

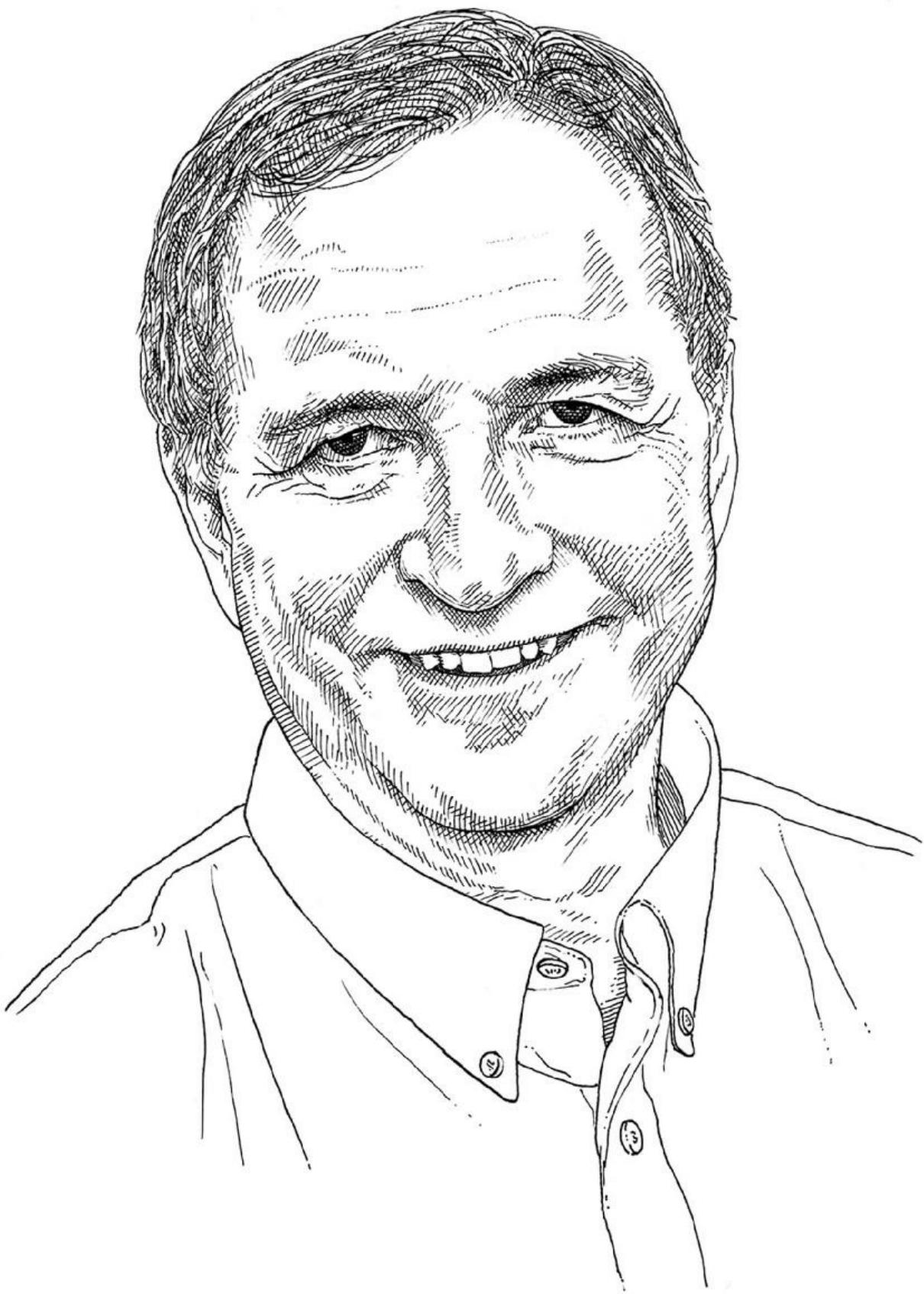
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The World in 2020



The AI we consulted reckons Mr Trump will lose

TWENTY-TWENTY has a landmark ring to it. The start of a new decade prompts bigger-than-usual thoughts about the future. For the first time in 60 years the new decade coincides with a year of the rat, the start of the 12-year cycle in the Chinese zodiac. And, as the predictions in this volume describe, 2020 itself will not be short of drama. A dozen highlights give a sense of what lies ahead.

- 1. It's judgment time.** That is doubly true for President Donald Trump: first in Congress with the Democrats' drive to remove him from office (the Republican-controlled Senate will save him), then in a febrile election in November. It will be ugly; the artificial intelligence we consulted reckons Mr Trump will lose. Britain's reckoning with Brexit will leave the country divided, damaged and diminished.
- 2. Economies wrestle with negativity.** Banks, especially in Europe, will battle with negative interest rates. America will flirt with recession—but don't be surprised if disaster fails to strike, and markets revive.
- 3. China highlights positivity.** It will claim to have met its target of achieving “moderate prosperity” by 2020. Other countries will have to work out how to position themselves, in trade and technology, between a Chinese sphere of influence and an American one.
- 4. Sport has a jumbo year.** The Tokyo Olympics will draw a huge global audience. The Euro 2020 football championship will be spread across 12 countries. Cricket hopes for a smashing success in Australia with the T20 World Cup—and in England and Wales with a new, even shorter format called The Hundred.
- 5. Worries about nukes proliferate.** The five-yearly review of the Nuclear Non-Proliferation Treaty will be a fraught affair, 75 years after the bombing of Hiroshima and Nagasaki. Fears of a new arms race will grow as nuclear arms-control agreements fray.
- 6. Sustainability is all the rage.** At least, talking about it is. In Kunming

countries will discuss biodiversity. In Glasgow they will make pledges on carbon emissions. Business leaders will vow to support sustainable capitalism —as long as shareholders let them.

7. The Gulf welcomes the world. Dubai hopes its World Expo will have a lasting impact. More awkwardly, Saudi Arabia hosts the g20 summit.

8. Multiple missions head to Mars. America, Europe, China and the UAE all send probes.

9. Tech has both highs and lows. The highs include flying taxis, electric supercars and personalised medicine; the lows involve tech giants bracing themselves for more regulation, taxation and critical scrutiny. Instagram will find itself in the spotlight of controversy in this American-election cycle.

10. Big anniversaries resonate, especially Beethoven's 250th. It's also 500 years since Raphael's death, 400 since the Mayflower sailed to America, 300 since the South Sea Bubble burst, 200 since the birth of Florence Nightingale (the World Health Organisation has designated 2020 the Year of the Nurse), 100 since Prohibition, 75 since the founding of the un and—while their fans gently weep—50 years since the Beatles broke up.

11. A torrent of entertainment comes on stream. Television's streaming wars intensify, and streaming opens new vistas for gamers, too. But James Bond fans will head to old-fashioned cinemas for the 25th film in the franchise. And a grand new national museum in Cairo will show that physical presence still matters.

12. It's the decade of...the “yold”, or the young old, as sprightly baby-boomers hit 65. For the first time, the world will have more people aged over 30 than under. The 2020s promise to be a bad decade for African dynasties, a disruptive one for countries facing separatist pressures and an exciting one for plant geneticists, who in ten years' time aim to be drawing down carbon dioxide from the atmosphere at a global scale.

The new decade provides an excuse to look beyond the coming year. A special section, “2020 visions”, reviews long-range predictions from the past and for the future, speculates on what the world is doing today that will appal

our grandchildren, and includes ideas on tech's evolution from the founders of DeepMind and Huawei. Elsewhere, guest contributors invite us to think afresh about the future of everything from Africa to Venezuela to the American Dream.

One thing about 2020 is sure: this annual will have a new editor. After 17 years, it is time to pass on the crystal ball. Under Tom Standage, a master at spotting trends and putting them in context, the future will be great.

Daniel Franklin
Editor, *The World in 2020*

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Leaders



Reuters

The tenor of the 2020 campaign will be uglier than any in modern American history

Febrile politics, faltering economy

The year ahead will be dominated by America's presidential election and a global slowdown, says **Zanny Minton Beddoes**

TWO SUBJECTS will hog headlines around the world in 2020: America's presidential-election campaign and the weakness of the global economy. Both will induce anxiety and each will influence the other. It will be a volatile year, characterised by unstable, angry and polarised politics, and an enfeebled economic outlook for the world, regardless of who wins on November 3rd, when American voters go to the polls.

Many elements of the election remain uncertain, from the impact of the impeachment trial that is all but certain to precede the head-to-head presidential battle, to who will be the Democratic nominee to challenge President Donald Trump. But there seems little doubt that the tenor of the 2020 campaign will be uglier than any in modern American history. In 2016, already a notably nasty contest, a Trump presidency was a pinch-me prospect that too many people discounted; in 2020 millions of voters, on both sides, will feel the very fabric of their country's democracy to be at stake. Outside America many more millions will wonder if an extraordinary four-year interlude is about to end, and whether the country that has been the anchor of the post-war world order has been irrevocably transformed.

Thanks to the American president's ability to make policy by executive action and the reach of his Twitter feed, Mr Trump will be the impresario of the election show, setting the terms on which the contest is fought and the tone with which it is conducted. He will brand whoever is his challenger as a dangerous socialist, bent on flooding America with immigrants and embarking on a radical far-left agenda that will enfeeble the country. The trope will seem more plausible if his opponent is Elizabeth Warren, the senator for Massachusetts and former law professor whose plan to remake American capitalism is genuinely radical. But the rhetoric will be similar

even if the Democrats choose a more centrist candidate, such as the former vice-president, Joe Biden, or just possibly Pete Buttigieg, the newly prominent mayor of South Bend, Indiana, who did a tour of duty in Afghanistan and will turn 38 in January.

Unfortunately for Mr Trump, a noticeable cooling of the American economy will challenge his claim to have made America great again. Global growth has already slowed in 2019, as damage from the Sino-American trade war accumulates, hitting manufacturing and trade flows, and denting business confidence. America itself has hitherto been least affected. Buoyed by rising wages, a lingering boost from tax cuts Mr Trump introduced in 2017 and the lowest jobless rate in half a century, consumers will end 2019 still confident and keen to spend.

But that confidence will start to ebb in 2020, as the stockmarket wobbles, the fiscal boost disappears and the jobless rate inches upwards. America will escape a formal recession, particularly since the Federal Reserve, which cut interest rates in July, September and October 2019, will act promptly to reduce rates yet further. But the mood will be one of growing gloom that the country's longest expansion on record is coming to an end.

Vicious cycles

The political maelstrom will make things worse. Mr Trump will search for scapegoats. His attacks on the Federal Reserve and its chair, Jerome Powell, will intensify. The president will vilify any firms that lay off workers. He will demand more tax cuts and then denounce a do-nothing Congress for failing to pass them. Ironically, politics will constrain the most sensible route to supporting growth: an end to the economic confrontation with China. Although Mr Trump will succeed in signing a mini-deal with President Xi Jinping, the bulk of America's levies on Chinese goods and its growing determination to limit China's access to American technology will continue. That is because Mr Trump cannot afford to be branded "soft on China" by his Democratic challenger. No Democratic candidate will run a campaign championing a more co-operative strategic relationship with China. If anything, the pressure to be more aggressive will grow, as Democrats lambast Mr Trump's tolerance of China's human-rights abuses in Xinjiang and his failure to support pro-democracy protesters in Hong Kong.

If the Democrats choose a more left-wing candidate—Ms Warren or Bernie Sanders, the 78-year-old senator for Vermont—a second, destabilising link between politics and economics could kick in. Fearful of a radical overhaul of swathes of American business (Ms Warren’s plans, for instance, would transform industries from health care to finance to technology), financial markets may stumble further if, as could well be the case, the election seems close. Mr Trump will be quick to blame any stockmarket weakness on the spectre of socialism. But as consumers’ confidence falls it will get harder for the president to base his campaign on the idea that, thanks to him, America’s economy is strong.

Worries around the world

Wobbles in the world’s biggest economy will compound weakness elsewhere. China’s economy will slow further, though gradually, as its government strains to provide enough stimulus to keep its growth targets in sight. Yet in doing so it will have to balance its need to make up for the loss of trade and its fear of letting loose another surge in excess credit.

Europe will face a particularly difficult year. Because of its reliance on foreign demand, especially from China, Germany will begin 2020 close to recession and with the grand coalition under the chancellor, Angela Merkel, looking more fragile than ever. Political paralysis in the waning days of the Merkel era, alongside a cultural aversion to deficit spending, will prevent Germany from grasping the obvious policy response: a fiscal stimulus focused on domestic public investment. France’s president, Emmanuel Macron, will try to galvanise a bolder approach at the European level, but it will founder on petulant arguments about how to make up for the shortfall Brexit will leave in the European Union’s seven-year budget. That means the burden of propping up European demand will, yet again, be left to the European Central Bank (ECB), even as that institution adjusts to its change of leadership and reaches the limits of what its rules allow.

And in 2020 reliance on the ECB may bring a new danger, as Mr Trump, in search of scapegoats for America’s economic slowdown, points to the ECB’s negative rates as an unfair trade advantage. His campaign speeches could be peppered with the threat of tariffs on European goods frequently enough to unnerve investors. The stockmarket gyrations that this would cause might

perhaps be sufficiently alarming to discourage Mr Trump from opening up a major second front in the trade war.

Climate of discontent

Nonetheless, the more Mr Trump indulges in tariff threats, the more that approach will appeal to others. In the run-up to a big climate summit in Glasgow in November 2020, the coming year may well be when European politicians start seriously to discuss carbon tariffs (which they will call “border adjustment taxes”). Though the rationale has some legitimacy, the prospect of adding tariffs to the climate-fighting arsenal will add a further, unnerving risk to global trade.

All these factors form multiple feedback loops between wild politics and a weakening economy. Whatever their outcome, it will mark a big change. For the past few years the global expansion has seemed all but impervious to political shocks. Financial markets have shrugged off angry and polarised politics. In 2020 the opposite will be true.

Such volatility will not be confined to the economy. A similar dynamic will be at work in geopolitics, too. A more inward-looking America has widened the scope for disruptive behaviour around the world. Recent examples range from Turkey’s move into northern Syria to Iranian mischief-making against Gulf shipping and Saudi oil facilities to an outbreak of trade hostilities between Japan and South Korea.

With America’s politicians distracted by electoral rivalry at home, opportunists elsewhere will be tempted to try their luck. If that exposes the superpower’s weakness, the embarrassment could in turn push an argument over America’s role in the world to the heart of the election campaign—potentially precipitating an international crisis as the president feels himself compelled to react decisively.

Such a crisis is the last thing a faltering economy needs. But America’s febrile politics of 2020 make one likelier than usual. Get ready for a wild ride.

Zanny Minton Beddoes: editor-in-chief, *The Economist*

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Nick Lowndes

Sydney alone has more foreign-born residents than mainland China

Anglosphere v Sinosphere

Two of the world's great cultures need to get on better, says **Robert Guest**

TO UNDERSTAND THE difference between the Anglosphere and the Sinosphere, consider “South Park”. When this satirical American cartoon mocked Chinese censorship, China banned it. The show's creators apologised: “We welcome the Chinese censors into our homes and into our hearts...Xi [Jinping] doesn't look like Winnie the Pooh at all...Long live the Great Communist Party of China! May this autumn's sorghum harvest be bountiful! We good now China?”

Two of the world's great cultures are butting heads. In one corner is the Anglosphere—America, Britain, Canada, Australia and New Zealand—a group of rich, English-speaking countries with open societies and a streak of gleeful irreverence. In the other corner is the Sinosphere, a sterner place where deference to the leader-for-life is not merely expected but required. The Sinosphere consists mostly of the People's Republic of China, but also includes those under its sway.

Sticklers may carp that neither formally exists. There is no president of the Anglosphere, no code of Sinospheric law. But the idea of the two spheres explains a few things about the world. The superpower struggle at the centre of geopolitics is partly about two very different kinds of society failing to get along.

The five English-speaking democracies have heaps in common. All are free-talking, free-enterprise-loving places (though they often fall short of these ideals). They are attractive places, too. Between them, they draw in two-thirds of the world's highly skilled immigrants. By contrast, of the 750m people who Gallup reports would like to migrate, only 1% want to move to the People's Republic. Sydney alone has more foreign-born residents than mainland China.

Members of the Anglosphere have warmer ties with each other than they do with other rich democracies, even if most of the non-Americans dislike Donald Trump. Together the five governments make up the “Five Eyes”—their spies trust each other enough to pool intelligence, in a way they don’t with France, Germany or Japan. The Sinosphere revolves around one country, but its reach is wide. It buys influence with roads and loans, and offers autocrats everywhere a model of how to combine rapid economic growth with one-party rule.

The two spheres are increasingly suspicious of each other. Mr Trump is waging a trade war. Australia frets that it relies too much on exports to China. The once-fanciful idea that Western economies could decouple from China is gaining currency.

Meanwhile, the Anglosphere’s military planners ponder how to keep China from controlling the Pacific. To guard against Chinese spying, three Anglosphere governments have slowed the roll-out of fifth-generation (5G) mobile networks by imposing curbs on Huawei, a Chinese telecoms firm, and the other two are mulling it (see Business section). China is ramping up military spending to keep America at bay.

A degree of discord is inevitable. But both sides must try harder in 2020 to avoid escalation. If they don’t, Mr Trump’s trade war could metastasise and hobble the world economy. A miscalculation in the South China Sea could lead to a shooting war.

A good start would be to co-operate more in areas where both sides have common goals: climate change, fighting pandemics, preserving the ocean and stopping North Korea from doing anything rash. America and Australia in recent times have failed dismally to work with China on climate change. They can do better, though perhaps not under their current leaders.

Both sides should tone down the hostile rhetoric. On trade, chest-thumping nationalism is obscuring shared interests. Mr Trump cannot afford a recession just before an election. Mr Xi cannot afford a sharp slowdown. A deal could be reached in which America drops tariffs and China allows more market access and less pillaging of intellectual property. The biggest sticking-point, America’s demand that China stop favouring state-owned enterprises, is

actually a demand to rewrite the relationship between the Chinese state and its economy. That cannot be satisfied—but it could be fudged.

Anglosphere, Sinosphere, atmosphere

To build more constructive relations, compartmentalise. By all means chide China for abusing dissidents, but not in negotiations on trade or the climate. Global disgust is rightly growing over Beijing's bullying of Hong Kongers and mass incarceration of Muslims in Xinjiang. But if trade talks start including demands for human rights—unlikely under Mr Trump, but possible under a future Democratic president—they are doomed.

Robert Guest: foreign editor, *The Economist*

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An opportunity exists in 2020 to salvage nuclear diplomacy

Do those nuclear deals

America urgently needs to get back into the arms-control habit, argues **Daniel Franklin**

THE CONDITIONS for America to do foreign-policy deals in 2020 could hardly seem worse. The effort to impeach President Donald Trump has made the country's diplomacy toxic, with suspicion and potential leaks apt to poison any big initiative. Relations with America's emerging challenger, China, have settled into deep distrust. Those with its traditional rival, Russia, look flimsier, in terms of the strategic dialogue between officials that minimises misunderstanding, than at any time since the height of the cold war. And foreign leaders everywhere may be calculating that they are better off waiting out this American president, in case a more amenable one is in place come 2021.

Yet in the vital area of nuclear arms-control there is an urgency to get back to business—and an opportunity to do so in 2020. The urgency comes from the fact that the regime of nuclear restraint is eroding to the point that there could soon be nothing left of it. America abandoned the 1972 Anti-Ballistic Missile Treaty in 2002. Mr Trump has walked away from the nuclear deal with Iran (though its European partners have kept it on life support). North Korea's nuclear programme and missile-testing continue while Mr Trump pretends his summity has solved the problem and looks the other way. Russian cheating has killed the Intermediate-range Nuclear Forces Treaty, which got rid of a whole class of weapons; it expired in August 2019.

And unless both America and Russia agree to an extension, the New START treaty, signed in 2010, will lapse in early 2021. Those two countries still have more than 90% of the world's nukes. New START limits the size of their arsenals and sets the rules for an intrusive regime of inspections. With no constraints in place, the way would be open to a new nuclear arms race. Mr Trump dislikes New START, just as he trashes everything else associated with his predecessor, Barack Obama. As is his wont, he wants a bigger deal,

one that brings in China, whose nuclear arsenal is small but expanding. But the Chinese show no interest. It makes sense to involve them in nuclear arms-control, yet any deal would take years, so right now talk of doing so looks like a ruse to let New START die. John Bolton, until September Mr Trump's hawkish national security adviser, who was happy to see off treaties that constrained America's freedom of manoeuvre, said in June that an extension of New START was "unlikely".

All this has veteran arms-controllers deeply worried. "Not since the 1962 Cuban missile crisis has the risk of a US-Russian confrontation involving the use of nuclear weapons been as high as it is today," warn Sam Nunn, a former senator, and Ernest Moniz, an ex-energy secretary, in *Foreign Affairs*. The breakdown in arms-control will make the five-yearly review conference, known as RevCon, of the Nuclear Non-Proliferation Treaty (NPT) in New York beginning in April a fraught affair (see International section). The nuclear powers are failing to keep their side of the bargain, which is to make good-faith efforts to give up the bomb. An unravelling of the NPT would surely lead to more states deciding they need nukes.

From RevCon to RevUp

Despite the gloom, an opportunity exists in 2020—75 years after bombs fell on Hiroshima and Nagasaki—to salvage nuclear diplomacy. The obstructionist Mr Bolton is gone. And in two areas, at least, deals are doable.

One is with Iran. Energetic efforts by France's president, Emmanuel Macron, to broker a meeting, or at least a conversation, between Mr Trump and President Hassan Rouhani point to the possibility of an updated nuclear accord. Mr Trump needs good headlines. Iran has a pressing interest in the easing of sanctions and Mr Rouhani has said he sees the French initiative as an "acceptable" basis for negotiations. Improbable though it may seem, given the chasm between America and Iran (see Middle East section), a bargain is there to be done.

The other is with Russia, on New START. Both sides have reservations that need to be dealt with before an extension can be agreed—but nothing that cannot be overcome given sufficient political will. Serious negotiations need to start soon to get a deal done in time.

For Mr Trump, who fancied himself as a nuclear deal-maker long before he became president, the temptation to put his brand on what he would sell as new, improved deals should be strong, given his troubles at home. True, tougher tasks lie ahead to manage new threats such as hypersonic weapons and cyber-warfare. All the more reason, then, not to lose the agreements that exist, and to get back into the arms-control habit in 2020.

Daniel Franklin: editor, *The World in 2020*

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Reuters

History offers little guidance as to what a trade-war recession looks like

Supply and unarmed

The world economy could be in for an unusual kind of downturn, predicts **Henry Curr**

ECONOMIC EXPANSIONS are most often killed off by rising interest rates or financial crashes—surprises that cause economy-wide demand for goods and services to fall. Rarer is the supply-side recession in which economies are deprived of their productive capacity. Not since the oil-price shocks of the 1970s has there been a global downturn that can be attributed primarily to supply. Yet if a worldwide slump happens in 2020 it may fall into that category—because it will have been caused primarily by the trade barriers erected between China and America.

The trade war between the two countries intensified for most of 2019, when it had been expected to come to an end. Relations eased a little in October 2019, with the postponement of some tariffs, but an end to hostilities is some way off. It remains possible that the average tariff on American imports could start the new year at 6%, easily the highest this century. Moreover, tariffs are expanding to cover imports for which there are fewer ready substitutes. Firms and their supply chains are being forced to make disruptive adjustments which will eventually bubble up and spill over into the broader economy.

History offers little guidance as to what a trade-war recession looks like, or what the right policy response is. Nor, it seems, is economic theory much use. It predicts that tariffs, like all supply-side disruptions, will be inflationary. In fact the most visible effects of the trade war to date have been declining business confidence, a global manufacturing slump and tepid investment. Inflation expectations have been falling, as have long-term interest rates. That makes the slowdown look more normal.

An upside of this is that the right policy response becomes clearer: economies will need stimulus. America's Federal Reserve has already cut interest rates

and the European Central Bank (ECB) has restarted quantitative easing (QE), while Chinese policymakers have eased both monetary and fiscal policy. Yet rich-world central banks are running up against limits on monetary policy. Interest rates in Europe are already negative and the ECB cannot buy bonds for ever without hitting legal constraints. The Fed does not have much more room to cut rates. The only central banks that look free to support their economies are those in emerging markets, where rates are higher and looser Fed policy is a boon, because it removes downward pressure on their currencies.

Turnover among top global officials is a further source of uncertainty. Christine Lagarde is taking over at the ECB. Though she shares the doveishness of her predecessor, Mario Draghi, she will struggle to hold together the central bank's governing council as its northern members become ever more agitated by negative rates and bond-buying. Britain is due a new Bank of England governor to replace Mark Carney. Kristalina Georgieva, a senior World Bank official, has replaced Ms Lagarde at the helm of the IMF.

And America's presidential election will have profound implications for both the trade war and economic policy. If Donald Trump is re-elected, investors might anticipate an assault on the Fed's independence which includes replacing Jerome Powell, its head, with a more pliant figure when his term expires in 2022. A Democrat in the White House, by contrast, might reverse Mr Trump's tax cuts and mount an assault on the rich.

Either way, American monetary policy will enter a period of flux. In 2020 the Fed will finish a review of its monetary-policy framework. It will probably commit to targeting 2% inflation on average over the economic cycle as a whole, rather than all the time. Tolerating inflation overshoots after a downturn should allow it to fight a slump more aggressively.

The Fed must also grapple with the consequences of having unwound QE in recent years. By making central-bank money scarce this has recently caused trouble in overnight money markets. The Fed will expand its balance-sheet again to ease the cash shortage and ensure the transmission of its monetary policy through the financial system.

A scary scenario

A recession is not inevitable. In many countries, especially America, healthy labour markets and confident consumers are bulwarks against one. Yet these defences are beginning to show cracks. And there is a worst-case scenario that should worry central bankers everywhere: that the trade war turns inflationary after all, perhaps compounded by rising oil prices, even as growth slows. The world economy is teetering on the brink of an unfamiliar type of downturn, with central banks in a period of flux. It is an uncomfortable position to be in.

Henry Curr: economics editor, *The Economist*

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Steve Carroll

It can help broaden the mind

Glimpses of the world ahead

Most science fiction is not predictive. Yet it can still be a guide to the future, says **Tom Standage**

IN “HIGH GROUND”, an episode of “Star Trek: The Next Generation” first aired in 1990, a crew member of the starship *Enterprise* is taken hostage by separatists on the planet Rutia IV. As her colleagues discuss how best to respond, one of them draws an analogy with a conflict on Earth several centuries earlier—the Troubles in Northern Ireland—noting that they were ultimately resolved by “the Irish unification of 2024”.

As the 2020s dawn, the upheaval of Brexit means the prospect of Irish reunification no longer seems like science fiction. A poll in September 2019 found that a slight majority of voters in Northern Ireland were in favour of it. “We are still on track for the Star Trek unification timeline,” one fan tweeted. It is a striking example of a specific prediction being made in a work of science fiction. But despite perceptions to the contrary, such forecasts are the exception, not the rule. Just because sci-fi is often set in the future does not mean it is intended to be predictive. More often it is a commentary on the present.

I, Asimov

In 2020 (which happens to be the centenary of the birth of Isaac Asimov, a sci-fi legend), can the genre tell us about the future nonetheless? Set aside the aliens and the spaceships, and much contemporary science fiction is concerned with themes such as the impact of artificial intelligence, the danger of ecological collapse, the misuse of corporate power and the legacy of imperialism. Since the sexual revolution of the 1960s, sci-fi writers have explored changing attitudes to gender politics—imagining, for example, future societies in which gender is irrelevant or people can change sex at will. Another vibrant subfield today is Chinese science fiction, which offers an outlet for subtle dissent, and gives Western readers a sense of the country’s

hopes and fears. In all these cases, sci-fi authors are using the freedom granted by the genre to consider present-day concerns and extrapolate them to mind-stretching conclusions.

All of which does have some predictive value. It means science fiction can play a useful role as a forward-scanning radar for technological, social and political trends—but in the near term, not the distant future in which it is often set. This is the first of three ways in which science fiction can provide a guide to the future.

The second is that it can help broaden the mind when assessing future scenarios for planning purposes, both in government and in business. France's Defence Innovation Agency is setting up a “red team” of sci-fi writers to propose scenarios that might not have occurred to military planners. Arup, an engineering firm, commissioned Tim Maughan, a science-fiction writer, to create four scenarios of what everyday life might look like as a result of climate change. Neal Stephenson, the bestselling author of “Snow Crash” and “Cryptonomicon”, has served as an adviser to Blue Origin, a rocket startup, and Magic Leap, a firm developing augmented-reality glasses. Tech giants including Google, Microsoft and Apple have also employed sci-fi writers as consultants, using a process sometimes called “design fiction”.

But bosses do not need to hire sci-fi authors to benefit from their expansive imaginations. Simply reading their books can help. Writing in *Harvard Business Review* in 2017, Eliot Peper, a novelist, argued that science fiction is valuable “because it reframes our perspective on the world”. Business leaders should read sci-fi, he suggested, because exploring fictional futures “frees our thinking from false constraints” and “challenges us to wonder whether we’re even asking the right questions”.

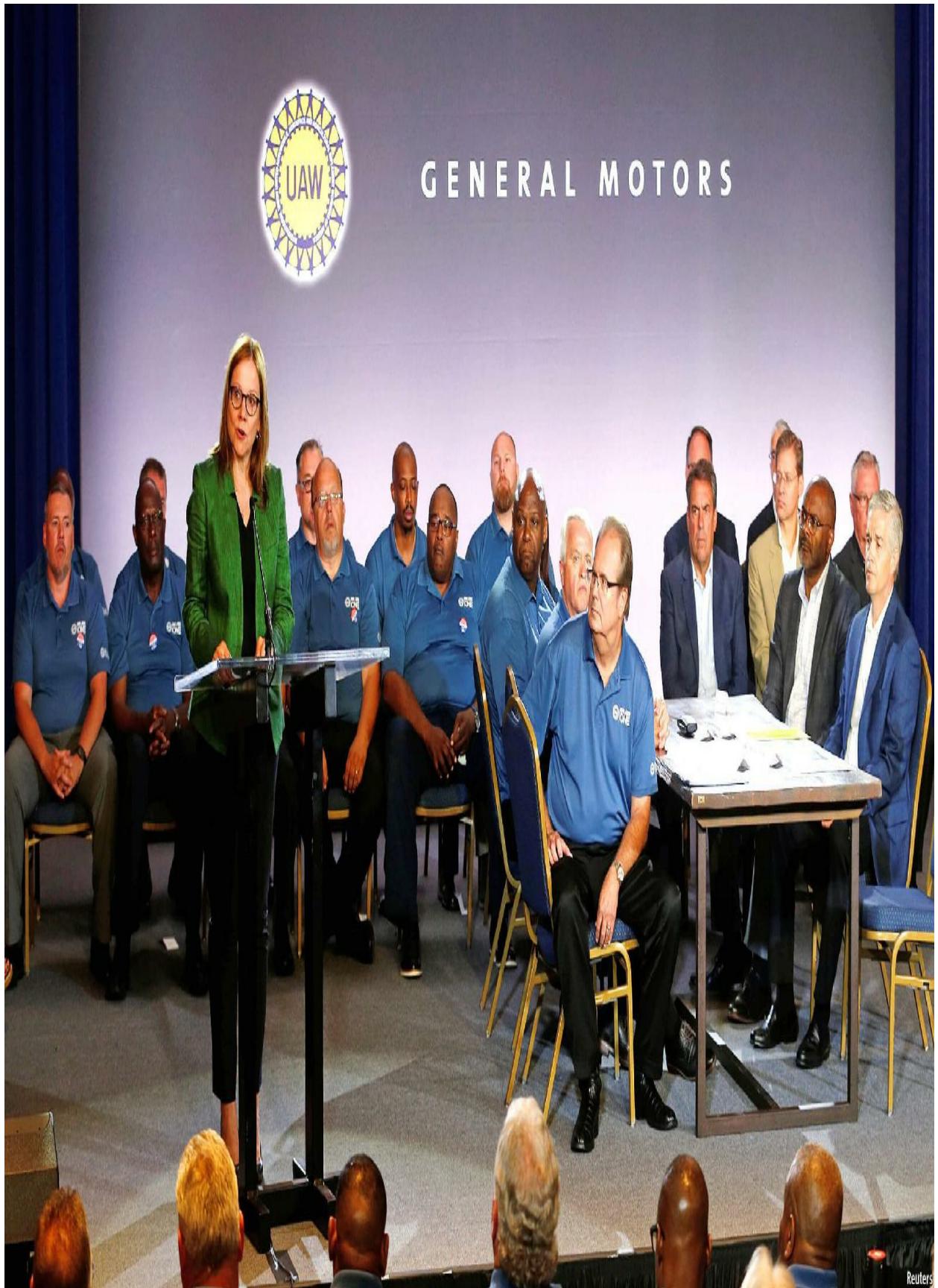
And then there is a third, more direct, way in which sci-fi can provide glimpses of the future: by inspiring people in the tech industry who want to make it come true. The creation of the mobile phone at Motorola was motivated by the handheld wireless communicators from “Star Trek”, and Amazon’s Alexa voice-assistant by the talking computer on the *Enterprise*. The Kindle was inspired by an electronic-book device in Mr Stephenson’s novel “The Diamond Age”, and an entire industry is trying to bring to life the

virtual world he depicted in “Snow Crash” (see 2020 visions section). SpaceX, the rocket firm founded by Elon Musk, lands its rockets on drone ships whose names are borrowed from Iain M. Banks’s “Culture” novels; another of Mr Musk’s startups, Neuralink, is building brain-computer interfaces inspired by the “neural lace” implants found in the same books. The tech titans of tomorrow are surely reading sci-fi today.

Tom Standage: deputy editor, *The World in 2020* and *The Economist*

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The ideological ground can shift quickly

Corporate realpolitik

In 2020 bosses will pay a painful price for getting involved in politics, says **Patrick Foulis**

THERE USED to be an iron rule for any American boss tempted to talk about politics: don't. Recently, this rule has been discarded as chief executives have been drawn into taking stands on inequality, the culture wars and climate. So far they have had an easy ride: it is more fun to outline your vision for humanity than for increasing EBITDA margins. But in 2020 this new breed of activist CEOs will face three problems that politicians know well: the charge of hypocrisy, the risk of a recession and destabilising ideological shifts.

