% more than projected on standardised tests based on pre-pandemic norms. Peers during the pandemic who spent less than 15 minutes a week fell short of pre-pandemic growth norms by 27% on average. Shifting just 10-20% of student time towards personalisation and mastery clearly results in accelerated learning, even compared with a normal year.

On top of software that can serve students, free tutoring is available. We started another NGO, Schoolhouse.world, that provides unlimited free tutoring for anyone who needs it (thank you, Zoom, for providing free licences to make it viable). This connects students needing support with vetted volunteers, who are consistently rated higher than paid alternatives.

As daunting as the learning-loss problem can seem, the only thing holding us back is cynicism and lack of awareness. The tools are there, and we just need to engage students, teachers and parents. ■

This article appeared in the International section of the print edition of The World Ahead 2023 under the headline "The lessons of learning loss"

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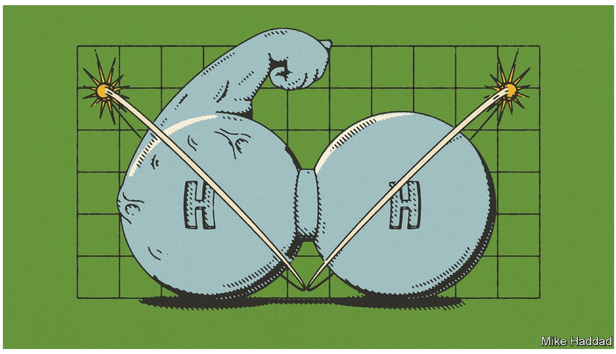
The World Ahead | The World Ahead 2023

Hydrogen hype is rising again —will this time be different?

Investors have been excited, and disappointed, before



Nov 14th 2022

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By Vijay Vaitheeswaran: Global energy and climate innovation editor, The Economist, New York

GUZZLERS OF FIZZY drinks in Brisbane could be helping to tackle climate change in 2023. By the end of the year, the vehicle delivering those sugary beverages may no longer spout climate-warming gases. PepsiCo Australia, the local arm of the world's biggest purveyor of snacks and drinks, will test a new sort of lorry powered not by a dirty diesel engine but by fuel cells, devices that convert hydrogen to electricity while emitting only water vapour.

Enthusiasts are bubbling with excitement as a swirl of geopolitical and energy trends has put the spotlight once again on hydrogen, a clean fuel that can be made from a variety of primary energy sources. Hydrogen has seen previous false dawns. Two decades ago European and Japanese carmakers wasted billions chasing the dream of fuel-cell passenger cars. But governments and investors are betting that this time will be different.

One reason is growing interest in using hydrogen to replace fossil fuels in heavy industries, such as steel-making. That would help reduce carbon emissions—and could also boost energy security by reducing dependency on natural gas, the price of which has soared in the wake of Russia's invasion of Ukraine. Environmentalists love that "green" hydrogen can be made with renewable energy in electrolysers —devices that use electricity to split water into oxygen and hydrogen. This has sparked a global rush to manufacture them, with around 600 proposed projects, about half of them in Europe. But Big Oil is keen on hydrogen too, because "blue" hydrogen can be made in a cleanish way from natural gas, if methane leaks are minimised and resulting carbon emissions are captured and sequestered.

Just how durable this latest wave of enthusiasm for hydrogen will prove to be should become clear in 2023. A global recession could slash funding for novel technologies as companies cut capital expenditure and investors grow risk-averse. Supply-chain disruptions could also spoil things. They have already forced ITM Power, a pioneering British firm, to roll back plans to scale up its production of electrolysers. And as countries respond to the energy shock they may prioritise security of supply, from dirty sources such as coal, over new technologies that can help tackle climate change.

> **"The biggest force pushing hydrogen forward will be government money in America**

One telltale sign will be how many of those electrolyser projects actually go ahead. Andy Marsh, chief executive of America's Plug Power, a pace-setter in the industry, predicts that global electrolyser sales will shoot up from almost zero a few years ago to $15bn in 2023. Bernd Heid of McKinsey, a consultancy, believes the first gigawatt-scale green-hydrogen project will get the go-ahead next year. BloombergNEF (BNEF), a research firm, reckons electrolyser shipments will rise from 1GW now to 2.4-3.8GW in 2023, mostly in Asia.

But there is much enthusiasm about green hydrogen in Europe too. "Europe has been pregnant with a lot of projects but will finally give birth in 2023," says Daryl Wilson of the Hydrogen Council, an industry body. He expects the regulatory uncertainty that has held back many of those projects to be cleared up. Mr Heid predicts that Europe will conduct the first global auction for hydrogen supply and demand, and that the European Commission will set up a European Hydrogen Bank in 2023.

Perhaps, but as that BNEF forecast suggests, Asia will be worth watching, too. China is currently the biggest manufacturer of electrolysers, and the firm predicts that scaling up production will help it cut costs by 30% by 2025. India has unveiled policies to promote its own green-hydrogen industry. That is prompting Western firms to try to manufacture electrolysers and make hydrogen there. India's Greenko, a renewables firm, thinks its joint venture with Belgium's John Cockerill, an electrolyser giant, will produce the world's lowest-cost ammonia (a fuel derived from hydrogen) by the end of 2023. homiHydrogen, an Indian startup, plans to make electrolysers that are "98% Indian-made" by that time.

But the biggest force pushing hydrogen forward in 2023 will be a tidal wave of government money in America. The Inflation Reduction Act, which is really a climate-change law, offers a staggering $3/kg in subsidy for green-hydrogen projects. Unlike Europe's thicket of rules, America's hydrogen policy is clear and extremely compelling, experts say. Many green-hydrogen projects, currently unable to compete against dirtier forms of hydrogen (which typically cost around $2/kg), will suddenly enjoy costs below $1/kg. In sun-kissed or wind-swept areas, some may even see negative costs.

Mr Heid predicts that America will leapfrog Europe in attracting hydrogen projects, with total investments possibly reaching $100bn by 2030. The global hydrogen race is hotting up, and 2023 looks to be a make-or-break year. Watch this gas. ■

Vijay Vaitheeswaran: Global energy and climate innovation editor, The Economist, New York

This article appeared in the Business section of the print edition of The World Ahead 2023 under the headline "Hydrogen rising"

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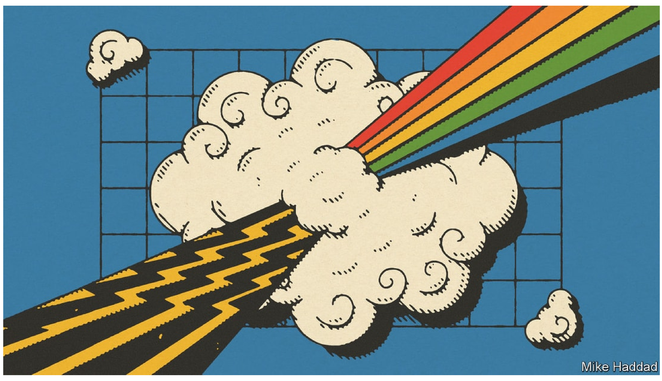
Big tech will benefit most from the meltdown

Size still matters in a downturn



Nov 18th 2022

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By Guy Scriven: US technology editor, The Economist, San Francisco

THE YEAR 2021 was a roaring one for technology firms. National lockdowns forced billions of people to move much of their work and play online. Everything from cloud computing to semiconductors to laptops was in high demand. Businesses that aided digital life, such as Zoom, a video-conferencing firm, and Peloton, a seller of internet-connected exercise bikes, became household names. The Nasdaq Composite, a tech-heavy index, climbed by 21% during the year. The excitement was matched in the private markets. Venture capitalists invested a whopping $621bn into startups, more than twice as much as they had forked out the previous year.

In 2022 the music stopped. Soaring inflation meant the value of the future earnings of speculative firms collapsed. It also forced consumers to tighten their purse strings. The war in Ukraine and souring geopolitical relations between China and the West added to the uncertainty. The value of high-growth firms that remained unprofitable plummeted. Tech companies scrambled to adapt to the new reality. Many shed workers or shut down experimental projects to cut costs. Who will come out on top in 2023?

Consider three characteristics: a firm's geographic region, its sector and its size.Few big countries or regions have escaped the first stage of the tech meltdown. As investors reassessed future cashflows, the value of tech firms tumbled around the world. How painful the downturn will be depends on future sales. Those most reliant on inflation-hit Western consumers are most likely to suffer. That means American and European companies, which tend to sell to their home markets.

> **Sectors will matter more than regions**

Other big firms are also exposed. Of the top ten non-Western tech firms by market value, eight derive more than 40% of their revenue from America or Europe. The two that do not are both Chinese (Meituan, a delivery super-app, and Tencent, a social-media giant). Though Chinese firms are, in theory, well placed to benefit from the tech crunch, they have problems of their own at home. China's regulators are reining in tech giants for fear they have become too powerful.

Sectors will matter more than regions. Consumer-facing tech firms were the first to see a decline in sales in 2022. Some of that is likely to continue. PC sales are forecast to fall in 2023 (as they did in 2022). Netflix, a video-streaming firm and another pandemic darling, reported its first decline in subscribers in a decade in 2022. Analysts expect growth to return in 2023, though at a far lower rate than in previous years.

Tech firms that make their money by selling ads, such as Google and Meta, struggled too, as marketing budgets were squeezed. But even if ad spending rebounds, Apple's changes to its privacy rules, which make it hard to attribute online purchases to specific ads, will continue to weigh on the sector.

Makers of business software, such as Adobe, Oracle and Salesforce, will probably fare better. Enterprise customers tend to sign up to long-term contracts, which are less sensitive to changing consumer demands. The growth of the cloud-computing arms of tech giants, including Amazon, Google and Microsoft, shows little sign of slowing as software, services and data move online. That can create new vulnerabilities and thus more business for cyber-security firms, such as CrowdStrike, whose fortunes will also be lifted by fears of Russian and Chinese cyber-attacks.

Size will be another decisive factor. Larger firms tend to be more resilient in a downturn, partly because they hold plenty of cash. The combined cash piles of the big five (Alphabet, Amazon, Apple, Meta and Microsoft) has grown to more than $500bn, or 27% of the reserves of all non-financial firms in the S&P 500. Cash helps in two ways: it means firms can hire and retain the best talent, and it enables cash-rich firms to snap up small firms at bargain prices.

Mid-sized tech firms are at it, too (and their spending sprees are less likely to be scrutinised by regulators). Expect the tie-ups to continue. After the dotcom bust in 2001 and the global financial crisis of 2007-09, the number of tech acquisitions quickly returned to its pre-meltdown level, but the average price of the deals fell. Tech's big shake-up, in other words, may help the sector's giants grow even bigger in 2023. ■

Guy Scriven: US technology editor, The Economist, San Francisco

This article appeared in the Business section of the print edition of The World Ahead 2023 under the headline "From the ashes"

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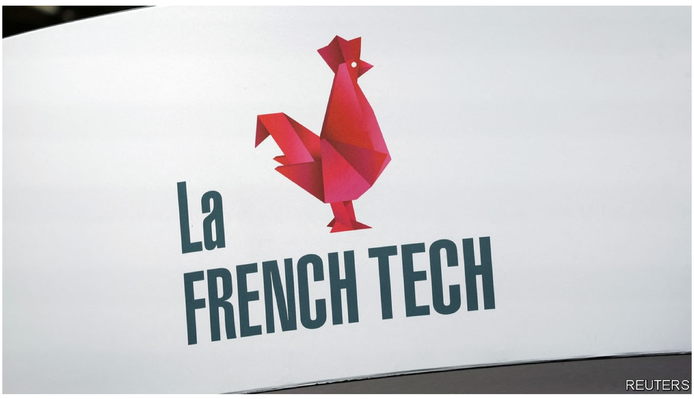
The downturn is unlikely to decimate Europe's tech industry again

The whole ecosystem has changed



Nov 18th 2022

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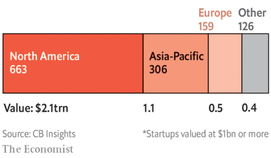
By Ludwig Siegele: European business editor, The Economist, Berlin and San Francisco

ALARM BELLS started ringing at a recent financing round for Klarna, a noted European startup and pioneer of "buy now, pay later", a modern-day version of instalment buying. In June 2021 investors valued the company at $46bn, which made it Europe's largest unicorn (a privately held startup worth more than $1bn). But when Klarna raised another $800m in July 2022, that valuation had shrunk to $6.7bn, a contraction of more than 80%.

The sharp drop reminded some of the period after the dotcom bubble burst at the start of the century, and of the financial crisis of 2007-09, which also decimated the European tech scene. So far, however, Klarna looks to be the exception, rather than the rule. Investment in European startups is holding up and reached nearly $59bn during the first half of 2022, according to Dealroom, a data provider—only about $1bn less than in the same period a year earlier. But 2023 will show whether Europe's startup ecosystem has genuinely become more robust.

Flying horses
Number of unicorns* by region, October 7th 2022



Source: CB Insights
*Startups valued at $1bn or more
The Economist

2021 was a bumper year for European startups, even by frenetic global standards. For the first time, venture-capital (VC) investments on the old continent exceeded €100bn ($118bn) in a single year, according to PitchBook, another data provider. Valuations soared accordingly, creating many new unicorns. In early October 2022 there were 159, 13% of the world's total (see chart).

Most of these companies are not household names, but they are growing powers in their respective industries. Celonis (worth $13bn) helps firms identify and improve business processes; Personio ($8.5bn) manages human resources for smaller companies; and Northvolt ($12bn) is a fast-growing maker of lithium-ion batteries for electric vehicles.

The quality of Europe's startup ecosystem and its context has also changed. For one thing, it benefited from the rapid growth of cloud computing, particularly during the coronavirus pandemic. Until it became possible to offer all sorts of computing services over the internet, big software firms tended to cluster in a few hubs, particularly in Silicon Valley. Now, with computing power on tap anywhere, location matters less. And the cloud-computing market is now so big that even specialist firms that cater to one sector of European customers can be very successful.

> **Other regional ecosystems are becoming startup islands of their own**

Even more important, European entrepreneurs have become more experienced. Mosaic Ventures, a VC firm based in London, says two out of three founders have more than one startup under their belts. Capital is being accumulated and fed back into the industry, too. European VC firms raised a record $20bn in the first half of 2022, according to Dealroom.

Much of that came from investors who made money as founders. In short, the ecosystem has started to feed on itself, creating what insiders call a "flywheel", where success breeds success.

None of this means that Europe's startup scene is immune from the effects of a prolonged tech downturn. But it is more protected from what is happening elsewhere in the world than it was in the past. And in this it is not alone: other regional ecosystems, such as those in India and South-East Asia, are increasingly becoming startup islands of their own. In a way they all have declared independence from the mother of all ecosystems, Silicon Valley. ■

Ludwig Siegele: European business editor, The Economist, Berlin and San Francisco

This article appeared in the Business section of the print edition of The World Ahead 2023 under the headline "Brussels, we have lift-off"

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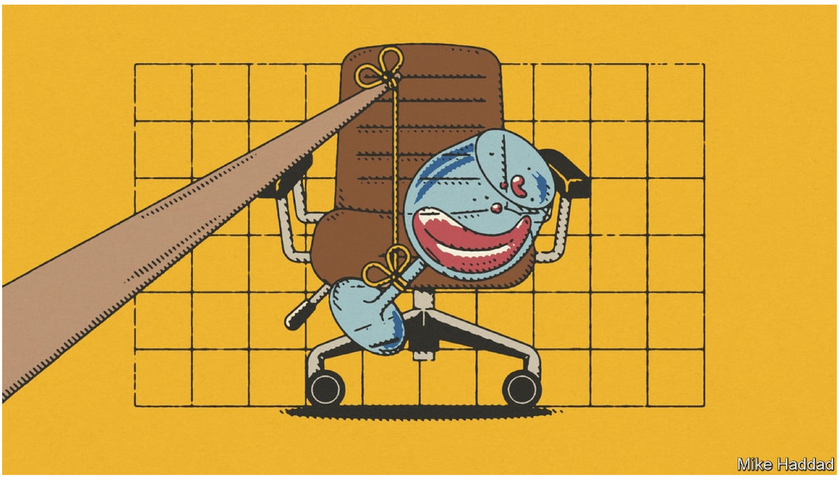
Bosses are growing more desperate to get workers back to the office

Wine tasting? Or in-house nail bar, anyone?



Nov 18th 2022

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By Vinjeru Mkandawire: Property correspondent, The Economist

AFTER A LONG stretch of lockdowns, many of life's rhythms are returning. Weddings are back on, diners are flocking to restaurants and shopping malls are jam-packed. The one exception is the office. In August, a typical office attracted no more than a third of employees on any given day, with attendance averaging just over a quarter.

To tempt workers back and repopulate corporate digs, companies are offering generous—and increasingly desperate—freebies. Food is one example. Tech giants have long provided gourmet meals made by in-house chefs. Now, more firms are dangling free lunches, barbecues and a roster of food trucks to encourage office attendance. A survey by Fooda, which offers food programmes for workplaces, found that 80% of workers are more eager to return to the office when free lunch is provided.

Booze is another crowd-pleaser. Microsoft treated returning employees to beer and wine tastings, while tenants at Manhattan's Starrett-Lehigh building have their own 600-sq-ft (55-sq-metre) speakeasy. Elsewhere, perks range from on-site child care to dry cleaning and valet parking. Google hired Lizzo, a pop star, to perform for staff; GFP Real Estate, a Manhattan landlord, organised daily raffles for tickets to American football games. Bloomberg, a business-data provider, has offered staff a daily commuting allowance of $75.

> **Pet-friendly workplaces are on the rise**

Many are jazzing up their offices. Firms are splashing out on juice bars, meditation rooms and on-site gyms, all with the goal of creating a home away from home. Pet-friendly workplaces are also on the rise. At 22 Bishopsgate in London, home to companies such as Cooley, a law firm, pets have their own building passes. A wide range of other amenities is also on offer. Workers at Credit Suisse, a bank, have access to a Michelin-starred restaurant in their New York building. The office of L'Oréal, a cosmetics firm, in Hudson Yards features a nail salon.

Some firms are even ditching open-plan office layouts for more exciting set-ups. Salesforce has opened a ranch among the redwoods of Scotts Valley, California, where it will host training sessions for employees, as well as nature walks, yoga and cooking classes. Citi has opened a hub for junior bankers in the Spanish seaside city of Málaga.

The most ardent supporters of the office prefer tough love. Firms such as Goldman Sachs—whose chief executive, David Solomon, called remote work an "aberration"—are reining in the perks. In September, the bank yanked a crucial office perk from its front entrance: free coffee. It also lifted all covid-19 protocols and ordered its staff to return to five-day weeks. If the carrots do not work, other exasperated employers may also switch to using sticks. ■

Vinjeru Mkandawire: Property correspondent, The Economist

This article appeared in the Business section of the print edition of The World Ahead 2023 under the headline "A free lunch"

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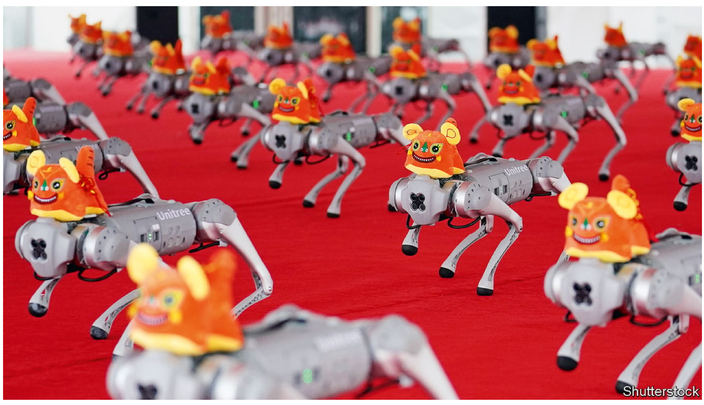
The tech war between America and China is just getting started

The industry is a vital battleground in their geopolitical rivalry



Nov 18th 2022

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By Don Weinland: China business and finance editor, The Economist, Shanghai

THE TECH war between China and America is only just getting started. On October 7th the American government launched a serious attack with its latest round of measures. It has cut its rival off from many of the crucial components needed to power developments in artificial intelligence (AI). American companies can no longer export the most cutting-edge chips to China, or the software and equipment needed to design and make them.

Joe Biden's administration plans to increase restrictions on American investment in Chinese tech firms. During 2023 it may also stop companies such as TikTok, a popular short-video platform controlled by a Chinese group, from collecting personal data from American users.

> **America's new measures will hasten the gradual decoupling of the world's two largest economies**

Politicians in Washington have been devising an ever-longer list of punishments for Chinese companies, a process that began during Donald Trump's presidency. Mr Trump practically destroyed ZTE, a Chinese telecoms-equipment maker, by temporarily banning it from buying American chips. Huawei, its much larger peer, has been fighting since 2019 to keep parts of its business operating without American components.

Instead of resetting or reducing the restrictions on China's tech sector, Mr Biden has only added to them. But how much further will restrictions on Chinese tech investments go? A list of dozens of companies, most of which are government-affiliated, is already in place. The rationale for such restrictions is to stop American dollars from flowing into high-tech firms whose products could be used by the Chinese armed forces (so-called "dual use" technologies). Analysts believe this list will be expanded to include a much wider range of private companies, such as those working on facial recognition and other forms of AI.

America's new measures will hasten the gradual decoupling of the world's two largest economies. As well as imposing more restrictions, the United States will start taking enforcement more seriously, because its efforts to thwart China's technological ambitions have not always had the desired effect. An investigation by the *Wall Street Journal*, for example, found that many of the high-tech products that American companies are supposedly banned from selling to Chinese firms are still making their way across the Pacific. The need to be tougher on China is one of the few areas of bipartisan agreement in Washington. If tensions continue to rise over Taiwan, restrictions on tech will be tightened ever further.

For its part, China will continue to push its tech industry to focus less on consumer-internet services, such as shopping or food delivery, and more on home-grown innovation in "deep technology", such as semiconductors and AI, in order to move China towards its goal of technological self-sufficiency. On September 6th Xi Jinping, China's president, said at a political meeting that the country must "mobilise nationwide resources to achieve key tech breakthroughs". Analysts at Jefferies, a broker, anticipate that many of China's top AI and software companies will benefit from new state subsidies, and other support to promote research and development, in the coming months.

Will it work? China's technology sector is already undergoing what Mr Xi has referred to as the early days of a "new industrial revolution" based around AI and smart manufacturing. But his heavy-handed intervention in his country's tech industry risks stifling innovation and entrepreneurship, and some analysts believe the state's allocation of resources to boost home-grown innovation has been inefficient. As with other policies that are closely identified with Mr Xi, however, there seems little prospect of China changing course in 2023. ■

Don Weinland: China business and finance editor, The Economist, Shanghai

This article appeared in the Business section of the print edition of The World Ahead 2023 under the headline "Tech wars, continued"

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Companies are expected to take a stand on more social issues

Investors, workers and customers are all becoming more activist

Nov 18th 2022 Share

By Ore Ogunbiyi: Health-care and consumer correspondent, The Economist

IN JUNE 2022, when America's Supreme Court overturned *Roe v Wade*, the ruling that in 1973 declared abortion a constitutional right, hundreds of companies in America quickly came out in support of their female employees. This was not the first time companies had been expected to respond directly to a political event. It was the latest example of a broader shift in the way the private sector engages with sociopolitical issues—and in what it takes to be considered a good company by consumers, employees and shareholders.

Large corporations are finding it difficult to remain neutral on political and social issues. They are feeling investor pressure from above, employee pressure from within and consumer pressure from all around to be more public in the way they express and defend their values. Alongside abortion, in 2023 companies will be judged on their approach to climate change and the energy transition, gay and transgender rights, racial diversity and ethical labour practices. Taking a political stand is not just about juicing sales or generating press coverage. It can also be a way to build and maintain a relationship with consumers based on trust and transparency, demonstrate a commitment to employee welfare and bake purpose into corporate strategy.

Activist consumers expect companies not just to speak out, but to be consistent as they do so. Such consumers are vocal about their disdain, and quick to express it on social media. Yet, contrary to popular belief, being more political does not necessarily require companies to be progressive. Chick-Fil-A, an American fast-food chain, has maintained a strong brand even as it has faced boycotts for supporting organisations whose "traditional" values some see as homophobic. Activist consumers, on either side, reward courageous consistency.

> **Being political does not necessarily mean being progressive**

Employees are also becoming more activist, and paying closer attention to the values espoused by employers. Covid-19 thrust conversations about employee welfare to centre stage; many firms responded to the Black Lives Matter movement by re-examining their approach to racial diversity. Internal pressure can be very influential in shaping a company's position. At Disney, an employee walkout in March 2022 pushed the company to issue a statement opposing Florida's "don't say gay" law, after the boss, Bob Chapek, had been slow to speak out against it. And over 100 American-based companies responded to the overturning of *Roe v Wade* by expanding reproductive health-care options for their employees. Firms now realise that responding to the needs of employees helps recruitment and retention.

Also involved in this shift are shareholders, who are aware that markets respond when companies take stances. A study by the Yale School of Management found, for example, that the shares of companies that pulled out of Russia soon after it invaded Ukraine outperformed those of companies that dawdled or chose to stay. For firms that failed to act swiftly, the risk of pushback from consumers in other markets, coupled with pressure from investors worried about falling share prices, was a potent combination.

But keeping all these constituents happy can be hard. Firms that take a stand against repression in China's Xinjiang region, for example, may win praise in the West but face retribution from Chinese consumers and officials. American firms based in Republican-leaning states were less likely to oppose the overturning of *Roe v Wade*. Moreover, consumers and employees can spot corporate window-dressing. A report from Brunswick, a PR company, says firms must back up their words with "substantive and tangible actions" to avoid coming across as bandwagon-jumpers. At the same time, a backlash has begun among bosses, investors and politicians who think "woke capitalism" has gone too far.

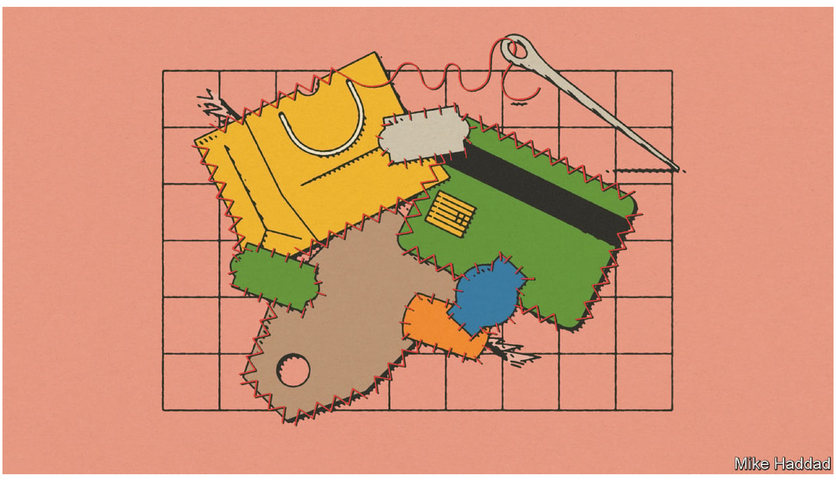
Corporate activism is not new. Some firms took positions against the Vietnam war in the 1960s and apartheid in South Africa in the 1980s. But as trust in politicians has declined, and companies have come to be recognised as powerful agents of social change, bosses are increasingly expected to speak out and take action. Some are happier than others to engage in such political action. But in 2023, they no longer have much choice. ■

Ore Ogunbiyi: Health-care and consumer correspondent, The Economist

This article appeared in the Business section of the print edition of The World Ahead 2023 under the headline "Time to take a stand"

Repairing clothes is becoming more fashionable

And it can help the industry address sustainability concerns



Nov 18th 2022

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By Imogen White: Co-ordinating editor, Culture, The Economist

PEOPLE BUY more clothes than they used to, and wear them less. Every second, the equivalent of a garbage truck full of textiles is dumped into landfill, or burned. Little wonder that fashionistas, particularly young ones, are becoming increasingly worried about the industry's impact on the environment.

In 2023 the backlash against fast fashion will continue to grow as part of a wider push towards "circular" business models, in which fewer new items are manufactured and more revenue is generated through recycling, resale and rental schemes. Many brands will ramp up their repair services to encourage customers to mend damaged pieces of clothing instead of throwing them away.

LVMH, the world's biggest luxury group, has promised shareholders that it will announce new "sophisticated" repair services by 2023. Hugo Boss's new resale platform will soon be extended with options to fix items, too. Tommy Hilfiger also plans to scale up its repair offerings. Many designers, including Arc'teryx, Barbour, Ganni, Patagonia and Uniqlo, already have programmes in place. In 2023 many more will follow suit.

The pandemic fuelled this trend. "We've all got pieces in the back of our wardrobe that just stay for years that need mending…the lockdown gave people time to really address that," says Laura Johnson of Make Nu, a business that does what she and her co-founder, Daisy Marlow, describe as "elevated" repairs. As in *kintsugi*, a traditional Japanese art in which cracks in pottery are filled with powdered gold, Make Nu turns damage into a feature: flowers are embroidered into woollen jumpers devoured by moths, skinny-leg jeans refashioned into trendier flares, pearls added to give glitz to worn-out shirt-cuffs.

Venture capitalists are throwing money into repairs, too. In 2022 Sojo, a London-based app which arranges drivers to ferry garments between tailor and customer, raised €2.2m ($2.2m) in pre-seed funding. Save Your Wardrobe, another startup offering after-care services (and nifty "digital wardrobe" technology that helps users keep track of what they own and what needs to be done to maintain it) secured $3m from early investors. It has teamed up with Zalando, Europe's biggest online clothes retailer, which recently announced plans to extend the life of at least 50m products through resale and reuse by 2023. Another platform, The Restory, which works with Selfridges and Harvey Nichols, big department stores in London, and with Farfetch, an online boutique, has raised £4.2m ($4.8m).

Greater emphasis on repair and reuse does not mean that fast fashion will release its stranglehold on the market soon: one study reckons it will be worth over $200bn by 2030, up from nearly $69bn in 2020. But in 2023 you may find yourself delving into your wardrobe to find something that can be given new life. John Ruskin, a 19th-century British art critic, wrote that "the golden stain of time" is what gives buildings grandeur. A garment with history, too, can be far more precious than a new one—as well as being much kinder to the planet. ■

Imogen White: Co-ordinating editor, Culture, The Economist

This article appeared in the Business section of the print edition of The World Ahead 2023 under the headline "The golden stain of time"

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Take that, covid! "Revenge" tourism takes off

As restrictions ease, travellers show the coronavirus who's boss

Nov 14th 2022

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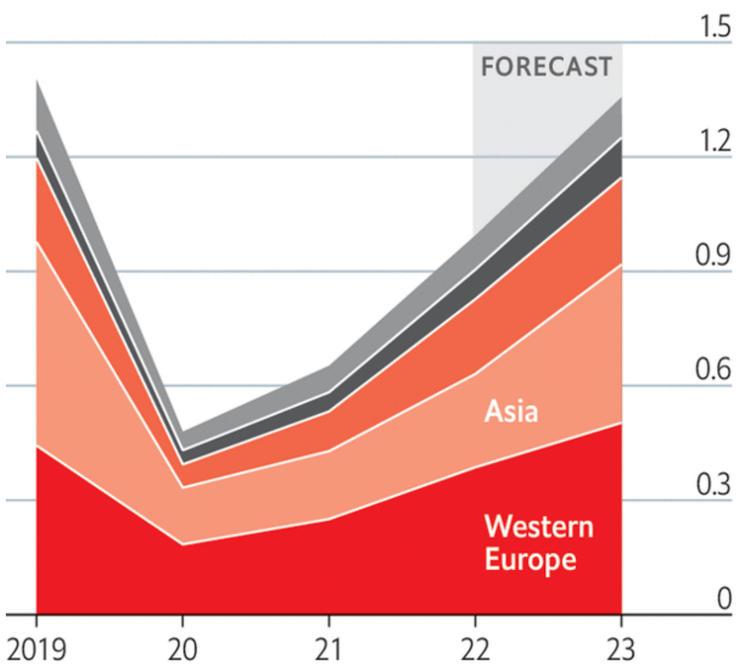
Back with a vengeance
Spending by international tourists, $trn



Sources: World Tourism Organisation; EIU
The Economist

ECONOMISTS CALL it "pent-up demand". But people who were stuck at home during the pandemic have another name for the rebound in travel that will continue in 2023: "revenge" tourism, as travellers show the virus who's boss. International tourism arrivals, up 60% in 2022, will rise by a further 30% in 2023, to 1.6bn, still short of 2019's figure of 1.8bn. But tourist receipts in 2023 will almost equal the 2019 total of $1.4trn, if only because inflation has pushed up prices. War in Ukraine has hampered the recovery, as has China's zero-covid policy: one in ten tourists was Chinese before the pandemic. Their numbers will double in 2023, to 59m, far below the 155m recorded in 2019. As beaches and sun-loungers fill up again, this is a case where revenge is best served hot. ■

This article appeared in the Business section of the print edition of The World Ahead 2023 under the headline ""Revenge" tourism takes off"

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Roz Brewer says upheaval can inspire a rethinking of corporate culture

It's time to "rephrase" how companies work

Nov 18th 2022

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By Roz Brewer, CEO of Walgreens Boots Alliance

AT THE END of 2021, in the midst of the pandemic, I participated in a forum with about a dozen other CEOs, and we briefly discussed the "Great Resignation"—the phenomenon of people leaving their jobs in unprecedented numbers. I jumped in and called it the "Great Rephrasing of Corporate America".