Corporate America's drift away from political neutrality and inactivity began after the financial crisis in 2008-09. Banks gave displays of contrition. A new generation of woke consumers and workers grew up during the crisis. Some were preoccupied by cultural injustices; others attacked capitalism, too. Climate change became an urgent problem and economic nationalism meant firms had to demonstrate their patriotism.

Bosses have responded to these signals. Jamie Dimon, of JPMorgan Chase, pens 50-page letters, ostensibly to its shareholders: the latest touches on education, and military procurement and demands "CEOs: your country needs you!" Silicon Valley chiefs humour a minority of radicalised employees. Bosses like to claim their firms are leading the fight against carbon emissions. In 2017 bosses joined flag-waving summits in the White House. And over 180 CEOs have signed a declaration by the Business Roundtable that their objective is not just to serve shareholders, but customers and workers, too.

Business folk are motivated by idealism, vanity and calculated self-interest. But it also helps that, so far, CEO activism has been cost-free. Like some politicians, some bosses gladly take credit for things they do not control.

Most of the CEOs who pledge to fight climate change do not run firms that are responsible for it. Take the biggest 200 Western firms that disclose emission figures. Of these, the top 20 are responsible for 70% of all emissions: the other 180 don't matter much. And like some politicians, some CEOs make promises they don't keep. Despite the Roundtable's concern for workers, executive pay is rising and there is no sign of a rethink on how the spoils are split between labour and shareholders. Profits for the S&P 500 index are forecast to rise by 8% in 2020.

By then the three downsides of CEO activism will have become more apparent. First, the accusations of hypocrisy: it is not hard to find. Nike, which has pushed virtuous branding, has been embroiled in a doping scandal. BlackRock, a fund manager that pushes other firms to invest more, spent over 100% of its own cashflow on buybacks in the past 12 months. Visa signed the Roundtable letter championing customers, but is part of a payments oligopoly. If the inconsistency between bosses' words and actions becomes too glaring, reputations can suffer, as Mark Zuckerberg of Facebook knows.

Second, if there is a recession, CEO activists will struggle to reconcile the interests of employees and their fiduciary duty to shareholders. In the past two downturns American firms cut their wage bill by 6%; if they had not, profits would have been 24% lower. This flexibility is a hallmark of American capitalism. The conflict between business logic and political posturing is already evident at firms facing technological disruption. Consider Mary Barra of General Motors, a prominent Roundtable signatory. In September 2019 she faced a strike by 46,000 workers who complained of unfair pay and factory closures as she tries to shift GM to electric vehicles.

And third, as any member of Congress will tell you, the ideological ground can shift quickly. CEOs hope that by adopting social and political causes they will defuse more radical sentiments. Dream on. The presidential campaign in 2020 will feature lots of criticism of big business, some of it legitimate. Democrats' proposals include workers on boards, beating up health-care firms and tackling monopolies, most obviously in big tech.

No such thing as a free declaration

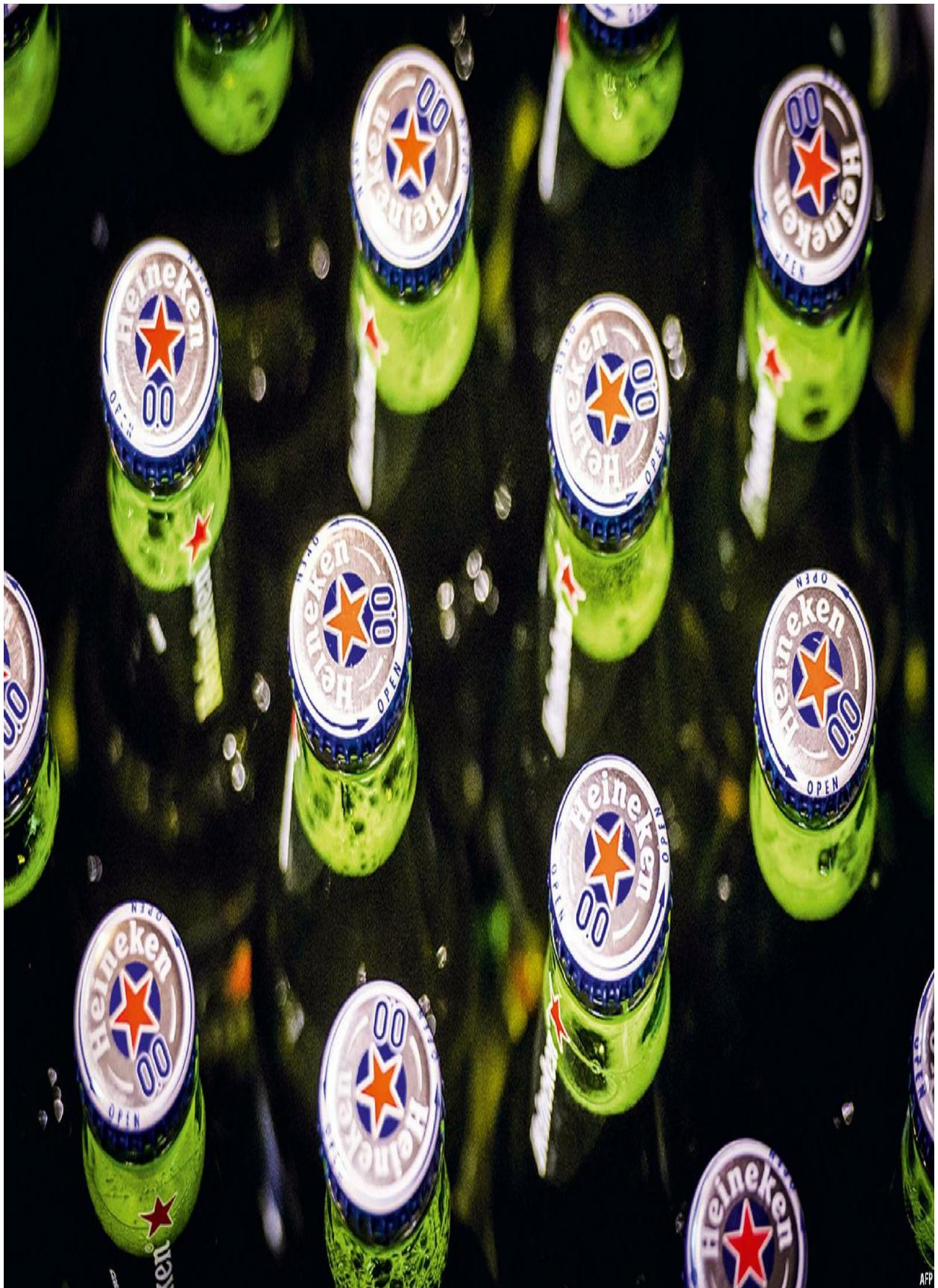
By the end of 2020 the leaders of America Inc will realise that political

posturing is no free lunch. Many will worry that it is a gimmick that elicits a backlash. Prudent firms will adopt a simpler vision: it is the job of government to set the rules, and the job of companies to maximise value within these rules. That means delighting customers (including socially conscious ones), investing in profitable innovation (including in green technologies), and attracting workers (sometimes by paying them more). It doesn't mean standing on a soap box. That is what politicians are paid (much less) to do.

Patrick Foulis: business-affairs editor, *The Economist*

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AFP

Today's teenagers will be a generation of light drinkers when they grow up

Glass half-empty

A century after Prohibition, drinking is going out of fashion, argues **Slavea Chankova**

THE VOLSTEAD ACT to establish Prohibition in America, a ban on alcohol which lasted nearly 14 years, took effect in 1920. Now, a century later, it is seen as proof (as it were) that trying to ban drinking, when it is already popular, is not a good idea. Prohibition gave rise to organised crime, as mafia gangs made fortunes from bootlegging. Enforcement of the ban was feeble because it lacked popular support. According to one estimate, there were at least 20,000 illegal bars in New York City during Prohibition. When police in Denver raided a bar, they found the local congressman, the mayor and the sheriff having a drink.

Yet Prohibition is still around, and not just in the Muslim world. In America it exists in nearly 500 predominantly evangelical counties, including that of Lynchburg, Tennessee—the hometown of Jack Daniel's whiskey (visitors to the distillery can take home a “commemorative” bottle of the stuff). Even so, in most places governments merely try to dissuade people from drinking by making alcohol more expensive through taxes, and restricting its sale and advertising. Such policies work. But drinking is now in decline for an unrelated reason: a shift in social norms among young people, which is charting a new future for alcohol.

The teen-totaller trend

In almost every Western country, teenagers are starting to drink later than they used to. That is partly because they socialise a lot with each other online, rather than in person. Better parenting may play a role too. Judging by historical patterns, this later onset of drinking means today's teenagers will be a generation of light drinkers when they grow up. Millennials, now in their 20s and 30s, are also drinking less alcohol. For them, moderation is part of a

healthier lifestyle—the pursuit of which is starting to look like a mainstream trend, rather than a fad.

The alcohol industry's primary customers today are middle-aged and older adults. In some rich countries they are drinking more than previous generations did at their age. Alcohol is carcinogenic even in small amounts, but most people do not know that. So tobacco-style warnings on alcohol labels are being talked about by public-health policy wonks. For now, only South Korea has a compulsory cancer warning on alcohol bottles, and Ireland passed a law in 2018 to introduce such warnings, though it has yet to do so.

Big alcohol companies can see the writing on the keg. They are expanding their low- and no-alcohol offerings of beer, wine and spirits. Innovation in such drinks is booming. Many are now indistinguishable in taste from the real thing. Nearly 50 of Heineken's brands, for example, have an alcohol-free version. In most Western countries such alternatives are still a novelty, but sales are growing fast. In Germany and the Netherlands, both early adopters, they make up about 10% of beer sales.

At the same time, the alcohol industry is following in the footsteps of the tobacco industry and looking for new customers elsewhere. The top ten fastest-growing markets for alcohol are all emerging economies, mostly in Africa and Asia. (China is not among them; alcohol sales there are declining.)

In a generation or two, drinking in rich countries could look *démodé*. Until then, alcohol will remain one of the most expensive public-health and productivity problems. Official estimates reckon that alcohol shaves 1.3-2.7% off Britain's GDP. In poor countries, the damage per litre done by alcohol is greater—just as it is greater among the poor than the rich in Western countries.

Proven supply-side policies to curb drinking, such as hefty taxes, will face an uphill battle in legislatures and courtrooms around the world, because anti-alcohol groups are no match for the legions of lobbyists hired by the booze industry. That is quite a turnaround: Prohibition came about because the Anti-Saloon League, which pushed for it, was one of America's most powerful lobby groups. It was backed by many of the richest people at the time, including John Rockefeller, Henry Ford and Andrew Carnegie. Today,

restricting alcohol is a tricky cause for philanthropists to support because drinking is ingrained in the social lives of the rich. But their children and grandchildren may feel more enthusiastic about a world with much less alcohol.

Slavea Chankova: health-care correspondent, *The Economist*

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The yold are not just any group of old people

The decade of the yold

People turning 65 will not retire quietly into the background, predicts **John Parker**

THE YEAR 2020 will mark the beginning of the decade of the yold, or the “young old”, as the Japanese call people aged between 65 and 75. The height of the baby boom, the period of high fertility in rich countries after the second world war, was 1955-60. The traditional retirement age is 65, and 2020-25 is 65 years later. One might therefore expect peak retirement for baby-boomers in the coming years—except that they are not retiring. By continuing to work, and staying socially engaged, the boomers, in their new guise as the young old, will change the world, as they have done several times before at different stages of their lives.

The yold are more numerous, healthier and wealthier than previous generations of seniors. There will be 134m 65- to 74-year-olds in rich countries in 2020 (11% of the population), up from 99m (8%) in 2000. That is the fastest rate of growth of any large age group. Health worsens with age, but the yold are resisting the decline better than most: of the 3.7 years of increased life expectancy in rich countries between 2000 and 2015, says the World Health Organisation, 3.2 years were enjoyed in good health. The yold are also better off: between 1989 and 2013, the median wealth of families headed by someone over 62 in America rose by 40% to \$210,000, while the wealth of all other age groups declined.

The yold are busier, too. In 2016 just over a fifth of people aged 65-69 were in work in rich countries, a figure that is rising fast. Working is one of the factors that are helping people stay healthy longer. A German study found that people who remain at work after the normal retirement age manage to slow the cognitive decline associated with old age and have a cognitive capacity of someone a year and a half younger.

And miles to go before they sleep

In short, the yold are not just any group of old people. They are challenging the traditional expectations of the retired as people who wear slippers and look after the grandchildren. That will disrupt consumer, service and financial markets.

The over-60s are one of the fastest-growing groups of customers of the airline business. The yold are vital to the tourism industry because they spend much more, when taking a foreign holiday, than younger adults. They are also changing education. Harvard has more students at its Division for Continuing Education (for mature and retired students) than it does at the university itself. And, because of the importance of pensions, the yold are transforming insurance companies from passive distributors of fixed annuities to financial-service providers for customers who want to manage their pension pots more actively.

The rise of the yold will be a boon to themselves, to economies and to societies. Many bosses and hr departments think productivity falls with age, but studies of truckmaking and insurance firms in Germany suggest older workers have, if anything, slightly above-average productivity—and that teams of workers from multiple generations are the most productive of all. Societies should be better off because public spending on health and pensions should be lower than expected, as people work longer and need less medical care.

But for all this to happen, three big things will have to change, under pressure from the yold themselves. The most important is public attitudes towards older people, and in particular the expectation that 60-somethings ought to be putting their feet up and quietly retiring into the background. Many companies discriminate against older workers by offering training only to younger ones, or by limiting part-time employment and job-sharing. The yold will demand that companies become more age-friendly and, in the process, help change attitudes towards ageing itself.

Government policies will have to change, too. The retirement age in many rich countries is still below the age to which many people want to work. The effective retirement age (the age at which people actually leave the workforce) is usually even lower. Public policy makes retirement a cliff edge, when it should be a ramp.

Third, higher numbers of healthy old people will require drastic changes in health spending. Most diseases of ageing are best met with prevention and lifestyle changes. But only about 2-3% of most countries' health-care spending goes on prevention. That will have to rise, because although the old will constitute a bulge of comparative health and activity over the next decade, by 2030 they will hit 75—and enter a long period of decline for which few rich countries are ready.

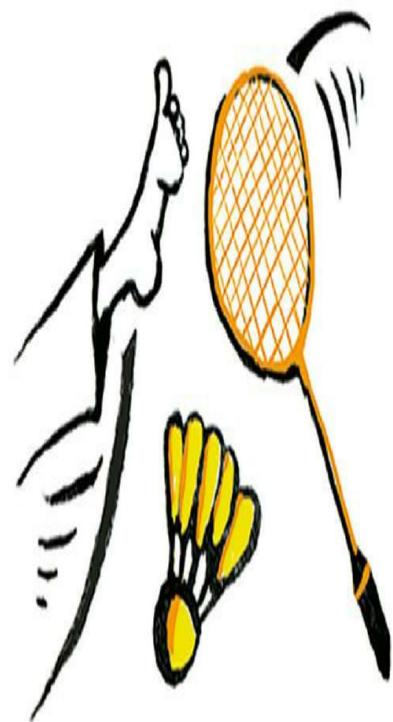
John Parker: correspondent, *The Economist*

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Calendar



Our selection of events around the world

January

As the new year dawns, the California Consumer Privacy Act (CCPA), which enhances the protection of personal data, comes into force, bringing with it a wave of new pop-up alerts. The CCPA regulates the collection, use and sharing of information by companies, and is similar to Europe's General Data Protection Regulation. Like the GDPR, the CCPA is expected to have global impact, even though it applies only to a specific region, because firms may find it easier to apply it to all customers, rather than just some of them.

Taiwan holds presidential and legislative elections. Chinese New Year is celebrated: those born in the year of the rat are supposedly quick-witted, industrious and thrifty—and those born in “metal rat” years such as 1960 and 2020 are said to be good problem-solvers.

February

With mobile and card-based payments on the rise, participants at the World Banknote Summit in Prague ponder the prospects for cash—in other words, how much longer their industry will have a licence to print money.

At the African Drone Forum in Rwanda, flying competitions show how drones can be used for cargo delivery and emergency response.

It's a leap year, and the world's highest-stakes horse race, the Saudi Cup, takes place in Riyadh on the 29th, with a total purse of \$20m. The winner gets \$10m, and the rest is divided between the other runners.

March

America's presidential race heats up, and the Democratic field is narrowed, with “Super Tuesday” on the 3rd, followed by a series of caucuses and primaries on other days (but mostly Tuesdays). By the end of the month

around half of the states will have indicated their choice of presidential nominee.

The Vatican makes the archives of Pope Pius XII, who was pontiff during the second world war, available to researchers. Criticised for failing to speak out against the persecution of Jews, Pius XII is said by the church to have done work behind the scenes. The archives should reveal how much.

In Nepal the government conducts a census of the greater one-horned rhino, also known as the Indian rhinoceros. The previous count, in 2015, identified 645 animals.

April

Shows across Europe mark the 500th anniversary of the death of the artist Raphael, with the largest at the Scuderie del Quirinale in Rome, the city where the Renaissance master spent the last decade of his life, and others in London, Urbino, Paris and Milan.

Communists everywhere ponder the 150th anniversary of the birth of Vladimir Ilyich Ulyanov, better known as Lenin. And while Leninists celebrate, Lennonists mark the 50th anniversary of the break-up of the Beatles.

The race is on in Korea: in the North, in the Pyongyang marathon; in the South, for seats in the country's parliament.

May

Fans of Vincent van Gogh are in for a visual feast, when an exhibition of his paintings opens in Arles and then with further shows in Amsterdam, Detroit, Padua, Santa Barbara and Tokyo later in the year.

The Eurovision Song Contest, an annual celebration of the culture-spanning power of cheesy music that has been running since 1956, takes place in Rotterdam. Originally intended to bring together European countries through television, the contest now includes entrants from Israel and, bizarrely, Australia. By tradition, the winning country hosts the competition the

following year.

New Orleans turns into “The Big Uneasy” as Hereticon, an invitation-only conference for those banned from other conferences, ruffles feathers there.

June

Football fans rejoice as the UEFA Euro 2020 championship starts. To celebrate the 60th birthday of the quadrennial tournament, it is being staged in 12 cities in 12 countries.

Meanwhile, historians recall an earlier European rivalry, on the 500th anniversary of the Field of the Cloth of Gold, a summit between Henry VIII of England and Francis I of France.

America hosts the G7 summit—though not, as at first controversially proposed, at a Trump resort in Miami.

Diplomats mark the 75th anniversary of the signing of the United Nations charter in 1945.

July

The summer Olympics open in Tokyo. Karate, rock climbing, skateboarding and surfing have been added to the mix, with new variations (such as 3x3 basketball) introduced for some existing Olympic sports.

The Democratic National Convention takes place in Milwaukee, Wisconsin, crowning the nominee to face (presumably) Donald Trump.

Having feasted on the new “Top Gun” movie in June, fans of 1980s films binge on the latest “Ghostbusters”, also with some of the original cast.

The launch window for missions to Mars opens, as it does every 26 months. America, China, Europe and the United Arab Emirates plan to send unmanned orbiters and rovers to the red planet before the window closes in September.

August

The summer Olympics come to an end, and the Paralympic games begin, in Tokyo. Badminton and taekwondo have been added to the programme, replacing sailing and seven-a-side football.

Ceremonies in Hiroshima and Nagasaki mark the 75th anniversary of the nuclear strikes on the two Japanese cities, which killed around 200,000 people and precipitated the end of the second world war.

Delegates at the Republican National Convention in Charlotte, North Carolina, confirm their presidential candidate and approve the platform, or manifesto, on which they will fight the election.

September

Events in England, the Netherlands and America mark the 400th anniversary of the voyage of the Pilgrim Fathers on the Mayflower. The Wampanoag Nation, the tribe that first encountered the settlers, are also involved in the commemoration.

The 43rd Ryder Cup, between European and American golf teams, takes place at the Whistling Straits course in Wisconsin.

Global Goal Live, a ten-hour concert taking place across five continents, aims to become the most-viewed charity event ever, while raising money to promote the UN Global Goals in the world's 59 poorest countries. Its organisers see it as the successor to Live Aid, the transcontinental, 16-hour concert that raised funds for African famine relief in 1985.

October

Expo 2020 opens in Dubai, with pavilions from 180 countries, an observation tower, the world's biggest 360-degree projection screen and its largest vertical farm, among other attractions. The organisers hope some 25m visitors will come over the expo's 172 days.

Guitarists and rock-music fans mark the 50th anniversary of the death of Jimi Hendrix. Excuse them while they kiss the sky—and, perhaps, play the guitar with their teeth (or behind their heads).

Cricket teams from 16 countries compete in the ICC T20 World Cup in Australia, with matches taking place in seven cities across the country.

November

Presidential and congressional elections take place in the United States.

The United Nations' COP 26 climate-change conference gathers in Glasgow. As many as 200 world leaders are expected to attend the final weekend.

Representatives of the G20 nations, plus the IMF and the World Bank, meet for a summit in Saudi Arabia. It was chosen as the host in 2017, well before the assassination of Jamal Khashoggi, a dissident Saudi journalist, in the Saudi consulate in Istanbul in 2018.

New Zealand should hold a referendum by now on whether to legalise cannabis for recreational use. Draft legislation would allow people over 20 to use and buy the drug, and grow it at home in limited quantities.

December

Classical-music lovers rejoice at the 250th anniversary of the birth of Ludwig van Beethoven, with concerts and celebrations in Bonn, Vienna and other cities capping a year of celebrations.

A total eclipse of the sun is visible from the South Pacific, Chile, Argentina and the South Atlantic.

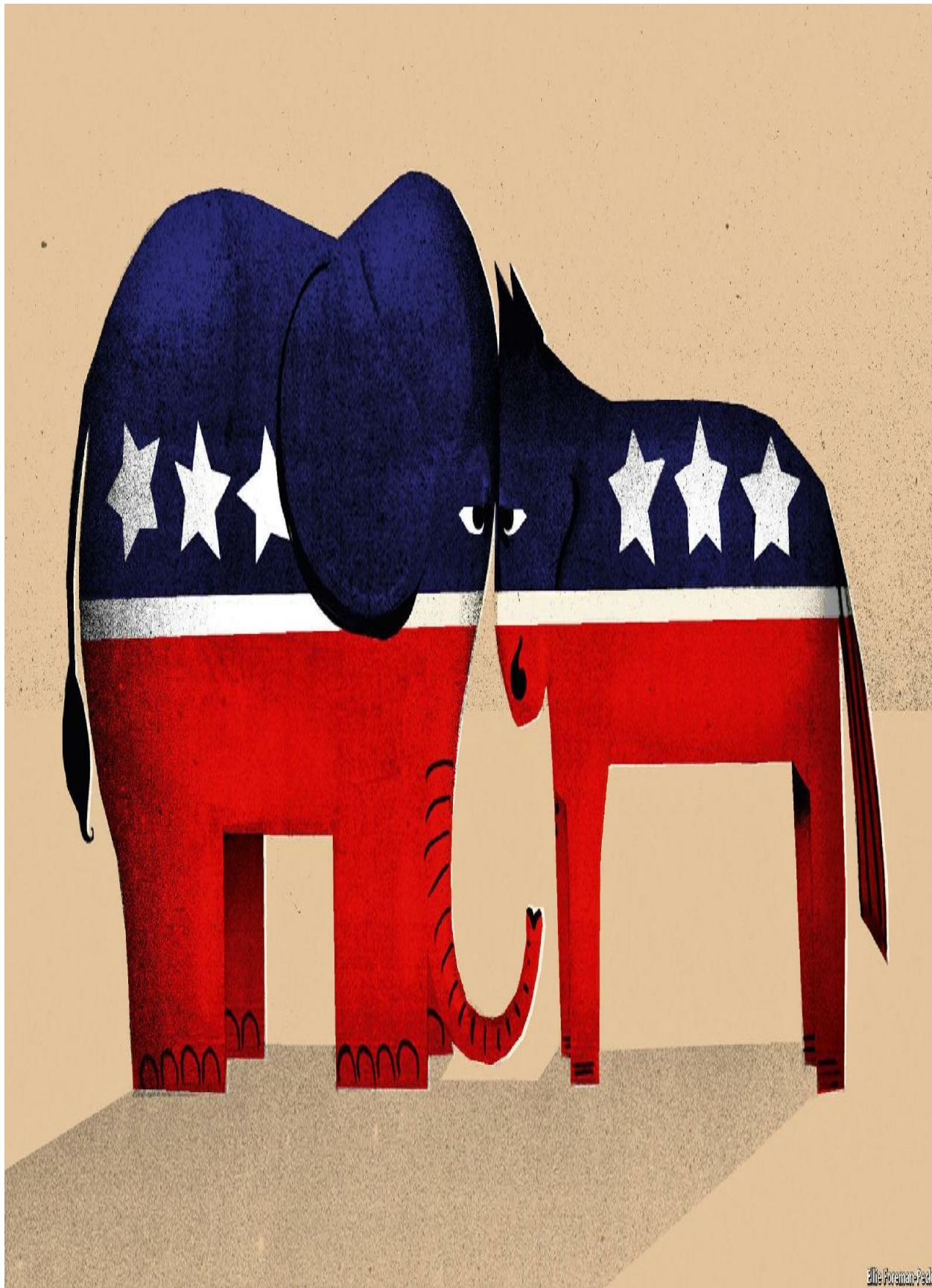
NASA, which is required by Congress to identify 90% of potentially hazardous asteroids and comets (those with a diameter of 140 metres or more that might hit Earth) by the end of 2020, misses the deadline.

Compiled with the help of contributions from **foresightnews.com**

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United States



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Making America grate again

James Astill Washington bureau chief, *The Economist*
WASHINGTON, DC

A new president, minimal bloodshed and another divided government is Americans' best hope from 2020

2020 in brief

The **American Civil Liberties Union** marks 100 years of defending the Bill of Rights with a gala concert and a book of essays by, among others, Jennifer Egan, Neil Gaiman, Marlon James, Ann Patchett and Salman Rushdie

THE MOST graphic argument for backing Donald Trump in 2016 compared a vote for him to a suicide-mission by passengers of a hijacked airliner. It would probably turn out disastrously, the conservative proponent of this “Flight 93 election” theory conceded, yet he believed a Hillary Clinton presidency was certain to. He was being hysterical. Yet as Americans gear up for another election in 2020, many consider the stakes to be even higher this time

Republicans, most of whom viewed Mr Trump with suspicion four years ago, are now all in for him. The party of Lincoln has come to resemble a personality cult: its elected representatives are defined by their degree of loyalty to Mr Trump. This will ensure that the Democrats’ attempt to impeach the president over his endeavours to harness foreign policy to his re-election effort falls flat in the Senate. For while most Republican senators accept and abhor that Mr Trump leaned on the president of Ukraine to investigate Joe Biden, a possible electoral rival, most Republican voters couldn’t care less. And the fact that Mr Trump admits to doing most of what he stands accused of (he just says there was nothing wrong with it) makes this unlikely to change. In this impeachment drama, there is no smokier gun than the president’s Twitter feed, which his supporters love.

To remove him from office, 20 Republican senators would probably have to

vote to convict Mr Trump; if two do, that will be a lot. The main effect of the Democrats' failed effort will be still more of the partisan rancour on which the president thrives. Even if the Democrats nominate Mr Biden or another moderate to run against him in 2020, their nominee will be denounced on the right as a socialist who hates America.

Democrats and dissident conservatives consider such partisanship to be among the many ways in which the damage Mr Trump has done in one term would rise astronomically in two. Re-election, they fear, would encourage him to pay even less heed to the rulebook than he has hitherto. It would also persuade foreign allies that the reliable, outward-facing America they could once set their watches by is not coming back. If the reward for Mr Trump's contempt for the system is another term, his opponents warn, Americans' already buckling trust in their democracy will collapse. Preventing that outcome, they will argue, is tantamount to saving America.

So this will be an ugly election. Do not be surprised if it sparks America's worst political violence since the Vietnam war. Yet, relatively few voters will actually be swayed by the apocalyptic rhetoric they hear. The competing voter blocs are cemented. Mr Trump cannot expand his large and heavily white minority of the electorate and his opponents probably cannot erode it by much. The election will be decided in half a dozen competitive states. Even if Mr Trump wins, it will be with a minority of the popular vote. His re-election hopes depend on his treading the same sinuous path to an electoral-college majority he took in 2016: through Florida and Ohio (which he will win again in 2020) and a trio of formerly Democratic rustbelt states that now look harder for him.

Michigan and Pennsylvania can be expected to return to the Democrats. That will make Wisconsin, which is whiter and more conservative, the most fiercely contested state in the country. Forced to choose in their presidential primary between a moderate and a left-winger, Democrats should ask themselves: who would be likeliest to win the Badger State? Unhappily for their chances, they may well pick Elizabeth Warren, a liberal leftist, as their nominee nonetheless.

Bear that prospect in mind through the months of feverish debate that lie ahead. In 2016 Mr Trump promised vast changes—to eliminate the national

debt, wall off Mexico and so forth. In 2020 his Democratic opponent will make promises almost as wild. Even moderate Mr Biden has promised a climate-change policy that he estimates would cost \$1.7trn. In a bitterly divided America, none of those pledges is remotely plausible.

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A century of suffrage

**Jon Fasman Washington correspondent, *The Economist*
WASHINGTON, DC**

Women voters will decide the election in 2020



On the button

Women have become America's most reliable voters

"IN ASMUCH, THEN, as woman shares equally the joys and sorrows of time and eternity, is it not the height of presumption in man to propose to represent her at the ballot box?" Elizabeth Cady Stanton was 77 years old when she asked that question in 1892 as part of a speech marking her resignation from the National American Women's Suffrage Association. She had dedicated her life to the cause. She would die ten years later, her goal still unreached.

In the early 20th century, some states permitted women to vote. Montana became the first state to elect a woman (Jeanette Rankin) to the House of Representatives in 1916—the same year that Woodrow Wilson, then a presidential candidate, announced that Democrats backed women's right to vote. But it took a constitutional amendment, ratified in 1920, to give women universal suffrage under law, and even then southern states systematically denied black women the franchise until the passage of the Voting Rights Act of 1965.

Women have since become America's most reliable voters. In every presidential election since 1964, more women than men have voted. In every one since 1980—and in every mid-term since 1986—the share of eligible women who voted has exceeded that of men. The long-present gender gap in party identification has grown since Donald Trump's election.

Mr Trump, who was elected president after boasting in a leaked recording about grabbing women "by the pussy" and with a propensity for using sexist language, has widened the partisan gender gap. In 2017, 56% of women (including 66% of Hispanic women and 87% of black women) leaned Democratic, compared with just 37% who leaned Republican. Among men that order is reversed: 48% lean Republican, and 44% lean Democratic.

In 2016 Hillary Clinton became the first woman to win a major-party nomination (two have been vice-presidential candidates, Sarah Palin in 2008 and Geraldine Ferraro in 1984; neither won). In 2020, for the first time, Democrats will choose from a primary field that includes several women,

including Elizabeth Warren, Kamala Harris and Amy Klobuchar.

But even if the presidential race ends up being between two men, women voters will be crucial in determining its outcome. In 2016, 53% of white women, and 62% of white women without college degrees, voted for Mr Trump. In 2019 his standing with both groups fell. Polls taken last summer showed that most white women disapproved of his performance, and 47% of white women without college degrees said they would “definitely not” vote for Mr Trump. Unless he can shift those numbers, he risks becoming a one-term president.

Figuring out the 2020 race

Dan Rosenheck data editor, *The Economist*

What do historical statistics and current numbers say about Donald Trump's chances of re-election?



2020 in brief

The Department of Justice issues a definitive policy on the controversial use by law enforcement of **data from consumer DNA** and genealogical websites to solve violent crimes

MOST AMERICAN presidents win re-election. With a strong economy, they do so almost without fail: the last time a president who was elected to a first term stood for a second and lost despite robust growth was in 1892. History thus suggests that, provided a slowdown can be avoided, President Donald Trump should be an overwhelming favourite in the election of 2020. But after he has defied virtually every other expectation set by previous officeholders, it is fitting that Mr Trump faces a precedent-upsetting risk of being—as he once put it on Twitter—“unpresidented”.

Democrats have good reason to feel confident that the 2020 contest will bear little resemblance to past re-election campaigns. To start with, Mr Trump lost the popular vote in 2016 by over two percentage points, a larger shortfall than the margins of victory achieved by John Kennedy in 1960, Richard Nixon in 1968 and Jimmy Carter in 1976. It took an extraordinarily efficient geographic distribution of votes—combining razor-thin victories in Michigan, Pennsylvania and Wisconsin with lopsided defeats in large states like California and New York—for him to eke out a triumph in the electoral college. That will be a difficult feat to repeat.

Moreover, rather than gaining popularity since 2016, Mr Trump has slid precipitously. His approval rating began at a vulnerable 45%, fell to 35% during his first year in office and now sits at 42%. Barack Obama and George W. Bush both enjoyed approval ratings close to 50% when they were narrowly re-elected, while Bill Clinton and Ronald Reagan were at 55% and 58% before their landslide victories.

There is still plenty of time left for Mr Trump to endear himself to voters: at this point in his first term, Mr Obama’s approval languished at a Trump-like 43%. But the current president’s ratings have been bound within a much narrower range than those of his predecessors, oscillating between 37% and 43% despite the frenetic pace of political news during his administration.

That suggests that in America's polarised partisan environment, opinions about Mr Trump have hardened and are unlikely to budge much. What is more, with the economic expansion now in its 11th year (the longest on record) and the stimulus from his tax cuts waning, growth is far more likely to slow down in 2020 than to speed up. A sharp deceleration or outright recession would probably sink his chances.

Wanna bet?

If 2020 becomes a referendum on Mr Trump's performance alone, he would be almost sure to lose. Nonetheless, a year before the election pricing in political betting markets implies he has a 46% chance of re-election. There are two main reasons for punters' relative bullishness on his odds. One is uncertainty about the strength of his eventual challenger. Joe Biden, who was the early front-runner, is 76 and got off to a halting start; Elizabeth Warren, who has emerged strongly from the pack, and Bernie Sanders are both more left-wing than the median American voter and could alienate the affluent, educated suburbanites whose defections cost Republicans control of the House of Representatives in 2018. Mr Trump will do his best to demonise his opponent and turn 2020 into a lesser-of-two-evils contest; it will take a deft Democrat to parry his attacks.

The other reason why bettors are bullish about Mr Trump's prospects is the chance that his advantage in the electoral college could persist into the next election cycle after all. There is some evidence that he would still hold the edge in a close contest. The Upper Midwest states that delivered him victory in 2016 have disproportionately high concentrations of white working-class voters, the group most loyal to the president. Partly as a result, in many of the states most likely to cast the deciding electoral votes, his approval rating a year ahead of the vote is just a few percentage points below 50%. Moreover, despite the nationwide "blue wave" in Democrats' favour in 2018, the party's candidate for governor lost in Florida and only barely won in Wisconsin, suggesting that both states remain more conservative than the national average.

America's political geography tends to vary between elections, and strategies built around winning a few specific states regardless of the nationwide vote-tally are dangerously brittle. But bettors give Mr Trump only a 24% chance

of receiving more votes than his opponent, suggesting that a second consecutive split between the popular vote and electoral college is a strong possibility. In that sense, the race in 2020 will test not just the popularity of a norm-busting president, but also the perceived legitimacy of American democracy.

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Taking a walk on the downside

Leo Abruzzese senior global adviser, public policy, The Economist Intelligence Unit

The American economy is in for one of its worst years since the recession in 2009

进口商品

Import

产地



美国
America

新奇士夏橙

等级：合格

规格：500克

2020 in brief

The **National Museum of African American Music** opens in Nashville, Tennessee, spanning genres from gospel to hip-hop

AMERICA'S ECONOMY is headed for trouble in 2020. How much trouble will depend on two parties that do not get along: the mercurial president, Donald Trump, and the country's cautious business bosses. Mr Trump, who never met a trading partner he trusted, clipped American economic growth in 2019 with his trade war on China, which, despite temporary truces, shows no sign of ending. That will disrupt companies that thrive on trade in 2020. Firms will face the added task of managing the weaker profits, higher labour costs and falling stockmarket prices that come near the end of an economic expansion—and the current one, which began in 2009, is ancient. A recession is not inevitable in 2020, but a slowdown is.

Mr Trump's tariff war with China is the biggest risk to the American economy in the next 12 months. Trade alone is not a large enough share of American output to pose a serious recession threat, but business confidence affects the whole economy: when it plunges it can bring down capital investment and, ultimately, hiring. Layoffs, and fewer new jobs, would reduce consumer spending, which comprises nearly 70% of the country's output.

The impact of a sustained breach in commercial ties between America and China would be both enormous and opaque. These are the two largest economies in the world, which in 2020 will jointly account for 40% of the nearly \$90trn global economy. After decades of mostly climbing, the value of two-way trade between America and China fell victim to the tariff war, declining by 13% in the first eight months of 2019 from a year earlier. Supply chains are deeply intertwined and often company-specific; even a modest unwinding of ties slows business activity as companies scramble for new partners and costs rise.

American manufacturers reported a steady decline in new orders in 2019, a recession red flag. The trade war is not the only reason they are doing less business, but American companies rarely discuss the future without a worried

nod to tariffs and supplier relationships. Trade friction could ease if Mr Trump strikes a deal with China, perhaps to boost his chances in the election in 2020. But he could just as easily double down and push the relationship into an even darker place. The rest of the world, which depends on America and China for markets, investment and innovation, feels the pinch.

The trade war will magnify a host of other worries. American corporate debt, equal to nearly 50% of GDP, has never been higher. Debt makes companies more vulnerable to risk, including slowing sales and higher costs, which can flip them into bankruptcy. The pile of debt has been manageable in recent years not just because of ultra-low interest rates but also because of strong corporate profits and lofty equity values, both of which are set for a knock in 2020. Financial markets are also on edge. The yield on long-term government bonds dipped below the rate on short-term notes in mid-2019, a sign of waning investor confidence and a notoriously accurate predictor of recession. America's partners are also struggling. Germany, a favourite Trump target, was probably in recession in mid-2019, Britain was wrestling with Brexit, and Asia's economies were feeling the effects of slowing Western demand and the trade war.

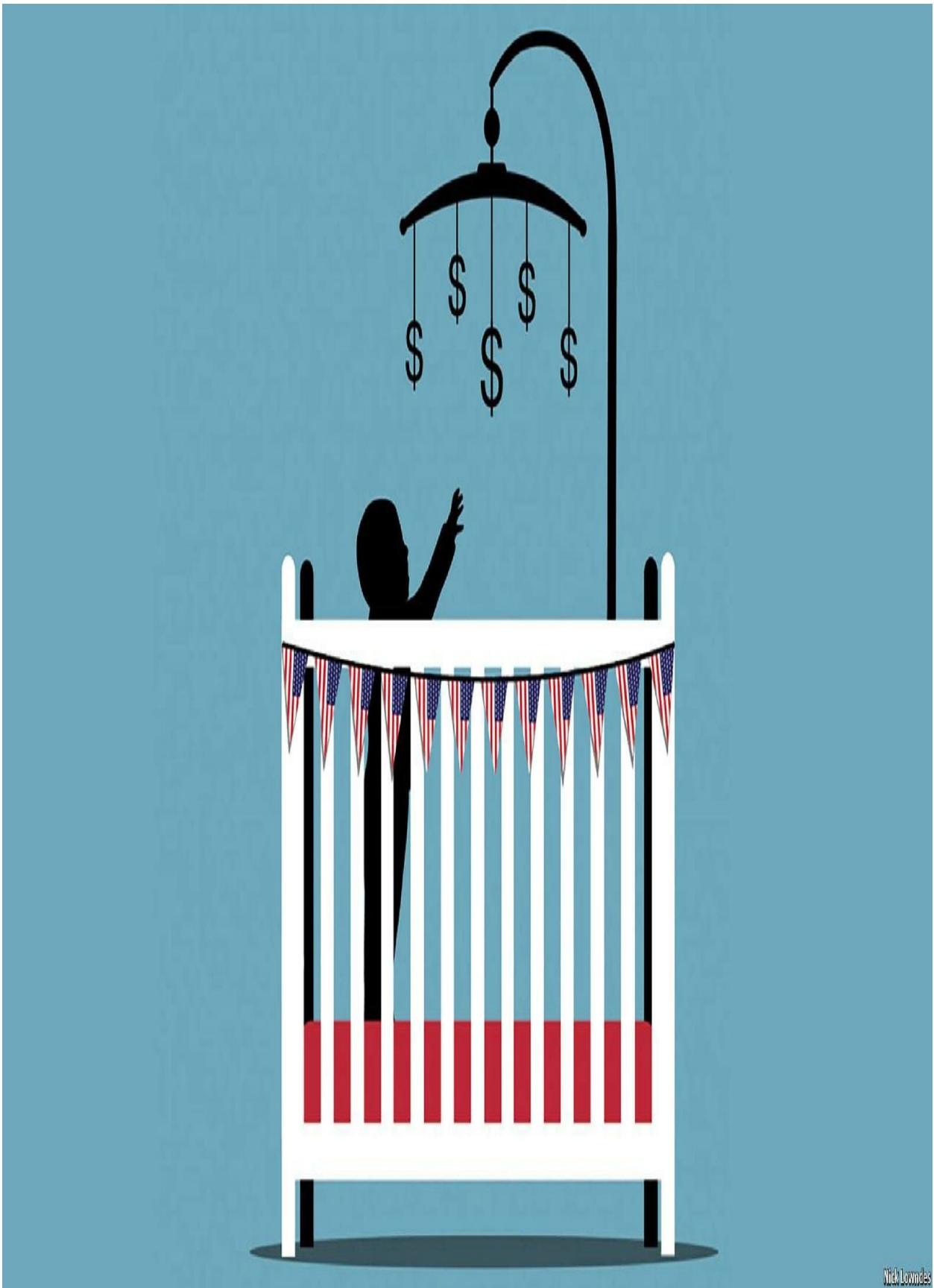
America may yet dodge a recession, usually defined as two consecutive quarters of declining GDP. The jobless rate was below 4% in 2019, a 50-year low, and consumers have been enjoying higher wages. The Federal Reserve, which is usually prone to raising borrowing costs when the unemployment rate is very low, cut them three times since mid-2019 in a pre-emptive strike against a slump. That may help the economy eke out at best 1.6% growth in 2020, matching 2011 and 2016 for the weakest performance since the recession in 2009.

Mr Trump will keep pressing Jerome Powell, the Fed's chair, for deeper rate cuts, and he will insult companies that criticise his trade policies. He might at least give the companies a break. If American businesses lose confidence in 2020, the economy will go down with them.

Ending exceptionalism?

**Alexandra Suich Bass senior correspondent, politics,
technology and society *The Economist* DALLAS**

The inexorable spread of paid parental leave



2020 in brief

California becomes the first state in America to require that all new dwellings under three storeys must have **solar panels** installed, adding as much as \$10,000 to the cost of a new home

WHAT DO AMERICA and Papua New Guinea have in common? They are the only two countries in the world with no statutory national policy of paid maternity leave. The average rich country offers 18 weeks of paid leave to new mothers; America guarantees none. Americans who need to take time off work to care for a new child or a loved one lose nearly \$21bn in wages a year, according to the Centre for American Progress, a think-tank. For American working women, the musing of Isadora Duncan, a dancer, still rings true: “With what price we pay for the glory of motherhood.”

However, much as gay marriage went from being perceived as a fringe issue to gaining broad acceptance, discussion of paid-leave policy will go mainstream in 2020. First, it will be debated on the campaign trail. In 2016, for the first time, both the Democratic and Republican candidates for president supported a paid-leave policy for new parents; in 2020 the two will argue over different visions for expanding paid leave. Whereas Donald Trump wants to offer limited paid leave mainly to new parents, the Democratic nominee will support expanding paid leave beyond parents to include those who need to care for a sick loved one.

Second, Congress will take up the issue more seriously. The House of Representatives will pass a bipartisan bill that would extend paid leave to Americans for the first time. The bill is unlikely to pass the Republican-controlled Senate, but that could change after the election in 2020, if more Democrats win Senate seats.

Third, more states will adopt their own paid-leave laws, creating momentum for a federal policy. Eight states and Washington, dc, have passed such laws. In 2020 the states of Massachusetts and Washington will implement paid-leave laws, and Colorado, Minnesota and Virginia will debate, and potentially pass, them.

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Census sensibility

Adam Roberts Midwest correspondent, *The Economist*
CHICAGO

Counting people gets unusually complicated



CHEAP AND accurate ways exist for totting up how many people live, and where, in America. Survey sampling lets demographers track population change. For those curious about shifting trends such as how quickly Americans are ageing (40% may be older than 65 by century's end), or when non-whites will outnumber whites (likely to be in 2020 among under-18s), number-crunchers can give good answers without interviewing everyone who lives within the country's borders.

Yet America's constitution orders that a census must take place every ten years, for two reasons. The first is about money. Federal funds will be dished out to states and cities according to the population tracked by the census on April 1st 2020. In 2019 these funds amounted to \$675bn. The second reason relates to political clout. Congress's 435 seats are apportioned depending on states' recorded resident populations (not the size of their electorates). Analysts forecast that several southern and western ones can expect to gain a seat, including Arizona, Colorado, Montana, North Carolina and Oregon. Florida could gain two; Texas, three. Mostly the east and Midwest will lose: look out Illinois, Michigan, Minnesota, New York, Ohio, Pennsylvania and West Virginia.

With much at stake, will the census pass off quietly? Not likely. President Donald Trump fired up controversy by trying to insist that respondents should have to answer a new question about their citizenship. Opponents saw that as a ploy to discourage unauthorised migrant residents from taking part. Since such people are mostly in Democratic strongholds, the effect would have been to benefit Republican-held areas.

Mr Trump's move failed, but "the damage has already been done," says Joseph Chaimie, a demographer who used to head the UN's population division. He thinks many migrants will shun census-takers, worried that their details will be shared with the agency that deports unauthorised foreigners. Philip Rocco, a Wisconsin academic who is tracking the political consequences of the census, also fears a "huge depressive effect", with minority groups being sidelined. He says state governments usually bolster census operations; this time some states, such as Arizona, are tardy in offering to help.

Usually businesses and charities also do a lot to promote participation. The controversy surrounding the census might discourage them. CAIR, a Muslim non-profit group, announced a partnership with the Census Bureau to promote American Muslim participation, but that quickly came unstuck after a fuss on Fox News.

The biggest fear is that Mr Trump will attack the census as “fake” or somehow illegitimate. “I could imagine him saying, ‘Don’t count the unauthorised population’, and that’s a threat to the census,” says Mr Chaimie. “We’re in for one of the most delicate periods,” says Mr Rocco. That is true even when it comes to the seemingly simple matter of counting people.

The surveillance state

**Jon Fasman Washington correspondent, *The Economist*
WASHINGTON, DC**

The watchers will finally get a poke in the eye, as Americans turn against intrusive snooping

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LOS ANGELES
POLICE



Recognising a problem

RIOT POLICE in Hong Kong have attacked protesters with the usual weapons: clubs, tear-gas, water cannons. Protesters, conversely, have deployed distinctly unusual weapons to defend themselves, including laser pointers and spray paint. These are intended not to blind or mark police, but to impede the use of facial-recognition technology via Hong Kong's roughly 50,000 closed-circuit television cameras.

That may sound like a lot. In fact, measured by cameras per 1,000 people, Hong Kong does not crack the top 25 most-surveilled cities on Earth. With 6.71 cameras per 1,000 people, it has less than one-twentieth as many as the mainland Chinese cities of Chongqing and Shenzhen. China's government has bet heavily on surveillance technology, providing startup funding for multiple companies now hawking their wares around the world. But Hong Kong's camera density also trails that of cities in freer countries, including London (68.4 per 1,000 people), Atlanta (15.6) and Chicago (13.1).

In none of those places did people vote to create a surveillance state—and yet, here it is. For years, the rollout of surveillance technology around the world, whether under dictatorship or democracy, followed a drearily predictable pattern. Whatever security forces said they needed, they tended to get.

As a result, police in liberal countries now have a host of tools at their disposal. As well as facial-recognition systems, they have cameras mounted on police cars or telephone poles that recognise and record the licence plate of every passing vehicle; and Stingrays, which mimic mobile-phone towers and let police intercept data from every passing phone, including texts, websites visited and the phone numbers of incoming and outgoing calls. All these gadgets allow the police to build detailed portraits of people's lives.

That is the bad news. The good news is that, in the United States at least, concerned citizens are starting to hit the brakes.

In 2019 cities on both coasts of America banned police forces from using facial recognition. California was poised to become the first state to ban it statewide on police body-worn cameras—used by an increasing number of

agencies to record encounters with citizens. Kade Crockford, of the Massachusetts branch of the ACLU, a civil-liberties group, called these bans “a wrench thrown into the gears of techno-determinism: this belief that if it’s invented then it has to be deployed, and you’d better just get out of the way.” This trend looks set to continue in 2020, and travel inland.

New York City convened a task force in 2018 to examine how its agencies use algorithms. Decision-making software pops up in surprising places. It is used not just in predictive-policing programmes (which rely on historical crime data to forecast where future crimes will be committed, and therefore where police should go), or in creating risk-assessment scores to determine who is eligible for pre-trial release and who has to wait in jail, but also to determine who goes to which schools, and which buildings merit a fire-safety inspection.

We got algorithm

Many people worry that, far from being impersonal, impartial tools, algorithms are trained on racially biased data which, whether consciously or unconsciously, will replicate that bias. Another concern is that algorithms are unaccountable black boxes with opaque decision-making processes, which is inappropriate in a democracy. Congressional Democrats have introduced a bill requiring companies to investigate and fix algorithmic bias in their systems. But with Congress divided and a presidential election looming, it is unlikely to become law in 2020.

If Democrats capture the presidency next November, however, the bill could pass in the Congress to follow. Several candidates have announced criminal-justice reform packages sceptical of surveillance technology. Bernie Sanders wants algorithmic risk-assessment and a full ban on facial recognition. Elizabeth Warren has promised to establish “privacy protections” and a “task force on digital privacy in public safety”. Kamala Harris has expressed more measured support for regulations to combat tech-enabled racial bias.

Although Democrats may be the loudest voices in this arena, privacy and scepticism of state power have traditionally been bipartisan concerns. The optimism that led politicians from both parties to become starry-eyed about technology is fading. So is the tough-on-crime consensus that made

politicians afraid to say no to police and eager to impose ever-harsher sentences. A convergence of these two trends means that in 2020, the all-seeing watchers can expect to get a long overdue poke in the eye.

Jon Fasman is author of “We See It All: Liberty and Justice in an Age of Perpetual Surveillance” (to be published by Public Affairs Press in 2020)

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Opening windows of opportunity



There has never been a better or more urgent time to open windows of opportunity, suggests **Robert F. Smith**, founder, chairman and CEO, Vista Equity Partners

Wealth can be created solely through the power of ideas

WE ARE IN an age of extremes. Our politics careen between opposite poles and politicians seem disinclined to seek the middle ground. Our economy is built to fuel growth, even as increasing numbers of people feel left behind.

In 2020 it is time to reassess the “American Dream”. For generations, those who came to America by choice did so because it promised opportunity to anyone willing to dream, dare and do. My ancestors were brought to America against their will, and after eight or nine generations I was the first in my family to have secured all my rights as an American. This history rings true to many African-Americans, and yet we still grew up feeling that the American Dream belonged to us too.

In the part of Denver where I lived, my neighbours were mostly educated, proud, hard-working and ambitious: dentists, teachers, politicians, lawyers, Pullman porters and small-business owners. They were active in the civil-rights movement at home even as they were sacrificing their sons to the Vietnam war. By and large they hadn’t yet achieved what we would consider success by any objective material measure, and almost to a household they gave more to their country than they received in return. But they believed steadfastly it was only a matter of time until things got better—if not for them, then surely for their children.

That was their American Dream. It reflects an abiding faith, conceived by our founders and held fast by generations from Lincoln to King, that the essential work of America is to make an imperfect union a little more perfect each day.

A class action

For many of my neighbours and my generation, these words proved hollow. They worked, they sacrificed, yet their piece of the American Dream was always out of reach. I was lucky. I was part of a small group that was bused each day to a high-performing and predominantly white public school on the

other side of the city. If you look at the trajectory of that group, it's astonishing. Almost without exception, we went on to become business leaders, doctors and public servants. My friends left behind at our local school underperformed our group by a staggering degree.

By luck, I happened to be among those who made it through a narrow window of opportunity. The tragedy is that this window soon closed. Busing ended due to political pressure and violence. I often think how differently my life might have turned out if I had been born just a few short years later.

With a divisive presidential election in America and unrest in many corners of the world, in 2020 we need to decide to build a global economy that pries open as many windows of opportunity as possible. We can do this. Today, for the first time in history, success requires no wealth or capital, no ownership of land, natural resources or people. Wealth can be created solely through the power of ideas. Intellectual capital can move people from poverty to prosperity in one generation. Technology is creating a whole new set of on-ramps to the 21st-century economy.

This was my message when I delivered the commencement speech at Morehouse College in May 2019. When I pledged personally to forgive the Class of 2019 student-loan debt, it was one way of prying open some windows. My hope is that those graduates, relieved of their debt burden, will go forth with the freedom to find their own greatness, pursue their dreams and give back to their communities. Many have already pledged to "pay it forward" by donating generously to future Morehouse classes.

Redesigning the American Dream requires each of us to pry open these windows of opportunity in ways big and small. We do so by being role models, mentors, good neighbours. We do so in the workplace by viewing diversity as a business imperative and strategic advantage, rather than just a social good. We need to create more training programmes and internships that expose people from all backgrounds to the skills they need to succeed. This won't happen on its own, but it can be done.

Bringing more people into the economy, giving more people the chance to help their children live a better life: these are universal goals. Even at its best, the concept of the American Dream has been an ideal: within reach for some,

a mirage to others. Our society and economy work best when everyone has the chance to compete. This is how ideas take flight. We have never had better tools to get this right. I will do my part.

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The Americas



Getty Images

The year of (mis)governing

Michael Reid Bello columnist and senior editor, Latin America and Spain, *The Economist*

Attention in Latin America will focus on Venezuela, and how to get economies moving again

2020 in brief

Bolivia prepares to take advantage of the growing demand for **lithium**, which powers electric cars, with the new Llipi lithium-production factory. The country has one of the world's largest lithium reserves sitting under the Uyuni salt flats

A BURST OF voting in Latin America saw 15 presidential elections in the two years to November 2019. In 2020 a quieter period looms, Venezuela always excepted. The elections brought the victory of populists of varying kinds in Argentina, Brazil and Mexico, the region's three biggest economies. Elsewhere, many of the new governments are weak. The task facing them is daunting: to assuage citizen discontent over mediocre economic growth, creaking public services and infrastructure, and a pervasive fear of violent crime.

The region's overarching problem will remain Venezuela. There is a chance that 2020 will see a negotiated return to democracy in which Nicolás Maduro, an illegitimately elected dictator, steps down and yields to a free and fair presidential election. But it is more likely that Mr Maduro, who has the backing of the armed forces and the support of Cuba and Russia, clings on, presiding over a country that descends further into penury and feral violence. In this case, more migrants will stream out of Venezuela. By the end of 2020, the total of those who have left since 2014 could rise to 7m-8m. Mr Maduro preserves the outward forms of democracy: whatever happens, he will hold the legislative election that is due in 2020. But unless there is a deal, it will be a sham affair, in which he seizes control of the parliament from a weakened opposition, which won a large majority in the last free election held in Venezuela in December 2015.

Colombia will face severe strain in 2020. It is being subverted passively and

actively by Mr Maduro. Most of the migrants will head there. Venezuela harbours and sponsors Colombian guerrillas, who engage in drug-trafficking, illegal gold-mining and other criminal activities. Border skirmishes are likely —a full-fledged war is not impossible. Colombia's president, Iván Duque, who lacks a majority in congress, will struggle unless adversity brings greater unity. Most of the 10,500 former FARC guerrillas who disarmed under an accord in 2016 will stick to that; to signal its commitment to peace the FARC political party will change its name.

Latin Americans will hope in 2020 for release from a long slump that has seen average income per person in the region as a whole fall since 2013. Year after year since then, forecasters have had to slash their initial predictions of recovery. The IMF recently downgraded its estimate of growth for the region in 2020 to 1.8%.

The hope of meeting it lies with Brazil. Jair Bolsonaro's government will remain a politically dysfunctional affair, but its plans for tax reform, privatisation and private infrastructure investment may prod the economy into life. Municipal elections in October will offer an opportunity for the opposition to Mr Bolsonaro, both in the centre and on the left, to reorganise.

Mexico has a strong president in Andrés Manuel López Obrador, but one who inspires little confidence among private business. The country faces slow economic decline. That will gradually take a toll on the president's popularity ahead of a mid-term legislative election in July 2021 which is crucial to his hopes of constitutional change. He may try to engineer a short-term boost by breaking his pledge of fiscal discipline.

The Bolsonaro effect in Brazil

Sarah Maslin Brazil correspondent, *The Economist* BRASILIA

Under a far-right firebrand, Latin America's biggest country will waver between progress and populism



From Amazon to Amagone

Brazil's recovery will be gradual

AFTER A DECADE lost to corruption scandals and recession, 2020 is supposed to be the year Brazil turns itself around. Jair Bolsonaro, a far-right populist, soared to victory in late 2018 with promises to reform the economy and shake up politics. But the gains of his first year in office were

overshadowed by scandals involving his family and his insouciance towards the destruction of the Amazon rainforest.

The biggest success, an overhaul of Brazil's pension system that eluded multiple governments before finally passing in October, will help get public accounts in order and attract much-needed investment. Yet significantly higher growth and relief for the 12.6m Brazilians who are unemployed depend largely on further reforms that face battles in congress. Simplifying the tax system would be a huge victory. Privatisations will bring confidence and cash, though some require cumbersome congressional approval. Brazil's recovery will be gradual, not radical.

When prosecutors started investigating Mr Bolsonaro's eldest son Flávio, a senator, for money-laundering, the president all but abandoned his plans to crack down on political corruption. A bill with dozens of measures to tackle graft and organised crime, presented with much fanfare in early 2019 by the justice minister, Sérgio Moro, has gone practically nowhere. Meanwhile, Mr Bolsonaro has replaced or threatened to replace the heads of the federal police, the tax authority and the financial-investigation unit, raising concerns about their independence. Paulo Guedes, the economy minister, has lent credibility and technical expertise to an inexperienced and dysfunctional administration. His resignation or sacking would darken the outlook.

If Mr Bolsonaro insists on pursuing controversial development in the Amazon and dismissing concerns about rising deforestation, he will be shunned by the wider world. Though limited so far, boycotts of Brazilian products could spread. The European Union may reject a trade deal with Mercosur, a regional bloc made up of Brazil, Argentina, Paraguay and Uruguay, on environmental grounds.

Although a crop of new politicians elected in 2018 have vowed to make congress more reformist and progressive, Brazil will get worse before it gets better. Some 22,000 Brazilians, including many young professionals, informed the treasury that they were emigrating in the first half of 2019, five times the rate in 2011. In 2020, those without the resources to vote with their feet will become even more disillusioned.

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Caught between colossuses

Madelaine Drohan Canada correspondent, *The Economist*
OTTAWA

In dealing with the Chinese dragon, Canada's prime minister needs asbestos gloves



CANADA AND China mark 50 years of diplomatic relations in 2020 and neither government is in the mood to celebrate. The relationship has become one of mutual antagonism and incomprehension since Canada acceded to a request by the United States in December 2018 to arrest Meng Wanzhou, a senior executive from Huawei, a Chinese telecoms firm. Repairing the now-tenuous bond is the most important foreign-policy priority for Justin Trudeau, the prime minister.

He no longer has a free hand to craft foreign policy, after the election in October reduced his majority government to a minority of 157 seats in the 338-seat House of Commons. The prime minister must now pay heed to the opposition Conservatives and other parties. Pressed after the election about what he intends to do about China, Mr Trudeau said only that he looked forward to checking in with experts working on the China file.

It will not be easy. China reacted to the arrest of Ms Meng for extradition to the United States by detaining two Canadians on grounds that the government of Canada says are spurious. China has accused them of espionage. Canada responded by rallying its allies to denounce China's actions. China then blocked key Canadian imports, such as canola, and accused Canada of being a white-supremacist client state of the United States. Long-time China-watchers in Canada say relations are in crisis.

Without at least a working relationship with the world's leading trade power, trade-dependent Canada will be marginalised and its economy will stagnate. To avoid that outcome the prime minister must win over a souring electorate, 90% of whom harbour negative or somewhat negative perceptions of China, and resist American pressure to take its side in its trade war with China. Still, Pierre Trudeau overcame those same pressures in 1970 when, as Liberal prime minister, he established diplomatic relations with what was then known as Red China.

The Conservatives have long favoured siding with the Americans against China, even if that leads to a complete break. They reckon that China differs so markedly from Canada, especially when it comes to human rights, that it is safer to remain within the American fold. Canada will continue to do the bulk of its trade with the United States. And even though its access to the American market has been regularly threatened in recent years, Donald

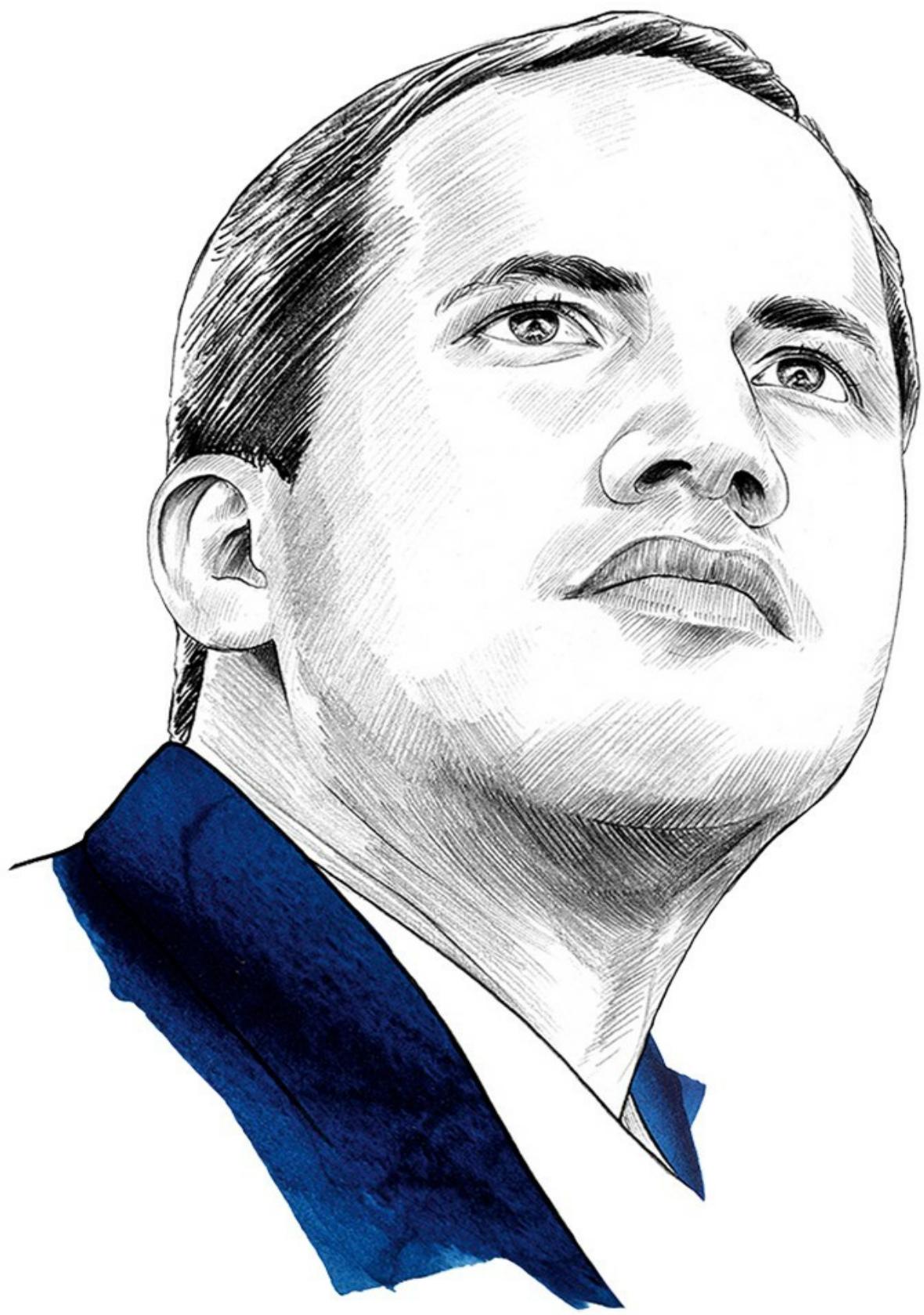
Trump will not last for ever. Or so their thinking goes.

The Liberals have not given up on China, at least as a potential trading partner. But inciting international criticism of China for arresting the two Canadians and weighing in publicly on the unrest in Hong Kong was guaranteed to raise hackles in a country that values its international reputation and its sovereignty over domestic affairs. The Liberals' emphasis (and that of the Conservatives) on human rights tends to obscure one of the primary reasons Canada began diplomatic relations with China half a century ago: Pierre Trudeau wanted to ensure China was a member of the post-war international, rules-based order, rather than standing apart.

If the prime minister keeps his father's goal in mind through the hard slog back to more normal relations, it might help him resist American calls to "decouple" from China and domestic pressure to stand up to it. More flashpoints lie ahead, with the continuation of Ms Meng's extradition trial and the decision, put off until after the election, on whether Huawei can bid to supply gear for its 5g telecoms networks. The appointment of Dominic Barton, a seasoned China hand and former global consultant, as Canadian ambassador to China suggests Canada wants the connection to continue. So too it seems does China. It recently appointed Cong Peiwu, a career diplomat, ambassador to Canada.

Pierre Trudeau once compared Canada to a mouse sleeping beside the American elephant. His son Justin, referring to the relationship with the United States, said Canada had plenty of experience of dealing "directly and successfully" with larger powers. Different countries require different tactics. As he sets out to mend Canada's relationship with the Chinese dragon, the prime minister may want to invest in some asbestos gloves first.

The way to change Venezuela



Juan Guaidó, president of Venezuela’s National Assembly and widely recognised as the country’s interim president, sees opportunity in his country’s crisis

We will take advantage of the knowledge acquired by our diaspora

OVER THE past five years Venezuelans have been going through an extremely hard ordeal. Our democratic system, which in the past served as a refuge for tens of thousands of citizens fleeing from tyranny in different parts of the world, has been reduced to ashes because of the desire of one person, and the group that surrounds him, to cling to power. We know that it has been tough for the world to understand how a political project that promised to end poverty and strengthen democracy more than two decades ago has done the opposite, and driven our country to political, social and economic collapse.

The only result of what the dictator calls “21st-century socialism” has been the creation of a complex humanitarian emergency without precedent in our region. Nine out of ten Venezuelans live below the poverty line. Our hospitals lack supplies and doctors. Schools find themselves without teachers and the population lives in a state of fear.

The actions, neglect and massive corruption of the authoritarian regime have ruined our economy. In 1998, when it was producing more than 3.1m barrels a day (b/d), the Venezuelan oil industry was among the biggest in the world; in September 2019 it barely achieved 650,000 b/d. The same has happened to our refineries, which enable us to export petrol and other products. Today hundreds of thousands of Venezuelans have to queue to obtain them.

Similarly, the electricity-supply system is in ruins and its deficiencies subject our citizens to hours and days on end of blackouts, even though we have the fourth-largest hydroelectric power plant in the world. The non-oil private sector of our economy, which in 1998 contributed almost one in every three dollars of the country’s exports and was the principal source of employment, has been devastated by absurd ideological policy.