I explained that for me, as a leader, a company is not just about the products we make, the services we offer or the brands we build. It's about how we re-energise our teams, to give them hope and make them feel great about their contributions during challenging, changing times. It's about how we now need to "rephrase"—in other words, approach our work in a different way that has clearer meaning. Just as sentences must sometimes be rephrased for greater effect, so must our companies.

As an optimist, I believe every truly exceptional organisation understands that culture needs to be at the centre of its success. In 2023 and beyond, connections to companies' culture and values will be key drivers of motivation for workers as we rephrase the corporate environment.

Covid profoundly impacted people socially and emotionally. During the pandemic they were separated from their routines and pillars of comfort and belonging. They could no longer meet in physical locations with family, faith groups, extra-curricular clubs, exercise classes and the like.

As a result, our companies became even more important places of human connection, and colleagues opened up to each other and their supervisors as never before, especially because everyone was too scared, exhausted or isolated to pretend or posture. People just wanted to be real.

Now, as the pandemic subsides and we relearn how to engage with each other, the conversations are vastly different. The workplace is where many more problems, opportunities and ideas surface—both professional and personal. You're much more likely to hear about marriages, divorces, children's ups and downs, illnesses and so on.

Early in my career, I would have never thought to bring some of these discussions into the workplace. But here we are, and we are better off for it. In fact, when we don't allow space for these discussions, we see what is being called the Great Resignation.

> **"During the pandemic, companies became even more important places of human connection**

We must change! As Gavi, the Vaccine Alliance, has noted, there are several factors—global travel, urbanisation, climate change and so on—that are making pandemics more likely. Those factors will not change, so it is vitally important that we are prepared for future challenges. Managing the health of our corporate environments, and sharing our lived experiences more deeply, is now crucial.

But it's not all doom and gloom. I am optimistic that over the next 18 months we will see boosts in economic growth, jobs and spending; travel returning to normal; a greater focus on health and wellness; and a resurgence in human connection. And it is this last point that I want to emphasise as being so important in our workplaces.

Years ago, company culture was viewed as the light and fluffy stuff. But the facts and data show that a healthy company culture delivers results, and this has never been clearer to me than right now. Strong culture drives performance: 80% of firms united by a meaningful purpose have been found to outperform the general market. It drives recruitment: 65% of candidates say they will accept a job offer only if they know and agree with a company's purpose, vision and values. It drives engagement: nine out of ten people are willing to trade a percentage of their lifetime earnings for greater meaning at work. And it drives customer retention: 87% of consumers buy products based on values, or because a company spoke out on an issue they care about.

In 2023, I predict that the most effective leaders will connect to their team members not only in a traditional, intellectual, IQ-based way, but also on a more evolved, empathetic EQ level. Team members will insist their voices are heard and will expect their company's values to mirror their own.

Corporate America has been rephrased, and there is no turning back. Employees expect to bring their entire identity as people to work, and not to compartmentalise their values and keep them separate. As leaders, we will need to listen more to our employees and our wider communities. This approach is good business. Companies will do well by doing good for their own employees and for the broader world around them. The Great Rephrasing is a time to listen—and to act. ■

Roz Brewer, CEO of Walgreens Boots Alliance

This article appeared in the Business section of the print edition of The World Ahead 2023 under the headline "It's time to "rephrase" how companies work"

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Europe and America disagree over how to handle ESG

Regulation, regulation, regulation

Nov 18th 2022

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By Henry Tricks: Schumpeter columnist, The Economist

IF YOU ARE offered a seat on the board of a multinational company in 2023, think twice. It's likely to be a year when the headache about how a company reports its environmental, social and governance (ESG) credentials becomes yet more acute. The topic has become political—almost viscerally so. That threatens to complicate efforts to standardise disclosures, to prevent companies being overwhelmed by different reporting requirements depending on which side of the Atlantic they are on.

The coming year was supposed to be one of harmonisation. The Securities and Exchange Commission (SEC), America's securities regulator, together with the European Union, other regulators in Asia and international standard-setting bodies are all working towards standardising disclosure of the climate-related risks a company faces. This is aimed at giving investors a better sense of which firms are meaningfully adjusting their activities to the reality of climate change and, in the EU's case, what impact firms are having on the environment.

But the SEC's proposed rule, which would require big firms to disclose climate-related risks and greenhouse-gas emissions for fiscal year 2023 (to be filed a year later), has run into flak from Republican lawmakers, attorneys-general in some red states and business lobby groups. It has elicited more than 14,000 comment letters. The issue is likely to come under yet more scrutiny if, as expected, the Republican Party takes control of the lower house after the midterm elections. In June 2022 the Supreme Court issued a ruling that restricts the ability of the Environmental Protection Agency, a regulator, to curb power-plant emissions. Some Republican lawmakers have used this to argue that the SEC is, similarly, overstepping its regulatory authority.

> **The shifting goalposts make it harder for companies to gauge what their reporting requirements will be**

The stage may thus be set for a vigorous battle in the courts. "In the United States, the whole debate on climate-related disclosure has gone back to 'why are we doing it?' rather than 'how are we doing it?'," says Zhihan Ma of Bernstein, an equity-research firm.

The EU, at the forefront of all manner of green regulation, is further ahead. At the end of 2022 it is expected to introduce the Corporate Sustainability Reporting Directive (CSRD), which will eventually oblige almost 50,000 companies (including foreign ones operating in the bloc) to disclose sustainability-related information related to their business models, strategy and supply chains. It expects to publish new standards by mid-2023, which some companies will use to start reporting a year later. The CSRD will be underpinned by the full introduction at the start of 2023 of the EU's taxonomy, which sets six criteria—from climate-change mitigation to protection of biodiversity—by which to determine how sustainable a firm's activities are.

And yet even in Europe, ESG regulation is more controversial than it sounds. Russia's invasion of Ukraine and the risks of an energy crisis have led to a rethink about energy security and a spiralling of electricity and gas bills. To the dismay of some, and the relief of others, some production of natural gas and nuclear power will be considered "green" under the EU's taxonomy from the start of the new year—a reflection of how views have changed.

The shifting goalposts for ESG are making it all the more difficult for companies to gauge what their reporting requirements will be. They know they will be costly. But the more that disclosure requirements differ between jurisdictions such as the EU and America, the more expensive and time-consuming they will become. ■

Henry Tricks: Schumpeter columnist, The Economist

This article appeared in the Business section of the print edition of The World Ahead 2023 under the headline "Emissions divisions"

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The World Ahead | The World Ahead 2023

Can electric pickup trucks persuade Americans to ditch petrol vehicles?

Seven out of ten Americans want no truck (as it were) with electric vehicles

Ford Motor Company

Nov 18th 2022

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By Simon Wright: Industry editor, The Economist

AMERICA IS RIGHTLY regarded as a place of automotive leadership. It was the birthplace of the mass production of automobiles with the Ford Model T and pioneered everything from the parking meter to muscle cars to California's tough environmental rules, which once set the standard for the rest of the world. It is also home to Tesla, which has set the pace of the electric-vehicle (EV) revolution and, in the process, become the world's most valuable carmaker. So it is somewhat curious that America is a laggard when it comes to EV adoption.

Turning Americans on to battery power will require the carrots and sticks that have coaxed drivers into EVs elsewhere in the world. But another means of changing attitudes towards battery power is gaining traction—the electrification of the pickup, the practical, no-nonsense vehicle that embodies ruggedness for many Americans. In 2023 a fleet of new models will join Ford's F-150 Lightning and the R1T from Rivian (an EV-only startup), including an electric Chevrolet Silverado and Tesla's much-delayed Cybertruck.

The effect of Ford's electrifying its bestselling F-150 pickup (the F-150 Lightning was launched in April 2022) is already being felt. According to Canalys, a research firm, in the first half of 2022 EVs accounted for 6% of passenger vehicle sales, 62% more than in the first six months of 2021. Pickups went from zero to around 15% of EV sales. But America still has a lot of catching up to do. In Europe EVs accounted for one in five cars sold—and in China, for one in four.

Electric sceptics are a sizeable constituency. A recent survey by Deloitte, a consultancy, found that around seven in ten American drivers wanted no truck (as it were) with EVs. But minds are being changed by the F-150 Lightning. Ford seems to have got the vehicle right, a necessity for Detroit as a whole. That is because America's "big three" carmakers—Ford, General Motors and Chrysler (which is due to start selling an electric Ram pickup in 2024)—all rely on pickups for most of their profits and fear ceding ground to upstart rivals.

The performance of the Lightning is impressive. It boasts a range of 320 miles (515km). The price is competitive, though a mid-range electric model costs a third more than the equivalent petrol version. Its pulling power may not quite compete with that of a petrol model, but its ability to go from 0-60mph in four seconds is remarkable for a pickup and beats all but the most expensive supercars.

Moreover, the vehicle's battery can be used to power tools at a worksite or an electric grill at a picnic, and a spacious "frunk" can store drills and shovels, or be filled with ice to cool drinks (there is even a handy drain hole). Ford's message, in highlighting such uses, is clear: EVs can be just as practical and sturdy as petrol-powered vehicles.

But it will take more than nifty pickups for EVs to displace combustion-engine vehicles in America. A new system of EV subsidies, though apparently generous, is restricted to light vehicles in which the batteries, and the raw materials required to make them, are sourced in America, which in practice is almost none of them for now. California's recent decision to ban the sale of petrol vehicles from 2035 will hasten EV adoption, and other states are adopting similar measures. But cheaper fuel and laxer emissions rules than in Europe, coupled with America's love affair with internal combustion, mean that the road to electrification will be long and winding. ■

Simon Wright: Industry editor, The Economist

This article appeared in the Business section of the print edition of The World Ahead 2023 under the headline "Charging ahead"

Kim Povlsen says we should welcome robots, not fear them

Automation will improve productivity and help maintain standards

Nov 18th 2022

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By Kim Povlsen, president, Universal Robots

WE ENTER 2023 in an intensifying labour crisis. In many countries a shrinking workforce and a rapidly ageing population are combining to leave companies and industries struggling to match labour demand with supply.

This will only get worse. According to the UN's World Population Prospect forecasts, in Europe alone there will be 91m fewer working-age people by 2050 compared with 2015. In manufacturing industry, more than 2m jobs will sit unfilled across the United States by the end of this decade.

This is not merely an issue for future generations. Japan's population is already shrinking, and in China more people are leaving the workforce than joining it. We urgently need to be considering solutions to these labour shortages, which are already affecting productivity levels and economic performance more broadly. In many cases, technology is the only viable option—in particular, the widespread and overdue adoption of robotics and automation.

In 1923 the world was only just acquainting itself with the concept and indeed the word "robot". It was coined by Karel Capek, the Czech author of the science-fiction play "Rossum's Universal Robots". Written in 1920, it had been translated into 30 languages by 1923 and was staged in London that year for the first time.

A century later, we are still getting used to actual robots. Technical and commercial considerations affect adoption, but in many cases it is social factors, including wariness of automation, that are preventing companies from considering solutions that could boost their business.

Necessity will drive a shift as organisations and entire sectors realise that adopting robotics at scale is the only way to deliver the output they need with the workforce they have available. The result will be workforce transformation.

Fundamentally, robots perform simple, repetitive tasks, and the adoption of robots reduces the number of people required to do them. Instead of these menial tasks, automation will create a new class of jobs, which require more technological knowledge and problem-solving skills, a far better match for the Gen-Z digital natives joining the workforce. By making jobs better (and even a little cooler), automation can also help attract a new generation to manufacturing careers.

People often worry about robots taking people's jobs. But none of the countries that have adopted robots on a large scale—Germany, Japan, Singapore and South Korea—has a problem with unemployment. And all of them have a higher proportion of their workforces employed in manufacturing than America does. More robots, in short, seem to be associated with more manufacturing jobs.

In addition, robots can plug existing and emerging gaps where people simply cannot be found to do the work. Some sectors are already badly hit by a skills shortage—welding, for example, a technical and dangerous occupation with severe worker shortages. It can now be performed by experts working alongside robots.

> **None of the countries that have adopted robots on a large scale has a problem with unemployment**

As this reality hits home, companies and industries around the world will learn that they need to change the way work is done if they are to keep up. Improved and increased use of robots will do this—not only offsetting productivity gaps but allowing people to work smarter, rather than harder.

Robots will also enable people to live healthier lives, no longer putting strain on their bodies through tough, repetitive actions, or imperilling themselves in high-risk situations where machinery can be operated remotely.

This is all central to the European Commission's "Industry 5.0" drive, which aims to reshape the industrial landscape in and beyond Europe over the coming years. As organisations and industries are encouraged to become more human-centric, sustainable and resilient, greater automation can offer clear benefits in each respect.

Ultimately what is required is a mentality shift. At Universal Robots we have calculated that at least 20m jobs worldwide include tasks that are already automatable with collaborative robots, which are also known as "cobots". This offers tremendous potential for supplementing the existing workforce.

As vacancies grow over the coming months and years, the use of technology will move from being a luxury or novelty to being essential. That, in turn, will better prepare the world for its changing and ageing demographics. The robots aren't coming: they're already here. Now we need to put them to good use. ■

Kim Povlsen, president, Universal Robots

This article appeared in the Business section of the print edition of The World Ahead 2023 under the headline "Don't fear robots—welcome them"

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How does the past help us predict policy on inflation in 2023?

Taking away the punch-bowl

Nov 14th 2022

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By Ryan Avent: Trade and international economics editor, The Economist, Washington, DC

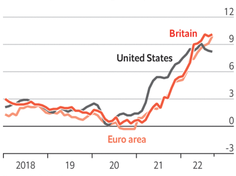
THERE IS A saying in the world of monetary policy: only hawks go to central-banker heaven. Among the men and women charged with managing their economies' money, the fortitude to rein in an economy which is growing too strongly—to take away the punch bowl just as the party gets going, as a Federal Reserve chairman once put it—is among the most admired of traits. But during the 20 years prior to the pandemic, the most pressing macroeconomic problems in many of the world's large economies were weak growth and low inflation. Central bankers were thus cruelly denied the opportunity for a virtue-signalling removal of the punch bowl.

The sharp and persistent rise in inflation which began in 2021 has, however, given today's central bankers their moment to shine. In 2023 most countries will get inflation under control, though not without serious pain. The problem grew to distressing dimensions in 2022, after Russia's invasion of Ukraine sent prices of food and energy skyward. Many economies saw inflation rise to levels unseen for decades. The rate of consumer-price growth peaked at 9% in America and reached a record 10.7% in the euro area—and far higher in a few particularly troubled emerging economies.

> **Most countries will get inflation under control, but not without serious pain**

These rising prices are the result of a confluence of inflationary forces. Generous pandemic-relief measures and accommodative monetary policy fuelled a surge in consumer spending. That spending outstripped the capacity of factories and ports to respond, often because of supply problems associated with extreme weather, new outbreaks of covid-19 and other shocks. The soaring prices of oil, gas and grain, caused by the war in Ukraine, poured fuel on the fire.

Rising, part one
Consumer prices, % change on a year earlier

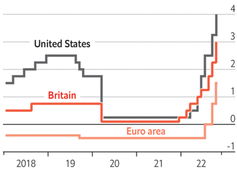


Source: Refinitiv Datastream
The Economist

As inflation rose, an intense economic debate broke out concerning how hard central banks should hit the economic brakes—by raising interest rates, for instance—in order to check price growth. Some more doveish figures counselled a light touch, arguing that because so much of observed inflation was associated with supply problems, it should in large part resolve itself. Others argued that, as long as consumers were keen to spend, an easing of price pressures in one part of the economy would leave people with more money to splash out and drive up prices in another part.

By early 2022, the latter view had begun to win over many central bankers. The Federal Reserve, which in 2021 had waited patiently for prices to ease on their own, raised its main policy rate by 0.25 percentage points in March and 0.5 points in May, and a whopping 0.75 in June, September, October and November. Yet to begin with, central bankers held out hope that inflation might be brought to heel without a growth-crushing recession. In March, the Fed chairman, Jerome Powell, said "the historical record provides some grounds for optimism" concerning the central bank's ability to engineer a "soft landing".

Rising, part two
Central-bank policy interest rates, %



Source: Refinitiv Datastream
The Economist

By August, Mr Powell's tune had changed. Higher interest rates would eventually bring down inflation, he said, but "they will also bring some pain". Other central bankers concurred. "For the first time in four decades", noted Isabel Schnabel, a member of the board of the European Central Bank, "central banks need to prove how determined they are to protect price stability." The Fed's forecasts began to show an uptick in unemployment in 2023; the Bank of England's forecast projected a drop in Britain's GDP.