What is more, in order to survive, the regime has had to share power with non-state actors such as the ELN (the Colombian-based National Liberation Army), other armed groups and organised crime. The evident linkages

between Nicolás Maduro and criminal and irregular actors have become a real problem for our neighbours.

All this has led over 4.3m Venezuelans to flee our country, mostly in the past five years. Historically we received millions of immigrants from Europe and South America, so it is heartbreaking to see that today we have become a nation that pushes out its population because of poor management by a small group of people.

Paradoxically, this has occurred at a time when hunger, child malnutrition and material poverty are in retreat around the world. And as international organisations have promoted programmes to advance literacy, improve education and health, and provide more access to drinking water, our country has missed out on the trend.

Venezuelans want to, and will be, a part of this process once we manage to move back towards democracy. Despite our current troubles, we will take advantage of the knowledge and tools acquired by our diaspora. Those departed migrants are an enormous source of opportunity. Thanks to modern technology, they propel and connect Venezuela in a way that would not have been possible in other periods of human history. Moreover, the vast majority of them wish to return to their country.

This has been a very tough yet important collective learning process for Venezuelans. We have discovered that, despite the abundant natural resources that our country has, our real wealth is in our people. That is the true human capital that we will recover once we recover our institutions.

The force of hope

In 2020, and the years beyond, the world will witness the rebirth of Venezuela. But for this to happen we must overcome Nicolás Maduro's usurpation of power, to begin a process of transition to democracy. We are fortunate to have the backing of the majority of democracies in the world.

The force that keeps Venezuelans fighting is hope. Despite the humanitarian emergency our citizens march, raise their voices, demand a peaceful and democratic exit from this tragedy. The entire nation, inside and outside our

borders, is firm in its determination to live in freedom.

The regime seeks to generate fear. We generate hope, confidence, dreams. Together we will achieve the change that Venezuela urgently needs. We will not return to being the country we once were, but will learn from our past to create a better future.

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Asia



Treading the boards

Sarah Birke Tokyo bureau chief, *The Economist* TOKYO

The Olympics will boost Japan's international standing—to some degree

2020 in brief

Single-use plastics are banned on **Mount Everest** from January. The ban includes single-use plastic bottles (although not water bottles) and plastics less than 30 microns thick. Local shops are prohibited from selling the banned plastics

JAPAN IS THE world's 11th-most-populous country and has its third-largest economy. It is peaceful, stable and democratic. Yet for all that the Land of the Rising Sun has little visibility on the global scene. The Japanese do not go around tooting their own horn; when foreigners mention the island nation it is usually to rave about a great holiday or a curious pastime. That will change in 2020. All eyes will be on Japan as Tokyo prepares to host the summer Olympics. The country's leaders want to use that to Japan's advantage.

When it last hosted the summer games, in 1964, Japan seized on them as an opportunity to re-emerge onto the world stage after the second world war. The games showed it had transformed itself from a militaristic power into a peaceful and responsible member of the international community. Japan demonstrated that it had risen from the ashes of economic ruin to become a technological whizz kid, debuting flashy new infrastructure and technology, such as the *shinkansen*, or bullet train.

Five decades on, Japan has similarly bold hopes for what it will get out of its costly and, in many quarters, unpopular hosting of the games. Since its economic bubble burst in the early 1990s, Japan has tended to be seen as past its heyday. But as America, Britain and other Western countries struggle with divisions that are straining their democracies, and illiberal states such as China grow in stature, Japan's leaders reckon the country can play a role in promoting the liberal norms that have served the world so well in the post-war era, and reminding other countries of their benefits.

The home of iconic inventions such as the Walkman, the PlayStation and the Prius will also try once again to boost its image as being at the cutting edge of technology—a reputation which has been battered by fierce competition from America, China and South Korea. Robots will be out in force at Olympic venues, greeting guests and picking up heavy sports-equipment. There are plans to use a flying car, made by Toyota, Japan's carmaking giant, to light the Olympic flame.

In some ways Japan is well positioned to have more clout in the world. Since Shinzo Abe, the prime minister, returned to office in 2012, the country has become more assertive. Take trade. In 2018 Japan led the Trans-Pacific Partnership, a huge trade deal signed by 11 states, to conclusion once President Donald Trump had pulled America out of it. It is now working on the Regional Comprehensive Pacific Partnership, a trade deal involving South-East Asian states and their partners.

And in 2020 Mr Abe will try to change Japan's pacifist constitution, though it will be hard. It currently stymies Japan's ability to take part in any military action, limiting what Japan can do at home as well as what it can contribute to missions abroad. Mr Abe has already brought in legislation that allows Japan to play a bigger, though still limited, role in international peacekeeping missions.

But there are more than a few obstacles both to how Japan wants to be seen and what it can do. The country is struggling with rapid depopulation and ageing that are affecting its economic growth and public finances. It lags behind its developed-country counterparts on many fronts, from gender equality to environmental protections. In the run-up to the Olympics, which the organisers promised would be the most environmentally friendly ever, the country will curb its excessive use of single-use plastics.

Further, many Japanese people are wary of their country becoming more prominent internationally, especially if it involves military adventures abroad. And Mr Abe, the architect of that goal, is soon to leave office—in autumn 2021 at the latest. That threatens to make him a lame duck in 2020, as rivals jostle for power. Once he is gone, there is no obvious successor with the same ambition, clout and, probably, staying-power. That means Japan's grandiose global ambitions may prove to be as fleeting as the Olympics

themselves.

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Move over, salaryman

Bill Emmott chairman, Japan Society

Why women's share of leadership roles in Japan is likely to double over the next decade



Soon a critical mass of female managers will be in place

2020 in brief

Thailand hosts the first **World Ganja Festival**, which looks at commercial opportunities for medical uses of cannabis

WHEN THE Olympic games open in Tokyo in July 2020, images from two of the main venues will feature something unusual: prominent female political leaders. Yuriko Koike, the governor of Tokyo, and Fumiko Hayashi, mayor of Yokohama, will both stand out amid the dark suits and dyed black hair of their male counterparts. Though Japan is a more equal place than other countries by many measures, on gender equality it is a dismal laggard.

Believe it or not—and Japan’s rigidly patriarchal society provides much cause for scepticism—this is about to change. According to the McKinsey Global Institute, women account for just 15 out of every 100 leadership roles in Japan (in Asia only Bangladesh, Pakistan and South Korea score worse). Yet over the next decade, women’s share of leadership roles is likely to at least double.

The main reason is supply. During the 1980s, most 18-year-old girls went from school to two-year “junior colleges” (with a heavy emphasis on home economics), rather than to the four-year university courses favoured by their male contemporaries. So among the generation now at the sort of age—typically 50-55—from which companies and other organisations pick their leaders, there are few women to choose from.

As the chart shows, this changed during the 1990s, as families and the girls themselves decided that they too deserved a full four-year university education. Moreover, fewer professional women now decide, or are forced, to leave their jobs when they get married or have children (and the marriage rate itself has declined), so the drop-out rate has fallen. The pipeline of potential female leaders is increasing every year.

Will they be chosen? Certainly, too few companies, especially the big and famous ones, have altered their promotion and staff-deployment practices sufficiently to become family-friendly. The gender gap in admission to the best public universities, including Tokyo and Kyoto, from which top organisations recruit, remains wide. Nevertheless, many organisations have changed their ways, out of sheer necessity: with Japan’s population ageing and declining every year, there are not enough trained and experienced men

to hog all the managerial jobs any longer.

“Diversity” has become a buzzword. Spending on child-care facilities, to make it easier to retain mid-career female staff, has climbed. Soon a critical mass of female managers will be in place, sufficient to change corporate procedures and cultures for their successors, as has happened in Europe and America.

Both Ms Koike (now 67), who studied Arabic in Cairo and became a prominent journalist, and Ms Hayashi (now 73), who rose to lead Nissan Auto Sales, were rarities in their generations even before they entered politics. So was Mari Miyoshi, who until August 2019 was Japanese ambassador to Dublin. In 1980 she was the only female recruit to the foreign ministry’s diplomatic track alongside 27 men; in 2016 the intake was ten women and 18 men. The gender gap remains far too wide—but by 2030, female managers and other leaders will no longer be rarities.

Bill Emmott is the author of “Japan’s Far More Female Future” (to be published by Oxford University Press in 2020)

Tsai again

Dominic Ziegler Banyan columnist and senior Asia correspondent, *The Economist* HONG KONG

If Taiwan's president gets a second term, she can thank China



EARLY IN 2019 Tsai Ing-wen's position was bleak. Taiwan's president had

to step down as leader of her Democratic Progressive Party (DPP), a penance for its mauling in municipal elections. It was even far from clear that she would win her independence-leaning party's nomination to run for a second term. Still, in the presidential election in January she will beat her rival, Han Kuo-yu of the Kuomintang (KMT) or Nationalist party.

That will be despite Mr Han's common touch and China's backing biddable media outlets in Taiwan and waging (dis-)information wars on social media. The mayor of Kaohsiung, the island's second-biggest city, has an oratorical flair that Ms Tsai lacks, and in the election will fire up (mainly older) working-class and rural voters. Attacking Ms Tsai for poor economic performance, his message will be that Taiwan's prosperity must come from hewing closely to China's vast markets. Mr Han's own family hails from the mainland. Taiwanese independence, he says, is "more scary than syphilis".

But younger voters especially will decide that being dictated to by China is scarier still. If one factor accounts for a Tsai victory, it will be the ongoing anti-government unrest in Hong Kong. The "one country, two systems" envisaged after Hong Kong's return in 1997 was supposed to guarantee autonomy for the former British colony. Yet, more than Hong Kong, the Communist Party long intended the formula to apply to Taiwan, which the party sees as the last unresolved piece of China's civil war. The Communists rose to power in 1949 by vanquishing the KMT, whose rump escaped to rule Taiwan.

Beijing's leaders meant "one country, two systems" and its application in Hong Kong to be an inducement for Taiwanese to return to the supposed motherland. In this context, China's breaking of its promises, including that Hong Kongers would be able to choose their own leaders, weakened what little appeal the formula might once have held in Taiwan. China's orders to crack down in Hong Kong and its support for police brutality there suggest that, so far as Xi Jinping, China's dictator, is concerned, the age of inducement is over.

Backlash against Beijing's bullying In the long run, of course, China's aims are unchanged. Over Beijing's streets hangs a slogan of Mr Xi's: "Don't forget the original intention. Stick to the mission." It is meant as a battle cry for political obedience and territorial integrity—both stamping on dissent in

the restive peripheries of Tibet, Xinjiang and Hong Kong, and dragging Taiwan back to the fold. For now, however, China's hardline tactics mainly help Ms Tsai. Many of her countryfolk resent China's efforts to pick off Taiwan's remaining diplomatic allies, along with restrictions on Chinese tourist visitors intended to punish it economically. Ms Tsai's offering of shelter to a number of Hong Kong protesters is popular.

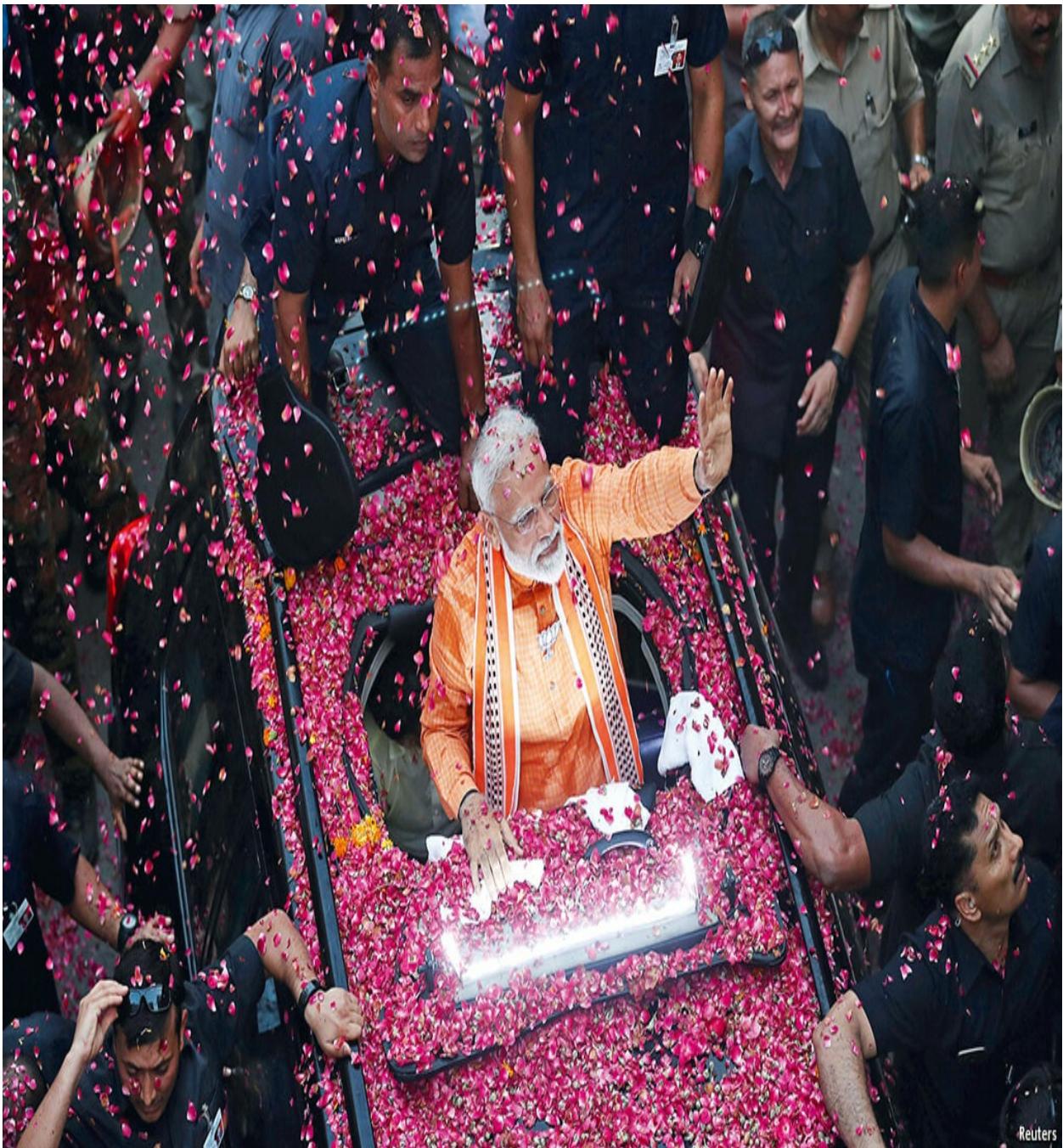
Meanwhile, in 2020 Ms Tsai will be able to claim a boost for Taiwan's economy from an unlikely quarter—the trade war between the United States and China. The threat of American tariff increases on made-in-China technology exports, plus China's own desire to source components from non-American suppliers, will work to the advantage of Taiwan's tech firms, particularly as China rolls out its 5G mobile networks. It will prove an incentive for Taiwanese firms to move their China production back to Taiwan.

That will look like success for Ms Tsai's reshoring strategy, though too late for her to counter opposition criticism that the DPP has failed to boost the economy in recent years. Even though Ms Tsai will probably win the presidency, the KMT will gain narrow control of the legislature. With China growing more strident, even making military threats, and the opposition carping at home, it will be no easy second term.

Peak Modi

Max Rodenbeck South Asia bureau chief, *The Economist* NEW DELHI

India's prime minister has almost unfettered power. Now he must decide what to do with it



Flower power

2020 in brief

India's Republic Day holiday on January 26th has a special resonance. The country's written constitution (the world's longest) came into effect 70 years ago

IN 2020 NARENDRA MODI celebrates his sixth year in office from a position of near invincibility. Many had expected his Bharatiya Janata Party (BJP) to win the general election in 2019, but few thought it would sweep even more seats than last time around in 2014. The crushed opposition, already weak and fragmented, has disintegrated further. Analysts now foresee Indian democracy settling into a period of one-party hegemony as in the 1950s and 1960s, when the Congress party of such towering independence leaders as Mahatma Gandhi and Jawaharlal Nehru held absolute sway.

Mr Modi does not bask in glory solely by virtue of running a successful party. As even critics concede, his electoral success is very much personal: the prime minister's mix of energy, charisma and relentless hype simply bulldozes opponents aside. The vote in 2019 had less to do with particular policies than with the prime minister's projection of confidence and pride. Whether by his more muscular posture towards India's eternal bugbear, Pakistan, or his unembarrassed championing of humble programmes such as providing toilets or gas cookers for the poor, or his merciless needling of political rivals, Mr Modi signals a pugnacious will to succeed that resonates with status-conscious ordinary folk.

If Indians wanted a strong leader, they have got one. Gone are the constraints of the BJP's first term under Mr Modi: the party's increased majority of 353 in the 545-seat Lok Sabha now gives it virtual carte blanche to legislate at will. Mr Modi is a hands-on leader, choosing ministers and other appointees less on the basis of competence than on probity, Hindu-nationalist ideological credentials and personal loyalty. With a relatively weak cabinet, the centre of power remains firmly in the prime minister's own office. The one exception to this is Amit Shah, Mr Modi's closest henchman from his days as chief minister of the state of Gujarat. As the BJP head during its first term in government, the workaholic Mr Shah is credited with vastly expanding membership and crafting the campaign strategies that won both state and national victories. In his new position as home minister he is positioned to instrumentalise the machinery of law and order to reward friends and punish enemies.

What will Mr Modi do with so much power? In his first term, despite the hype, he shied away from major reforms. Aside from some long-expected,

albeit useful, tweaks to the economy and a bit of belligerence towards Pakistan, he showed little boldness except for a reckless and costly move to hunt illicit wealth by voiding 86% of paper notes in circulation.

But Modi 2.0 shows more determination. Satisfying critics on the Hindu-nationalist right who are his firmest base, Mr Modi ended 70 years of constitutional ambiguity by abruptly slapping the restless state of Jammu & Kashmir under direct rule, at the same time suspending political life and imposing a weeks-long blockade on the 7.5m mostly Muslim residents of the Kashmir Valley. Mr Shah, meanwhile, pushed through a package of laws that increased police powers and diluted public oversight. The home minister has also questioned the utility of political pluralism and declared plans to expand nationwide a project piloted by the state of Assam, which forced its 32m residents to prove their Indian citizenship—and disqualified some 2m people, mostly poor and mostly Muslim, whose papers were rejected.

At a time when India's economy has been showing signs of severe strain (see Business section), Team Modi's focus on such issues seemed ill-judged. It has certainly alarmed minority groups and liberal intellectuals, who fear an irreversible drift towards totalitarianism. But with so little to hold him back, it is really up to Mr Modi which way India will go.

Into choppier waters

Robert Milliken Australia correspondent, *The Economist*
SYDNEY

Continuing Australia's long run of growth won't be plain sailing



AFP

Voyage of rediscovery

PASSENGERS ABOARD the *HMB Endeavour* will probably have as good a view as any of Australia's fortunes in 2020. The Australian-built replica of Captain James Cook's 18th-century barque will journey around the country to mark Cook's first voyage to the Pacific, his charting of Australia's east coast in 1770 and his claiming it for Britain. An exhibition about the lasting impact of European arrival on Aboriginals will travel, too. Some of the 38

ports of call will highlight Australia's big challenges 250 years later.

Hobart, capital of Tasmania, will be one of the first stops. Growth in its population, house prices and sense of confidence have given Australia's smallest state its strongest economic performance in years. The big question is whether this will be reflected in the rest of the country, across Bass Strait.

After 28 years of unbroken economic growth, Australia's performance will be less certain. Its GDP growth fell to 1.4% in the year to June 2019. The central bank expects it to recover to 2.8% in 2020. To achieve this, Australia will need to find different forms of stimulus from those that have underpinned its long recession-free run: a mining-investment boom, strong population growth and soaring house prices in Sydney and Melbourne, the biggest cities. Saul Eslake, an economist, argues that this combination made Australia an "outlier" among rich countries. But its impact has now waned. Australia, he says, is coming "back to the pack": grappling with problems that trouble comparable countries, such as low wage-growth.

The Reserve Bank of Australia cut the cash rate to a record low of 0.75% in October, the third cut in 2019. It will probably keep cutting. Philip Lowe, the central bank's governor, will become more interventionist, and call on the federal conservative coalition government to do its bit by spending more. Scott Morrison, the prime minister, will resist this. He won an election in 2019 unexpectedly, with few policies other than income-tax cuts; he hopes these will be enough to keep recession at bay. Yet he will risk tinkering with another big stimulus: immigration. To please conservatives in his Liberal Party, Mr Morrison will cut it by 30,000 to 160,000 arrivals in 2020. Business leaders will not welcome this.

If the economy's wobbles give Australians the jitters, the "lucky country" will reassure them, as it often has, with prosperity from stuff it digs from the ground and under the oceans. Exports of liquefied natural gas (LNG) from Queensland and Western Australia, mainly to China, Japan and South Korea, will hit a high spot. If forecasts are right, Australia will export LNG worth A\$54bn (\$37bn) and overtake Qatar as the world's biggest LNG exporter by volume in 2020.

As the *Endeavour* sails past LNG plants at Gladstone in Queensland, and

heads farther north to the Great Barrier Reef, the outlook will be less bright. Captain Cook beached his ship at what is now Cooktown after it foundered on the reef. Now a World Heritage site, the reef will face its own crisis in 2020. The Australian authority overseeing it downgraded its health outlook from “poor” to “very poor” in 2019. Climate change is the main culprit. Warming seas have bleached the colour from swathes of its coral. Mr Morrison’s government will face louder calls to end its wishy-washy approach to climate matters, and to come up with an energy policy that does not rely on coal as its centrepiece.

A cheerier welcome awaits the *Endeavour* at one of its last stops, in early 2021, at Adelaide in South Australia. The state’s wine producers are booming: Australia even overtook France for a few months in 2019 as China’s top wine supplier by value. Wine, like gas, could provide one path to a record 29th year of growth.

Best frenemies

Miranda Johnson South-East Asia correspondent, *The Economist* KUALA LUMPUR

Malaysia still awaits the transition from Mahathir Mohamad to Anwar Ibrahim



Getty Images

Malaysia's duet

HOW LONG will Mahathir Mohamad remain Malaysia's prime minister? The question will haunt the country's politics in 2020. The coalition in power, Pakatan Harapan (PH), unexpectedly soared to victory in elections in 2018. It defeated another grouping which included the United Malays National Organisation (UMNO), a party that ruled for more than six decades. Dr Mahathir, now aged 94, is a notable UMNO alumnus, having served as

prime minister for the outfit between 1981 and 2003. So, too, is Anwar Ibrahim, Dr Mahathir's former deputy prime minister. Mr Anwar now leads the largest party in PH; Dr Mahathir one of the smallest.

To say the two men's relationship is complicated rather understates the case. Dr Mahathir sacked Mr Anwar in 1998. Mr Anwar then went to prison for six years on trumped-up charges of sodomy (which is a crime in Malaysia). He landed behind bars twice more as a leading opposition figure. Imagine the surprise, then, when the two teamed up under PH's banner in 2016. Dr Mahathir took the helm after the coalition's triumph, in part because Mr Anwar still languished in prison. At first the plan was for Dr Mahathir to step down within two years. Now he says he will stay "not beyond three years".

The delay is adding to strife within an already unwieldy coalition. The government has enjoyed some success. It has reopened investigations into a huge financial scandal involving the previous administration, cancelled or cut back extravagant infrastructure projects and reduced the voting age from 21 to 18. Dr Mahathir has ably marshalled his inexperienced ministers and accepted a greater devolution of his powers. But the government is falling behind on its pledges to protect civil rights and reform Malaysian institutions. PH's manifesto promised voters a host of goodies at a time when it seemed doubtful that the coalition could possibly achieve victory.

Amid the difficulties, Dr Mahathir has vowed to support Mr Anwar's rise. But Azmin Ali, a bigwig in Mr Anwar's party, is thought to be Dr Mahathir's preferred successor. Factions have formed around the two men. Hopes of cleaner politics in Malaysia were dashed in 2019 with the release of compromising footage. It allegedly shows Mr Azmin in bed with another man, a claim he denies. Instability in PH may be a good excuse for Dr Mahathir to cling to power for longer. But the nonagenarian knows that time is not on his side.

The longest war

Daniel Knowles international correspondent, *The Economist*

In Afghanistan, the worst could be yet to come



AFP

FOR AMERICANS 2020 may be the year the Afghan war, now by far America's longest, finally comes to an end. For Afghans, it may be a year in which it truly accelerates. President Donald Trump has shown little enthusiasm for a conflict that has cost some 2,400 American lives since 2001. He has claimed that the war is "stupid" and that he could, if he wanted, win it in "a week" by killing 10m people. But instead he wants to withdraw, so he can claim to have ended the war by the time of the American presidential

election in November.

Mr Trump's envoy, the Afghan-born diplomat Zalmay Khalilzad, spent most of 2019 jetting between Washington, Doha and Kabul negotiating a peace deal with the Taliban—something America had for years refused to do. By September it was ready to be signed. America would withdraw most of its troops from Afghanistan, leaving only a small force to protect its embassy and support intelligence operations. In exchange, the Taliban would agree not to allow Afghanistan to become a base for international terrorists again, and would talk, in a fashion, to the Western-backed Afghan government.

But a little over a week before the 18th anniversary of the attacks on September 11th 2001, Mr Trump declared that he was cancelling the deal. He had, he tweeted, been ready to invite the Taliban and Afghanistan's president, Ashraf Ghani, to Camp David for a peace ceremony (astonishingly). But after a Taliban bombing in Kabul that killed a dozen people, including an American soldier, he had changed his mind.

As time passes, the Afghan government gets ever more feeble. The army, though generously funded, relies more than ever on air support to keep the Taliban out of big cities. Partly as a result, in the first half of 2019 American and allied Afghan forces killed more civilians than the Taliban, for the first time in years. Mr Ghani struggles for legitimacy. In September's deeply flawed presidential election only 2.7m out of 9.6m voters turned out. Over 2,000 polling stations did not open and biometric voter IDs failed in many places. Both Mr Ghani and his main rival, Abdullah Abdullah, claimed victory.

The tireless Mr Khalilzad continues to meet the Taliban; a deal may yet happen. But the Taliban are growing in power with each passing month. If Mr Trump is determined to pull America out, they may decide to press for total victory—in which case the worst of the war could just be beginning.

How to counter extremism



Jacinda Ardern, prime minister of New Zealand, points to key lessons from the murderous attack on mosques in Christchurch

I knew that New Zealand on its own could do only so much

I REMEMBER THE moment I realised social-media platforms were being weaponised. When the video of the attack of March 15th 2019, which saw 51 innocent Muslim worshippers massacred in two mosques in Christchurch, New Zealand, showed up on my social-media feed, I realised that if I was seeing it, countless others must be too. And they were. In the 24 hours following the attack the video was at times uploaded as fast as once a second to YouTube and 1.5m copies were taken down from Facebook. To this day, the video still exists on the internet and is constantly being removed.

The alleged terrorist purposefully chose to broadcast his crime on social media. He wanted to inflict fear, spread his hateful ideology and seek infamy. As a global community, we must deny him all these things, but we won't succeed if we act alone.

Two months later a group of world leaders, spearheaded by President Emmanuel Macron of France and me, and representatives from the major tech companies launched the Christchurch Call to Action, a set of shared actions designed to stop the spread of terrorism and violent extremist content online. It is a first-of-its-kind agreement whereby countries and companies have come together to solve a common problem. Though each country retains the right to regulate as it sees fit, the premise of the Call is that the best way to stop extremism is by governments and tech companies working co-operatively.

In the few short months since the Call was launched we have also developed a crisis-response protocol so that, in the event of a terrorist attack being livestreamed again, companies can move quickly to shut it down and stop its spread. I remember on March 15th it wasn't clear where to go to have the video removed; now we have a global network and system at the ready to stop similar content taking a foothold. We saw this protocol kick in after the atrocious attack on the Jewish community in Germany in October.

Companies have also taken action, including Facebook's decision to remove

the right to livestream from those who abuse its community standards. Had these rules been in place on March 15th the alleged gunman would not have been able to livestream his rampage due to prior breaches of the guidelines.

These changes are significant. In less than a year meaningful progress has been made to prevent such an attack being broadcast. But there is more to do in 2020 and beyond, and all of us involved in the Christchurch Call know that it is only part of the answer. Limiting the ability for hateful ideologies to spread online is an important action to take, but it must be supplemented by efforts to build more cohesive and inclusive societies offline, too.

I have long argued that politics is a place where we should make decisions based on the kind of values we teach our children: simple concepts of empathy and kindness. That is what lay behind my government's decision to ban all semi-automatic weapons in New Zealand in the wake of the attack. Their easy availability has made our community less safe. Let me be clear: I'm not advocating that New Zealand become a country free of guns. I grew up in a rural community where guns are a necessity on a farm, for pest control and other purposes. We have protected these legitimate uses of guns. But I see no reason to have easily available a type of weapon that is now regularly used around the word in the mass killing of innocent people.

Kindness v killers

From the start I knew that New Zealand on its own could do only so much. Only through working with others, across borders, did we stand a chance. But we also must look inward. The best technology in the world can't stop someone's rage and descent into extremism. For that we need to build better and more inclusive societies, where people's differences are celebrated and everyone has a stake in their local community—the kind of place we would be proud to have our kids grow up in.

We are not a perfect nation. But the response to March 15th amplified who we are: a place that feels a sense of responsibility to prevent this ever happening again, but also a place that, in the face of extreme violence and hate, responded with humanity and love to the community that was targeted.

Infamy, extreme ideology and fear will not be the legacy of March 15th.

Determination, kindness and a stronger sense of our shared humanity will.

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China



Reuters

All things in moderation

James Miles China editor, *The Economist*

In 2020 China is supposed to become a “moderately prosperous” country. What does that mean?

2020 in brief

By the end of 2020, 80% of Chinese people will be **proficient in Mandarin**, vows the government, up from 70% in 2017—a difference of more than 100m people

THE COMING year should be a gloomy one for China’s Communist Party. A trade war with America, unrest in Hong Kong, elections in Taiwan that could keep China-sceptics in power for another four years—all will weigh heavily on its leaders’ minds. But they will try hard not to show it, for 2020 has long been marked in their diaries as a year of triumph. It is when the country is supposed to reach a crucial stage of its development and become a “moderately prosperous society in all respects”. To a world used to thinking of China as an emerging superpower that is catching up with America in wealth and global reach, that may sound like a surprisingly modest goal. But in party-speak it has great resonance. By the end of the year the leadership hopes to be crowing.

“Moderately prosperous” is the official translation of *xiaokang*, a term borrowed from ancient Confucian philosophy by Deng Xiaoping after he launched his economic reforms in 1978. It suggests a society on its way to becoming an egalitarian Utopia. Deng believed China could become *xiaokang* in the lifetimes of many who were then alive. He used a crude measure of the goal: a quadrupling of GDP and GDP per person compared with 1980. China would reach these targets by the year 2000, he proclaimed. He was proved spectacularly right. By 1995 China’s GDP had already grown four-fold in real terms. By 1997 GDP per head had done so, too. Yet many Chinese still did not feel prosperous. Nearly 130m remained in absolute poverty. So the party set higher targets. In 2012 it announced that, by the end of the decade, the country would finish building a *xiaokang* society. GDP and average disposable incomes per person would be double what they were in 2010. No one would be below the poverty line.

This is not proving easy. Gone are the days of relentless double-digit economic growth. Officials have been trying to achieve a more sustainable rate: high enough to reach the new *xiaokang* goal, but no longer so high that it risks causing financial chaos. They want GDP to be generated far less by pouring concrete and far more by brainpower. A sluggish global economy has been complicating their efforts. So, too, has faltering confidence among consumers and businesses at home. To double the GDP of 2010 in real terms, China needs its economy to grow by an average of 6.2% in 2019 and 2020. That will be hard. China's prime minister, Li Keqiang, said in September that even keeping it growing by 6% has been "very difficult". Doubling disposable incomes per person has been less so: they have been rising faster than GDP for most of the past decade.

Eliminating absolute poverty will be hardest of all. China says it has already done so in cities. The problem, it says, is in the countryside. Great progress has been made since the start of Deng's reforms: the number of rural people below the official poverty line of 2,300 yuan (\$340) a year at 2010 prices dropped from 775m in 1980 to 16.6m at the end of 2018. But this is mainly the result of rapid economic growth, which has created job opportunities in urban areas for migrants from the countryside. Many of those who remain in absolute poverty are too infirm to work. They are supposed to receive subsistence handouts. But some do not because of corruption or bureaucratic failings. Many do not receive enough.

Statistical sleight of hand is always a help. The only reason the government can claim that poverty does not exist in cities is that it uses the same standard for absolute poverty in both urban and rural areas, even though living costs in urban areas are higher. In the past couple of years, officials have been racing to declare that "impoverished counties", as hundreds of them were formally classified by the central government, have "removed their hats"—meaning they no longer wear that badge. By the end of 2020, the government says, there will be no more such counties in China.

Rushing to meet targets, or to massage figures so that they appear to have been fulfilled, is a routine feature of officials' lives in China. Bureaucrats will feel under particular pressure to achieve *xiaokang*-related goals. That is because the party wants to show the public that *xiaokang* has been realised—

in all respects—by 2021, the year of its 100th birthday. But average annual growth may well fall below 6.2% in 2019 and 2020. That will be a problem for the party, which at the very latest wants to achieve its *xiaokang* goals by its birthday date of July 1st 2021. It may settle for a fudge, claiming it has “basically” hit the target.

Some Chinese will still grumble that they have not got much richer, and many will complain that the gap between them and the wealthy has been growing. But Utopia beckons. The next target is to become a “modern socialist” country by 2035 and then, by 2049 (the 100th anniversary of Communist rule), to become rich. By that time, the party says, China will be “prosperous, strong, democratic, culturally advanced, harmonious and beautiful”. As always, the party will define what those terms mean.

A territory in turmoil

**Caroline Carter Deputy Asia news editor, *The Economist*
HONG KONG**

A vote in Hong Kong in 2020 will highlight the shortcomings of its limited democracy



Getty Images

Force v freedom

Many Hong Kongers with foreign passports will be ready to leave

2020 in brief

Fuzhou, in Fujian Province, hosts the 44th UNESCO **World Heritage Meeting**. China currently ties with Italy for the most World Heritage sites

(each has 55)

FROM MARCHES to songs, boycotts and petrol bombs, Hong Kongers have shown they have a knack for protest. In the summer of 2019 over a million people took to the streets to demand that an unpopular extradition bill be shelved. The bill is no more, but the fury it unleashed remains. And without compromise from both the government and the protesters, no end is in sight. The government will enact laws to restrict protest and give the police extra powers. Should “front line” protesters take up more dangerous arms, moderates will still support them.

Hong Kongers want to pick their own leaders but China will not allow the sort of democratic reform that protesters demand. Even if the rulers in Beijing could find a willing (and capable) candidate to replace Carrie Lam as Hong Kong’s chief executive, they would invite controversy on the question of how her successor should be chosen. Although China will not rush to remove her, Mrs Lam could be gone by the end of the year.

In February the first report of an investigation by the police watchdog into the unrest is due and will be heavily scrutinised, especially by those who wanted an independent, judge-led inquiry instead. In September elections are planned to appoint lawmakers to the Legislative Council. Legco, as it is known, is a physical and ideological target for protesters. Only half of the 70 seats are directly elected; the others are chosen by industries and interest groups which tend to be sympathetic towards the local government and its backers in Beijing. Loud calls for democratic reform should mean a high turnout and wins for the opposition. But young people will disrupt proceedings when candidates they support are barred from running, as some have been in previous elections for supporting greater autonomy.

China may calculate that the damage to Hong Kong from sending in its troops would be greater than that of the protests themselves. Instead the government in Beijing will exert pressure on local policymaking, the courts, businesses and the media, but it will face greater resistance. China will punish firms which support the protests and it will decry “foreign meddling”, especially by America, where some presidential candidates will take a keen interest in the territory.

Many Hong Kongers with foreign passports will be ready to leave if things get uglier. The economy has suffered from both the trade war between America and China and from the protests. Important sectors—including property, tourism and retail—will struggle as mainland visitors stay away.

Mrs Lam hopes that housing reforms will make the city fairer. But she must be realistic about the anger she faces and offer more. Political reform is no longer a topic she can brush under the carpet. Hong Kong's battered society is in urgent need of repair.

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Donald Trump, accidental China hawk

David Rennie Beijing bureau chief and Chaguan columnist,
The Economist BEIJING

From Xinjiang to Taiwan, China's periphery will be a source of unpredictable risks and threats



PRESIDENT DONALD TRUMP has spent years playing the role of a China hawk. Events in 2020—notably around China’s periphery, in border regions and contested territories where Beijing struggles to impose its autocratic will—could push him towards truly hawkish policies that challenge China on political and ideological grounds.

It might seem odd to call Mr Trump soft on China in any way. He ran for office accusing China of manipulating its currency to “rape” America’s economy. As president he unleashed a tariff war. He has allowed genuinely hawkish aides and officials to impose sanctions on Chinese companies deemed a threat to national security, notably the technology giant Huawei; to hunt for Chinese spies and agents of influence; and to upgrade military ties with Taiwan, the democratic island of 24m people that China claims as a province.

Yet by instinct Mr Trump is not a conventional hawk, if hawkishness is defined as objecting to the principles that guide China’s modern rise, from its authoritarian political system to its embrace of state capitalism, in which the government’s deep pockets and legal powers are used to create local champions while bullying or excluding foreign competitors. Indeed, Mr Trump says that he does not blame China for trade cheating, calling its leaders smart. That opens a gap between the president and his officials, who push lists of structural changes that China must make, starting with further opening of its markets to foreign firms. In contrast, Mr Trump brags that his tariffs are inducing American businesses to leave China, as if market access for multinationals is barely a priority at all. Mr Trump has pursued a narrower agenda: namely, reducing the trade deficit by pushing China to buy American goods, above all from farm states important to his re-election in November.

But in an American election year, when there will be no political downside to talking tough on China, events could push Mr Trump into cold-war-style confrontations that he has avoided until now. Start with Hong Kong, locked in a crisis that could have been tailor-made to appeal to American public opinion. It pits pro-democracy protesters, many of them young, English-speaking graduates of a liberal education, against baton-wielding security forces. Democrats will jump on any repetition of the ambivalence that Mr

Trump showed in 2019, when he dismissed Hong Kong's demonstrations as "riots" that were for Beijing to deal with. In the event of real horrors in Hong Kong, such as the deployment of mainland troops to crack skulls and shed blood, prominent Republicans in Congress will join Democrats in demanding sanctions on Chinese officials and a review of trade privileges extended to the former British colony.

In China's far west, meanwhile, the brutal, remorseless repression of Uighurs and other Muslim minorities in Xinjiang will fuel election-year debates about human rights, and questions about why Mr Trump rarely speaks about them, leaving that to his underlings. A succession crisis in Tibet could return that tragic, isolated region to the headlines. The exiled Tibetan spiritual leader, the Dalai Lama, will turn 85 in 2020.

Moving offshore, Mr Trump's (weak) commitment to upholding the security of America's democratic allies could be tested by trouble in Taiwan, which holds presidential and legislative elections in January 2020. The Chinese government loathes the sitting president, Tsai Ing-wen, because she opposes calls for Taiwan to become part of the Chinese motherland and points to Hong Kong as a reason to distrust Beijing's promises of autonomy under the slogan "one country, two systems". China has seethed as hawks working for Mr Trump have sought to deepen and enhance America's relations with Taiwan. If Ms Tsai wins re-election, renewed bullying by China may demand an American response. Chinese naval provocations in the South China Sea (see next story), if ignored by Mr Trump, could also embolden critics of an American president who—time and again—has scorned the idea that his country is an indispensable guardian of a liberal, rules-based order.

All in all, China's periphery will be a source of unpredictable risks and threats. Those dangers must be added to the trade confrontation at the core of the America-China relationship. Critics will already be watching for signs of Mr Trump striking a shabby trade deal, in which China buys soyabeans from Iowa but dodges economic reforms. In 2020 Mr Trump may rue proclaiming himself "the chosen one" who can bring China to heel.

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Sea of troubles

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In 2020 the world should pay more attention to the South China Sea



Reuters

IF 2019 WAS the year that strategic competition between China and America upended their trading relationship, 2020 will be the year of intensifying security competition. In both Beijing and Washington patience is waning and calls for action are escalating, making more direct and potentially dangerous encounters likelier. The world should pay more attention to one potential flashpoint in particular: the South China Sea.

In 2020 America will sail its ships through the Taiwan Strait once a month, and even send a major warship on a port visit. It will seek to expand Taiwan's international space, for example by inviting Taiwan to the World Health Organisation and organising an unprecedented cabinet-level visit. President Xi Jinping will react strongly, increasing the frequency and sophistication of Chinese military activity opposite Taiwan, harassing American ships in transit and restricting foreigners' access to Xinjiang and other restive parts of China. China will also raise its game on persuading Taiwan's remaining diplomatic partners to switch allegiance; Haiti will make the switch. And China will use information operations, influence campaigns and economic incentives to boost its preferred candidate, Han Kuo-yu, in Taiwan's presidential election in 2020.

Against this backdrop of escalating tensions, China will push towards confrontation in several territorial disputes. In the East China Sea, where China and Japan both claim the Senkaku/Diaoyu islands, China will further increase its military pressure. The People's Liberation Army has steadily raised its rate of military exercises in the region since a lull in 2017, and has enlarged the operating area of its warships, submarines and aircraft there. In 2020 China will act more aggressively, encouraged that the growing rift between Japan and South Korea will fracture regional political opposition. And China will conduct more joint patrols with Russia in the region, calculating that America will be more reluctant to challenge both rivals at once.

In the South China Sea, China might go even further. It could, for example, establish more outposts on the Spratly islands, "occupy" Scarborough Shoal with an unmanned drone, further militarise its current outposts in the Paracels and Spratlys, or declare greater restrictions over other countries' freedom of navigation. But Chinese leaders will be reluctant to upset the current status quo too drastically, as they are successfully establishing de facto control over the South China Sea through gradual legal, economic, diplomatic and military measures.

Even so, China will not hesitate to act if its South-East Asian rivals seek to strengthen their positions. Vietnam, for example, will assume the chair of ASEAN in 2020, and may take the opportunity to scuttle the long-debated

South China Sea Code of Conduct, which China wants to use to codify some of its preferred policies, such as keeping out foreign armed forces. Alternatively, President Rodrigo Duterte of the Philippines might assume a more hostile pose towards Beijing if, for example, Chinese ships accidentally kill Filipinos in a scuffle in disputed waters. In either case China will adopt a bolder stance if it no longer feels the need to keep regional rivals on side.

America will rush to capitalise on any potential change in the wind in Manila and Hanoi. It could float options like threatening to reconsider its position on not taking sides in territorial disputes, or putting the South China Sea back on the agenda in high-level meetings with China and in international forums such as the G7. But President Donald Trump will probably prefer the economic options of sanctioning Chinese companies and individuals involved in illegal activities, harassment and coercion in these waters.

With the Department of Defence driving much of America's China policy, it will press countries in the region to provide more military access and political support. America's patience with the region's mantra of "don't make us choose" will run out in 2020. But America's military advantage over China is waning, and unless it gains new and expanding military access into South-East Asia, China will be able to dominate the so-called first island chain. That means America will have to start asking its ASEAN allies to do more. In 2020 it will expect these countries to agree to more frequent and persistent American military presence from their shores, and to publicly support America's efforts to push back against China's efforts to extend its sphere of influence.

The coming crisis

Both China and America will be willing to take greater risks to gain advantage. It is only a matter of time before this security competition in the South China Sea spills over into a crisis. The coming year threatens to be a rocky one not only for China-America relations, but also for countries in the region that are caught in the crossfire.

Oriana Skylar Mastro is the author of "The Costs of Conversation: Obstacles to Peace Talks in Wartime" (Cornell University Press, 2019)

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The financial centre that wasn't

Simon Rabinovitch Asia economics editor, *The Economist*
SHANGHAI

Shanghai is no New York. But it will still be important in 2020



2020 in brief

China moves to speed up its roll-out of **ultra-fast trains**. An experimental track in Hubei province trials maglev trains, which levitate above the rails on a magnetic cushion, allowing them to travel at up to 1,000kph (620mph)

CHINESE OFFICIALS like targets, and they do not like missing them. So

they will declare victory in making Shanghai a global financial centre before the end of 2020, a goal they announced a decade ago. A more sober assessment is that it is still a couple of notches below Hong Kong, London and New York.

China had hoped that financial clout would match economic heft. In reality there has been a big gap. China accounts for 16% of world GDP, but a much smaller part of global equity portfolios. The yuan's share of cross-border payments is just 2%, on a par with the Canadian dollar's.

The reasons are clear. China views capital controls as essential to its economic health, but they constrain its financial ambitions. The lack of an independent judicial system is another impediment, no matter how often China promises to protect foreign investors. Few trust the Communist Party: when fund managers visit, many leave their usual mobile phones at home, bringing "burner" phones just for China.

Still, China has recently opened its doors a little more widely. Most notably, it eliminated a quota system for international fund managers and gave foreign firms the right to majority stakes in domestic brokers.

Compilers of global stock and bond indices are boosting the weight they assign to China. In February 2020 J.P. Morgan will add Chinese bonds to its emerging-market local-currency bond index. And 2020 will mark the first full year in which onshore Chinese shares account for more than 3% of the closely watched MCSI emerging-market equity index. Investors who track these indices have little choice but to increase their China allocations. Others are doing so willingly in order to diversify.

Some hawks in America would like to sever these links, perhaps blocking pension funds from investing in China. But their proposals will gain little traction in 2020. A conservative estimate is that about \$50bn of foreign cash will flow into Chinese stocks and bonds in the year ahead. Shanghai does not deserve to be seen as a true global financial centre. But it will be a bridge between China and the rest of the world in 2020, at a time when such linkages will be in short supply.

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Not just for kicks

James Yan China correspondent, *The Economist* TIANJIN

Xi Jinping is going all out for a big win for Chinese football



AFP

A great wall of China

It may take decades before China discovers its own Lionel Messi

FOR HALF an hour each week, Ming Ze Kindergarten in the port city of Tianjin changes into a football academy. Pupils flock to the playground for compulsory footy drills. The little ones are taught by licensed coaches from Argentina and Spain (in Spanish, no less). The most talented students are

encouraged to attend an extra hour of training in the evening.

Ming Ze is among China's first batch of "kindergartens with football characteristics"—a pilot scheme launched by the education ministry in 2019. Around 10,000 kindergartens are expected to enroll in the scheme by the end of 2020. Participating schools are required to submit a three-year plan explaining how they will foster enthusiasm for the sport and build up skills. Government grants are available.

Xi Jinping, China's president and an avid football fan, wants China to host the World Cup and win it by 2050. Alas, China has qualified only once for the tournament, in 2002, and failed to score a single goal. The poor performance of the men's national team (the women's team is good) has struck a sensitive nerve in a highly patriotic country of 1.4bn people.

Cultivating young talent has thus become the priority. In July 2019 the government announced that it would build or renovate 29,000 football pitches on school grounds by the end of 2020. That is around the same number of schoolyard pitches built or renovated between 2015 and 2018.

It may take decades, however, before China discovers its own Lionel Messi. In the meantime, planners have settled on a stopgap measure: granting Chinese citizenship to foreign players. In 2019 a Brazilian named Elkeson became the first footballer without Chinese ancestry to play for China's national team. Now he goes by his Chinese name, Ai Kesen. He just might be the best player on the team. Expect more naturalisation ceremonies in 2020.

China's new travellers



The benefits of the boom in tourism from China will be more than just economic, argues **Jane Sun**, CEO of Ctrip

Roughly six out of ten Chinese solo travellers are women

FOR SEVEN years, China has been the world's biggest travel spender. And now travel from China is set to soar. It will also diversify, with more solo Chinese travellers, more small groups and more educational and cultural trips. More Chinese travel will be good for China. It will also be good for others—generating more revenue, but also increasing opportunities for cross-cultural understanding at a time of heightened political mistrust.

Until the new millennium, overseas travel from China was a luxury available only to a privileged few. In 2001 Chinese residents made 10.5m foreign trips. By 2018 this had risen by an astonishing 1,326% to 149.7m. In the 2020s this number will double again as passport ownership in China increases from the current 10% of the population to an expected 20%. The rise will be driven in large part by a growing demand from China's rapidly developing "new first-tier cities" such as Changchun, Shenyang, Qingdao and Taiyuan.

This boom has huge implications for the global tourism economy. Already, tourism spending from China has risen from 3% of the world's total in 2006 to 21% in 2016, according to the World Tourism Organisation. The amount that Chinese tourists spend abroad exceeds the country's reported trade surplus. Further growth in tourism will help create jobs and stimulate investment, from London to Los Angeles and emerging destinations for Chinese visitors including eastern Europe and Latin America.

The impact will not only be economic. Confucius taught that "it is better to travel 10,000 miles than to read 10,000 books". Confucianism is ever more influential in today's China. Expect to come across fewer big snap-happy tour groups jostling and mall-shopping, and more Chinese travellers looking for an opportunity to learn, experience and share across cultures.

Such trends are already there to see, with more single travellers and small groups of friends on solo trips leaving from China's airports. Ctrip's data suggest that demand for international travel from the Chinese singles market (which is approaching 200m people) is growing by more than 10% a year.

Roughly six out of ten Chinese solo travellers are women—heading overseas to off-the-beaten-path destinations such as Mexico, Myanmar and Montenegro and keen to have experiences away from the standard tour-group trail.

Solo and small-group trips have the potential to bring Chinese people and the rest of the world closer together. In the 2020s prepare to meet a generation of travel-savvy, multilingual Chinese millennials keen to broaden their perspectives. This will lead to a greater awareness of critical global issues among young Chinese.

Then there are the educational trips for Chinese children. According to Ctrip's 2018 Travel Report, parents spent an average of 23,000 yuan (\$3,250) per person so that their children could become more familiar with other cultures. Chinese parents increasingly see the value of taking their children on overseas trips. Although 80% of these educational trips taken in 2018 were to English-speaking Western countries, other destinations such as Singapore and Thailand are gaining in popularity.

China also wants to attract more inbound tourists eager to escape the standard Great Wall and Terracotta Army highlights route. Investment in infrastructure is growing in the run-up to the Winter Olympics in 2022, opening access to less-visited parts of the country. The government also plans to make China easier for international visitors, for example by streamlining visa-applications and offering multiple language services and improved signage in airports and stations. China will thus become an ever more accessible and enjoyable destination for international tourism.

Millennials on the move

Our millennials will travel the world. And China must be open to receiving global millennials. Young people, after all, are our shared future. That means being willing to accommodate their preferred styles of travel. We need to cater for solo or small-group travellers who want to go off the standard tourist trail and seek flexibility, spontaneity and customised activities.

The increase in travel from and to China offers us all a great opportunity. Travel can create peaceful, respectful international exchange even in trying

political times. From 2020, China and the world at large need to work together to create the best possible environment for this to occur.

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Middle East



Reuters

The dreadful relationship

Roger McShane Middle East editor, *The Economist*

The stand-off between America and Iran will get worse before it gets better

2020 in brief

Presidential and parliamentary elections may take place in the **Palestinian territories** if all sides can agree. Elections were last held there in 2006

“IRAN IS AN island of stability in one of the most troubled areas of the world,” said Jimmy Carter, then America’s president, as he dined with his Iranian counterpart, the shah, Mohammad Reza Pahlavi. But as the leaders feasted, suffering Iranians stewed. Just over a year later, in 1979, Pahlavi was ousted and mullahs led by Grand Ayatollah Ruhollah Khomeini took power. It turned out Iran was not that stable. It has been causing trouble in the region ever since.

Few, least of all America’s spooks, saw the revolution coming in 1979. Nor, just a few years ago, did many imagine that America and Iran would come to the brink of war in 2019. But in June President Donald Trump nearly bombed Iran, which had attacked commercial shipping and shot down an American drone. There was more talk of war in September, after Iran or its proxy attacked oil facilities in Saudi Arabia. The risk of an all-out conflict will cast a shadow over 2020.

The backdrop to this bleak picture is Mr Trump’s decision in 2018 to ditch a deal, negotiated under Barack Obama, that curbed Iran’s nuclear programme in return for economic relief. The president says he wants a new agreement that also limits Iran’s missile programme and its meddling in the region. His administration has pursued a policy of “maximum pressure”, heaping sanctions on Iran in the hope of pushing it back to the negotiating table—or spurring another revolution. So far, though, it has merely strengthened Iran’s hardliners and reinforced their distrust of America.

American officials are betting that Iran will reach a breaking-point in 2020, or soon thereafter. “It’s going to hell,” says Mr Trump. “They are broke.” The sanctions have cut Iran off from the global economy; its oil exports are close to zero, as America threatens potential buyers. The hardship has led to protests. But Iran is not broke, say America’s own analysts. They predict that it has enough foreign reserves to last two years. Iran’s “resistance economy” was built to withstand external pressure and evade scrutiny. It has weathered sanctions before.

The Iranian regime will not collapse in 2020. Rather, it will restart more parts of its nuclear programme that were stopped under the deal. And, like a cornered animal, it will lash out in the region. With its trade dwindling, Iran has little to lose from turning the Strait of Hormuz, through which one-fifth of the world’s oil supply passes, into a gauntlet. The regime’s Revolutionary Guard and its proxies in Yemen and Iraq will launch more attacks on America’s allies in the region. Iran will show America that it can impose pain, too.

All hope is not lost, however. Iran says Saudi Arabia, its arch-rival, has reached out through intermediaries. The kingdom is growing weary of its involvement in Yemen, where it is battling the Iranian-backed Houthi rebels. A deal could be reached which ends that humanitarian disaster. Mr Trump is also eager to talk to Iran’s leaders. So far they have rebuffed him, claiming he only wants a “photo opportunity”. But Hassan Rouhani, the president, says that if America lifts its sanctions, “then negotiations with the US are a possibility.” He even concedes that the nuclear deal is imperfect.

Mr Trump and Kim Jong Un, North Korea’s despot, traded insults and threats before meeting in 2018. Then, says Mr Trump, they “fell in love” (though achieved little). A similar turnaround in America’s relationship with Iran is not out of the question. It would distract from Mr Trump’s domestic problems and boost his ego (and, perhaps, his presidential campaign). He might even settle for a deal that looks a lot like the old one, but has his name on it. The mullahs, under pressure at home, would be foolish not to allow Mr Rouhani to sit down with him.

So why is a genuine breakthrough unlikely in 2020? Iran’s hardliners largely define themselves by their hostility to America. Mr Trump’s hawkish

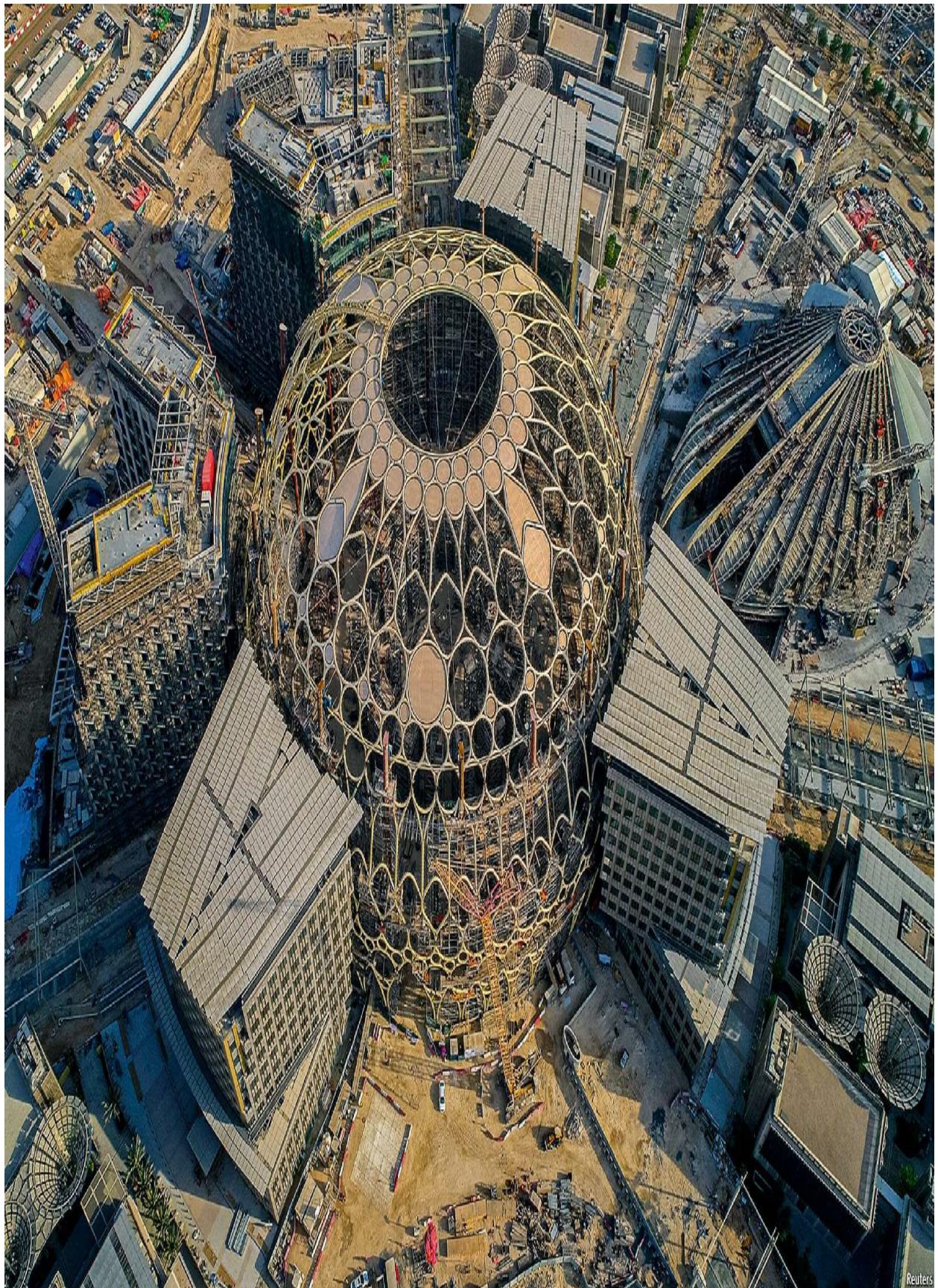
colleagues in the Republican Party are unlikely to support any deal that Iran would sign. Improved relations, and the compromises they would entail, carry risks for both sides. But a photo opportunity would be better than war.

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Operation desert hub

Alexandra Fattal freelance correspondent DUBAI

Dubai hopes for a boost from hosting a World Expo



Reuters

Oasis of innovation

WORLD EXPO opens in Dubai, in the United Arab Emirates (UAE), on October 20th 2020. Part trade show, part entertainment, part education, this six-month-long event, in a different city every five years, traces its history to London's Great Exhibition of 1851. Innovations launched at past Expos include the X-ray machine (Buffalo, 1901), the ice-cream cone (St Louis, 1904), and the mobile phone (Osaka, 1970).

Recent Expos have been less about new products than nation-branding. This one, says Reem Al-Hashimi, Expo 2020's director-general, will be for the whole region. The theme, "Connecting minds, creating the future", is a nod to Dubai's role as a trade hub, and to its diverse population, just 8% of which is Emirati. It also reflects the country's ambitions: the UAE has a minister for artificial intelligence and in 2019 sent its first astronaut into space.

Some 25m visits are expected; over 70% of people will come from abroad. A record 192 countries are taking part, including Israel, which the UAE does not officially recognise, and Qatar, with which it cut ties in 2017. Some countries which skipped Expo 2015 in Milan, such as Australia, are back. Their representatives say participation depends on a rigorous assessment of the business case. But Expo is also about diplomacy. "It's one thing to miss a friend's birthday," says one diplomat, "another to miss their wedding."

A steel trellis dome covering an area the size of 16 tennis courts will connect three thematic districts focused on sustainability, mobility and opportunity. Expo is providing 2bn dirhams (\$544m) to help poorer countries with their pavilions. Deng Deng Nhial, South Sudan's ambassador to the UAE, says it's a "golden opportunity" for the world's newest country. He hopes to forge new trade links.

After studying Expo 2010, held in Shanghai, the Dubai team reduced the size of their site by 30%, to make it more "cosy". Milan's experience encouraged it to include three entrances, to better manage queues. It has also focused heavily on its legacy. Post-Expo, the 5G-enabled site will become District 2020, a "free zone" (with relaxed tax and trade rules) for residential and commercial developments, automated public transport and capacity for 90,000 people. Siemens, a German conglomerate, plans to open a logistics

headquarters there. Accenture, a professional-services firm, will create a hub showcasing new technologies.

Yet the plan to make District 2020 a regional innovation hub depends on securing corporate clients at a time when the city is awash with buildings and sector-specific “free zones”. Trade wars, cheap oil and heightened regional tensions—the war in Yemen, American sanctions on Iran and the Qatar boycott—are squeezing the economy. High-spending Western expats are leaving. The property market has slumped.

Underpinned by Expo-related construction, including the extension of the metro line, GDP is estimated to have grown by 1.9% in 2019. It is forecast to grow by 3.1% in 2020. The government has reduced business fees and eased restrictions on foreign ownership. But few firms plan to hire. Stories of people absconding because of unpaid debts have re-emerged for the first time since the financial crisis.

Amid such troubles, the Expo brings hope. But the costs and benefits of hosting mega-events take years to become clear. Dubai is placing a long-term bet.

An ending, of sorts

Roger McShane Middle East editor, *The Economist*

The war in Syria will draw to a bloody end. But there is still much trouble ahead



Reuters

The victors: Russia and Syria

AS THE TIDE of Syria's civil war was turning in Bashar al-Assad's favour in 2016, he vowed to retake "the whole country" from the rebels trying to dislodge him. A spokesman for the State Department in America, which backed some of the rebels, called him "deluded". But Mr Assad ignored the West's warnings and leaned on Iran and Russia for support. After eight years of fighting that has cost 500,000 lives and displaced half the population, he will finally make good on his promise. Syria's blood-drenched despot will regain control of the entire country in 2020.

The final battle will be fought in Idlib, a northern province that is home to some 3m people, many of whom fled fighting elsewhere in Syria. And, like the fighting elsewhere, the battle will involve foreign powers. Turkey supports rebels in the province, which is controlled by the most extreme sort, including jihadists linked to al-Qaeda. Most will fight to the death. But some will flee northwards, along with hundreds of thousands of potential refugees. Turkey may try to avert the chaos by cutting a deal with Russia. Nevertheless, a bloodbath looms.

Mr Assad's victory comes with some big qualifications. Even after it leaves Idlib, Turkey will stay in north-east Syria, which it invaded in 2019. Its cross-border incursion aimed to push local Kurdish forces, whom the Turks consider terrorists, out of the region. An agreement with Russia (and by association Mr Assad) accomplished that goal and left Turkey watching over a "buffer zone" on the Syrian side of the border. That area may not stay quiet for long. Turkish and Russian forces will patrol together. But Mr Assad accuses Turkey of "stealing" his territory, and the Kurds blame it for destroying the proto-state they had created.

The Kurds also curse America, with whom they fought bravely against the jihadists of Islamic State (IS) in Syria. Thousands of Kurds died in that fight, compared with a handful of Americans. Yet President Donald Trump unceremoniously abandoned his allies in 2019. He has pulled most American troops out of Syria. IS will benefit from America's retreat. Mr Trump expects Turkey to keep the jihadists in check, but it was responsible for letting many of them cross into Syria in the first place.

IS has been pushed off its territory and the loss of its leader, Abu Bakr al-Baghdadi, in an American raid in October 2019 was a big blow. But it still has thousands of fighters and is beginning to look like a more conventional terrorist organisation. It claimed numerous attacks in the past year, from Congo to Sri Lanka. “Our battle today is one of attrition and stretching the enemy,” said Mr Baghdadi before his death.

Mr Assad is going to make it easier for IS to recruit. The ruthless tactics of Syria’s leader have alienated much of the population. In Idlib he is destroying homes and hospitals as well as rebel hideouts. He has gassed his own people repeatedly. Millions of Sunni Muslims, once a large majority, have fled the slaughter and left the country. Mr Assad, who is Alawite (an offshoot of Shia Islam), believes this has created “a healthier and more homogeneous society”. Remaining Sunnis disagree. They have seen their property taken and neighbourhoods transformed by supporters of the regime. Tens of thousands of them languish in Mr Assad’s secret prisons, which will become incubators of extremism.

Counting the cost

The situation is not one to which those who fled abroad will want to return. The war has created some 6m refugees. As the fighting ends, countries such as Jordan, Lebanon and Turkey want them to go home. Locals accuse them of sapping government budgets and taking jobs; politicians use them as scapegoats. Some refugees have already been forcibly returned—even to places such as Idlib. Those who stay away risk turning into a bitter, permanent diaspora, much like the Palestinians.

Still, Mr Assad and his backers see the war as a great success. Not only has the regime come out on top, but Russia has emerged as the main arbiter in Syria and a power-broker in the region. And Iran has established a foothold in the country, giving it another front to torment Israel (which will continue bombing Iran’s positions). But they underestimate the price. Mr Assad’s Syria is seething with ethnic and sectarian tension, infected by jihadists and threatened by foreign powers. In the years to come, victory may not taste so sweet.

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Year of the general

Gregg Carlstrom Middle East correspondent, *The Economist*
CAIRO

The Arab spring toppled dictators. The military men who followed will be harder to dislodge



Dave Simonds

AT TIMES IT will be hard to tell if Abdel-Fattah al-Sisi is plotting a military campaign or inspecting the newest factory or fish farm. Flanked by stern men in khaki, the Egyptian president will tour the latest gems in his army's ever-expanding economic empire. A former general who led a coup in 2013, Mr Sisi oversaw a bogus constitutional referendum in March 2019 that should keep him in power until 2030. In 2020 he will help the army get its hooks even deeper into the economy. Officers will start moving into new digs in a purpose-built capital rising in the desert, 45km (28 miles) east of Cairo—safely removed from the teeming masses.

Military men now control much of north Africa. Protesters in Algeria and Sudan shook off dictators, only to find their armies in charge. Algeria's army chief, Ahmed Gaid Salah, will try to install a new president who will be little more than a puppet. In Sudan, civilian activists wanted a quick changeover to democracy and civilian rule. The army insisted on a 39-month transition, which it will lead until almost 2022—leaving plenty of time to sabotage it.

Smiling behind the scenes will be the autocratic rulers of Saudi Arabia and the United Arab Emirates. They will dig into treasuries and arsenals to support military regimes across the region. But societies are not armies. Activists will keep pressing for democracy, and the generals will have a choice: make concessions or rule through fear. They will opt for fear.

Mr Sisi's regime will arrest anyone who dares to speak up. For the surviving Arab autocrats, this was the lesson of the uprisings in 2011: to allow even a hint of dissent is to risk disaster. It is the wrong lesson. Once again, ageing army men will prove themselves incapable of ably governing modern states.

From Bibi to Benny

Anshel Pfeffer Israel correspondent, *The Economist*
JERUSALEM

The difference a change of leader could make in Israel



Reuters

ISRAEL HELD two elections in 2019 and Binyamin Netanyahu failed to win either. At the time of writing, he is still clinging to power as a caretaker prime minister, but a combination of political and legal circumstances is almost certain to force him out of office before long. For Israel, it will mean a reboot of its political system, after 11 years of Mr Netanyahu's overbearing presence—and perhaps also an opportunity for reconciliation after a prolonged period of toxic leadership.

For years now, the question of Mr Netanyahu's political and personal survival in the face of multiple corruption investigations has dominated Israel's discourse. Once he is no longer prime minister and left to face the charges as a private citizen, what will Israelis focus on?