In fact, noted the World Bank, over the past half-century the world has rarely seen a shift towards growth-restricting policies as synchronised as the one that took shape during 2022. One exception was in 1982, when policymakers around the world determined to end a decade-long inflation problem. They succeeded, but in the process induced a global recession. It was a time of hardship for many people, but is considered a triumph by most central bankers. In 2023, unfortunately, the profession seems likely to welcome a new generation of heroes. ■

Ryan Avent: Trade and international economics editor, The Economist, Washington, DC

This article appeared in the Finance section of the print edition of The World Ahead 2023 under the headline "Fighting the good fight"

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Hopes for a post-pandemic productivity surge will be disappointed

There doesn't seem to have been a boost in innovation, either

Nov 18th 2022 Share

By Callum Williams: Senior economics writer, The Economist

IN 2020-21 THE invention, approval and distribution of vaccines against covid-19 prompted a wave of optimism about the future. If humans could, within months, develop the tools to end a global pandemic, then what else might they be able to do? Many economists held out hope that the world was on the cusp of "the roaring twenties" and that before long there would be vaccines for cancer, driverless cars and virtual-reality goggles for all. Others added that the shift towards working from home would raise productivity by cutting out commutes.

The reality since then has fallen far short of these lofty expectations. Productivity, which measures how much people produce at work, did accelerate in 2020 and 2021—but that was largely because lower-skilled folk dropped out of jobs, mechanically raising the average. Since then productivity growth has come back down to earth. The latest data suggest that productivity may now be falling (see chart). Unfortunately, there is little sign that 2023 will be any different. That matters greatly, because higher productivity is the root cause of higher GDP and take-home pay.

Unproductive
Global productivity*, annual % change

*Proxy based on difference between output and employment components of all-industry purchasing managers' index
Sources: JPMorgan Chase; Goldman Sachs; *The Economist*
The Economist

Productivity growth has disappointed for a few reasons. The shift towards home-working may have proved less helpful than it seemed at first. True, at home people are more able to focus on "deep work" than they might in a noisy office. But the productivity losses from missing out on water-cooler chat may, slowly, add up. Communication within organisations, especially between different departments, is also likely to have suffered.

> **The conditions that led to weak productivity growth before the pandemic have not changed**

In addition, many companies still have to deal with the fallout from the pandemic. Millions of people still get covid each week, forcing them to stay at home. And some workers, aware of the acute labour shortages that afflict many industries, may not see the point in putting in much effort, knowing they are unlikely to get fired. There has been much speculation about whether "quiet quitting", a supposed trend in which people do the absolute minimum, is the latest headache for bosses.

Nor is there any sign of an uptick in innovation. Global patent filings, one measure of inventiveness, barely budged in 2021. Investment surged, but not necessarily in the things that improve people's lives. Some companies built extra manufacturing and storage capacity in order to prevent a repeat of the empty-shelves fiasco of 2021—measures that actually reduce productivity by raising costs. Others have built up stocks of raw materials, semi-finished and finished goods in order to protect themselves from supply-chain snarls. This counts towards investment in the statistics, but does nothing for productivity.

Some economists hold out hope that the long-awaited surge in productivity will still materialise. But that may be over-optimistic. The continued prevalence of covid means that worker absences are likely to be permanently higher than they were before 2020. The latest data suggest that global capital spending is coming back down to earth. Higher interest rates will make companies think twice about big investment plans.

More important, the structural conditions that led to weak productivity growth before the pandemic have not changed. Populations continue to age, and older people, generally speaking, have fewer ideas. Many productivity-enhancing activities, from building commercial and residential property to approving inventions or boosting immigration, are hampered by bureaucracy. When it comes to economic growth, 2023 will be more boring than roaring. ■

Callum Williams: Senior economics writer, The Economist

This article appeared in the Finance section of the print edition of The World Ahead 2023 under the headline "The boring twenties"

Give Feedback

Market performance in 2023 may depend on the extent of past misdeeds

What might the receding tide reveal from 2022?

Nov 18th 2022

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By Alice Fulwood: Wall Street correspondent, The Economist, New York

BEAR MARKETS come in all shapes and sizes. Since the 1950s there have been 11 of them. The shortest, in 2020, lasted a single month; the longest, from 2000, more than two and a half years. From peak to trough American stocks' worst decline began in October 2007, a whopping 57% slide, as the financial crisis set in. The shallowest was in 1990, just a 20% dip, in response to a mild recession. History, then, cannot tell us much about whether the stockmarket will continue to slide in 2023—but it does offer a couple of clues.

The nastiest, most prolonged slumps in financial markets have generally occurred when the slump in asset prices helps reveal that a slew of financial misdeeds were taking place when the going was good—such as the savings-and-loan crisis of the 1980s or the mortgage-backed security problems of the mid-2000s. A bad asset cycle then sets off a period of deep economic pain as consumers cut back and companies lay off workers as their profits shrink. Milder bear markets, like those of the 1960s or the 1990s, have tended to happen when the economic cycle had one of these elements but not all of them—for example if asset prices were low, if financial misdeeds revealed by the slump were not significant, or if consumers were not too badly hit.

Will the bear market endure into 2023? The going was pretty good in the run-up to it—the roaring bull market of 2021 was unwavering. The S&P 500, the leading index of stocks, hit new all-time highs on 68 of the 252 trading days—in only one year, 1995, did it reach more new peaks. There were clearly bubbles inflating in crypto assets, such as non-fungible tokens, and novel financial instruments called SPACs (special purpose acquisition vehicles) raised absurd amounts of capital. House prices climbed even more quickly than they had in the years before the global financial crisis.

Will this slump reveal widespread financial transgressions? If it does, you will soon know about it. It was only a year after the market peaked in October 2007 that Lehman Brothers went bust. And weaknesses in the financial system are already starting to appear.

> **It was only a year after the market peaked in October 2007 that Lehman Brothers went bust**

British pension funds were imperilled in September 2022 by margin calls on some bond derivatives they held. Volatility in the American Treasury market has spiked. The cost to insure against the default of Credit Suisse, a big global bank, has shot up. Still, global regulators have spent 15 years reducing the risk the financial system can take and insulating it with layers of capital. It is hard to imagine that anything on the scale of the 2007-09 global crisis is about to unfold.

What about the depth of the economic pain? That is unclear. If deep pain is on the horizon it has yet to show up at all—America's unemployment rate remains at multi-decade lows, despite rapid tightening of policy by the Federal Reserve. Still, monetary policy acts with long and variable lags. It is possible to imagine that this tightening will cause a sharp contraction in economic activity once households and businesses feel its full force. Do not count your bulls until they are hatched, then. ■

Alice Fulwood: Wall Street correspondent, The Economist, New York

This article appeared in the Finance section of the print edition of The World Ahead 2023 under the headline "Return of the bulls?"

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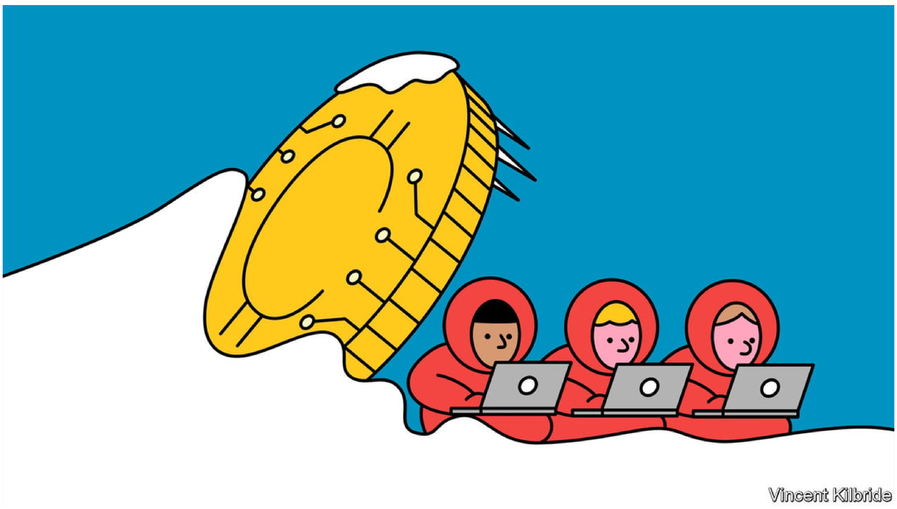
Can crypto survive its latest winter?

Finding a real use for it would help



Nov 18th 2022 Share

By Alice Fulwood: Wall Street correspondent, The Economist, New York

WHAT DOES crypto do after the crash? "HODL and BUIDL," says Scott Speigel, one of the organisers of BitBasel, an annual crypto-art event held in Miami. HODL, a term common in crypto circles, encourages users to "hold on for dear life" during a slump—and the community has taken to re-working the word "build" to go with it. In short: keep the faith.

The idea that a "crypto winter", the term widely used for a slump in crypto prices, is the time to knuckle down is long-held. Each drop tends to wash out those suckered in by the hype and leave only the dedicated core—those building applications and blockchain technology. Ethereum, now the second-most valuable blockchain, was launched during the first "crypto winter", after a price spike in 2014. The next winter, in 2017, also gave rise to the invention of many decentralised finance applications.

> **The industry is girding itself for an onslaught of regulation**

If anything, crypto is better prepared to BUIDL through the latest chill than it has been before. Billions of dollars' worth of crypto venture-capital money has been raised and put to work, giving many crypto founders a cash cushion to rely upon with asset prices low. The market capitalisation of all of crypto is still higher than it was in late 2020. The spectacular collapse of FTX in November, after an $8bn hole was discovered in its balance-sheet, was a blow. But other exchanges ,such as Binance and Coinbase, seem likely to survive.

As well as moves to HODL and BUIDL, the industry is girding itself for an onslaught of regulation. Three major bills are being passed around in Washington—two comprehensive efforts and one focusing on stablecoins, a type of cryptocurrency pegged to an asset or commodity. American regulators, such as the Securities and Exchange Commission, are clamping down on platforms that have facilitated activity in crypto-tokens that they think look like securities.

What will all this mean for the price of crypto-tokens such as bitcoin or ether? If inflation subsides and the Fed eases off on interest rates, it will probably help crypto prices, given how closely correlated to stocks they have been in 2022. But the bigger crypto grows the harder it is to imagine another boom in crypto prices built on hype alone.

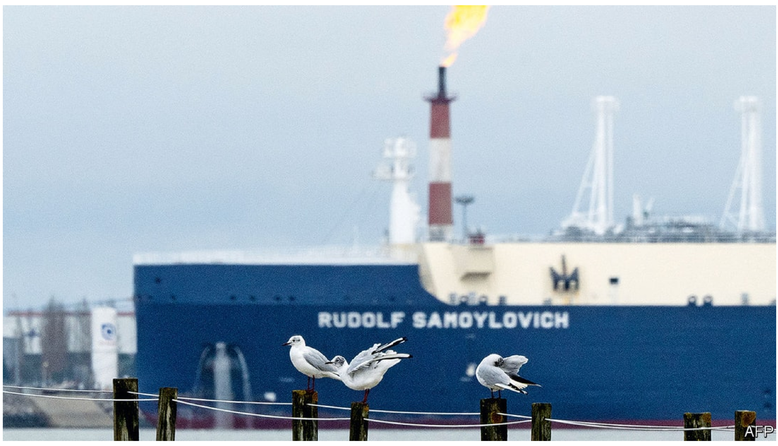
"Everyone is laser-focused on delivering a use case," says one Miami-based developer. If the BUIDL activity during this downturn does not deliver on a real use for crypto beyond speculation and scams, this chill could well endure. ■

Alice Fulwood: Wall Street correspondent, The Economist, New York

This article appeared in the Finance section of the print edition of The World Ahead 2023 under the headline "In the deep midwinter"

High energy prices will hurt companies and consumers in 2023

Everyone is hoping for a mild winter



Nov 18th 2022

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By Matthieu Favas: Finance correspondent, The Economist

THE AFTERMATH of Russia's invasion of Ukraine has been a long tunnel for energy users—with no light in sight. Western sanctions and supply cuts from Russia have put pressure on the global oil-and-gas trading system, which was already strained by a sharp rebound in demand after the pandemic and by years of low investment in new production. In theory 2023 could look a little better. Russia is finding alternative buyers for the oil and gas the West no longer wants. Europe appears to have stored enough gas to survive this winter; by next winter it should also have more terminals to receive liquefied natural gas (LNG), making it less dependent on Russia's piped fuel. Yet it is all too likely that energy markets will flare up again. Three risks stand out.

Economic slowdowns will smother oil demand, but disruptions to supply may well keep the petroleum market off balance—the first danger. Once Europe implements its boycott of Russia's seaborne crude oil, in December, China and India will buy even more than they have in 2022, helping to keep Russia's barrels in the market. As Europe's vast imports are re-routed to Asia, new bottlenecks are bound to appear. America may become more hesitant to tap its Strategic Petroleum Reserve, which is significantly depleted after being raided for months since the invasion. Some exporters, such as Libya, look unlikely to produce at full capacity for very much longer; OPEC countries are already failing to meet output targets. The cartel could also announce yet more big cuts in an effort to keep prices up.

> **It is all too likely that energy markets will flare up again in 2023**

The second concern is the growing scarcity of refined oil products, such as petrol (gasoline) and diesel. In February 2023 Europe is set to ban imports of such fuels from Russia, most of which, this time, will not be redirected elsewhere. China and India, which have ample refinery capacity, are not interested, and other would-be buyers are too far away. Europe, for its part, is struggling to produce decent quantities of these products, because expensive natural gas means it cannot produce a lot of hydrogen, a crucial input in the making of diesel. In principle China could export more oil products, allowing it to flog the Russian oil it will soon be refining in huge amounts. China's own stash may be depleted if the winter is cold, prompting it to restrict exports. A global diesel crunch may, therefore, strike before March 2023.

Perhaps the wildest card is gas. As Russia struggles to make gains in Ukraine, it will intensify its manoeuvres to stoke inflation in Europe and keep the continent in the dark. Nobody expects it to reopen flows through Nord Stream, its main pipeline to Europe, which is anyway badly damaged after being sabotaged in September. But it could cut supplies through other pipelines that are still delivering gas to Europe, such as the one that runs through Ukraine, and stop delivering LNG to Europe. Meanwhile, the EU could strengthen measures aimed at capping the cost of Russian hydrocarbons and otherwise make it more difficult for other countries to buy from its foe.

The next few months will test the West's resolve. But don't expect much of a truce in its energy wars with Russia once the winter is over. ■

Matthieu Favas: Finance correspondent, The Economist

This article appeared in the Finance section of the print edition of The World Ahead 2023 under the headline "More pressure"

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China is rapidly rolling out its new digital currency

The rest of the world is watching its experiment closely

Nov 18th 2022

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By Don Weinland: China business and finance editor, The Economist, Shanghai

THE BUZZ around the e-CNY, China's central-bank digital currency, has been loud. The country's policymakers have been credited with leading a revolution in state-backed digital money starting in 2019. Many other central banks have followed China's lead. But the development has all been local. The People's Bank of China (PBOC), the central bank, has said next to nothing about using the digital currency abroad. In fact PBOC officials have emphasised that the current focus of e-CNY use is within China.

This has not stopped the speculation about it spreading abroad. Cryptocurrency and decentralised-finance specialists say it is only a matter of time before China expands trials into markets where the country does lots of trade. They also suggest that sanctions on Russia could speed up the process.

Xi Jinping, China's president, and other senior leaders in the country view their reliance on the American-backed global financial system as a chronic weakness. America has demonstrated recently that it is willing to cut foreign banks off from the most important global financial messaging system, SWIFT, if they disobey its orders. In particular, in 2022 the Biden administration told SWIFT, which is based in Belgium, to stop doing business with several Russian banks after Vladimir Putin's invasion of Ukraine. Leaders in Beijing can easily imagine similar sanctions being imposed on their banks if China dared at some point to invade Taiwan, the self-governing island it views as part of its sovereign territory.

> **Xi Jinping views reliance on the American-backed global financial system as a chronic weakness**

The usefulness of the digital yuan in international markets is a hotly debated topic. Some experts have pointed out that, in theory, the e-CNY could be used to dodge the dollar system altogether. This is because its technology does not need SWIFT. And yet critics note that the long arm of American financial regulation would probably still succeed in persuading foreign bankers to stay away from a challenger currency from China if its usage for sanctions busting grew significantly. Even so, many people watching its development speculate that the e-CNY, which is both a currency and a payments system, will eventually be rolled out abroad for use in trade finance.Do not expect any big moves on this in 2023. China is still trying to keep covid-19 out of the country and, as a result, has become increasingly inward-looking. It is also still perfecting the e-CNY within China. In September 2022 several provinces were added to the trial programme. A national roll-out could pick up pace in 2023.

But there is still important global work to be done in the coming year. The initial deployment of China's digital currency has spurred the development of a handful of payments platforms around the world, some of which are linked to the PBOC. China's central bank, for example, joined a project with the central banks of Hong Kong, Thailand and the UAE that is developing a wholesale clearing system for cross-border payments called mBridge. Kakao, a South Korean tech group, is building a retail clearing platform called Klaytn. In Singapore, JPMorgan Chase, a bank, is partnering with Temasek, a state investment group, to build its own. When digital currencies such as the e-CNY start eyeing foreign markets, these platforms will be able to facilitate exchange between different jurisdictions.