Those who hope that a new Israeli government will revive the long-dormant diplomatic efforts to solve the conflict with the Palestinians, and end the military occupation of the West Bank and isolation of Gaza, are set to be disappointed. Even with Mr Netanyahu gone, the new government will lean to the right. And the Palestinian issue is nowhere near the top of the global or even regional agenda. There is little international pressure on Israel to make concessions to the Palestinians, who are preoccupied with their internal divisions, and the new Israeli prime minister, probably Benny Gantz, a former general, has expressed no interest in doing so.

But there should be other advantages to Mr Netanyahu's departure. His strategy of dividing Israelis—on one side his loyal right-wingers and their religious allies, on the other the leftist “elites” and Israel's Arab citizens—failed in the last election. A less polarising government could start to heal some of the rifts. This would be good for the economy as well.

Business leaders have already recognised that a society in which a third of citizens—Arabs and ultra-Orthodox Jews—are not integrated into the workforce can hardly hope to sustain the knowledge-based tech sector which has underpinned Israel's financial success in the past two decades. Reconciliation with the Arab minority will not be simple. Nor will it be easy to overcome the barriers some of the more extreme rabbis have put in front of the younger members of their communities seeking modern education. But Mr Gantz and his colleagues have promised to work towards those goals.

If Mr Gantz succeeds in forming a government without the ultra-Orthodox parties, he could at least try to solve some of these core issues of state and religion, which have bedevilled Israel for generations. But there is another likely and much less appealing scenario. The split between the two main political blocs could preclude the formation of a majority government and plunge the country into a third election in swift succession. For Israel, 2019 was a wasted year in which it was consumed by Mr Netanyahu's struggle for survival and stuck in political deadlock; 2020 could bring more of the same.

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Africa



Nick Lowndes

Come together

John McDermott Africa correspondent, *The Economist*
KAZUNGULA, ZAMBIA

Africa's economies will draw closer, but far too slowly

2020 in brief

Gabon begins a ten-year deal with Norway worth \$150m to **preserve its rainforest**—the first African country to be rewarded in this way. Around 90% of the country is covered by forest and Gabon will be paid for fighting deforestation

AT THE BORDER post in Kazungula, on the Zambezi river in south-west Zambia, a queue of lorries stretches back out of town. Drivers slope into nearby bars as they wait for their turn. It can take four days to clear customs before the ferry crossing. Fortunately, though, change is on the way. A new bridge will be finished in 2020. The crossing will smooth trade between the four countries that converge on this pinch-point in southern Africa: Botswana, Namibia, Zambia and Zimbabwe. It ought to be a boon for their economies.

The Kazungula bridge is part of a broader trend towards Africa's economic integration. In 2020 the African Continental Free Trade Agreement (ACFTA) is scheduled to become operational, after receiving the support of 54 out of 55 African countries in 2019. Judged by the number of signatories, the ACFTA is the biggest trading area since the creation of the World Trade Organisation in 1994. It aims to cut tariffs and facilitate trade among its members.

Its boosters have high hopes. Roughly the same number of people live in sub-Saharan Africa (1bn) as in Asia excluding India and China. But, as John Ashbourne of Capital Economics notes, the average African country's population is 12m, versus 45m in "emerging Asia". So there is huge potential for an African trade deal to increase economies of scale on the continent.

The ACFTA could lead to a single market with a GDP of more than \$3trn, about the size of the Indian economy, the world's fifth-largest. At present just 15% of African exports go to other African countries; the equivalent figures for regional trade in Asia and Europe are respectively 58% and 67%. Because the goods traded within Africa tend to be manufactured ones, rather than the oil and minerals that make up most exports to the rest of the world, the

ACFTA could foster African industry, too. Doing so should help domestic manufacturing, which would in turn increase the number of well-paid jobs.

The new trading area is not the only sign that business is getting easier among African countries. Aliko Dangote, a Nigerian tycoon, said in 2016 that he needed visas to travel to 38 other states on the continent. It is often easier for Westerners to criss-cross Africa than for its own citizens. But things are slowly improving, according to data from the African Union. In 2016 a fifth of African countries did not require Africans to have a visa to enter; two years later the share was a quarter. (In another quarter of countries Africans can get visas on arrival.)

Yet despite some progress, economic integration in Africa has a long way to go. Implementation of the ACFTA will take years. Even then, it will never be as sweeping as Europe's single market and customs union. For it is unclear how the deal will interact with other, existing, often contradictory regional trade-deals. Then there are the politics. Many smaller countries worry that regional hubs, such as Kenya and South Africa, will benefit from the deal at their expense. Others, such as Nigeria, are run by leaders who remain protectionist by instinct.

And cutting tariffs is just a start. As the drivers in Kazungula know well, it is the practical barriers, such as the quality of roads and the number of police checkpoints, between African countries that are often most significant. Studies suggest that the cost of transporting goods by road can be five times higher in African countries than in other poor ones. Red tape at the border only adds to the problem. Though there is progress on visas, some of the biggest economies in Africa, such as Angola, Nigeria and South Africa, still make it fiendishly difficult for other Africans to visit.

Africa as a whole is not about to make the sort of rapid progress seen by China and, to a lesser extent, India over the past few decades. A continent of 55 diverse countries is unruly in a way that a single country is not. Corruption and patronage politics hold back far too many of them. Growth in Africa may struggle to outpace rising populations, save in notable exceptions such as Ethiopia. So Africans will fall further behind Asians.

Still, it is encouraging that the central topic of conversation on the continent

is commerce and trade. That is a huge shift from the years when talk was dominated by war and conflict. In 2020, as swathes of the world embrace protectionism, African policymakers ought to be applauded for at least trying to make trade easier.

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Rama-poser

**John McDermott Africa correspondent, *The Economist*
JOHANNESBURG**

South Africa is in peril. But its president appears powerless



Reuters

Trouble in store?

In theory, 2020 ought to be the year South Africa emerges from a lost decade

2020 in brief

Rwanda, the Commonwealth's newest member, hosts the 26th Commonwealth Heads of Government Meeting, in Kigali in June

WHEN CYRIL RAMAPHOSA succeeded Jacob Zuma in 2018, he spoke of a “new dawn”, after nine years of rampant corruption and economic stagnation. But since taking office, South Africa’s president has overpromised and underdelivered. This coming year may prove no different.

Mr Ramaphosa’s defenders point out that their man is constrained. The African National Congress (ANC), which has ruled South Africa since the end of apartheid in 1994, is divided. On one side are the president and cabinet allies such as Pravin Gordhan and Tito Mboweni. On the other are those close to Mr Zuma, including Ace Magashule, the ANC’s secretary-general. Many of these enemies of Mr Ramaphosa face allegations of corruption. They do not want to see the president clean house. So they have undermined Mr Ramaphosa’s agenda.

The ANC is undoubtedly a mess. The party of Nelson Mandela has become entitled, embittered and graft-ridden. Yet even if Mr Ramaphosa had a free hand, it is unlikely he would be the radical reformer the country needs.

In three key areas the president has made little progress. The first is the economy. Mr Ramaphosa pledged to “unbundle” Eskom, the state-run electrical utility. He said that South Africa would soon be among the top 50 countries in the World Bank’s “ease of doing business” rankings. But Eskom remains unreformed, prone to blackouts and in need of bail-outs. And there has been no sign of even simple business-friendly measures, such as easing visa rules.

Second, Mr Ramaphosa has failed to tackle a bloated state. Under Mr Zuma public debt as a share of GDP more than doubled, from 26% to 56%. It has kept rising under his successor. Tax revenues are under strain because of a weak economy and emigration. The idea that the International Monetary Fund would one day need to bail out South Africa was once a fringe notion. Today it is a common topic of conversation among business people.

The third area of concern is social stability. After declining in the 2000s, the murder rate is again ticking up. In September cities were home to spasms of

xenophobic violence against migrants from Nigeria and other African countries. Some in the ANC, and dangerous chancers like Julius Malema, leader of the opposition Economic Freedom Fighters, suggest that whites are to blame for all the country's ills.

For his part Mr Ramaphosa continues to say a lot of the right things. But he shows few signs of taking the initiative and facing down his enemies. What goodwill remains for the former union boss and tycoon is dwindling. In theory, 2020 ought to be the year South Africa emerges from a lost decade. It has the chair of the African Union and a non-permanent seat on the UN Security Council. It ought to be leading the drive for economic integration across the continent. Instead it is turned inward, the victim of misrule by a once-great party.

Extinction event

Jonathan Rosenthal Africa editor, *The Economist* MALABO

The days of dynastic succession and big-man politics in west Africa are coming to an end



AFP via Getty Images

TUCKED INTO lush green jungle beneath a volcano and with tropical waters lapping shores lined by a magnificent esplanade, Malabo, the capital of Equatorial Guinea, is a picture-perfect island paradise. And a rich one at that. A three-lane motorway lit by gleaming bronzed street lights stretches along its northern shore past magnificent glass-and-steel conference halls and a row of 52 mansions. Yet something is amiss: the mansions are empty (they were built to house visiting presidents for a summit) and so few cars use the

motorway that minutes pass between each one.

One explanation could be that most drivers have been stunned into lethargy by the state television channel, which screens an insufferable loop showing the president and his wife greeting foreign dignitaries, cutting ribbons and receiving gifts from grateful subjects. A more likely explanation is that few can afford to buy cars.

This sounds absurd: oil-and-gas revenues made Equatorial Guinea the wealthiest country in Africa, with national income of more than \$15,000 per person in the early 2010s. Yet even during the boom 44% of its roughly 1m people lived on less than \$1.90 a day. This is because Equatorial Guinea has been run like a family business since its only free election in 1968, first by Francisco Nguema and then by his nephew, Teodoro Obiang Nguema Mbasogo, who overthrew him in 1979. If the 77-year-old Mr Obiang has his way, the crown will pass to Teodoro, the most powerful of his sons, who amassed an offshore fortune including cars, jewellery and a mansion worth \$30m that he had to hand to America's Justice Department, as well as \$115m-worth of assets seized by French courts, after a corruption trial.

Equatorial Guinea is not the only example in Africa of presidents behaving like monarchs. Gabon's millionaire president, Ali Bongo, has been in charge for only a decade, but his family has run the country since 1967. In nearby Togo two generations of the Gnassingbé family have also held the top job since 1967.

Yet 2020 may be the year in which at least some of these dynasties are swept away. A wave of popular protests has already washed over north Africa, ending the 30-year reign of Sudan's strongman, Omar al-Bashir, and the two-decade rule of Abdelaziz Bouteflika in Algeria. It has also rolled through Ethiopia, forcing change upon what was in effect a one-party state, and through the Democratic Republic of Congo, where it brought to power the first president since 1997 whose surname is not Kabilia (albeit precariously; see next story).

To be sure, people have protested before against big-man rule. Togo was rocked by demonstrations in 2017-18, as was Gabon in 2016. But many youngsters now say they are emboldened by the reforms that have been won

elsewhere.

The regimes that pro-democracy activists are hoping to topple look particularly wobbly. Gabon has been rudderless since Mr Bongo suffered a stroke in 2018 and retreated from public life. Cameroon, which has been under the thumb of Paul Biya for 37 years, is falling apart while its octogenarian president spends much of his time at the InterContinental Hotel in Geneva.

It is far from clear what will ignite the next protests that may lead to a west African spring. But any spark will land in a tinderbox of anger and frustration.

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Congo-ing, going...

**Olivia Acland Congo correspondent, *The Economist*
KINSHASA**

The former and current presidents are bound together by a secret deal. Expect it to unravel in 2020, with grim results



Reuters

Kabila is on the right and Tshisekedi is in the hot seat

IT WOULD BE reasonable for Félix Tshisekedi, president of the Democratic Republic of Congo, to admit that staying alive ranks high on his list of priorities for 2020. All the country's former leaders, save one, have either been killed or chased out of office. When Mr Tshisekedi was inaugurated in January 2019, he wore a bulletproof vest which fitted so tightly over his bulky torso that he had to stop his speech to adjust it. As he feebly climbed down from the podium, some in the crowd speculated that he had been

poisoned. But moments later he was back up, boozing out his plans as president.

These extend beyond mere survival. He has promised to stamp out corruption and use the extra cash to provide free schooling, more lights and better roads. He says he will “dismantle the dictatorial system that was in place”.

He will not. In the coming year Congo’s cities will erupt with riots as people notice that little has changed. By the end of the year, the government will be teetering on the edge of a precipice, ready to topple in 2021.

Low copper prices and the closure of the world’s biggest cobalt mine will cause growth to dip (Mr Tshisekedi hoped for improbable growth of 25% each year). And he will not be able to dismantle the dictatorial system. Joseph Kabilu, the former dictator, handed him power after a rigged election. Leaked data from the electoral commission, which match with another independent tally, suggest Mr Tshisekedi may have won only 19% of the vote. The real winner, Martin Fayulu, nabbed around 60%, but posed a threat to Mr Kabilu, who feared investigation of his immense wealth. Instead, Mr Kabilu struck a secret power-sharing deal with his more pliable opponent.

That deal is already under strain. It was agreed that Mr Tshisekedi could rule as long as his predecessor controlled a two-thirds majority in parliament. (Conveniently, the president can be impeached by a vote of two-thirds of MPs, allowing Mr Kabilu’s party to oust him at any time.) The two men cannot agree on much—they bickered for seven months before picking a cabinet.

Eventually, the president will either be impeached or strong-armed into resigning. Although he will probably survive 2020, his lofty ambitions will not.

All change, please

Will Brown west Africa correspondent, *The Economist*
ABIDJAN

Ivory Coast will try to put the past behind it



Democracy is not Ivory Coast's strong point

WHEN PEOPLE talk about a rising Africa, they often point to Ivory Coast. It is one of the fastest-growing economies in the world. The streets of Abidjan, the commercial capital, are awash with entrepreneurs and international business folk. But Francophone Africa's economic lynchpin is about to face a serious test. In October 2020 it will hold its presidential election. Democracy

is not Ivory Coast's strong point. It has never had a peaceful democratic transfer of power and has suffered two civil wars since 2002. To the north, both Mali and Burkina Faso are struggling with ethnic violence and jihadist attacks. If the insecurity spread into Ivory Coast, all of west Africa would suffer.

The last Ivorian war broke out over an election dispute in 2010. After two terms in power, the then president, Laurent Gbagbo, lost the vote to Alassane Ouattara but refused to give up the presidency. The dispute escalated to a full-scale conflict, killing over 3,000 people. It ended only when Mr Gbagbo was captured and bundled off to stand trial for war crimes at the International Criminal Court (ICC). When he was acquitted in early 2019, many feared he might return to contest the elections. That would have been disastrous for the fragile Ivorian peace. But in September the ICC announced it would reopen the case, so Mr Gbagbo is stuck in Europe.

There are still risks. Voters think corruption has got worse. The army remains divided along political lines and there have been several recent mutinies by disgruntled soldiers. If Mr Ouattara ignores the constitution and runs for a third term, he will enrage his opponents. Alternatively, some suggest he could decide against running but seek to change the constitution to impose an upper age-limit on candidates. This would disqualify Mr Gbagbo and another former president, Henri Konan Bédié. The three men have dominated Ivorian politics for three decades. Such a move would let a new generation of leaders emerge—and help close the door on the country's troubled past.

The future is African



N'Goné Fall, general commissioner, Africa2020, wants France and the world to take a fresh look at the continent

My goal was to design a project to talk about Africa's place in the world

"I CONSIDER THAT Africa is simply the central, global, essential continent because it is here that all the contemporary challenges collide. It is in Africa that a part of the tipping of the world will be played." So said Emmanuel Macron in November 2017. It was on this premise that France's president decided to organise a "cultural" season in his country in 2020 dedicated to the entire African continent. And it was on this premise that I accepted his invitation to direct this project.

At first Mr Macron and his advisers planned to focus on African cultures, to change French views on Africa. I found it reductive to celebrate a millennia-old continent with six months of cultural programming. I saw a risk of verging on folklore and entertainment, without meeting the project's goal: to take down clichés and preconceived ideas. Africa's image is always associated with poverty, lack of democracy, coups and of course migrants, who transformed the Mediterranean into a vast cemetery and symbol of lost dreams.

I accepted the position on condition that I revise the format and give it meaning. My goal was to talk about Africa's place in the world, yesterday, today and especially tomorrow; to tell the world what it owes this continent, cradle of humanity, whose demography and rates of economic growth make it the continent of the future.

Africa is not an obscure and cursed land, prisoner of obsolete traditions, indifferent to world affairs. This season gives a voice to Africans who have pushed boundaries. Africa2020 is an invitation to look at the world from an African perspective.

How do we talk about a territory of more than 30m square kilometres and more than 1.2bn people? The challenge of dedicating a season to Africa is to take the continent in its complexity, while keeping in mind its history: its populations have been migrating for centuries, and its borders have moved a lot over time. What brings Africans together is the knowledge of having

come from the same place and from a series of communal histories, linked to the empires and kingdoms that moulded civilisations.

This knowledge, sometimes tenuous, creates a feeling of solidarity and fraternity in sharing a common destiny. This feeling of belonging to the same territory, to the same people and the same destiny, is pan-Africanism. This ideal, of political, social, economic and cultural emancipation, is based on the principle of uniting in the face of adversity and of claiming a common, distinctive future. Southern African populations define this as: I am what I am thanks to what we all are. *Ubuntu*.

By building the season around a pan-African state of mind, we can avoid the temptation of promoting nationalism, regionalism and linguistic and ethnic groups. Projects from African artists, scientists, intellectuals and entrepreneurs invite the French public to reflect together on the state of Africa and of contemporary societies. This exceptional season presents the points of view of African civil society, both from the continent and from the recent diaspora. The Africa2020 season is the sounding-board for these agents of change that affect contemporary societies.

I invite Africa and its recent diaspora to respond to issues that are the topics of research and passionate debate on the continent. The programme for the season will include about 100 projects across France and its overseas territories. It is structured around five big themes: “augmented orality” (the spread of knowledge, social networks, innovations); “the economy and fabulation” (the redistribution of resources, financial flows, economic emancipation); “archiving imagined histories” (history, memory, archives); “fiction and (un)authorised movements” (the flow of people, ideas and goods, the concept of territory); and “systems of disobedience” (political consciousness and movements, the question of citizenship).

Continental shift

Africa2020 is a pan-African and multidisciplinary project focusing on innovation in the arts, science, technology, entrepreneurship and the economy. Education will be a cross-cutting issue for the sharing and transmission of knowledge. It will promote mobility, showcase women in all sectors of activity and target the young above all. Its ambition is to create a

global emancipation movement through a sustainable commitment built around the values of citizenship.

The Africa2020 season is the story of a human adventure based on the principle of collective intelligence.

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International



Sébastien Thibault

Going critical

Shashank Joshi defence editor, *The Economist*

As the Nuclear Non-Proliferation Treaty reaches its half-century, it is creaking at the joints

2020 in brief

The **League of Nations** was founded 100 years ago to maintain peace after the first world war. But it failed to prevent a second world war. Its successor, the **United Nations**, now celebrates its 75th birthday

ON MARCH 5TH 2020 the Nuclear Non-Proliferation Treaty (NPT) will mark the 50th anniversary of its entry into force, and the 25th anniversary of its indefinite extension. Its backers can celebrate the fact that only 13 states have ever held nuclear weapons, and four of those—South Africa, Belarus, Kazakhstan and Ukraine—gave them up. But the birthday celebrations will be short-lived. From April 29th to May 10th diplomats will gather in New York for the treaty's five-yearly Review Conference, widely known as RevCon. The last few have been flops, with the nuclear haves pitted against the have-nots, rendering it impossible to produce consensus statements in 2005 and 2015. The gathering in 2020 is set to be something of a disaster.

That is partly because the nuclear order is fraying. The multinational deal that capped Iran's nuclear programme in 2015 will crumble further, America having walked out in May 2018 and Iran suspending compliance a year later. Iran will pile up more uranium and install faster centrifuges, shortening the time it would take to build a bomb if it opted to do so. North Korea, impatient with slow progress in negotiations with America and the lack of sanctions relief, will keep churning out bomb fuel—and might resume the testing of longer-range missiles. And there are signs of restlessness even among NATO allies. “Some countries have missiles with nuclear warheads [but say] we can't have them,” complained Recep Tayyip Erdogan, Turkey's president, in September. “This I cannot accept.”

For many of the diplomats in New York, however, the problem will lie not with the nuclear rogues, but with the NPT's nobility: America, Britain, China, France and Russia, the five countries permitted to own nuclear weapons. That is because the treaty can be understood as a bargain. The nuclear have-nots agreed to renounce nuclear weapons for ever; in turn, under Article 6 of the treaty, the nuclear quintet agreed to negotiate "in good faith" towards giving up their bombs. Many countries—as varied as Ireland, Mexico and New Zealand—are aggrieved that the nuclear powers seem to be moving in exactly the opposite direction.

Nowhere is that truer than in America and Russia. Both will pour money into the modernisation of their arsenals, including exotic new weapons like Russia's nuclear-powered cruise missile. Both are also dismantling the treaties designed to keep a check on any new arms race. Following the collapse of the Intermediate-range Nuclear Forces (INF) Treaty in August 2019, America will test several new types of quick-flying medium-range missiles and NATO will debate new ways of defending itself from equivalent Russian ones. Meanwhile, the world will grow increasingly nervous about the fate of the New START Treaty, which governs longer-range missiles, as its renewal date of February 2021 approaches. America will step up its demands that China, whose small arsenal is swelling, join such agreements; others will see that as a cynical excuse for inaction.

The impression of nuclear disorder and big-power complacency is generating a tangible sense of urgency. In an effort to make progress, some countries will push new schemes. America, eager to show that it is acting in good faith, is rallying support for an initiative called "Creating an Environment for Nuclear Disarmament", designed to think through how the global security environment would need to change to encourage America and others to give up their bombs. Sweden will offer a "Stepping Stones" approach focused on smaller measures, such as getting nuclear-armed countries to reduce the salience of nuclear weapons in their security policies.

But the most radical approach is a Treaty on the Prohibition of Nuclear Weapons approved by 122 countries in 2017, and now signed by 70. The treaty emerged from the Humanitarian Initiative, a group of non-nuclear states which highlight the terrible humanitarian consequences of nuclear war.

They grew dissatisfied with the lack of progress and consensus at the RevCon in 2015 and decided to shift the debate to the UN General Assembly, which votes by majority.

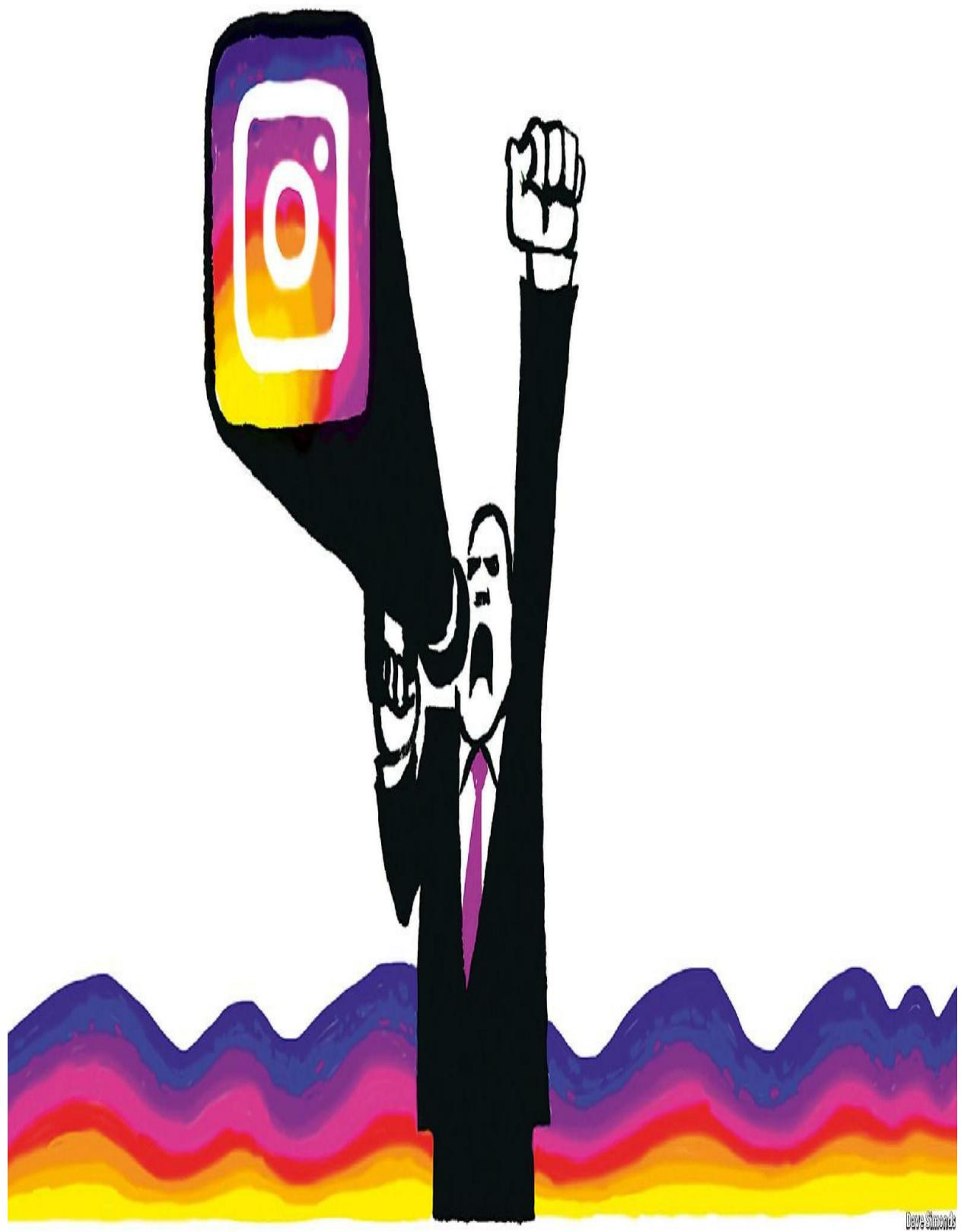
The treaty will probably enter into force before 2020 is out, once 50 states have ratified it; a disappointing RevCon will speed the process along. Some nuclear powers, like America and Russia, are willing to shrug off the legal and diplomatic consequences of a treaty that they have not signed; others, like France, worry about the impact on customary international law, and will fight it at every turn. Though the treaty's designers insist that it complements the NPT, rather than supplanting it, others worry that the two are bound to compete for legitimacy.

Perhaps the most explosive issue of all—the one that torpedoed the last RevCon—concerns a country that does not even admit to having nuclear weapons: Israel. For many who want to rid the world of weapons of mass destruction (WMD), the idea of a “WMD-Free Zone in the Middle East” has become a totem of progress. For America, the concept is a thinly disguised cudgel against its Israeli ally, wielded largely by Arab states, many of which refuse to recognise Israel’s right to exist. Israel, buoyed by President Donald Trump’s firm support and mindful of Iran’s growing nuclear programme, will not give an inch. The NPT’s birthday cake could well end up on the floor.

The real influencers

Leo Mirani senior Britain correspondent, *The Economist*

The world will wake up to the dangers of misinformation on Instagram



Dave Simonds

Accounts dedicated to divisive issues have proliferated

FACEBOOK WAS a breeding-ground for partisanship, crackpot articles and conspiracy theories long before America's presidential election in 2016. The social network is optimised for "engagement", and encourages people to keep scrolling, clicking and commenting by promoting content that triggers strong reactions. Yet it took the revelation of a massive Russian propaganda campaign before lawmakers, journalists and Facebook users began to take notice of the risks this entails. Something similar will happen with the election in 2020—but this time to Instagram (which is owned by Facebook).

Instagram has exploded in popularity since 2016. One reason is that people are tiring of Facebook's cluttered interface and cumbersome privacy controls. Instagram offers pretty pictures and is easy to use. What supercharged its growth was the introduction, in late 2016, of "Stories"—a parallel feed of pictures and videos that disappear after a day. While the "grid", as the traditional Instagram profile is known, was painstakingly curated by its users to present their best lives, Stories gave them licence to have some fun, safe in the knowledge that the posts would not linger.

Usage shot up, particularly among older people. In June 2016 Instagram had 500m users. That had grown to 1bn by June 2018; about half of American members of Congress and nearly three-quarters of senators had signed up. It is safe to assume all those numbers are now much higher. Moreover, engagement levels are stratospheric. Instagram's tenth-biggest account gets three times as many interactions as Facebook's single-biggest, according to Axios, a politics website.

Stories has changed Instagram. It introduced text to what had been a visual medium. And it gave users the ability to reshare others' posts more easily. This combination of text and sharing, along with a huge user base, has made Instagram much more like Facebook—and irresistible to propagandists. Best of all, it is still regarded as a place for harmless snaps of sunsets, coffee cups and attractive young "influencers" flogging lip gloss, so users lower their guard.

But politics long ago infected Instagram. Its role in America's election in

2016 was understated, says a report commissioned by the Senate Intelligence Committee. The report adds that in 2017 Russian propagandists shifted focus to Instagram after media coverage of their Facebook and Twitter operations. A report from New York University warns that Instagram will be “the vehicle of choice for people who wish to disseminate meme-based disinformation” in the election in 2020, noting that “beyond Russian interference, domestically generated hoaxes and conspiracy theories increasingly are thriving on Instagram.”

Already, accounts dedicated to divisive issues, such as political memes or vaccinations, have proliferated. Followers are then shown similar accounts, algorithmically reinforcing opinions just as Facebook’s news feed pushed extreme stories. Users are also finding ways to bring politics into the grid, such as changing their profile pictures to red in support of Kashmir, or blue for Sudan.

Since 2016 Facebook has linked up with fact-checking agencies, hired thousands of content moderators and tried to reduce the spread of inflammatory material. Its smaller, faster-growing social network has fewer safeguards. All the warning signs are there. Yet it may take another fall from grace, in another election, before anybody pays attention.

Forever middle-aged

Joel Budd social-affairs editor, *The Economist*

In 2020, for the first time, the median human will be older than 30



Getty Images

2020 in brief

Mexico (in April) and France (in July) host forums as part of “Beijing+25” deliberations on **women’s rights**, 25 years after 189 countries signed a declaration in Beijing on improving those rights worldwide

THE 1960s WERE a great decade for anthems of generational takeover. Songs like “The Times They are a-Changin” by Bob Dylan, “My Generation” by The Who and “Five to One” by the Doors did not just rail against the middle-aged and old—they actually predicted their ousting. The singers were confident about this partly because of demography. America was a young country in 1965, with a median age of 28, and was getting younger. As Jim Morrison put it in “Five to One”: “They got the guns/But we got the numbers.”

Well, the times they have a-changed. The median American is now 38, the median non-Hispanic white American six years older than that. The world is rapidly going the same way. Although some countries are still extremely youthful—the median age in Niger is 15—almost all are ageing. Humanity as a whole is already older than America was in the mid-1960s. In 2020, for the first time in history, the median person will be older than 30.

Two forces are driving this change. The first, bigger one is overall demographic ageing. As the global birth rate falls and lifespans lengthen, the proportion of older people in the population is growing. The second cause is that a great many people have just crossed from their late 20s into their early 30s. According to the UN’s demographers, in the past decade no five-year age group has grown faster than 30- to 34-year-olds, whose numbers have swelled from 506m to 606m. More than half of the additional early-30-somethings are Chinese and Indian. The huge cohort born in the 1980s, which flocked to cities in the early years of this century, powering Asia’s industrial development, is now settling down and worrying about school fees.

One result is that the world will have fewer energetic workers. The global population of 20-somethings is barely growing, and if you exclude Africa—where, sadly, most young people cannot find decent jobs—it is shrinking. Firms will respond by automating. A paper by two American economists,

Daron Acemoglu and Pascual Restrepo, finds that countries with relatively old workforces (like Germany and Japan) rely on industrial robots more than younger countries (like America) do.

You say you want a revolution?

Politics will change, too. Protest-marchers and barricade-builders are disproportionately young and childless. Although street protests can sway governments in aged countries, such as France and Ukraine, they are more potent in young ones. The Arab spring of 2011 was attributed partly to a bulge of young, underemployed people in north Africa and the Middle East. But that region is ageing, with some countries already beyond their most rebellious years. The median Iranian is now 32, the median Tunisian 33. They could hit the streets, but they will have to find babysitters first.

In mature democracies, by contrast, politics could become more unstable. Despite a reputation for zealotry, young people in the West are often more moderate than their elders. Opinion polls by Pew, a think-tank, show that 55% of millennials in America call themselves political moderates or centrists. Every other cohort—Generation X, baby-boomers, the elderly “silent generation”—is more extreme, generally in a right-wing direction. It was old voters, not young ones, who put a human wrecking-ball in the White House and blew up Britain’s constitutional order by voting for Brexit in 2016.

This white-haired rebellion may well continue. As countries age, they will need more youthful workers to keep their businesses humming and to pay for pensions. The obvious way of getting them is by letting in more immigrants. But old people are often violently opposed to that, and will punish governments that do it. To rephrase Morrison: they got the guns, and the numbers too.

The coming surge in separatism

**Gideon Rachman chief foreign-affairs correspondent,
*Financial Times***

Why splittists will be on a roll around the world



FROM CATALONIA to Kashmir, and from Hong Kong to Scotland, separatist movements will make headlines in 2020. At best, this will lead to political turbulence and tension. At worst, it could lead to violence.

Across the world, two types of identity-driven movements are increasingly clashing—and feeding off each other. On the one hand, there are separatist groups that seek to break away from their nation-state and establish new countries; on the other, there is the outraged and assertive nationalism of existing states, determined to crush separatism.

This process is clearly observable in Spain—where Spanish and Catalan nationalism are now stoking each other in a noxious symbiotic process. Attempts by Catalan nationalists to hold an independence referendum in 2017 were declared illegal by the Spanish central government. Several Catalan leaders have been put on trial in Madrid and given long prison sentences. These developments have stoked the radicalism of the Catalan nationalist movement. But Spanish nationalism is also resurgent, in response to the threat of the break-up of the country—evidenced by the emergence of a far-right nationalist party, Vox, and the fact that centre-right parties are taking an increasingly hard line on Catalonia.