That is no easy task. SWIFT has been around for ages. New systems must bridge huge technological and regulatory differences between countries. In 2023 many of these projects will begin to mature. Some will launch, laying the early groundwork needed for transactions in e-CNY—and other such central-bank digital currencies—in the years to come. ■

Don Weinland: China business and finance editor, The Economist, Shanghai

This article appeared in the Finance section of the print edition of The World Ahead 2023 under the headline "Yuan for the money"

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Some unusual products have seen their prices soar and plunge

Everything from eggs to hot tubs to used cars

Nov 18th 2022

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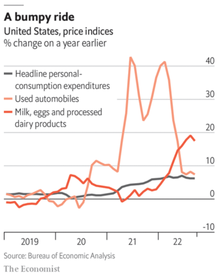
By Arjun Ramani: Global business and finance correspondent, The Economist

IF MOVEMENTS in asset prices are like a rollercoaster ride, then in 2022 the track split in two. Share prices, which crashed at the start of the pandemic before quickly rebounding, crashed again in the first half of 2022. Prices for in-person services, such as sports tickets and public transport, were depressed for much of the pandemic but recovered steadily in 2021 and 2022.

In 2023 there will be even more price swings, many of which will appear in strange places. Their size will depend on two big factors: the depth of the economic slowdown and the duration of the war in Ukraine. Perhaps the most notable mover has been used cars. Supply-chain snafus during the pandemic led to shortages of critical components, such as chips, for new cars. That boosted demand for the used variety—prices in America spiked by more than 60% in 2021. Hot tubs are an even stranger example. Cooped up at home and flush with savings from government stimulus, many households splurged on making their homes more cushy. But now demand is tanking. Sanctions on Russia, a major oil and gas exporter, have driven up energy prices, making hot tubs more costly to use.

> **Higher energy prices mean that demand for hot tubs is tanking**

Meanwhile, inflation is causing central banks to raise interest rates, making it harder to borrow money. Markets expect the Federal Reserve to raise its benchmark rate to 4.25-4.5% by June 2023. That spells bad news for cars and other durable goods that are often bought with borrowed money. The silver lining is that if you have savings, such goods may soon get a bit cheaper.



If you like omelettes, though, it is harder to find a positive spin. In the year to September 2022 eggs jumped in price by 28%, having already increased by 11% in 2021. Milk also fared poorly, with a 20% rise since the start of 2021. Both prices depend heavily on the cost of livestock feed, which has been affected by the war. (Ukraine and Russia are big grain producers and collectively export 12% of calories traded worldwide.)

The depth of a recession and the length of the war are hard to predict. But it seems likely that the unexpected price swings of the past few years, which have affected everything from chicken wings to lumber, will continue. Which unusual item will be the next to ride the rollercoaster? ■

Arjun Ramani: Global business and finance correspondent, The Economist

This article appeared in the Finance section of the print edition of The World Ahead 2023 under the headline "Hot-tub-onomics"

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Tayo Oviosu says that fintech in Africa looks very different from the West

Cash is still king in Africa

Nov 18th 2022

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By Tayo Oviosu, founder and CEO, Paga

AFRICA IS THE world's second-largest and second most-populous continent, yet it remains more than a decade behind the rest of the world in financial services. Fully 57% of Africans do not have a bank account, plenty of them in the larger economies. In Nigeria, the continent's most populous country, the figure is 60%; in Morocco, 71%; but in Kenya, thanks in part to the success of M-Pesa, a popular mobile-money service, it is 18%. Cash is still king in Africa, used in 90% of all transactions.

African banks have been trying to deal with the problems of access to finance and the use of cash but have not been successful at retail banking. This is primarily because of inefficient banking processes that do not make it easy for ordinary people to use them. In some countries, the regulatory requirements for banks make it expensive to serve African consumers with low earning power. GDP per person in Africa is the weakest of any continent. This is where fintechs have stepped in with innovative approaches that can serve a mass consumer base at lower cost.

It is still early days for fintech in Africa, but the signs are good. The middle class is expanding, and the needs of consumers are increasing. They want alternative ways to pay conveniently, to access loans for everything from rent or home purchases to cars, and to increase their wealth. Small and medium-sized enterprises (SMEs), the lifeblood of any economy, want to digitise their businesses and are looking beyond traditional banks for the finance they need to grow.

> **Cash is still king in Africa, used in 90% of all transactions**

Fintech in Africa has a different flavour from that in the West, as market dynamics differ. In today's Africa, smartphone penetration remains low (just 37% in Nigeria), data costs are high (1GB of mobile data costs as much as $1.82 in Nigeria, compared with $0.12 in Italy), and there are still significant numbers who are not online. Data from the International Telecommunication Union suggest that approximately 75% of sub-Saharan Africa still does not have access to or use the internet. To succeed, companies must implement a hybrid online-offline business model that meets customers wherever they are.

The early fintech companies in Africa focused on essential financial services and had to build their own infrastructure, as none existed. This included digital wallets that work with or without mobile data; connectivity to banks and companies to allow for seamless money transfers and bill payments; and a physical retail distribution network that relies on local shopkeepers to give people access to financial services at neighbourhood stores.

Companies such as Fawry, Interswitch, M-Pesa, MTN, Orange, Paga and Wave led the way. These firms have successfully transformed the economies in which they operate. They have demonstrated the gains to be had in financial inclusion, economic growth and job creation. They have also built the financial-services foundation upon which these same companies and newer entrants will deliver the next generation of more advanced offerings.

Some estimates put the number of fintech companies in Africa at over 2,500, providing online payments, in-person point-of-sale payments, retail lending, wealth management, insurance, open banking and cryptocurrency services. McKinsey, a consultancy, estimates that the total revenue of fintechs in 2020 was $4bn-6bn. The GSM Association, an industry body, estimates there are 621m mobile-money accounts in Africa. Overall, the mobile economy has created more than 300,000 jobs directly, and 1.1m indirectly, across the continent.

In 2023 we will see more significant partnerships between fintechs, accelerating offerings to consumers and SMEs. Startups will focus on smaller, more niche, opportunities that build upon the infrastructure already created. For example, a company such as Doroki or Yoco, looking to emulate Square, a small-business payments platform, does not need to reinvent the wheel on core payments infrastructure, but can instead use the digital pipes laid by other businesses. This way, resources can be focused on the needs of the SMEs being served.

The same is true for companies providing a variety of consumer opportunities. As we have seen in Asia and Latin America, there will be an explosion of startups that build upon the fintech infrastructure created over the past few years in Africa. This will help create more jobs and accelerate economic growth. An exciting future, built on the transformative impact of fintech, awaits Africa. ■

Tayo Oviosu, founder and CEO, Paga

This article appeared in the Finance section of the print edition of The World Ahead 2023 under the headline "Challenging King Cash"

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Psychedelic medicines are expanding into the public consciousness

Magic mushrooms are just the start

Nov 18th 2022

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By Natasha Loder: Health-policy editor, The Economist

THE COMING YEAR will see a number of milestones in the emerging era of psychedelic medicines. The recreational drug MDMA will complete a second phase-3 trial for the treatment of post-traumatic stress disorder (PTSD). If this trial confirms the findings of the first, from 2021, then in 2023 MDMA will be considered by America's Food and Drug Administration for approval. MAPS, a public-benefit corporation, has so far shown that three doses of MDMA, along with a course of therapy over 18 weeks, can deliver a significant reduction in the symptoms of PTSD.

It is not known how long the FDA will take to consider the drug, or whether it will approve it. But a decision will be expedited because the current treatments available for PTSD are so limited. An approval for PTSD treatment would also prompt MAPS to expand research to support the use of the drug for other indications, says Berra Yazar-Klosinski, its chief scientific officer. These might include eating and anxiety disorders.

MDMA is not a psychedelic drug in the classic sense of the word, but it is a psychoactive one. It produces a sense of emotional openness and empathy. MDMA, ketamine and conventional psychedelic drugs, such as psilocybin and LSD, all have one thing in common: they cause rapidly acting changes in brain function. They trigger receptors such as those for serotonin, and thereafter a cascade of signals important for the growth of neurons. It is probably not necessary to cause hallucinations to create the sort of neuronal plasticity that is increasingly thought to be important in the treatment of brain disorders. One theory is that many psychiatric and neurodegenerative conditions are a result of "cortical atrophy", the loss of connectivity between the connections of neurons in the pre-frontal cortex. Psychedelics seem to allow these connections to be strengthened and reconnected.

In recent years the number of clinics around the world offering ketamine, as an intravenous infusion, largely for treatment-resistant depression, has grown. That will continue. There are more than 100 clinics across America, and others in Europe, that administer it, and they are in an ideal position to deliver MDMA, if approved, to PTSD patients. Other psychedelics are also being tested against conditions such as addiction and eating disorders. The drugs are believed to leave patients' brains more flexible and thus receptive to psychotherapy, which is usually given before and after treatment with psychedelics.

> **On January 1st the therapeutic use of psilocybin becomes legal in Oregon**

Also in the pipeline is psilocybin for treatment-resistant depression (TRD). Results of a trial suggest that 12 weeks after treatment, one patient in five was in remission. But the small number of durable responses, and some adverse events, highlight the challenging road ahead for those trying to get approvals from medical regulators. And the difficulty of running placebo-controlled trials with psychedelic medicines means there are concerns about whether positive results found in tightly controlled trials will be replicated in practice.

Either way, these drugs are coming in 2023. On January 1st the therapeutic use of psilocybin becomes legal under licence in Oregon. From January the Canadian province of Alberta will also allow the regulated use of psychedelic drugs for therapy. This will cover psilocybin, MDMA, LSD, mescaline, DMT and ketamine.

Efforts by states to facilitate the use of psychedelics are moving faster than trials and drug regulators. Early availability will help many, but is also likely to bring risks. Trials of psilocybin for TRD led to an increase in suicidal behaviour in some patients. A closer examination of those patients revealed that they were the ones who had not responded to therapy. Rupert McShane, a professor of psychiatry at the University of Oxford, treats TRD patients with ketamine but emphasises the importance of setting expectations. Having failed to respond to treatment, sometimes for decades, patients can put "so much hope in it that when it doesn't work they feel more desperate," he says.

Other causes for concern are the potential for adverse events such as bad trips, and worries about cardiotoxicity with some psychedelics. Drug trials are not just meant to winnow out the drugs that do not work. They also increase the understanding of risks. The coming year will be an exciting one, but it will highlight the need to move cautiously, too. ■

Natasha Loder: Health-policy editor, The Economist

This article appeared in the Science and technology section of the print edition of The World Ahead 2023 under the headline "The magic of mushrooms"

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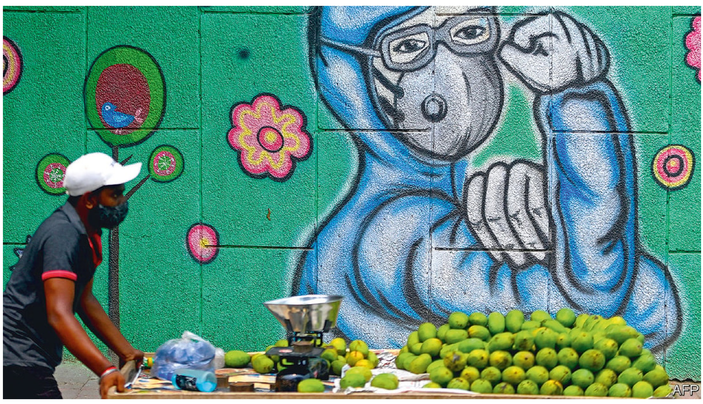
Next-generation vaccines could make a difference in 2023

New variants are always lurking, though



Nov 18th 2022

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By Slavea Chankova: Health-care correspondent, The Economist

IN THE FIRST two years of the covid-19 pandemic the undulating waves of cases and the deaths that followed them became fairly easy to predict. Disease modellers were largely accurate about when a new wave was coming, and how much of a threat it posed. But things are getting more complicated.

Significant new variants, some more contagious, others more severe, have been coming, on average, at a rate of two per year. What future ones might look like is hard to say, as is predicting how the world's defences against them—in the form of vaccines and immunity from past infections—will hold up.

The modellers' task has become more tricky because, in any one country, there are dozens of different levels of immunity. Each person's degree of protection depends on many things: how many jabs and boosters they have had, when and how many times they have been infected, and with which variants. Covid is far less deadly than it used to be, thanks to these layers of immunity and drugs to treat it. Its fatality rate is now similar to that of seasonal flu.

> **Next-generation covid vaccines could make the biggest difference in 2023**

But flu is far less contagious and comes around only in winter. Covid has not yet morphed into a seasonal bug, and because immunity against infection is short-lived (lasting three months or so), lots of people will get it more than once each year. In any given year, 5-20% of Americans catch flu. Some scientists reckon that around 50% of Americans will get covid each year, now that there are no measures to stop people mingling. This could cause around 100,000 deaths a year, twice the number of flu deaths in a bad flu season.

But much will depend on how people behave—and that is the hardest thing for modellers to predict. On London's Underground, a pattern has emerged: masks become more common as cases rise, then come off as the waves subside. And when covid case numbers rise, lots of people test themselves before visiting elderly relatives. Such testing is getting easier: an app that analyses a person's voice and breathing can identify covid infections 89% of the time.

Next-generation covid vaccines, however, could make the biggest difference in 2023. The World Health Organisation counts more than 170 in clinical trials. Two potential breakthroughs to keep an eye out for in the coming year are nasal vaccines and variant-proof vaccines.

Vaccines sprayed into the nose or throat aim to create immunity in the cells that are first to come into contact with the virus—thus stopping it from proliferating there and then, and halting the chain of molecular events in the body that cause the disease. More important, such vaccines could prevent transmission, which first-generation covid jabs failed to do (though they are effective at reducing the risk of serious illness). In September 2022 India and China approved covid vaccines that are sprayed into the nose and mouth. But data on their efficacy have not been published. A dozen more are in development in the West, with some showing promising results in early clinical trials.

Scientists are also hard at work on vaccines that can protect against any variants of covid that may arise in future. Some of these vaccines target specific groups of coronaviruses, including the four seasonal-cold coronaviruses, or more pernicious bugs such as the original SARS virus. Large-scale human trials for some of these jabs will get under way in 2023. With luck, a broad coronavirus vaccine may be available in 2024.

Scientists are quick to add caveats to any predictions they make about covid, raising the unknown (but very real) possibility of a curveball, such as a new variant that is wildly contagious and far deadlier than previous strains. But the rapid progress scientists have made against covid suggests that even if that were to happen, their worst fears would not come to pass. ■

Slavea Chankova: Health-care correspondent, The Economist

This article appeared in the Science and technology section of the print edition of The World Ahead 2023 under the headline "Vaccines v variants"

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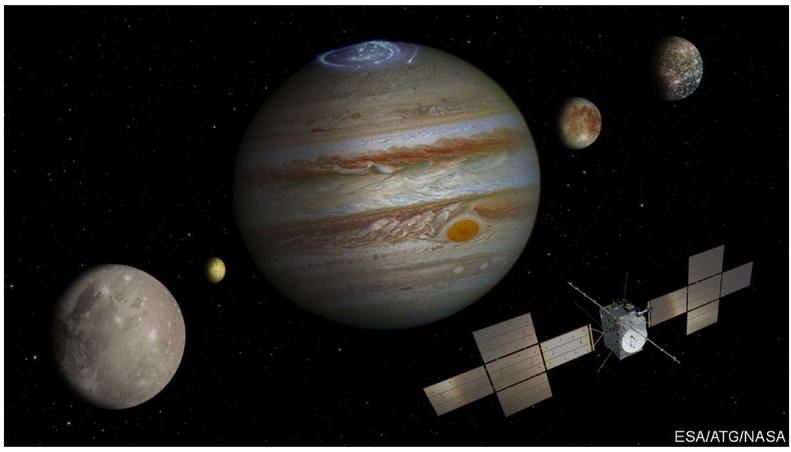
New spacecraft and missions to watch in 2023

From low-Earth orbit to the moons of Jupiter



Nov 18th 2022

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By Alok Jha: Science correspondent, The Economist

SOME OF THE most intriguing questions for astronomers right now involve the possibility of life beyond Earth. And the icy moons of the solar system's biggest planets are some of the most promising places to find it. In April 2023 the Jupiter Icy Moons Explorer (*JUICE*) is due to be launched by the European Space Agency (ESA) on an Ariane 5 rocket from French Guiana, to begin an eight-year cruise to Jupiter. Once it arrives in 2031, it will begin a survey of three of the gas giant's largest moons—Ganymede, Callisto and Europa. Each of these bodies is covered in a thick layer of ice, under which there is thought to be a significant quantity of liquid water. *JUICE* will not only map the moons in high resolution (expect some spectacular images); it will also characterise the various layers of the oceans that lie beneath their surfaces.

During the summer of 2023 America's space agency, NASA, plans to launch its *Psyche* spacecraft to explore an iron-rich asteroid of the same name, 16 Psyche, which is thought to be a remnant of a protoplanet from the earliest days of the solar system. By studying its composition, mass distribution and magnetic field (among other things), scientists hope to learn more about how the solar system's rocky planets may have formed. Another spacecraft, *Janus*, will launch with *Psyche* on the same Falcon Heavy rocket, to visit two more, yet-to-be-chosen asteroids.

Continuing the asteroid theme, NASA's *OSIRIS-REX* probe is already on its way back to Earth after its rendezvous to take samples of the asteroid Bennu in 2020. In September 2023 a capsule containing samples of dust from Bennu will be dropped back to Earth (landing at an American air-force base in Utah). *OSIRIS-REX* will then continue on its next mission, which is to meet Apophis, a near-Earth asteroid, in 2029.

The Indian Space Research Organisation plans to launch its next mission to the Moon, *Chandrayaan 3*, in early 2023. It follows the failed 2019 attempt, by its predecessor mission *Chandrayaan 2*, to make a soft landing on the Moon. The new probe will include a landing module and a rover to explore the Moon's surface.

Advances in private spaceflight will also continue apace. SpaceX hopes to send Yusaku Maezawa, a Japanese billionaire, to fly past the Moon aboard a crewed version of its enormous Starship vehicle, an ambitious new spacecraft that promises to slash the cost of getting into space. If and when Mr Maezawa's mission, known as "dearMoon", gets off the ground, he plans to take as many as eight passengers along for the ride.

ESA also plans to test its new spaceplane, Space Rider, in 2023. This is intended to be a reusable, uncrewed robotic laboratory that could provide regular, low-cost access to space for companies that wish to do research or test technology in the microgravity of low-Earth orbit for a few months at a time. Once each mission is completed, Space Rider will return to Earth, landing on a runway, before being refurbished for another flight.

Arianespace, a European rocket company, also plans to test its new Ariane 6 rocket in 2023. It is the intended replacement for ESA's current workhorse, the Ariane 5. By halving the cost of each flight, the hope is that it can more easily compete with SpaceX's Falcon 9 rocket. ■

Alok Jha: Science correspondent, The Economist

This article appeared in the Science and technology section of the print edition of The World Ahead 2023 under the headline "To boldly go"

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A reality check for the metaverse is coming

Is it really the next big thing? Watch this virtual space

Nov 14th 2022

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By Tim Cross: Technology and society editor, The Economist

AFTER DESKTOP computing, the consumer internet and the smartphone boom, the consumer-computing industry is past due its Next Big Thing. The coming year will see big tech firms doubling down on two related, much-hyped possibilities. One is virtual- (VR) and augmented-reality (AR) headsets; the idea that, having shrunk computers into our pockets, the next step is to strap them to our faces. The other is the metaverse, which holds that an internet which is still largely flat—based on two-dimensional text, images and video—is ripe for replacement with one that is three-dimensional and immersive, experienced as a sort of globe-spanning video game.

Consider first the headsets, which are a small but growing market. IDC, a firm of analysts, reckons around 11m were sold in 2021, with Meta, the parent company of Facebook and Instagram, accounting for around two-thirds of sales. The firm is expected to release several new products in the coming months. On October 11th it launched its latest headset, the Meta Quest Pro. At $1,499 it is far pricier than any of the firm's existing offerings, but cheaper, more mainstream devices are likely to follow in 2023.

The Meta Quest Pro is capable of AR as well as VR. Whereas VR acts like a digital blindfold, immersing users in a computer-generated world, AR involves painting useful information onto a user's view of the real world—something that is much harder, which may explain the higher price. Meta will have fresh competition, too. Apple, the world's biggest smartphone-maker, is likely to release its first attempt at an AR/VR headset in 2023 (one guess puts the probable price at $3,000). Sony, whose PlayStation VR gaming headset, launched in 2016 and has sold over 5m units, will also release an upgraded model.

Meta's ambition is not just to produce VR hardware but also to build the sort of virtual worlds that, it hopes, VR users will want to inhabit. The firm's new name is a reflection of its focus on the idea of the metaverse, a shift announced by Mark Zuckerberg, its boss, in 2021. It has since spent more than $27bn on the idea and has trailed pictures of users, or their computer-generated avatars, working and playing in friendly, cartoonish 3D environments that range from boxing rings to virtual meeting-rooms. But many analysts are sceptical, particularly as Meta's share price has slumped.

Rival firms have similar ambitions, however. Rival tech giants, such as Microsoft and Nvidia, have trumpeted their own metaverse ambitions. Industries from advertising to banking have jumped aboard, too. But the industry that is furthest along is the video-games business, which has been selling virtual worlds for decades. Epic Games has already held live-music gigs and tie-ins with films inside "Fortnite", its popular online shooter game. Some have attracted tens of thousands of virtual revellers. Unity, which, like Epic, makes a video-game "engine" that software developers can use to power their games, has experimented with concerts of its own, and is experimenting with the 3D broadcasting of sports events.

For now, a spirit of co-operation reigns. Microsoft announced in October 2022 that it would make its Windows operating system, as well as its business-focused apps, and games written for its Xbox games consoles, available within Meta's virtual worlds. And almost every big firm in Silicon Valley has joined the Metaverse Standards Forum (MSF), which commits them to open, interoperable technical standards, so that an avatar designed for use in one company's virtual world should work without trouble in another's. (A notable exception is Apple, which has long prioritised keeping users within its own "walled garden" over compatibility with other firms' products.) In 2023 the MSF's progress, or lack of it, will be one way to gauge whether the metaverse is an idea that has legs. It remains to be seen whether the collaborative spirit of the MSF will survive if metaverse-based services start to make serious amounts of money.

No one is quite sure whether VR, AR or the metaverse is really the future of computing. Sceptics point out that such ideas are not new. Consumer VR headsets date back to the 1990s. Smartphones already have AR apps that rely on a screen rather than a headset, such as automatic text-translation programs.

But overnight revolutions are not how technology works. Apple did not invent the smartphone out of thin air. It perfected a formula that its competitors had been working on for years, in the form of BlackBerry phones and Palm handhelds, for instance. That does not guarantee that the companies piling into these trendy technologies will succeed. But it shows why they are trying. ■

Tim Cross: Technology and society editor, The Economist

This article appeared in the Science and technology section of the print edition of The World Ahead 2023 under the headline "The next big virtual thing?"

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Sexual pleasure is increasingly seen as part of general well-being

Discussion of sexual well-being will become less taboo

Nov 18th 2022

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By Slavea Chankova: Health-care correspondent, The Economist

NOT LONG ago sex toys could be found only in sex shops hidden in back alleys or in dodgy parts of town. Now, the devices seem to be sold everywhere, from traditional department stores to high-street pharmacy chains and small health-food stores. Retailers are catching up with the growing demand for "sexual wellness" and a greater willingness to talk about it. Mentions of the phrase on Twitter grew six-fold between 2018 and 2021. More big-screen films and television series are focusing on this theme, too. Bedroom pleasure is becoming accepted as an important aspect of general well-being—and seen as something to be maintained and improved.

In 2023, this trend will accelerate. Already, 25-30% of adults in America, Britain and France own sex toys. According to a survey in 2021 by PWC, a consulting firm, a third of them had bought their devices in the previous three years. The market will continue to grow rapidly in 2023. Sales will be pushed up not just by consumer demand but also by innovative designs that are attractive to new users, some of whom may have found the vibrators of yore a turn-off. Big, plasticky, phallus-shaped models are out; palm-sized, unisex intimate-massage gadgets in soft silicone and all sorts of shapes are in.

> **Bedroom pleasure is becoming accepted as an important aspect of general well-being**

The innovative startups in the sexual-pleasure business are particularly attuned to the needs of female customers, in part because they are, unusually for the tech industry, often led by women. Their products will be increasingly used by couples, rather than solo, as talking about sexual pleasure—in private and public—becomes less of a taboo.

These trends will not be limited to the Western world. Neither will they be the sole preserve of young people, or urban and tech-savvy consumers. In India, for example, lots of sex toys are bought by married couples in smaller towns who are looking to spice up their sex lives.

Education about sexual dysfunction, sexual pleasure and how to talk about them to a partner is also going to get better. But expect little of that to come from public sex-education programmes. Apps and websites run by companies and non-profit groups are packaging sex education and therapy in youth-friendly language and easy-to-access formats. They are covering topics that people are generally reluctant to talk about, even with a doctor or therapist, such as masturbation, erectile dysfunction or difficulty reaching orgasm.

"Digital therapeutics" for sexual problems—app-based therapies that may include connected devices (such as masturbator pumps or pelvic-floor training gadgets)—will become more popular. Some of these therapies may become available on prescription from health-care providers, such as England's National Health Service, which have long waiting lists for sexual therapy.

But, sadly, the expansion of the sexual-pleasure business will probably continue to be stymied by regulators and the social-media giants that control a big chunk of advertising. On Facebook, all advertising for gels, devices, sex tips or anything to do with sexual pleasure is banned on the grounds of shielding users who might not approve from "potential negative experiences". That is regrettable and short-sighted, because far too many people have unhappy sex lives, and far too many relationships are wrecked for common reasons that appropriate information, and a short course of therapy, can easily resolve. ■

Slavea Chankova: Health-care correspondent, The Economist

This article appeared in the Science and technology section of the print edition of The World Ahead 2023 under the headline "Nudge nudge, wink wink"

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Electric "air taxis" hope to get off the ground in 2023

But first they must be cleared for take-off by regulators

Nov 18th 2022

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By Paul Markillie: Innovation editor, The Economist

THIS WILL be a crucial year for the aviation pioneers developing electric vertical take-off and landing (eVTOL) aircraft, popularly known as flying taxis. Several firms are hoping their craft can obtain the necessary certification in 2023 to commence commercial production, paving the way for the first passenger services.

Air taxis generally carry fewer than half a dozen passengers. They land and take off vertically using multiple small rotors, much like hovering drones. With clever software controlling the rotors, they are easier to fly than a helicopter and readily capable of autonomous flight. The abundance of rotors also helps with safety, as the aircraft can continue to fly if one or more fails.

> **Piloted operations are expected to be approved before autonomous flights**

Some designs use an extra rotor or two at the rear to push the aircraft along in horizontal flight. Others, like that produced by Joby Aviation (pictured), have rotors that tilt forward to act like propellers; a set of small wings then provides lift, making more efficient use of the aircraft's battery and increasing range.

After scratching their heads about how to certify these newfangled flying machines, regulators have been working with developers on safety standards. This is a multi-stage process. Besides obtaining "type" approval, which signifies the airworthiness of a new type of aircraft, factories must be certified before production can begin in volume. And an airline-style licence is required if fare-paying passengers are to be carried. Companies are working hard to get these approvals. Piloted operations are expected to be approved before autonomous flights.

China may be an exception: EHang, a Chinese firm, is working with that country's aviation administration on flight trials of its two-passenger vehicle, which flies autonomously. These are likely to include test flights carrying passengers over tourist spots and delivering parcels. AutoFlight, another Chinese firm, aims to certify its air taxi, which seats three passengers and (at least initially) a pilot, with a series of test flights in Germany. The Shanghai-based company reckons European approval will speed up its entry into service in other markets.

Also in Germany, Volocopter will be flight-testing a family of eVTOLs. The firm is hoping its smallest, the two-seater VoloCity, can be certified in time for the 2024 Olympics in Paris, where the plan is to operate shuttles between airports and the athletes' village. Other air-taxi firms also hope to provide shuttles in Paris, or at the World Expo, which takes place in Japan in 2025.

In addition to the aircraft themselves, companies will also start work on "vertiports", as the small take-off and landing sites that eVTOLs will use are called. In 2023, the race to get this new industry off the ground will truly begin. ■

Paul Markillie: Innovation editor, The Economist

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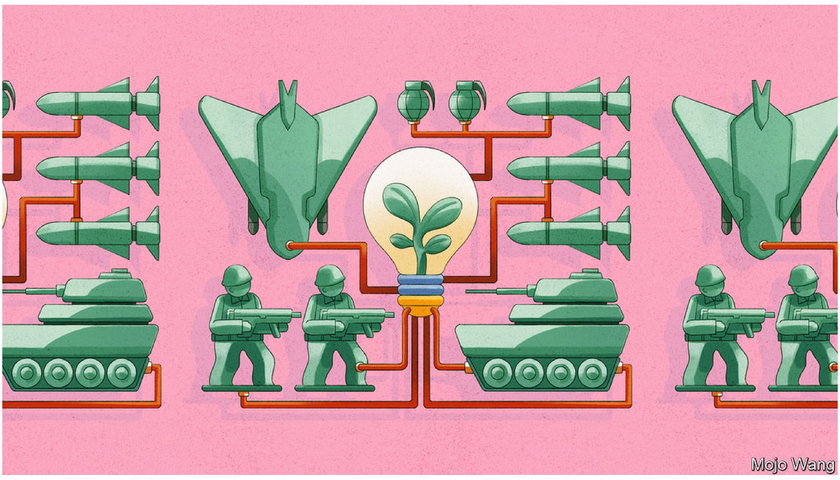
How the war in Ukraine could influence technological innovation

Increased defence spending means more money for research



Nov 18th 2022

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By Shakeel Hashim: Freelance correspondent

IF YOU HAVE watched any videos from the front lines in Ukraine, you have unwittingly used a military technology. The internet, like lasers, GPS and MRNA vaccines, is an invention that came about thanks to military investment—specifically, from DARPA, an agency of the Pentagon that tries to advance cutting-edge technology.

In the wake of Russia's invasion, new technologies could be on their way, because the war has prompted countries to boost defence spending. For politicians, says Stefanie Tompkins, the head of DARPA, Ukraine has "taken things from abstract to reality". America has already increased its defence spending by 5%; Germany has promised to increase its own budget by a third. Much of the new cash will go on recapitalising the depleted stocks of weapons and ammunition given to Ukraine. But some will trickle down to research and development budgets, potentially producing revolutionary new technologies.

Projects currently under way offer a glimpse of the future. One area of focus, says Dr Tompkins, is improving supply chains. Rather than having to transport food, medicine, water and fuel to soldiers in remote locations, raising concerns about cold storage and logistics, DARPA hopes to be able to manufacture them all on-site—from protein and petrol to painkillers—using novel biotechnology.

> **Increased defence spending will trickle down to research and development budgets**

This and other military-focused innovations could reshape civilian life. Many countries are trying to develop hypersonic weapons, which travel at 5-25 times the speed of sound. Venus Aerospace, an American startup, hopes to use the same technology to build a space plane that could fly passengers anywhere on Earth within an hour.

Similarly, America, Australia, Britain and the EU are all eagerly pursuing quantum computers, which could solve problems that are too hard for conventional ones. Much research to date has been funded by defence and intelligence services, says William Oliver, director of the quantum-engineering centre at MIT. Yet no one is sure how useful quantum computers might be in practice—or how to tell when they're working. Hence DARPA's "quantum benchmarking" programme, which Dr Tompkins describes as providing a framework to determine "whether quantum computing is actually going to be useful".

Analysts note that military R&D is not nearly as important as it was in DARPA's heyday, at the height of the cold war. An enormous technology industry and large amounts of venture capital mean defence money is more fungible. But for "truly novel" technologies, says Amy Kruse, an investor and former DARPA officer, military budgets remain critical. Vladimir Putin's war may have unexpected technological spin-offs. ■

Shakeel Hashim: Freelance correspondent

This article appeared in the Science and technology section of the print edition of The World Ahead 2023 under the headline "The mother of invention"

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Jack Hidary says you can't afford to ignore quantum computing

Encryption needs to be updated to protect sensitive data

Nov 18th 2022

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By Jack Hidary, CEO, SandboxAQ

QUANTUM TECHNOLOGIES, which take advantage of the strange fuzziness of the subatomic realm, will have a profound impact on our society—from medicine and materials science to banking and clean energy. Such technologies, which include communications, computing, quantum sensing and simulation, will bring many benefits. But they will also make necessary a dramatic shift in the global cyber-security architecture—a process that will start in earnest during 2023.

Quantum computers are still in development. But as they become more powerful and more reliable, they will pose a threat to how we transmit and store confidential data including bank transactions, sensitive government information and intellectual property. That is because unlike existing computers, quantum computers will be able to crack the encryption systems that provide secure data communication and storage, and underpin the global economy.

Criminals and other adversaries know that this will be possible one day—and they are not waiting to get their hands on sensitive data. They are already carrying out "store now, decrypt later" (SNDL) attacks—stealing data for future decryption with quantum computers. According to America's Department of Homeland Security, the decryption of this data could be feasible as soon as 2030. If this happens, any encrypted data acquired by adversaries today will have a maximum confidentiality period of eight years.

Criminal groups are targeting intellectual property and other kinds of data that will keep their value years from now when they decrypt it. This means that as quantum computers scale, there will be "submarine decryptions" of data troves that will surface unexpectedly, just like submarines in water.

This is not a tomorrow problem: SNDL attacks are being perpetrated right now. Once stolen, there is no way to protect encrypted data. For example, an aerospace company could lose billions in future revenue if its proprietary designs are stolen. A government's military and intelligence operations could be compromised if plans fall into an adversary's hands. (Several countries are actively engaged in building quantum-computing hardware for the sole purpose of defeating public-key cryptography and securing their own critical systems and data.)