The coming year will also see a resurgence of Scottish nationalism in response to Brexit, which the Scottish Nationalist Party has labelled an English nationalist project imposed on Scots against their will. A clear majority of Scots voted against Brexit in 2016. As a result, demands for a new referendum on Scottish independence will increase in 2020.

Separatism will become an increasingly severe problem for the world's two most populous countries, China and India. In both cases, hardline policies from the central government risk backfiring—and causing the very separatism they are intended to repress.

Activists in Hong Kong usually prefer to call themselves “localists”, rather than pro-independence campaigners, partly because any suggestion that Hong Kong is aiming for independence risks provoking a ferocious reaction from Beijing. However, whatever the vocabulary employed, the reality is that months of civil unrest in Hong Kong have transformed the political

atmosphere. The Chinese government is in a bind. It knows that violent repression—or even moves to curb Hong Kong’s autonomy—are likely to widen the divide between Beijing and Hong Kong. But if mainland China allows Hong Kong to hold fully democratic elections, as the demonstrators demand, it will not be long before pro-independence parties gain ground.

A similar dilemma will face China over the elections in Taiwan in January. Chinese threats of invasion could strengthen support for pro-independence candidates who reject Beijing’s demand for eventual reunification between Taiwan and the People’s Republic.

Meanwhile, repression in the remote Chinese province of Xinjiang remains acute, with over 1m Uighur Muslims apparently interned in re-education camps. The central government in Beijing may succeed in quashing Uighur separatism in the short term. But over the long run, it will fan resentment of centralised rule from Beijing—and demands for a separate state.

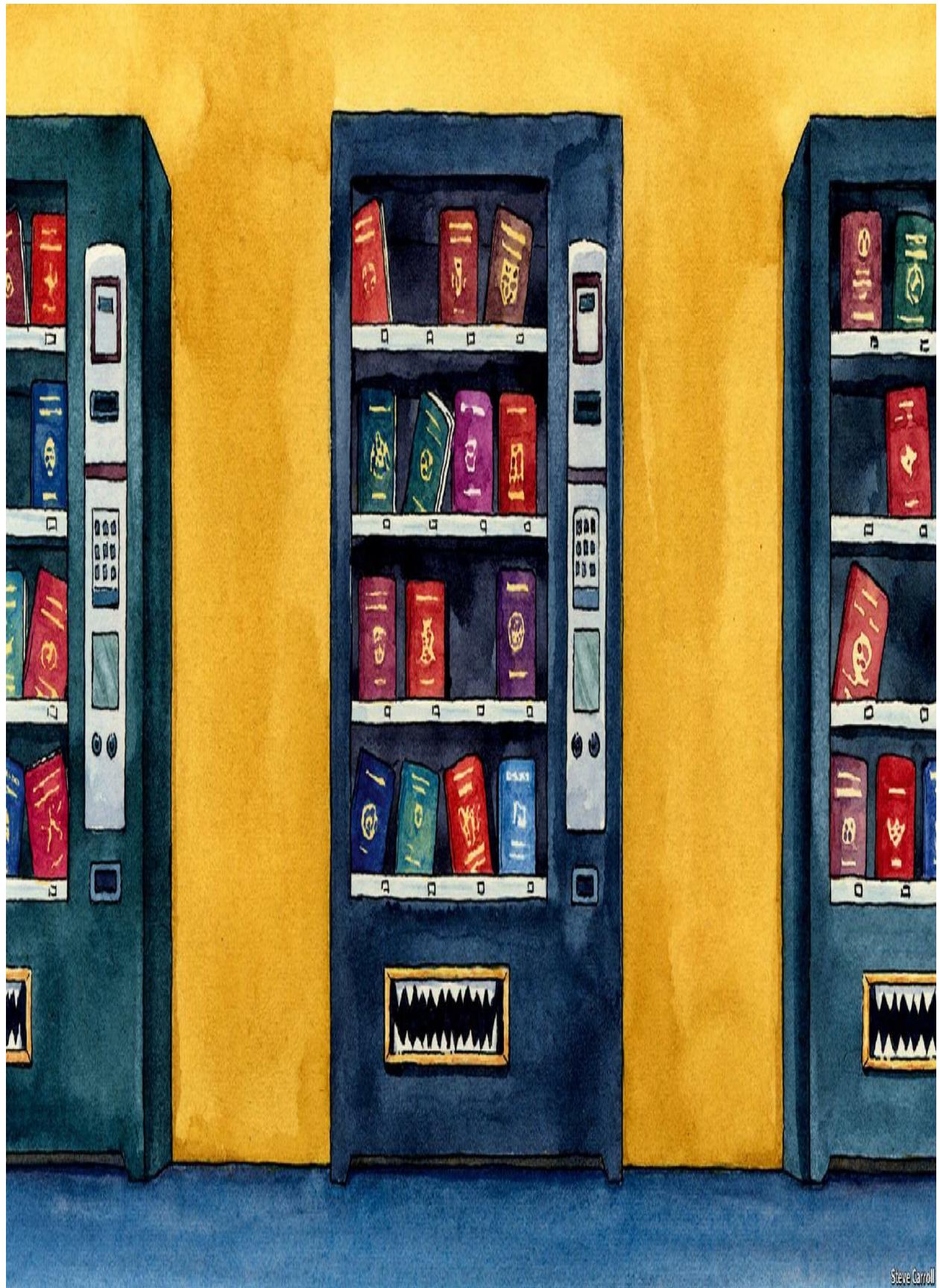
Until recently, India seemed considerably more relaxed about regional autonomy than China. But in 2019 the government of Narendra Modi won re-election on a stridently nationalist ticket. Shortly afterwards, the Modi government abolished the special constitutional status of Jammu & Kashmir, India’s only majority-Muslim state. Arun Jaitley, India’s finance minister, justified the move by arguing: “Separate status led to separatism. No dynamic nation can allow this situation to continue.”

There are scholars who agree that devolution of power from central to regional governments can indeed fuel separatism, rather than calming it down. Both Scotland and Catalonia have seen the powers of their regional governments increased in recent decades—and those moves may have helped foster separate political cultures and demands for independence. But efforts to try a different strategy, and crush nationalist sentiment, are rarely more effective. On the contrary, they can create the deep grievances and bitter memories that sustain nationalist and independence movements for decades.

Have money, can move

Simon Long deputy digital editor, *The Economist*

The booming business of obtaining passports and residence visas for rich people will face increased threats



Steve Carroll

2020 in brief

UNESCO and three partner organisations test a **passport for refugees and migrants**, initially in Zambia

“THEY WANTED to destroy our industry,” says one of its insiders. “They” are European Union officials. The “industry” is the one selling CRBI schemes—Citizenship and Residence by Investment, that is, a travel document that allows you both to stay somewhere outside your homeland for as long as you want and to travel the world without too many constraints. In 2020 the future of this business will continue to be clouded by the EU’s suspicions and hostility. But the industry will also continue to grow.

Thousands of passports and hundreds of thousands of residence visas are bought every year. Around 100 countries around the world have schemes that offer residence—a “golden visa”—in return for a big investment. A dozen or so go further, and offer a passport, in effect selling citizenship. They include five Caribbean island-states, Vanuatu in the South Pacific, Jordan and several EU members: Bulgaria, Cyprus and Malta (Austria has a less formal, and very expensive, scheme). The prices range from \$150,000 in Vanuatu to an investment of at least £2m (\$2.5m) for a British “Tier-1” investment visa.

The EU’s sensitivities about the business are understandable. Few issues are more central to ideas of national sovereignty than who lives in a country and carries its passport. Yet the EU clearly has an interest if the passport is a European one. And a visa granted by a member of the Schengen internal-border-free area also allows entry to 21 other countries in the EU.

The suspicion is that the schemes are abused by crooks, money-launderers and tax-dodgers. They are dogged by repeated scandals. In 2018 a scam was revealed in Greece, where an entrepreneurial purveyor of residence visas bought properties at market value and sold them at a big mark-up to would-be Chinese migrants (and then partially reimbursed them). In 2019 Bulgaria withdrew the citizenship of a number of investors, either because they had lied about themselves or had failed to make the promised investment, or both.

The EU’s stance matters to non-European countries operating such schemes,

since one of the attractions of, for example, Caribbean passports is that most offer visa-free access to the Schengen countries. Even a requirement, to be introduced in 2021, for visa-free entrants to the EU to pre-register online (to weed out undesirables) is a deterrent for some would-be purchasers.

To defend itself, the passport-and-residence industry deploys a number of arguments. The first is that it is performing stricter due-diligence checks on its customers and easing the lives of fewer criminals. The second is that it is, for some small economies in particular, a useful source of debt-free capital. In Vanuatu the industry is now the largest single source of government revenue. Even within the EU itself, in Malta, where the investment-migration industry comes closest to a simple passport-for-sale model, it claims some of the credit for strong recent economic performance.

The industry also argues that only a tiny minority seek a second national residence for nefarious reasons. Many do so because they fear political or economic unrest, want a foreign education for their children or are simply fed up with the difficulty they have in crossing borders with their own passport. And the number of investment migrants is trivial compared with the millions who cross borders in other ways.

None of these arguments probably weighs as heavily with EU officials as the sheer difficulty of meddling in sovereign countries' passport and visa regimes. Indeed, 2020 will see demand for the industry's services grow. China has long been by far the biggest source of investment migrants. But other Asian countries, such as Bangladesh and Vietnam, are also becoming more important markets. So is sub-Saharan Africa. "Through gritted teeth," says the industry insider, the EU has accepted that this line of business is not going to disappear.

Change of destination

Naomi Cohen editorial assistant, *The World in 2020*

Migrants in 2020 will end up in poorer places



Reuters

IN 2015 A RECORD number of migrants, hoping to escape violence and poverty, entered Europe illegally. Five years on, the picture will look very different. It is impossible to know how many people will migrate in 2020, but easier to predict where they will end up. America, Australia and EU countries have beefed up their borders, so relatively few would-be migrants will be accepted compared with the numbers wanting to come. Instead, countries around the edges of the rich world (such as Egypt and Turkey), and ones farther away (such as Bangladesh and Colombia), have been taking in more.

Migrants out of sight will not be out of mind, however. Funding for border patrols in rich countries will rise, but not as steeply as funding to keep migrants from setting out in the first place. In the past five years, the European Union has pledged nearly 50 times more to discourage people from leaving poor countries—with aid, jobs and border surveillance—than to guard its own boundaries. Such programmes will grow and multiply in the year ahead.

Poor countries will accept the money, and the people, but with growing unease, as they grapple with the same sorts of tensions that have unsettled rich countries. Discontent over jobs and social change will be directed towards migrants. Politicians in some countries will talk of throwing them out, as Turkey has threatened to do with Syrian refugees. In 2020 the rich world will to a degree be able to turn to other topics, after experiencing what some call migration “fatigue”. But elsewhere the pressures will keep building up.

Biodiversity and inclusion

Catherine Brahic environment editor, *The Economist*

Efforts to protect biodiversity have been overshadowed by the climate fight.
Might 2020 be different?



Sébastien Thibault

2020 in brief

The UN's International **Year of Plant Health** aims to raise awareness about the importance of plants in helping end hunger, reduce poverty, protect the environment and boost economic development

IF AN EFFECTIVE international agreement to curb climate change were not a tough enough nut to crack, consider the scale of the challenge facing the United Nations Convention on Biological Diversity (CBD): to protect the biological, ecological and genetic diversity that sustains all life on Earth. Progress has been slow to non-existent. Governments are meant to turn this around at a summit in Kunming, China, in October 2020.

The CBD was one of a trio of conventions to come out of the Rio Earth Summit in 1992, along with the UN Framework Convention on Climate Change and the UN Convention to Combat Desertification. Together, these were intended to support a comprehensive strategy for sustainable development.

The climate element has taken centre stage in recent years, but to ecologists biodiversity is no less critical. Humans rely on there being a diversity of plants and animals in order to feed themselves. Indirectly, this biodiversity is also a key contributor to health, through medicines which are often inspired by molecules found in nature, and other basic needs such as clean water. Ocean bivalves, for instance, help clean up toxic spills, and even tiny ocean plankton help form rain-bearing clouds. Yet modern civilisation is impinging on virtually every ecosystem.

In 2010, after nearly two decades of discussions among the 196 countries that are party to the CBD, 20 conservation targets were adopted: the Aichi targets, named after the Japanese prefecture where they were finalised. They were ambitious, to put it mildly. The text reads like a wish-list for a perfect future in which every human is aware of the value of biodiversity, every government has integrated this into its policies, nefarious subsidies are eliminated, all fishing is sustainable and pollution is under control. The delivery date for this Utopia was 2020.

Unsurprisingly, an intergovernmental report on biodiversity published early in 2019 found that progress on the Aichi targets was poor. Indeed, overall, species are accelerating towards extinction.

Despite the bleak landscape, conservationists are optimistic that 2020 could mark a new beginning. They are calling for a “Paris-like moment for biodiversity”, in reference to the Paris agreement in 2015 on climate change. In Kunming, they hope, all 196 parties will adopt a new and more realistic framework to protect biodiversity.

Already, there is an awareness that any new targets must be more quantitative and preferably achievable. They may include a key number, which would through its symbolism and simplicity mimic the 1.5°-2° C target for limiting the impacts of climate change and would, with luck, result in a similar worldwide buy-in. The concept of “bending the curve” may help frame such a number: there are calls to halt the loss of biodiversity by 2030 in order to shift the focus towards restoration by 2050. How exactly to define and quantify that loss under the new framework—whether as a number of species, or some measure of ecosystem or genetic health—is still an open question.

The bigger issue is how to integrate the talks about biodiversity with those on climate, desertification, forests, wetlands and trade in endangered species. A month after governments meet in Kunming to discuss biodiversity they will reassemble in Glasgow for the next round of UN climate talks. That the degradation of ecosystems is responsible for 23% of global emissions suggests it would be more productive to bring these two sets of discussions, at a minimum, under one roof.

Hindsight on foresight

Daniel Franklin editor, *The World in 2020*

How well did our forecasters do last time?

The
Economist

The World in **2019**

Leonardo da Vinci 500 years on
Angelina Jolie Responding to refugees
Pony Ma Virtuous tech
Christine Lagarde Inclusive growth
Laurene Powell Jobs Voting rights
Stacey Cunningham Markets and Main St



Brexit was not the only big topic on which our record was mixed

GRUMPILY PACING the corridor of our London office a year ago, our Bagehot columnist complained that it was “quite impossible” to make any sensible predictions about Brexit. But readers of *The World in 2019* needed a view, so, reluctantly, he offered three catastrophe scenarios which could flow from the country’s chaos and paralysis: a no-deal Brexit, a divisive second referendum, or a lurch to a far-left government. Our Britain editor, in a separate article, predicted no one would be happy with Brexit. So far, so prescient. Yet our central scenario—that Britain would leave the European Union as planned on March 31st—proved to be wrong.

Brexit was not the only big topic on which our record was mixed. On the economy, our forecast for the general direction was solid: we rightly expected America to break its record for uninterrupted growth but amid gathering nervousness about the next recession. We were wrong, though, on some important details. We thought India’s growth would accelerate; it did the opposite.

Producing a scorecard for predictions is not as simple as you might think. Take the dozen trends highlighted in the introduction to last year’s edition. Many have played out as we said they would. But that is hardly a triumph, given that some related to scheduled events or big anniversaries (such as the 500th anniversary of the death of Leonardo da Vinci, who inspired our cover), and others to political dynamics that were clear for all to foresee (such as the inevitable escalation in the conflict between President Donald Trump and a Democratic House of Representatives). Missing from the list were important shocks such as mass protests in Hong Kong or a major attack on Saudi Arabia’s oil facilities.

In the end the verdict on many of our forecasts, like the process of making them in the first place, comes down to a judgment call. Suppose this was a competition. Who deserves the medals?

An early contender for gold was the prediction that a couple of big European banks would merge. Sure enough, Deutsche Bank and Commerzbank, Germany’s biggest, soon announced that they wanted to tie the knot;

UniCredit, Italy's largest lender, also professed its interest in Commerzbank. But no one got to the altar, so our correspondent slips back to third place, taking the bronze medal.

Silver goes to our team of China correspondents. They outperformed in imagining how a tricky year would play out. In particular, the foretelling of the developing rivalry between China and America, with its “great wall of distrust” spreading well beyond trade, proved uncannily accurate.

And gold? This judge awards it to the prediction that 2019 would be the “year of the vegan”. Trend-spotting is hit and miss, but that was spot-on.

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Promises, promises

Catherine Brahic environment editor, *The Economist*

Signatories of the Paris agreement say they will reduce emissions. In 2020 they must set tighter goals



Emissions are rising by roughly 1.5% per year

2020 in brief

Scientists, policymakers and civic groups gather in Berlin for the **Climate Engineering Conference**. They discuss deliberate manipulations of the world's climate to lessen the harm done by global warming

"IT IS A small hammer but I think it can achieve great things," proclaimed Laurent Fabius on the morning of December 12th 2015. Moments before, France's then foreign minister had gavelled in the Paris agreement on climate change. In some ways it was a remarkable moment, sealing the first international agreement on climate change since the Kyoto protocol of 1997 and the first ever to include commitments by both rich and developing countries alike.

But in other ways, it was a bit of a let-down. Although the text included a collective pledge to limit global warming to 1.5°-2°C above pre-industrial temperatures, that ambition was not matched by the sum of national promises to cut emissions. The world as a whole committed itself to tackling climate change, but in practice none of the governments seemed willing to do enough to make that promise a reality.

Aware of this contradiction, the architects of the Paris agreement built in a mechanism to encourage governments to declare new national climate goals (known as "nationally determined contributions" to the agreement, or NDCs). Each new NDC must be greater than the previous one. The first updates are due in 2020 at the 26th UN climate talks (COP26), which will take place in November in Glasgow.

The Climate Action Summit held in New York in 2019 was meant to get this process moving. So far 81 countries, mostly small emitters in Africa and Latin America, have formally communicated their intentions to update their NDCs in 2020. Collectively they account for just 18.1% of global emissions. Among the big emitters, Australia, Brazil, Canada and Japan have remained silent on their intentions. Their contributions are key to the success or failure of any global climate pact. Donald Tusk, president of the European Council,

said in New York that the EU would submit an ambitious long-term strategy in 2020. But earlier efforts to adopt a target of net-zero emissions by 2050 were blocked by the Czech Republic, Estonia, Hungary and Poland.

Commitment from China, the source of around 27% of global emissions in 2017, is also crucial. It was reluctant to make any promises unless America moved first. Its position softened during Barack Obama's presidency. Donald Trump's administration has clearly removed any peer pressure on climate matters, but Xi Jinping's government is still committed to the Paris process, judging by a joint statement published with France in June 2019. Some analysts believe China may wait to see whether the American election delivers four more years of Mr Trump, or a Democratic administration with strong environmental policies. Mr Trump has promised to take America out of the Paris agreement. The earliest he could do that is November 2020, but a newly elected Democratic administration would probably rejoin it right away.

In the background of all the manoeuvring is a scientific assessment that global emissions should peak in 2020 to have the best chance of meeting the 1.5°C target. It would take a miracle for this to happen: emissions are rising by roughly 1.5% per year. Which means they will have to fall faster still in future.

High-hanging fruit

Simon Cox emerging-markets editor, *The Economist* HONG KONG

Is an SDG target still a target if it cannot be hit?



Alamy

“THIRTY THOUSAND children die of extreme poverty every day,” says Lawrence, a demoralised civil servant, in “The Girl in the Café”, a TV drama released before the G8 meeting in 2005. Although the film is entirely fictional, this terrifying statistic is not. It is based on estimates of the actual number of children who died (not all of them from extreme poverty) before their fifth birthday in the early 2000s. Later in the film, Lawrence’s girlfriend causes a stink at a G8 dinner by clicking her fingers every three seconds—to mark the passing of another child whom the assembled leaders could conceivably have saved.

Five years ago, world leaders promised to stop the preventable part of this death toll by 2030. That aspiration was included among 169 targets, grouped into 17 broad categories, known as the Sustainable Development Goals (SDGs). The other goals include fighting inequality, pollution, violence and donor stinginess. In July 2020 ministers will gather in New York to review progress towards them.

Already it is clear that few, if any, of the goals will be met at a global level. That should not surprise anybody, because the SDGs were chosen with their desirability, not their feasibility, in mind. They are best seen as a collection of rallying cries, not a well-calibrated battle plan.

That said, not everything is getting worse. Poverty is falling. According to the World Poverty Clock, someone escapes extreme penury roughly every two seconds (even after counting the people who move in the opposite direction). Increasing numbers of people have access to safe water, electricity, some secondary education and smartphone networks. Child marriage is becoming a little less common. Almost 8% of the ocean and over 18% of national waters now enjoy some kind of conservation protection, up from about 4% and 10% in 2015. And forests are disappearing at a slower pace, albeit mostly because new trees are being planted, even as older, richer forests continue to perish.

But some things that were getting better are not any longer. The main measure of hunger (the proportion of people lacking enough dietary energy for a healthy, active life) fell steadily in the decade before 2015, but has risen since. The number of malaria cases, which fell between 2010 and 2015, has risen in more recent years. Just two countries, Nigeria and Congo, account for

36% of today's victims. The same two countries are now home to 26% of the world's poor. Neither is an easy place in which to operate. In the fight against poverty and disease, the last cases will be the hardest. As 2030 approaches, the global effort to meet the SDGs will find itself reaching increasingly for the high-hanging fruit.

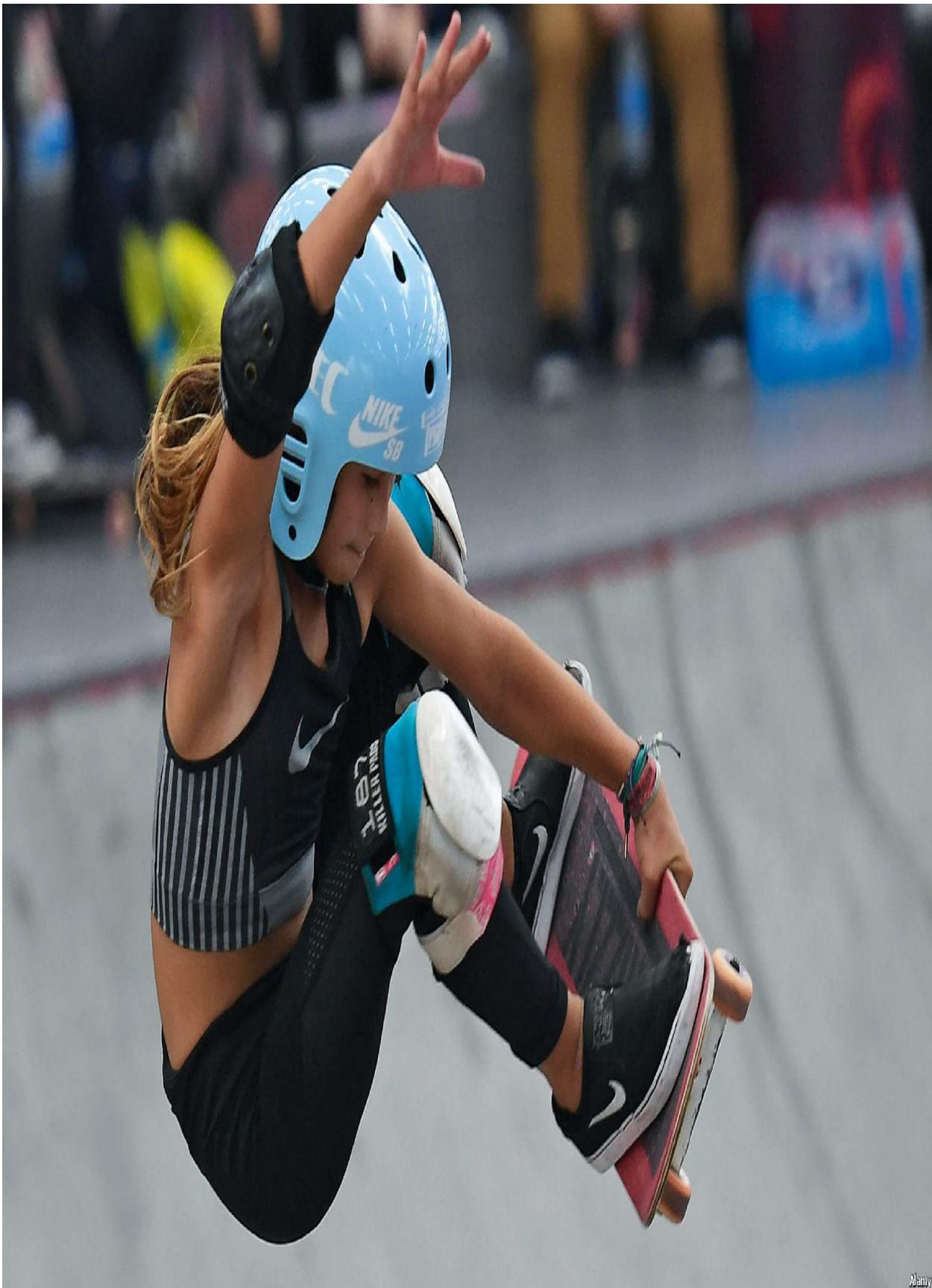
Despite the gravity of the world's problems, the last goal, which includes raising aid to 0.7% of donors' national income, will not be met either. Aid remains at about 0.3% of donors' combined income. And that is unlikely to change much over the next ten years. After all, the 0.7% commitment was first made in 1970.

In "The Girl in the Café", Lawrence wearily predicts that the G8 leaders will give them "half of what's really needed", so that "only" 15,000 children will die every day. That bit of the film has come true: 5.3m children died before their fifth birthday in 2018, the UN estimates. That's about 14,600 per day. Or one click every six seconds.

Changing the game

Tim Cross technology editor, *The Economist*

Rock climbing, skateboarding, surfing and karate are now Olympic sports. How will that affect them?



Golden future

Stars have wondered whether accepting the Olympic torch amounts to selling out

ON A WARM September evening in London, The Arch climbing wall, just south of the River Thames, is packed. Scores of people mill around on the thick crash pads, chatting, waiting their turn and offering the odd shout of encouragement to those clinging on to the colourful plastic holds that festoon a series of plywood walls.

Rock climbing was once classed as an “extreme sport”. But indoor centres like The Arch, which offer climbing without the need for rocks, are bringing it into the mainstream. The British Mountaineering Council reckons there are at least 248 public climbing walls in Britain, a number that has risen by 30% since 2010. In 2020 the sport’s governing bodies are hoping to see an even bigger surge in interest. Along with skateboarding, surfing and karate, rock climbing will be making its debut as an Olympic sport at the summer games in Tokyo in 2020.

The International Olympic Committee (IOC) is frank about the reasons. It hopes to appeal to a younger crowd who may be less familiar with longer-standing sports such as athletics, weightlifting and equestrianism. The crowd at The Arch is exactly what the IOC has in mind: mostly young professionals letting off steam after work, who see climbing as a more engaging and sociable alternative to pounding treadmills or pumping iron in a gym. Between them, the new sports will mean another 18 events and 474 athletes at the Tokyo games.

Officially, all four sports are delighted with their new status (they will be joined by baseball and softball, returning to the games after a 12-year absence). But with the exception of karate, all of them have counter-cultural, anti-establishment roots. Some stars have wondered whether accepting the Olympic torch amounts to selling out. Owen Wright, a famous surfer, has said that surfing is more art form than sport, and therefore not suitable for the games—though he has since recanted, and hopes to represent Australia in Tokyo.

Adam Ondra, a Czech who is one of the world's best climbers, at first said he might boycott the games because of the format. Climbers will compete in bouldering (climbing without a rope, low to the ground, with a focus on hard, gymnastic moves), lead climbing (roped climbing up a tall wall of increasing difficulty) and speed climbing (a timed scamper up a fixed route). Bouldering and lead climbing feature new routes in each stage of a competition, in an effort to mimic the variety of real rock. But speed climbing takes place on a standard, unvarying course. Because of this, said Mr Ondra, "speed is a kind of artificial discipline...and this is against the soul of climbing."

Like Mr Wright, Mr Ondra has since changed his mind, and knuckled down to training. He already excels at bouldering and lead climbing. At a competition in July in Chamonix, he posted a speed-climbing time of 8.01 seconds—respectable, but not yet world class (the record is 5.48 seconds). The eventual champion will have to master all three disciplines.

Skateboarders, also notably rebellious, can be strikingly young. Sky Brown (pictured) is set to become Britain's youngest Olympian. By the time of the Tokyo games, she will have just turned 12.

A diet to save humankind



A paradigm shift in food production and consumption is needed, argues **Guido Barilla**, chairman of Barilla Group and the Barilla Centre for Food & Nutrition Foundation

Governments must make healthy food accessible and affordable

WHEN I WAS a child my family would always sit down together for meals. My favourite was among the simplest: *spaghetti pomodoro*, pasta in tomato sauce. We ate fresh vegetables and fruit, and, starting in our teenage years, sipped a glass of red wine. We ate together. I indulged with a few slices of prosciutto and practised a wide variety of outdoor sports. This centuries-old Mediterranean diet kept me fit and trim—and turned out to be good not just for my personal well-being, but for the planet's health too.

In 2020 we will celebrate the tenth anniversary of UNESCO's designation of this Mediterranean diet as a "Cultural Heritage of Humanity". But Italians have, unfortunately, been turning away from their traditional healthy diet. We have started to eat more fast food and have increased our portions. Fewer Italians enjoy social meals with family and friends. Italian children were among the most overweight in a recent study of 30 countries by the World Health Organisation.

Poor nutrition is a global problem, not just an Italian one. The fact that it's hitting Italy, the land where the Mediterranean diet originated, represents a dangerous paradox—one of many afflicting the world of food. After years of decline, hunger is back on the rise. Globally, some 821m people still do not have enough to eat. Yet while the poor south starves, the rich north gorges: some 2bn people are overweight or obese. We waste one-third of global food production. Livestock consume an estimated two-thirds of all the land dedicated to agriculture and contribute about half of farming-related greenhouse-gas emissions.

Let's take another look at the menu

Without a change in our diets, this disastrous cycle will worsen. The world's population is expected to increase by 2.3bn people by 2050, fuelling demand for meat. Since the end of the second world war the global food system has focused on producing more food for more people—but then wastes huge

amounts of it. A paradigm shift is needed. Production must concentrate on delivering better, more nutritious food. The UN's Sustainable Development Goals can show us the way. They aim to "end hunger, achieve food security and improved nutrition and promote sustainable agriculture."

These goals are ambitious but achievable. Governments must provide incentives to support sustainable agriculture, slash food waste and meet nutritional challenges. This does not just mean taxing unhealthy foods. A more effective policy is to make healthy food, including fruit and vegetables, accessible and affordable for consumers and profitable for farmers.

Companies must not be short-sighted, either. They should support legislation requiring them to embrace sustainability. At Barilla, we have teamed up with farmers on our most relevant raw material: the durum wheat needed to make pasta. Together, we combine the wisdom of our ancestors' crop rotation with modern tools such as advanced meteorological forecasting. Farmers use fertilisers more efficiently and reduce costs, and Barilla gets a better raw material.

Our Barilla Centre for Food & Nutrition is also working with the Italian education ministry to promote sustainable diets. Too often, the message of food sustainability is presented in the form of punitive, prison-like fare. Food must remain colourful and appetising and we should retain the joy of eating good food together. As part of the celebrations around the tenth anniversary of the UNESCO designation, the UN's Food and Agriculture Organisation will hold five events around the Mediterranean diet in 2020, exploring aspects relating to its history, culture, environment and social impact. Appropriately, my home city of Parma, famed for its cheese and ham, has been named Italian capital of culture for 2020. Although the city is being honoured for its art, architecture and museums, food will be at the centre of the celebrations.

We must change our diet. The Barilla Foundation has devised a food and environment pyramid. It highlights the close links between food's nutritional value and environmental impact. This "double pyramid" is based on the traditional Mediterranean diet of my childhood. It was a diet full of vegetables, fruits and wholegrains, with only occasional meat. Everything was tasty. We ate slowly, together. We exercised. Everyone can and must

continue to have fun at the dinner table—while eating what is good for our health and our planet.

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Europe



Getty Images

The new broom

Christopher Lockwood Europe editor, *The Economist*

Ursula von der Leyen has grand ambitions, but will be bogged down by pesky problems

2020 in brief

The US Navy's **Aegis Ashore missile site** begins operations in **Poland**. The system is intended to protect NATO by shooting down ballistic missiles coming from Iran or North Korea. It may also be rejigged to cope with Russian cruise missiles, too

MUCH MOCKED as a bit of a buffoon with a fondness for a well-lubricated lunch, Jean-Claude Juncker had a lot to be happy about as he prepared to hand over the European Commission. The toxic legacy of the economic crises of 2008-09 and 2011-12 is almost spent, and the oft-predicted collapse of the euro averted—at least until the next crisis comes along. Greece and Italy are behaving themselves under pragmatic new governments; Portugal, Spain and Ireland have all made spectacular recoveries. Germany may have come close to a recession in 2019, but overall the EU is expected to show positive growth in 2020, as it did in 2019.

The migration crisis of 2015-16 likewise passed its peak. Irregular-migrant arrivals in 2015 were well over 1m; in 2019 they are likely to have been well under 100,000. The third great crisis, the dreaded rise of populism, has faded too. The populists performed poorly in May's European Parliament elections, and since then have lost ground. Matteo Salvini's Northern League and the Austrian Freedom Party are both now out of government. In Hungary, Viktor Orbán's Fidesz has lost control of its capital city at local elections. The coming year is set to be blissfully free of stressful elections in Europe.

Even Brexit is moving towards a survivable conclusion, at least for the remaining 27 members of the EU, which have readied themselves even for the shock of Britain plunging itself into the chaos of a no-deal exit if something better cannot be agreed upon. Ireland is the only country that would really suffer, and Ireland is small enough to be helped. Other countries, France in particular, see some countervailing benefits in Brexit, as companies relocate, deal or no-deal.