In response, researchers have in recent years developed quantum-resistant cryptographic schemes—new forms of encryption that even future quantum computers will be unable to crack. These are known collectively as "post-quantum" cryptography (PQC).

In July 2022 America's National Institute of Technology and Standards (NIST) announced the results of a six-year, multinational process to set the new PQC standards. Experts from more than 25 countries participated in developing and validating these algorithms. NIST also launched a National Cybersecurity Centre of Excellence, composed of 12 leading companies from around the world, to develop PPQC migration strategies and models for future hardware and software solutions.

With this watershed event, governments, corporations and technology providers finally have the clarity and certainty they need to begin the transition to PQC. The next two years will be critical as governments and corporations begin that process.

Identifying all the devices and systems that need to be upgraded, working out which of the multiple NIST algorithms should be deployed in each case and making systems "crypto-agile" (ie, easily upgraded in the future) is a daunting task that will take several years. More than 20bn devices globally need PQC software upgrades—every mobile phone, laptop, desktop, server, website and mobile app—plus additional systems built into cars, ships, planes and operational infrastructure.

For this reason, 2023 will be a pivotal year for cyber-security and the emerging quantum-technology ecosystem. Driven by the need to protect against immediate and emerging threats, it is the year when public and private entities will start the process of migration.

The cyber-security risk has a silver lining: it will create awareness and drive adoption of quantum technologies in other areas. Forward-looking companies in financial services, health care, pharmaceuticals, telecommunications, transport, defence and other industries will explore the potential for quantum computing to accelerate R&D, enhance their offerings and bring new innovations to market—in 2023 and beyond. ■

Jack Hidary, CEO, SandboxAQ

This article appeared in the Science and technology section of the print edition of The World Ahead 2023 under the headline "Why you can't ignore quantum computing"

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A Mumbai museum has a different way of looking at history

And a new model for global cultural co-operation

Cultural Heritage of Mumbai

Nov 18th 2022

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By Fiammetta Rocco: Senior editor and culture correspondent, The Economist

BOUND, BOTH east and west, by oceans, and by snowy mountain ranges to the north, India has always appeared enclosed. Ideas flowed in, it seemed, but rarely out. In 2017 an exhibition entitled "India and the World" at the Chhatrapati Shivaji Maharaj Vastu Sangrahalaya (CSMVS) museum in south Mumbai challenged this perception. It demonstrated, for instance, that ideas about urban cleanliness, developed by the Harappa civilisation in the Indus Valley, spread across the world from the early Bronze Age, and that pepper was exported from the Malabar coast to the Roman empire. As the CSMVS's director, Sabyasachi Mukherjee, said just before the show opened: "Nothing like this has been tried in India before, either in terms of objects or in their presentation."

Thanks in part to that exhibition, the CSMVS, which opened to the public in 1922, now regularly welcomes 1m visitors a year. In 2023 it will launch the Ancient World Gallery Project, with a $2.2m grant from the Getty Foundation in California and featuring multiple exhibitions and educational schemes for university students and schoolchildren. A number of museums from across the world will take part in the initiative.

In the CSMVS itself, long-term loans from the British Museum (BM) and the Berlin State Museums will be displayed alongside Indian sculpture, ceramics, coins and seals to show how ideas of trade, death and religion have common roots across the world. "It reminds us all that everywhere people are trying to do the same kinds of things," says Neil MacGregor, a former director of the BM who is now advising the Getty on this project. "Civilisation is something you always do with other people."

> **"Civilisation is something you always do with other people"**

The project has an important role to play in India's future development. Of the country's 1.4bn people, nearly half are under 25. By 2026 they will have nearly 1bn smartphones. Yet teaching of the humanities is limited. Schools and universities have few formal courses, and educational programming in India's museums is rare. In this vacuum, the virulent cultural nationalism promoted by Narendra Modi's ruling Bharatiya Janata Party has thrived.

The collaboration between the CSMVS and its partners offers a new way of presenting global cultural history, which could be a useful counterweight, by showing India's role in the creation and exchange of global knowledge, innovations and traditions. "In a world of clamorous national identities, to locate Indian culture in a much bigger framework is a powerful affirmation that culture is global and shared," says Mr MacGregor.

The world's great encyclopaedic museums are still mainly in Europe and America, and their histories of global cultures tend to begin in the Mediterranean or the Near East. Retelling the story from the point of view of Mumbai—or Mexico City or Shanghai, as is expected in future—will provide different perspectives on world history. The co-operation at the heart of the project is also expected to recast the relationship between museums in the industrialised world, all too often regarded as greedy hoarders of world treasures, and the newer museums of the global South that have limited collections and struggle to tell a global story. "Museums should be [like] lending libraries," suggests one curator.

In the first phase, which is due to open in the autumn of 2023, sacred sculptures from London and Berlin will take their places alongside the Indian deities in the rotunda of the CSMVS—gods such as Lakshmi who, like Mercury, is a god of prosperity, or Mumba, the goddess of Mumbai (as Athena is for Athens). The display will also highlight how actively gods are still worshipped in India, in contrast to Europe and America. "Indian audiences [like] to treat the Indian sculpture gallery as a temple," says one Indian curator. A second phase, which is expected to open in 2024, will dig deeper, looking particularly at the Indus Valley and the ways that it and other riverine cultures, along the Nile and the Yellow river, promoted trade, the movement of ideas and the projection of power across the world.

The Ancient World Gallery Project will allow the Getty to expand its collection-sharing programme. At a time when calls for restitution are growing louder, the project hopes to inject new energy into the debate about how to share the world's common heritage. ■

Fiammetta Rocco: Senior editor and culture correspondent, The Economist

This article appeared in the Culture section of the print edition of The World Ahead 2023 under the headline "A different way of looking at history"

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After the pandemic, a feast of great art shows is coming

Everything from Vermeer and Picasso to a new museum in Ghana

Nov 18th 2022

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By Rachel Lloyd: Deputy culture editor, The Economist

LIKE MANY museums, the Rijksmuseum suffered during the covid-19 pandemic. With a mere 675,000 visitors, 2020 was its worst year since the 1960s—until 2021, when only 625,000 people came to see the treasures in Amsterdam. In February 2023, however, its staff will be preparing for vast crowds to return. Its forthcoming exhibition of Johannes Vermeer's work will be the largest ever, bringing together 27 of his estimated 35 paintings from collections in Berlin, Dublin, the Hague, New York and Washington. The show will also reveal the results of recent scientific studies of "The Milkmaid", painted in around 1660, which cast light on Vermeer's method. It will be the blockbuster art show of the year.

Those who prefer late-19th- and early-20th-century art should book tickets for "After Impressionism", which opens at the National Gallery in London in March. The exhibition will bring together pieces by Cézanne, Van Gogh, Klimt, Matisse, Munch, Picasso and Rodin to explore how styles such as Cubism and Expressionism developed in cities across Europe. Admirers of Picasso have much else to look forward to. Dozens of shows in America and Europe will mark the 50th anniversary of the Spanish artist's death.

Several cultural institutions in Britain will reopen in 2023. The V&A Museum of Childhood will welcome visitors in the summer under a new moniker, Young V&A, with three new galleries displaying 2,000 objects. After three years of renovation and building work, the National Portrait Gallery will also reopen to the public. Expect a less enthusiastic reception when the Energy Revolution gallery at the Science Museum is unveiled. Its theme—how to halt climate change—is an urgent one. But the fact that the gallery's main sponsor is the Adani Group, an Indian conglomerate involved in coal-mining, has drawn widespread criticism.

As well as revamped exhibition spaces, some entirely new venues will be inaugurated in the coming year. In 2019 the South Korean government announced plans to build 186 museums and art galleries by 2023; perhaps the most intriguing is the Seoul Robot & AI Museum, due to open late in the year. The museum will testify to the ingenuity of machines, both inside and out: as well as being exhibited, robots have also been involved in its design, manufacturing and construction, according to Melike Altinisik, the architect responsible for the project. Robots will thus help create one of the first museums dedicated to robots.

Other museums will tell a more human story. The International African-American Museum (IAAM), first proposed in 2000, will open in Charleston, South Carolina, in January. The IAAM sits on the former site of Gadsden's Wharf, where an estimated 100,000 enslaved Africans disembarked. As well as drawing attention to the "gruelling and inhumane Middle Passage", the museum aims to examine how Africans' "labour, resistance and ingenuity and that of their descendants shaped every aspect of our world". It will also allow visitors to trace their family history, consider the influence of African-American culture and undertake quiet contemplation in its gardens.

Fittingly, a spiritual sibling to the IAAM will also open in 2023. Kojo Acquah Yankah, a former journalist and politician, had the idea for a museum exploring African culture and history in 1994, after attending a ceremony marking the 375th anniversary of the beginning of the slave trade in America. The Pan African Heritage Museum is located in Ghana—the first European colony in sub-Saharan Africa to achieve independence. Its design resembles a horn, an instrument often used to herald the arrival of something, or someone, special.

The collection (some of which is already visible online) will draw attention to the continent's little-known kingdoms, celebrate historical figures and highlight the influence of African empires on global civilisation. The museum's ambition is to become a "site of pilgrimage" where visitors might "unlearn and relearn the true history, culture and civilisation of Africa from the origin of humankind to the present". ■

Rachel Lloyd: Deputy culture editor, The Economist

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As Hollywood turns 100, movie consumption is being transformed

Users' tastes and behaviours are changing faster than studios' output

Nov 18th 2022

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By Tom Wainwright: Technology and media editor, The Economist

IN 1923 WOODRUFF AND SHOULTS, a Californian property developer, came up with an idea to promote its latest housing project. With the help of a team of mules, 13 giant white letters, each 50 feet high, were dragged up a hill to advertise the new development: HOLLYWOODLAND.

A hundred years later the sign is still standing (minus the "LAND", removed during a renovation in 1949). But the film business that goes on beneath it is going through a transformation. The content that people watch, and the way they watch it, will change more in the next few years than in the century just passed.

A cinema-goer transported from 1923 would be wowed by today's colour images and synchronised sound, still experimental a century ago. But much would feel familiar. Studio logos such as Universal's globe and Paramount's star-circled mountaintop appeared on some of the most successful films of the 1920s, as they do today. Disney and Warner Bros will both celebrate their centenaries in 2023.

The cinema experience is also recognisably similar. Film and sound quality have made giant leaps, as has the size of a tub of popcorn. But bigger innovations—3D films, curving "Cinerama" screens, Smell-O-Vision and so on—have flopped. Anything that cannot be easily reproduced at home is hard to sustain, because films struggle to break even without the TV after-market.

Much else is transformed, however—and looks likely to change more. Cinemas today might be recognisable to audiences from 1923, but the way they are used is quite different. In 1930 two-thirds of Americans went to the movies at least weekly, to see not just films but news, soap operas and cartoons. In the following decades, as everything except "feature" films shifted to the television, it became an occasional treat. In 2019 the average American went just 3.5 times.

> **Audiences are eschewing multi-million-dollar productions in favour of home-made content**

The disruption caused by covid-19, which reduced worldwide box-office takings by 82% in 2020, will not be temporary. Receipts may never recover, admits one studio chief, who blames the permanent closure of some cinemas during lockdowns and the accelerated adoption of streaming. The latter trend also means that much of the output of "Hollywood" is now overseen by tech firms to the north. Apple, 300 miles (480km) up the coast in Cupertino, won the Oscar for Best Picture in 2022, just three years after launching its TV+ service. Amazon, which recently produced the world's most expensive piece of television, "The Rings of Power", is in Seattle, even father north.

If time-travellers from 1923 were surprised that their descendants were deserting 20-foot screens for 20-inch ones, they would find the next emerging trend still harder to understand. The average American now spends 50 minutes a day watching video on hand-held devices with screens little bigger than those of Thomas Edison's early Kinetoscope. Children are keener still, with 60% watching full-length TV shows on mobiles at least weekly, according to the Motion Picture Association, which represents America's film studios. In Britain, 16- to 34-year-olds spend more than an hour a day just on YouTube's app, according to Ofcom, the media regulator.

This would be doubly perplexing to the audiences of a century ago. Not only are consumers ditching big screens for tiny ones. They are also eschewing multi-million-dollar productions for home-made content with lower production values than films of the 1920s. Expect technology to become more advanced and output more lavish, and for audiences to shrug and turn to the blurry home videos streaming onto their tiny screens. ■

Tom Wainwright: Technology and media editor, The Economist

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2023 offers up an enticing variety of new films

Barbie, John Wick and Guardians of the Galaxy, to name a few

Nov 18th 2022

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By Rachel Lloyd: Deputy culture editor, The Economist

THE INTERNET lit up in the summer of 2022 when photographs from the set of the first live-action "Barbie" film were released. Margot Robbie, playing the titular doll, and Ryan Gosling, starring as Ken, were pictured rollerblading in matching neon outfits (the aesthetic has since earned the moniker "Barbiecore").

In July 2023 audiences will be able to satisfy their curiosity. The plot follows Barbie as she is ousted from her community for "not being perfect enough". Greta Gerwig, the Oscar-nominated film-maker behind "Lady Bird" and "Little Women", has co-written and directed the film, which suggests that viewers can expect plenty of dry wit.

Needless to say, "Barbie" is not the only franchise due to hit the big screen in 2023. In the ever-expanding world of superheroes, there will be a third outing for the "Guardians of the Galaxy", as well as new tales of "The Marvels" and "Blade". In the action genre, Tom Cruise will undertake his seventh impossible mission, Keanu Reeves returns for "John Wick: Chapter 4" and Michael B. Jordan will face another gruelling bout in the ring in "Creed III" (a spin-off from the "Rocky" franchise).

> **Harrison Ford, now in his 80s, returns as "Indiana Jones"**

Perhaps most surprising is the return of Harrison Ford, now in his 80s, for a fifth "Indiana Jones" film. This adventure, rumoured to be set during the space race of the 1960s, will be released 15 years after the last. (Filming was delayed when Mr Ford sustained a serious injury on the set.)

The coming year also promises a surfeit of biographical drama. Dustin Lance Black, who won an Oscar for his biopic of Harvey Milk, a gay American politician, has written the script for "Rustin", about Bayard Rustin, a gay civil-rights activist (played by Colman Domingo, pictured), who organised the March on Washington in 1963. Bradley Cooper will star as Leonard Bernstein, a revered composer, in "Maestro," and Cillian Murphy will take on the role of Robert Oppenheimer, a theoretical physicist often considered the father of the atomic bomb, in director Christopher Nolan's latest project.

For those with a literary sensibility, there is much to look forward to, including adaptations of Alice Walker's "The Color Purple", Kristin Hannah's "The Nightingale" and Roald Dahl's "The Wonderful Story of Henry Sugar". Drawing on a bestselling non-fiction book published in 2017, Martin Scorsese will direct "Killers of the Flower Moon", about a spate of murders of Osage tribespeople in Oklahoma in the 1920s. (The cast includes two of his favourite actors, Leonardo DiCaprio and Robert De Niro.) And 2023 will be a particularly exciting year for fans of Bram Stoker: with "Renfield" and "The Last Voyage of Demeter", they will get to see two films inspired by material in "Dracula". ■

Rachel Lloyd: Deputy culture editor, The Economist

This article appeared in the Culture section of the print edition of The World Ahead 2023 under the headline "Dolls and superheroes"

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Saudi Arabia is getting into film production

Saudiwood is betting big on Arab audiences

Nov 18th 2022

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By Elise Burr: Freelance correspondent, New York

WHEN HIND, a princess in 7th-century Arabia, refuses to become an emperor's concubine, she flees into the desert. With the help of a wanderer, she unites fractious tribes to battle the man she spurned. So goes the plot of "Desert Warrior", a new film co-produced by MBC, Saudi Arabia's biggest media company, and AGC Studios, a Hollywood outfit. The film stars Aiysha Hart as Hind, alongside Anthony Mackie, who now plays Captain America in Marvel's superhero universe.

For years, the Middle East punched beneath its weight in film and television. That will change in 2023. The number of Arabic-language television series made for streaming will double compared with 2019, according to Constantinos Papavassilopoulos of Omdia, a data company. The Saudi government wants at least 100 films to be made in the country by 2030, and is willing to fund them.

The kingdom is trying to establish itself as the Middle East's media hub. Authoritarianism has hobbled the industry in Egypt, once the regional centre for film-making. In the past five years, the Saudi government has tried to show it is moving in the other direction, lifting a ban on cinemas, taking a controlling stake in MBC, creating a film festival and pledging $64bn to the industry.

Budgets of Arab-made flicks will grow. "Desert Warrior" is reportedly the most expensive film ever made in Saudi Arabia. "Rise of the Witches", another MBC production, is said to be Saudi Arabia's most expensive television show. Both will be released in 2023.

Netflix is investing in Arab-made content, too, as it looks to new markets to revive its growth. In 2022 it released "Perfect Strangers", its first original film in Arabic, and "Finding Ola", a show about an Egyptian mother navigating life after divorce. A second six-episode season is expected in 2023.

For decades, Arabic dramas revolved around the Ramadan serial, where families watch one episode of a show each night of the holy month. With a rise in streaming, more will be packaged into ten episodes or fewer. MBC is also investing in American-style open-ended soap operas.

Obstacles remain. Local Saudi crews lack experience making films, so the industry relies on foreign know-how. But luring people from Hollywood may be tricky. In 2022 the Saudis shunned Pixar's "Lightyear", a spin-off from "Toy Story", for including a gay kiss, and Marvel's "Doctor Strange in the Multiverse of Madness" for featuring a lesbian character. Even scenes of heterosexual intimacy are usually censored. And big budgets and stars do not guarantee acclaim. In the year ahead it is viewers who will determine whether Saudi Arabia's investments will pay off. ■

Elise Burr: Freelance correspondent, New York

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Tall buildings are transforming Quito

The capital of Ecuador is a new playground for renowned architects

Nov 18th 2022

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By Claire McQue: Assistant editor, Culture and social-media editor, The Economist

THE SECOND-HIGHEST capital city in the world unfurls along a long, narrow plateau in the Andes beneath snowcapped volcanoes. But the source of Quito's beauty is a headache for urban planners: space for new homes in Ecuador's capital is limited. So the city is going upwards.

In 2023, two new skyscrapers will join the high-rise structures that are already transforming Quito's skyline. A building designed by Bjarke Ingels Group (BIG), a trendy architecture firm, will rise 100 metres above central Quito. Qanvas, a 24-storey tower in the same neighbourhood, will also be finished. They follow the opening in 2022 of IQON, BIG's first skyscraper in Quito, and the city's tallest building.

> **The concentration of prestigious architects with work in Ecuador's capital stands out**

High-rise buildings are a novelty in Quito. Until IQON was built, a soaring 19th-century basilica dominated the skyline. The relocation of the airport outside the city in 2013 allowed loftier structures to be erected. New regulations introduced in 2016 say that if a project is close to a stop on the new metro line, due to open in late 2022, developers can double the building's height—as long as it complies with green-building rules.

The idea is to shape the city around these public-transport hubs. Joseph Schwarzkopf, boss of Uribe Schwarzkopf, the property developer which commissioned ten renowned architects to build high-rises around Quito, wants to see a "15-minute city", a place where citizens can work, eat and socialise within 15-minutes of their home. This would cut out polluting car journeys and improve the quality of life.

Tree-covered buildings for "vertical living" are going up in cities around the world, from Tirana, Albania's capital, to Huanggang in China's Hubei province. But the concentration of prestigious architects with work in Ecuador's capital stands out. They include Moshe Safdie, the mastermind behind Singapore's jungly airport, and Jean Nouvel, a Pritzker prizewinning architect from France.

Some Quiteños view this with dismay, concerned over whom these flashy apartments will serve. One local architect worries that private developers, rather than city-planners, are moulding Quito.

Similar concerns have arisen elsewhere. Gonzalo Diez, whose firm designed Qanvas, says it is natural as cities evolve. In the 1970s and 1980s architects turned Quito's low-rise residential buildings into multi-storey structures, he says. "We're doing the same thing they did…just on a different scale." ■

Claire McQue: Assistant editor, Culture and social-media editor, The Economist

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Brian Eno says a new global movement is emerging to save the planet

It's all about relationships

Nov 18th 2022

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By Brian Eno, musician, artist and activist

IT'S IN THE nature of emergent systems that they don't always announce themselves. They cannot, because they do not know what they are going to become.

Right now we are living through the emergence of a movement of unprecedented scale and scope—the biggest movement in human history, facing up to the biggest challenge in human history. Let's call it the "climate-change movement", but then let's acknowledge that it is not just about climate change but impinges on every hot topic of the moment: the rethinking of democracy, electoral systems, economics, migration, inequality, agriculture, women's rights, resource extraction, common ownership and personal lifestyle choices, to name a few.

In September 2022 I attended a gathering in Barcelona called "Fixing the Future". All those topics were discussed by an assembly of people from over 100 organisations with names like Rewilding Europe, Observadores del Mar, the New Citizenship Project, YouthNet for Climate Justice Bangladesh and Plastic Punch Ghana.

What were we all talking about? Relationships, of people to each other, and of humans to the planet. We were talking about how to make a planet that actually works.

The products of such a conference are new ideas and new relationships. I made at least 20 new connections, and if the same was true for all the other attendees that means something like 10,000 new relationships were formed during that one conference. These are relationships held together by ideas: the scaffolding of a social movement.

In the same week, there were probably 100 other conferences worldwide discussing the same topics. That suggests a million new relationships centred around climate-change issues were formed in a week. And that's just in formal settings. We are all talking about the same things. Few of us have any idea how many people are involved (though I think we should wear little green badges saying "We're on the same side", so we can recognise each other).

You may wonder why this planet-wide conversation about the future is not bigger news. The problem is that it is good news, which, as everybody knows, does not sell newspapers or drive clicks. Only the spectacular parts of the climate news (floods and fires) are dramatic enough to make it onto television, so we get to see only the bad news. Underneath the news, though, slow and deep, is a movement of long horizons and structural rethinking, not attracting much attention until it gets angry. But a rich and robust root system is growing, and its first green shoots are starting to break the surface.

> **Brian Eno's album "ForeverAndEverNoMore" (Verve/UMC) was released in October 2022**

Quite a number of participants in this conversation are artists. Why? Art is where we go to experience things safely. In art we can allow ourselves to experience strong feelings. We can always shut the book. We can immerse ourselves in other worlds and the feelings they arouse without risking our lives or our health. Children do this when they learn through play to see how things work. Adults play through art. Reading George Orwell's "1984" gives you the chance to live in a totalitarian society and see what you feel about it, without actually going to one.

Art allows us to imagine what is possible and to monitor our feelings about it. The hit song "Jerusalema" inspired a global dance craze in which millions of people filmed their own versions of the dance and posted them on YouTube. Watch 100 monks and nuns dancing. Or 25 Polish construction workers. Or 200 Nigerian schoolchildren. It may be the biggest performance-art spectacle of all time. The message? We can do something together all over the whole world, and make it fun.

That's the kind of message that art carries well: "Here's a world that could exist. Now, how does that feel?" Feelings are thinking that doesn't yet have words.

I expect those first green shoots to multiply. New forms of democratic decision-making in the form of citizens' assemblies, new approaches to energy production, new understandings of who we are and what our planet needs, and new forms of global co-operation—sometimes for fun and sometimes for real. The fun prepares us for the real.

The next stage is for the movement to start to grasp its ubiquity and gather new strength. These are people who love life—not just their own lives, but life itself. Change will not happen overnight (and it will face a lot of opposition), but there are more of us than we realise. That's why we need those badges. ■

Brian Eno, musician, artist and activist

This article appeared in the Culture section of the print edition of The World Ahead 2023 under the headline "Badge of honour"

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The World Ahead | Triple dip

The weather system that influences the world

The southern Pacific Ocean has been locked in its La Niña phase for three winters running. That is unusual, and dangerous

The trade winds trace eternal circles, east to west around the planet, driven by the sun's heat and Earth's rotation. In the south Pacific, they combine with ocean currents to create a climate system called the El Niño-Southern Oscillation (ENSO).

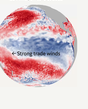
ENSO has three equilibrium points, states in which it can stay balanced for some time: neutral, El Niño and La Niña. In its neutral phase, shown here, winds are neither too strong nor too weak, and the ocean surface over which they blow oscillates gently between warm (red) and cold (blue).

But when trade winds strengthen or weaken just a little, they can tip ENSO into one of two other equilibrium states, El Niño or La Niña. Shown here is the formation of the El Niño phase of 1998. A great river of warm water stretches west from the coast of Peru towards Indonesia.

Weaker winds allow warm water from the western Pacific to spread east. Warmer seas heat the air above them, lowering its pressure and further damping east-west winds (as wind is just air that flows from areas of high pressure to low). This creates a feedback loop which locks ENSO in the El Niño phase.

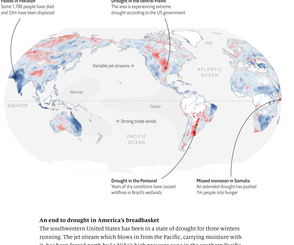
Eventually stronger winds or ocean currents nudge the system out of El Niño and back into the neutral phase. If stronger winds persist they can lock the system into an opposite phase: La Niña. This is what ENSO looked like in 2022.

Stronger winds drive water west over the surface of the ocean. Cold water then wells up from the depths to replace it, cooling the air above. This raises air pressure over the south-eastern Pacific and creates stronger westerly winds, which drive more water before them, setting up the opposite feedback loop to El Niño, and keeping ENSO in the La Niña state.



For La Niña to span three Northern-hemisphere winters is unusual. It has been recorded just twice before, once in the mid-1950s and again at the turn of the millennium. Its long duration is a problem. The large, persistent mass of cold air and high pressure influences wind patterns known as jet streams across the Pacific and the Indian Ocean. Where jet streams that blow over land from the ocean are diverted, that land loses moisture and can suffer from drought. The land to which that jet stream is diverted gets more moisture, and can be flooded.

This, coupled with a warmer planet, has created a series of extreme weather events. Places that need the rain, like the Horn of Africa, have been deprived of it. Regions that have more water than they can handle like Pakistan, have been inundated. But as 2022 turns to 2023, La Niña is weakening. Its end will bring relief to many. But the climate will not stand still. The heat that humans have added to the earth's atmosphere and oceans through decades of CO_2 emissions is making its weather less predictable and more volatile than ever.



An end to drought in America's breadbasket

The southwestern United States has been in a state of drought for three winters running. The jet stream which blows in from the Pacific, carrying moisture with it, has been forced north by La Niña's high pressure zone in the southern Pacific. That means more rain falls further north too, and less falls in the south. The National Integrated Drought Information System (NIDIS) shows that 70% of Oklahoma is in a state of exceptional or extreme drought, the most serious levels that NIDIS reports. September was the driest since 1956, according to Gary McManus, the state's climatologist.

This La Niña-induced drought is stimulating wildfires in Kansas. The state is now so dusty that it is becoming a safety concern for drivers and cattle. The wheat crop is weaker than usual and the state is concerned that it will be too dry for much of it to survive the winter. Losses to cotton crops due to drought in Texas are estimated to be worth some $2bn. The end of La Niña will bring relief. America's National Weather Service's latest prediction gives a 57% likelihood of ENSO returning to its neutral phase between February and April 2023.

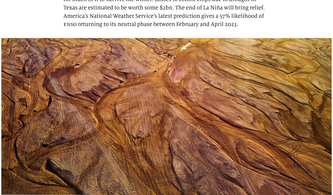


PHOTO: AP

The Indus River breaks its banks

Flooding in Pakistan killed at least 1,700 people during the summer of 2022, and left 7.6m homeless, according to the UN monitoring organisation, ReliefWeb. The country's climate minister, Sherry Rehman, said that the worst-affected provinces received between five and seven times their average rainfall in August. The Indus river, which runs the length of Pakistan, burst its banks to swamp thousands of square kilometres of land. Shehbaz Sharif, the prime minister, said they were the worst floods in his country's history.

La Niña is partially responsible. Just as the colder southern Pacific equilibrium pushes moisture away from the southern United States, it happens to push moisture right on top of Pakistan. But La Niña is not acting alone. A warmer climate, thanks to humanity's carbon dioxide emissions, also means a more flood-prone Pakistan. In a paper published in September, a group of climate scientists estimated that rainfall over the worst-impacted provinces was 75% more intense than it would have been without the 1.2C degrees of warming to which the planet has already been subjected.

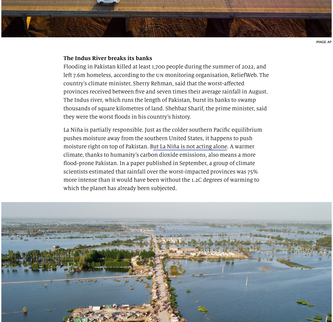


PHOTO: GETTY

As the winds ease, the south-eastern Pacific will warm and ENSO will finally break out of La Niña. It may switch into its opposite state, El Niño, pulling jet streams round the world in the opposite direction, driving different regions into drought or flood. The greatest forces on the planet remain outside human control.

Sources: NOAA; Planet Labs PBC; *The Economist*

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

The World Ahead | The World Ahead 2023

Supermarket cashiers move down the conveyor-belt to obsolescence

Unexpected item in bagging area

Getty Images

Nov 18th 2022

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By Ann Wroe: Obituaries editor, The Economist

If Dante had known such a scene, he would surely have put it in Purgatory. A long rubberised conveyor belt moved glacially along, bearing an unending line of groceries, homeware items and pet supplies. At its end sat a man in his 30s whose sole occupation was to seize these things, scan them, announce the price and then, with an expert wrist, whizz the shopping-dividers down to the other end. And again and again, *ad infinitum*.

This was Gary's job, and he had done it for years, struggling into his vinyl tabard and cap as soon as he got to the store and, occasionally, practising his smile. As well as "scanning goods" and "collecting payments", his job description required him to "issue receipts" and "greet customers who are entering or leaving the store". He did that sparingly.

For years, few people noticed him, save for that fleeting spell when they had to meet across the rubber divide. They had noticed Mavis, because she sang "Dream a Little Dream of Me" along with the muzak, and Polly with the purple fingernails which fell on the frozen Pop-Tarts like a vulture's claw. But the most dramatic thing Gary ever did was tear off the receipt with extra panache when pretty women were hovering over him.

They noticed him now, though, because he was the only human left on a till in the whole vast store. It was rumoured, in fact, that he might be the last supermarket cashier in the world. People no longer needed the likes of him. The rest of the front of the store was a shining, blinking array of self-service checkouts, proclaiming "Thank you for shopping with us! Would you like a receipt?" There were thousands of these in the world, and breeding fast. Next door there was even a shop with no checkouts at all, run by Amazon, where you could walk out of the door with your arms full of cakes, just like that.

So why was Gary still sitting there, in this entry-level job on the minimum wage? There was nothing the least bit creative about it, unless you count arranging the plastic bags in a pile ("maintain clean and tidy checkout areas at all times").

It was worse than that. If prices went up, or some favourite soup or cereal was missing from the shelf, it was his fault. When his cash-register total disagreed with the total the customer had roughly totted up in his head, it was also his fault. If an egg broke on the conveyor belt, or a bag of sugar leaked, it was his job to clear it up. Everyone took their grievances out on him, but he could not do the same to them. He could, however, put something heavy on top of their tomatoes.

> **It was rumoured that Gary might be the last supermarket cashier in the world**

His father, also a cashier, had taken real pride in the job. Cash registers back then were glorious machines, like a typewriter or a small piano. It was a thrill, once, to place your fingers on the keys at exactly the right tension to crash them down at the same moment and let fly the drawer, where the coins and notes nestled. On grander models the price also popped up, in a glass case on top of the till. Both the noise and the unlocking were designed to stop cashiers pilfering, as some did. Each sale was momentous.

Those glory days, when the cashier was in charge, were long gone. Yet it was he, Gary, who made the final, immutable announcement of the total and waited for tribute to be paid. That was his moment of supremacy. If payment was presented in copper coins, counted out shakily from purse to hand or poured out over the conveyor belt, he might generously deign to help with it. If the customer showed doubt or incredulity, he fell silent, sure of the upper hand. If they persisted he would take the nuclear option, and press the bell for the supervisor.

The more Gary thought about this, the more he recognised a cashier's powers. Time itself used to revolve around their rest-breaks, the only topic of their conversations. ("When are you going on break?" "Ten-thirty." "I'll go at 11 then.") They controlled motion, too, closing tills suddenly and randomly to send a cascade of shoppers and trolleys off in a different direction. He could enforce laws as he chose, determining the age of customers trying to buy alcohol not by ID but by how they were dressed and whether they were his girlfriend's cousin. And although he handled money, like royalty he was not required to know the price of anything. He was above that, too.

In fact, when he thought about it in sunnier moods, his role was essential on even more levels. He kept cash, still the life-blood of society, flowing round. He bravely manned the sharp end of trade and commerce, actually getting products into consumers' hands. Perhaps most important, he provided a bit of chat for people whose only daily interaction was with him. No craic about corns, or children, or the weather could be had with a self-service checkout.

Without people like him, the loneliness of cities and the facelessness of suburbs would only deepen. The gap between the tech-crazed young and the technophobe old would only widen. And if it weren't for the exercise and fresh air and the chance to squeeze an avocado or two, everyone might as well shop online. In a world of self-service checkouts, nobody would be a cashier—and everyone would be.

And with that profound thought, he went for a break from which he might never return. ■

Ann Wroe: Obituaries editor, The Economist

This article appeared in the Obituary section of the print edition of The World Ahead 2023 under the headline "Unexpected item in bagging area"

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