All this ought to create a bit of political space for the new commission president, Ursula von der Leyen, to deal with big themes in 2020. She certainly wants to, though she has got off to a rough start, being forced to delay the handover beyond the scheduled date of October 31st after the European Parliament rejected several of her commissioners. She has restructured the way her commission functions to focus greater attention on what she sees as her three big areas: meeting the climate-change challenge, delivering a Europe that promotes inclusivity, and equipping the EU for the digital age. The EU also needs to punch more nearly at its true weight in the global trading system. Despite having a GDP bigger than China's and comparable to America's, it has largely been an impotent victim of collateral damage as the two economic superpowers slug it out. And Donald Trump's retreat from global engagement makes it essential that Europe beefs up its co-operation on foreign and security policy, something else that Mrs von der Leyen, a former German defence minister, strongly favours.

How much will come of all that grand ambition? The answer, at least in 2020, is “not much”. For 2020 is the year when one single nit-picky problem will dominate everything the EU does. The EU’s seven-year budget, its “multiannual financial framework” (MFF) in Brussels patois, runs out at the end of 2020, by which time a new framework, to cover 2021-27, has to be in place.

Easy to say; hard to do. For an organisation that is so often derided as extravagant, the EU actually has a minuscule budget, currently set by law at just 1.02% of collective GDP (compare that with the 56% of GDP that France, say, spends on itself). Past rounds of MFF negotiating have involved intense argument over even tiny increases. And that budget is about to take a hit. When Britain leaves its contributions will cease; and since Britain is one of the biggest net contributors to the budget, paying in roughly €10bn (\$11bn) more a year than it gets back, the MFF starts with less money to spread around. So the first thing the EU’s leaders will have to do in the coming year (assuming, as most observers predict, that they fail to reach agreement at a summit planned for mid-December 2019) is reallocate that pain. On past form, this row could rumble on for much of 2020. It might not be settled by the end of the year, requiring the existing MFF to be rolled over

for a time.

Making up the British shortfall is likely to consume any willingness among the leaders to push overall spending higher. Instead, therefore, the fights will be about reallocating existing spending to other objectives. Expect huge battles about this. Countries like Poland, Hungary and Spain are all now getting more back from the EU than is justified by their levels of prosperity. But all will fight tooth-and-nail to prevent money being allocated away from their agricultural support and road-building to Mrs von der Leyen's cherished priorities.

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A game of two halves and a dozen hosts

Josh Spencer deputy digital editor, 1843

Why Europe's feast of football will be a shared affair



Alamy

Sharing helps spread the load

2020 in brief

Denmark's **Roskilde Festival** turns 50 (as does its British counterpart, Glastonbury). Taylor Swift leads the celebrations at the eight-day festival, if not its (in)famous “naked run”

“INSTEAD OF HAVING a party in one country, we will have a party all over Europe.” Gianni Infantino, then secretary-general of UEFA, which governs European football, made that seemingly generous pronouncement in 2012. The Euro 2020 tournament will be hosted across 12 countries. No more than two have ever divided up hosting duties before. This “special” celebration purportedly marks the 60th anniversary of the first “Euros”. But Mr Infantino hinted later that the decision to share festivities was also economic. Were authorities struggling to find one country, or even two, willing to bear the financial burden?

Hosting huge sporting spectacles is expensive. Russia forked out an estimated \$14bn on the World Cup in 2018. Brazil spent about \$11bn-14bn, on everything from roads to new stadiums, hosting it in 2014. At the time, forecasters predicted the positive impact on Brazil’s economy would be anywhere from \$3bn to \$13bn. But even many football-mad Brazilians were unhappy about this use of public money. One of Brazil’s new World Cup stadiums has since been used as a bus depot more than as a sports arena.

The decision to spread Euro 2020 across 12 countries was made in 2012, a few years on from the financial crisis of 2008 and the recession that followed. Sharing helps spread the load. It may be the way to make hosting manageable.

Decision-makers in Europe face greater scrutiny from their citizens to justify these mega-events. Environmental costs are a growing concern. Many voters think that public money may be better spent on hospitals and schools. In 2013 those factors probably influenced Munich’s referendum on whether it should bid for the Winter Olympics in 2002: the locals said *nein*. Gone are the days, it seems, when leaders in European democracies could bid for major sports tournaments as vanity projects.

It would be nice to think that sharing hosting duties promotes lasting warmth between the countries involved. But Japan and South Korea, which co-hosted the World Cup in 2002, have been in a bitter fight with each other over war reparations. And when the final of Euro 2020 takes place at Wembley Stadium in London in July, some may wonder about the extent to which England even considers itself to be part of Europe.

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Jupiter rebooted

Sophie Pedder Paris bureau chief, *The Economist* PARIS

Emmanuel Macron will have his eyes on the prize, both in France and abroad



2020 in brief

The world's biggest **rooftop farm** opens in south-west Paris. Located on top of an exhibition complex, it covers 14,000 square metres and aims to produce one tonne of food each day in high season

OUT WITH the cocky ruler of yesterday; in with the listening president. This will be the new style that marks Emmanuel Macron's year, as the French president tries to strike a balance between restoring reformist momentum and seeking consensus. France remains restless, Mr Macron's credibility is fragile and his new approach risks diluting domestic ambition.

After the civil unrest of the *gilets jaunes* (yellow jackets) protesters, Mr Macron will respond with the talking cure. He will replicate the town-hall meetings of his "great national debate" in 2019 to try to explain his forthcoming reforms. The president can be expected to turn up in municipal halls across the country, taking questions in shirt-sleeves and making his case.

The most difficult area will be pension reform, which the government will try to push through parliament before the summer. Mr Macron wants to merge the country's tangle of 42 different pension regimes into a single, points-based system. Administratively complex, it will also prove politically explosive. Those who face losing their advantages will take to the streets, accusing Mr Macron of dismantling the welfare state. His task will be to keep the ambition of the reform broadly intact while managing the unrest it will provoke.

Final decisions on new pension rules will be postponed until after the municipal elections in March, in the country's 35,000 communes. Mayors are much-loved figures in France, and these polls will be the first test of whether Mr Macron's young party, La République en Marche (LREM), can put down local roots. It may be badly disappointed. Most emblematic will be the battle for Paris. Benjamin Griveaux, a Macron loyalist, will take on Anne Hidalgo, the sitting Socialist mayor. The race will be tight, and Mr Griveaux's campaign could falter, not least because he faces a rival from his own camp, Cédric Villani, a popular mathematician and LREM deputy. If this division threatens Mr Macron's chances of taking the capital, the president might just send in Edouard Philippe, the prime minister, instead. If so, Jean-Yves Le Drian, the foreign minister, is his most likely replacement.

Throughout the year Mr Macron will push two themes, partly in an effort to destabilise his rivals. To fend off the Greens, he will stress his global fight against climate change and for an eco-friendly economy. To contain the nationalist right and Marine Le Pen, he will sound a firm note on immigration. With France's party-political system unusually fluid, figures to watch include the Greens' Yannick Jadot, the Socialists' Bernard Cazeneuve (a former prime minister), the centre-right's Xavier Bertrand—and, on the nationalist right, Marion Maréchal, Ms Le Pen's ambitious niece.

Under pressure at home, Mr Macron will try to impose himself abroad as Europe's natural next leader. In a year that marks the centenary of the canonisation of Joan of Arc, a national heroine, this will prompt accusations of delusions of French grandeur. Mr Macron will not be short of ideas—notably the need for European “sovereignty”—nor of concrete proposals to achieve them, such as stronger European defence co-operation, including on space and artificial intelligence. He will keep trying doggedly to act as a broker, over Iran, Syria, or Russia-Ukraine, however meagre the results.

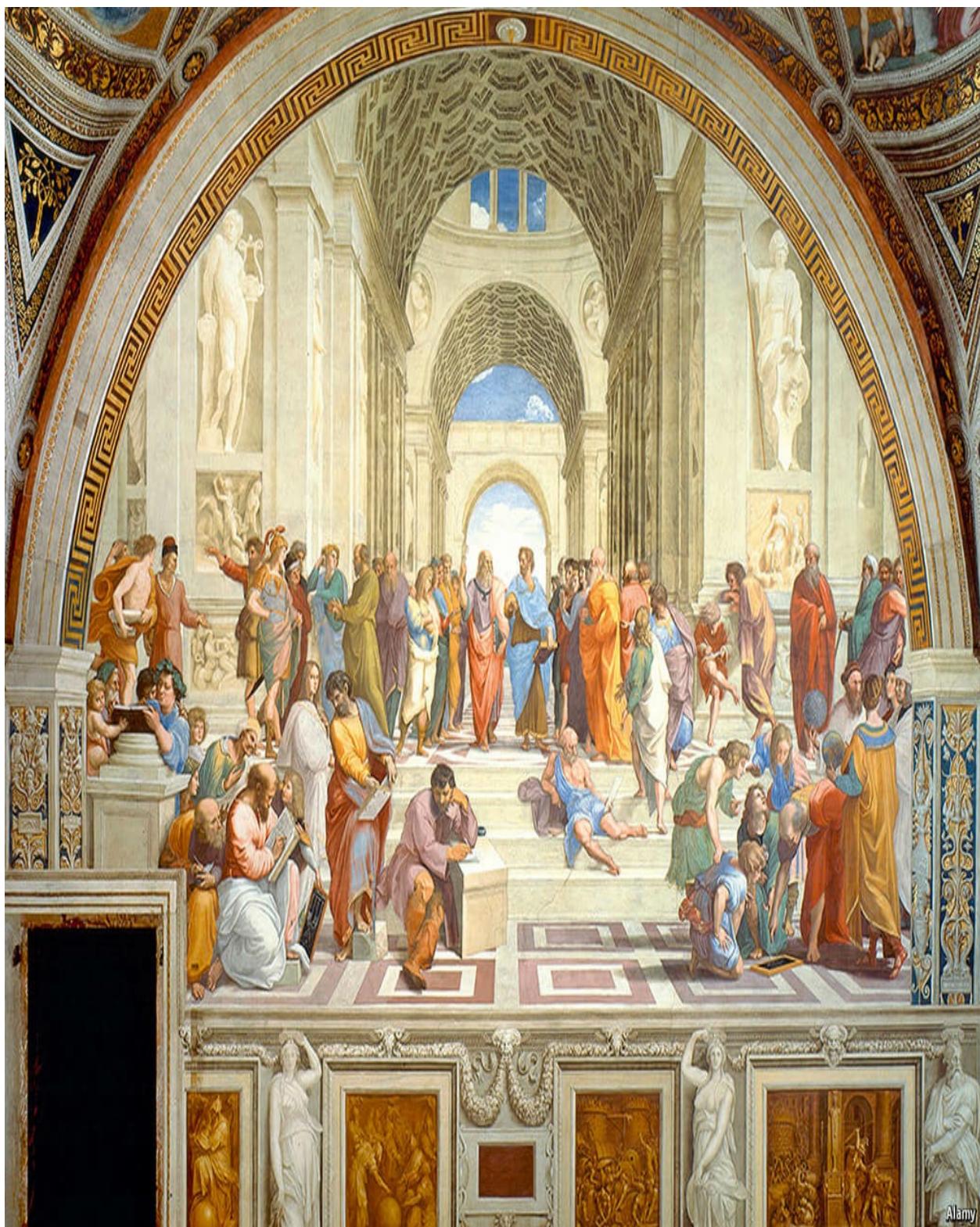
L'Europe, c'est moi

Such endeavours will not win him friends everywhere. Mr Macron's efforts to keep Russia in the European fold, and out of China's arms, will be viewed warily in Berlin and points east. The French president may attend victory-day commemorations in Moscow on May 9th. Yet, if he plays it right, the retreat of Brexit Britain, the weakening of the German economy and Angela Merkel's domestic troubles, along with a France-friendly European Commission, could offer Mr Macron an unusual opportunity to emerge as the continent's new spokesman.

What would Raphael have made of it?

John Hooper Italy and Vatican correspondent, *The Economist*
ROME

The only renaissance in sight for Italy is a 500th anniversary



THE 500TH anniversary of the sadly premature death of Raffaello Sanzio, the painter known to English-speakers as Raphael, falls in 2020. Reminders

of his genius (with a big exhibition in Rome) may offer a welcome escape from Italy's politics.

Raphael was adept at schmoozing patrons, and his people skills helped him make vast amounts of money. He was the first unabashedly affluent superstar artist—the forerunner of the likes of Damien Hirst and Jeff Koons. But then the Renaissance itself was inextricably tied up with wealth generation.

Returning today, its patrons would no doubt be dismayed to find the Italian economy in such a mess. Even the government, more optimistic than independent analysts, estimates that in 2020 GDP will grow by just 0.6%. That might be explained by the Europe-wide downturn. But at no time in the past dozen years has growth risen above 1.7%.

Various factors hold it back: snail-like civil justice (which deters foreign investors), red tape, tax evasion, a pile of public debt that has grown to 138% of GDP. Most of that debt is held in a fragmented banking system, which is thus forever at risk of a crisis if markets lose faith in Italy's ability to repay.

Such jitters arise periodically because of another factor slowing Italy's growth: its politics. The arrival in September 2019 of a left-populist government allying the Democratic Party (PD) to the anti-establishment Five Star Movement seemed to promise a spell of tranquillity after months of uncertainty. Yet within days a former prime minister, Matteo Renzi, had left the PD's parliamentary group along with enough of its lawmakers to bring down the government if he so chooses. Even the philosophers in Raphael's masterpiece, "The School of Athens" (pictured), who epitomise reason, might find it hard to comprehend Italy's politics in 2020.

The last hurrah

Tom Nuttall Berlin bureau chief, *The Economist* BERLIN

Germany will fail to adapt to a changing world



IN 2020 SOME of Germany's old certainties will be tested to destruction. Its open economy will flirt with recession as the global trading system withers. The American-guaranteed order that has underpinned German prosperity and security will fray further. A country designed for openness must adjust to a world that is closing.

Structural changes will compound cyclical flutters. Germany's coddled

carmakers are struggling with the shift to electric vehicles and have no answer to declining sales in China. From next-generation broadband to artificial intelligence, Germany has little stake in rising industries. Low public investment, constrained by self-imposed fiscal straitjackets, has mortgaged Germany's future to its present.

Politicians from Angela Merkel down know their country's doziness is unsustainable, but do little to deal with it, whether by tackling underinvestment in defence, prising open over-regulated services or accepting compromises on the euro zone. Despite rock-bottom borrowing costs and low debt, 2020 will not see German politicians embark on the sort of long-term targeted investment advocated by economists. Geopolitically, Mrs Merkel has urged Europe to take more responsibility. But if Donald Trump looks vulnerable in the run-up to November's presidential election, Germans will slip gratefully into fantasies of a return to *Pax Americana*.

For many voters the risks of inaction remain largely theoretical. In a tight labour market, slower growth will not quickly translate into serious job or wage cuts. The fires raging in Europe's neighbourhood have not directly affected Germans' sense of security since the migrant crisis of 2015-16; Germany enters 2020 more worried about extremism at home than conflagration in Libya, Syria or Ukraine. Within the EU (under German presidency in the second half of 2020), it will cough up more for a post-Brexit budget, and cede some leadership to France.

Domestic politics will turn inwards as Mrs Merkel approaches the end of her long reign. The "grand coalition"—an unhappy marriage of the chancellor's centre-right Christian Democratic Union (CDU), its Bavarian sister party and the Social Democrats (SPD)—could easily fall prematurely as it limps on towards its natural expiry in 2021. The CDU heavyweights jostling for the right to succeed Mrs Merkel will find few votes in urging a fiscal rethink. The SPD is more likely to descend into infighting than to ask hard questions about foreign policy. Fresher thinking may be found in parts of the Green Party, which will almost certainly join Germany's next government. But recession and tougher scrutiny may dent its support.

For years Germany thrived as a policy-taker, as its skilled exporters exploited the integration of developing countries into global markets. But as economics

takes on a geopolitical component and superpowers slide into conflict, Germany enters a realm of power, rather than rules, in which it has never sat comfortably.

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Plenty on her plate

Rachana Shanbhogue Europe economics correspondent, *The Economist*

Christine Lagarde's first year at the European Central Bank will be eventful



Reuters

2020 in brief

SeaBubble water taxis are tested in Paris. The bubble-shaped vehicles use hydrofoils to zip along the Seine. If approved for commercial use, each SeaBubble can carry up to four passengers, who hail it using an app

WHEN THE new year is rung in, Christine Lagarde will only just be settling into her office in the gleaming glass tower in Frankfurt that houses the European Central Bank (ECB). She will be two months into her eight-year term as the bank's president, and will have chaired only one monetary-policy meeting. The bank's approach and toolkit have been transformed under her predecessor, Mario Draghi. Even so, Ms Lagarde has plenty on her plate in her first year.

The economy will not do much better than in 2019. The threat of American tariffs will hang over the continent, as well as that of collateral damage from America's trade war with China. Gloomy conditions for exporters will mean that economic growth has to be powered by demand at home and not abroad: as the labour market tightens further, European consumers should spend more as their wages pick up in response. But even this is not assured. Consumers will put their wallets away if the global trading environment sours so much that manufacturers are forced to shed jobs.

Inflation will be stubbornly low, at around 1%, undershooting the ECB's target of "below, but close to, 2%". Underlying "core" inflation, which strips away volatile food and energy prices, has not breached 2% since 2008 and will not come near it in 2020. One of Mr Draghi's final acts as ECB boss was to cut interest rates and resume asset purchases. But all this will prove insufficient to revive inflation. So Ms Lagarde will have to turn the taps on yet again, either by cutting interest rates further or expanding the universe of assets that the bank can buy as part of its quantitative-easing scheme. Neither step will be popular, particularly with the high-saving member states in the north. And it will become harder to disguise the fact that conventional monetary-policy tools are nearing their limits.

Inspired by the Federal Reserve's review of its monetary-policy framework, which began in 2018, Ms Lagarde will launch her own review at the ECB, and reassess how the bank communicates with the public. She will hope that this helps bolster the bank's commitment to raising inflation, while quelling ever-louder grumbling from northerners. But any changes are unlikely to be able to achieve both objectives.

Not by monetary policy alone

Just as Mr Draghi did, Ms Lagarde will discover that decisions made in Brussels and other European capitals have a significant bearing on her job. If national governments spent more, it would boost inflation. And if the monetary union were completed—through deeper integration of banking systems and capital markets—the private sector would be able to spread the impact of economic shocks across borders. Both would mean monetary policy would have to step into the breach less often.

Here Ms Lagarde might spot some glimmers of hope. Attitudes to borrowing might budge a little because governments will still be able to borrow cheaply in 2020. Italy's new ruling coalition will be fragile but it will, in a departure from its populist predecessor's policies, seek consensus rather than confrontation over the EU's budget rules. And Ms Lagarde's colleagues at the European Commission, also newly appointed, may even consider relaxing its fiscal rules, so that members can take advantage of low borrowing costs and boost growth.

New commissioners might also have more energy to tackle the knotty issues of banking and capital-markets integration than their jaded predecessors. Banks will make further progress in resolving dud loans, which are particularly large in Italy and Greece. In theory, that should assuage northerners' concerns about common deposit insurance for lenders, the final plank of banking union.

Do not expect radical change, though. Europe's fundamental problem—an excess of saving over spending—will not go away. An aversion to debt and an inclination towards thrift are deep-rooted in the north; they cannot easily be ripped out and replaced by a willingness to accept risks across borders. The ECB under Ms Lagarde will remain the currency union's first line of defence when economic trouble strikes.

Tremors in Turkey

Piotr Zalewski Turkey correspondent, *The Economist*
ANKARA

Keep an eye on the cracks



Reuters

2020 in brief

Guided tours of **Amsterdam's red-light district** come to an end, amid concerns about disrespectful tourists. The city also imposes limits on tour groups in its medieval centre, to reduce overcrowding in the narrow streets

AFTER A WAVE of terror attacks, the arrival of nearly 4m refugees from Syria, an abortive coup and the mass arrests and purges that followed, plus a currency crisis, all in the space of a few years, no news would be good news in Turkey. For Turks, there is some hope that 2020 will deliver a respite.

After seven elections in five years, capped by a controversial rerun of Istanbul's mayoral race, voters will not have to make another trip to the polls. Turkey may go three more years without an election. Its economy crawled out of recession in 2019. And President Recep Tayyip Erdogan's government dodged economic sanctions when America postponed plans to punish its NATO ally for buying a Russian missile-defence system.

Along the country's deep political faultlines, however, pressure is mounting. Cracks are opening in the conservative base Mr Erdogan and his Justice and Development (AK) party assembled over the years. Heartened by its success in local elections in 2019, the secular opposition will make new inroads among conservative and Kurdish voters. Mr Erdogan will also face challenges from within. A former economy minister and prime minister have already broken with AK. They now appear poised to launch one or more splinter parties.

Turkey remains saddled with debt and exposed to outside shocks, including diplomatic crises in relations with Europe and America. The purchase of the s-400 missile system from Russia has already cost Turkey its participation in the American-led f-35 fighter-jet programme, as well as \$12bn in contracts. Assuming Mr Erdogan keeps cosying up to Russia, American sanctions could be in store.

The biggest concern will be the blowback from the last stages of the war in neighbouring Syria. Turkey launched an offensive against American-backed Kurds in north-east Syria, provoking a diplomatic crisis with America and bringing sanctions from several European countries. Turkey may soon have to cope with another refugee surge from the north-west of Syria, where a ceasefire Mr Erdogan brokered with Russia is nearing collapse. Tens of thousands of Islamist insurgents, plus 3m civilians, are facing Russian and regime firepower.

A shadow also hangs over the fate of the refugees already in Turkey. Mr

Erdogan says he would like to resettle 2m of them in a “safe zone” he plans to carve out of Kurdish-majority areas in Syria. To critics, this sounds like demographic engineering. Mr Erdogan has warned Western governments that unless they endorse the project he will tear up an agreement reached with the EU in 2016, open the borders and let a multitude of refugees head to Greece.

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Putin's prism

Arkady Ostrovsky Russia editor, *The Economist*

Russia's game plan for Ukraine



Don't lead us into capitulation

LOOK AT THE world from Vladimir Putin's point of view and things could hardly be better. America, the traditional opponent by which Russia measures its own weakness and strength, is in turmoil. Better still, its latest political crisis has been caused by engaging with Ukraine—a country which Russia has always considered to be in its sphere of influence. Britain, a close ally of America and an irritant to Russia, is in crisis. Angela Merkel, Germany's

chancellor, who championed European sanctions against Russia, has been upstaged by Emmanuel Macron, France's president, who wants to include Russia in a new European security architecture. In 2020, how will Mr Putin capitalise on these weaknesses?

Russia's proxy war in Ukraine's Donbas region may soon yield a settlement that would fulfil Russian goals. Faced with falling incomes and a rising pension age, Russians now consider foreign adventures irritating rather than exciting. Far better for Mr Putin to normalise his relationship with Europe and have sanctions lifted—particularly given the opportunity created by the change of government in Ukraine, where President Volodymyr Zelensky wants to end the war and has signalled his willingness to negotiate with Russia.

Mr Putin's ideal plan would be for Ukraine to give Donbas a "special status". Local elections would legitimise pro-Russian candidates. Donbas would be de jure controlled by Kyiv, and de facto by Moscow. In contrast to Crimea, the conflict in Donbas was not about seizing territory, but about creating tools that would give Russia a mechanism to dial the pressure up or down.

A majority of Ukrainians do not support a special status for Donbas. To get a settlement acceptable to people in Ukraine, Mr Zelensky needs the strongest support possible from Europe and America. Yet with Donald Trump in the White House, all he is getting is pressure. "I really hope that you and President Putin get together and can solve your problem," Mr Trump recently told Mr Zelensky in New York. Squeezed by Russia and America, Ukraine will not find it easy to stand up for itself in 2020.

Have another go

Michael Reid Bello columnist and senior editor, Latin America and Spain, *The Economist* MADRID

Spain needs to move beyond its political deadlock



Getty Images

2020 in brief

Two coastal cities, Rijeka in Croatia and Galway in Ireland, become European **Capitals of Culture** for 2020

THE QUESTION that has dogged Spain for the past four years will continue to do so as 2020 begins: can its politicians form a strong reformist

government? The answer depends on the outcome of a general election on November 10th 2019, the fourth in as many years—and on negotiations in its aftermath.

Unless fed-up voters swerve back to the right, the outcome may vary only a little from that in April 2019, when the Socialists won the most votes but fell well short of a parliamentary majority. If so Pedro Sánchez, the Socialist prime minister, would face the same task at which he failed in 2019: to forge an agreement either with Ciudadanos of the centre right or with the forces to his left, which now include both Podemos and a new splinter, Más País. Neither will be easy. Spain's party leaders have not yet accepted that a multi-party system requires compromise. In 2020 they will at last have to.

The first task facing the new government will be to approve a budget to replace the rolled-over one from 2018. The purse-strings will be tighter. Economic growth will dip and job creation slow. With public debt at 98% of GDP, Spain has little room for fiscal loosening if the euro-area economy falls into recession. Enhancing this performance requires structural reforms, especially of education and training. Agreement on how to finance a rapidly growing pension bill is urgently needed too.

The other big issue will be Catalonia. In October 2019 nine separatist leaders were sentenced to long jail terms after a lengthy trial arising from their unconstitutional independence bid. The sentences were greeted with protests. But the end of the trial may serve to unblock Catalan politics, at least a bit. Esquerra, the more organised of the two main separatist parties, is likely to renounce any repeat of the unilateral strategy. It will trigger a regional election at which it will hope to best the fast-fraying party of Carles Puigdemont, the former Catalan president whom Spain will expect to extradite from Belgium during 2020.

It is possible that 2020 could see a deal between the Madrid government and Esquerra that would involve the devolution of more money to Catalonia, and clarification of its powers. But few will bet on that.

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Ah, Trianon, a Hungarian lament

Vendeline von Bredow European business and finance correspondent, *The Economist* BERLIN

Viktor Orbán will exploit the centenary of a painful landmark in his country's history



AFP

The monument will encourage nostalgia

THE YEAR 2020 will bring the 100th anniversary of the Treaty of Trianon, a traumatic moment in Hungarian history. In the aftermath of the first world war, the treaty amputated two-thirds of the territory of the Kingdom of Hungary and transferred more than half of its population to Romania, Czechoslovakia, Ukraine and other neighbouring countries. Trianon was the

greatest catastrophe Hungary has ever suffered, according to Krisztián Ungváry, a historian. To this day Hungarians mourn their country's dismemberment.

Since he returned to power in 2010 Viktor Orbán, Hungary's prime minister, has made sure these phantom-limb pains do not go away. In his first big piece of legislation he gave the 2.5m or so ethnic Magyars abroad the right to Hungarian passports. More than 1m took him up on the offer and have since voted overwhelmingly for Fidesz, Mr Orbán's party, which subsidises the Magyar diaspora to the tune of 160bn forint (\$540m) a year. Mr Orbán made June 4th, the day Trianon was signed in 1920, a "National Unity Day". He backs conferences and lectures relitigating the details of the peace treaty.

In 2020 Mr Orbán will mark National Unity Day by unveiling a mammoth monument to Trianon that will face parliament. Already under construction, it will be a 100-metre-long ramp made of granite inscribed with the names of some 13,000 towns, cities and villages that were part of the Kingdom of Hungary. This will only strengthen the sense of historical loss. Even historians close to Mr Orbán's government, such as András Gerő, say the monument will encourage a nostalgia that leads nowhere.

Mr Orbán does not go so far as to ask for a redrawing of borders. But harking back to the old grievance helps him promote his nationalist credo. Trianon was a tragedy for Hungarians. Instead of encouraging healing, Mr Orbán keeps rubbing salt in their wounds.

Britain

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Britain



PA Images

Divided, damaged and diminished

Adrian Wooldridge Bagehot columnist, *The Economist*

Whatever the outcome, Brexit will suck the country's political lifeblood like a giant squid

2020 in brief

The spring bank holiday moves from the first Monday in May to the first Friday to mark **75 years since VE day**—the end of the second world war in Europe. Pubs encourage patrons to raise a glass to war veterans and bagpipers play on top of Britain's four highest mountains

BRITISH POLITICS is in such a state of flux that it is impossible to predict what the next week will bring, let alone the coming year. The next 12 months may see any of the following, depending on who, if anyone, wins the general election on December 12th 2019: a grudging Brexit deal, a no-deal Brexit, no Brexit at all thanks to a second referendum, a hung parliament leading to further paralysis, or even a referendum on Scottish independence leading to the break-up of the United Kingdom. But one thing can be predicted with certainty: in 2020 Brexit will act like a giant squid that has attached itself to the face of the nation, sucking its lifeblood and refusing to let go. Brexit's impact can be summarised by three ds: divide, damage and diminish.

Brexit will divide the British more than any other issue. The old class divisions between Labour voters and Tory voters had already begun to crumble before the referendum in 2016, which hastened the formation of new cultural divisions—between the metropolitan areas that attract large numbers of university graduates and the provinces that favour more traditional values. The emerging division is reshaping both Labour (which is split between its loyalty to the working-class and the new metropolitan elite) and the Tories (who are experimenting with national populism).

Even if the Brexit question is “solved” by a relatively amicable deal that takes Britain out of the EU, or by a second referendum that keeps it in the EU, the question will carry on causing rancour. In the event of an amicable deal Britain will still have to negotiate its precise relationship with the European club. In the event of a vote to stay in, many Leavers will be furious. Some 58% of Britons who thought that politicians “do not listen to people

“like me” voted for Brexit. About 2.8m habitual non-voters, who had given up on politics during the Blair-Cameron years of identikit politicians with interchangeable policies, turned out to vote Leave. A skilled politician such as Nigel Farage, the leader of the Brexit Party, will be able to turn the resentment created by a pro-Remain second referendum into a mighty political movement that could upend British politics.

The damage all this causes will become clearer. Brexit will keep on crushing British institutions between two rival interpretations of democracy: liberal democracy as the will of the majority and liberal democracy as the rule of liberal institutions. This will test, sometimes to breaking-point, the relationship between the component parts of the constitution: the government and MPs; MPs and their constituents; government, Parliament and the courts. It will also further alienate the public at large from a political class they have grown to despise. The Hansard Society, a research body, finds that 37% of Britons believe the system needs a “great deal” of change—ten percentage points more than the previous record, in 2010, when MPs were mired in an expenses scandal. Britain saw relatively few public protests between the arrival of democracy in 1918 and the referendum of 2016. Now it sees marches almost every week. The same could well happen with political violence, the relative lack of which made Britain such a peaceable place.

Brexit will also diminish Britain even more than it already has in the eyes of the world. Brexit has put a question-mark against the idea that the British are a pragmatic lot who always muddle through to a solution. It has undermined Britain’s reputation for possessing a first-class diplomatic operation. Its politicians and diplomats have been laughably underprepared compared with their continental counterparts. Brexit has underlined worries that Britain has not come to terms with its shrunken role in the world since the days of empire.

Brexit has also undermined Britain’s real influence. Britain’s membership of the EU bolstered its weight in America, just as its close relations with America increased its clout in the EU. The EU magnified Britain’s global power, bringing with it trade deals with dozens of other countries. In 2020 Boris Johnson’s talk about a “global Britain” will be tested as never before as Britain loses its role as a bridge between America and Europe, and China

increases its power in the emerging world. Smaller players can survive and prosper because of superior agility. But not with a giant squid attached to them.

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Runners and riders

John Peet Brexit editor, *The Economist*

Eleven faces to watch in the December election



2020 in brief

The BBC goes voice-to-voice with Alexa and Siri with the launch of “Beeb”, a voice assistant for its apps and website that has been trained to understand a range of British **regional accents**

WITHOUT A CLEAR majority since becoming prime minister, Boris Johnson has long sought an election. He has now got one, on December 12th 2019. He is confident of victory. But Britain’s politics are exceptionally fragmented.

The main protagonists in this drama are Mr Johnson and Labour’s **Jeremy Corbyn**. Mr Johnson has a big poll lead, whereas Mr Corbyn has the lowest approval rating ever recorded for an opposition leader. Yet memories are fresh that Theresa May, Mr Johnson’s predecessor, had an even bigger poll lead before the election in May 2017—and ended up with a hung parliament.

Smaller parties will matter. **Jo Swinson**, the fresh-faced leader of the Liberal Democrats, has seen her ranks swell to 20 MPs, thanks to defections. She is pitching hard to Remainers by promising to cancel Brexit and expects to win more seats in London and the south-west. If the Lib Dems were to hold the balance of power they could make their support conditional on a fresh referendum on Brexit. **Nicola Sturgeon**’s Scottish Nationalist Party also hopes for gains. The Tories have lost their charismatic Scottish leader, Ruth Davidson, and will bleed support in this strongly pro-Remain country, while Labour still trails north of the border. The SNP’s image may suffer because of the forthcoming sexual-assault trial of Ms Sturgeon’s predecessor, Alex Salmond, but the party has been buoyed by a rebound in support for Scottish independence, and is pushing for a new referendum on the issue in 2020.

Because his yet-to-be-approved Brexit deal puts customs controls in the Irish Sea, Mr Johnson has lost the support of the Northern Irish Democratic Unionist Party. Yet **Arlene Foster**, the DUP’s leader, expects to hold on to most of her MPs and remain as the biggest Northern Irish party. Sinn Fein, which does not take up its Westminster seats, will keep most of the nationalist vote, but the smaller non-partisan Alliance Party is also hoping to elect its first MP.

The most interesting runners could be dissenters in the two main parties. Two ex-Tories to watch are **Philip Hammond**, a former chancellor known as

“spreadsheet Phil”, who is now the biggest critic of a no-deal Brexit, a risk that may re-emerge at the end of the transition period in 2020; and **Dominic Grieve**, a cerebral former attorney-general who has fought doggedly to give MPs a say throughout the Brexit process.

Several Labour figures are on manoeuvres. Mr Corbyn is 70, tired and unlikely to stay if he loses another election. **John McDonnell**, his clever shadow chancellor, is said to favour a woman as Mr Corbyn’s successor, probably **Angela Rayner**. A dark horse to watch is **Sir Keir Starmer**, a former head of the Crown Prosecution Service and Labour’s Brexit supremo, who has run rings round three successive Tory Brexit secretaries.

Hanging about in the stands is a familiar spectre: **Nigel Farage** of the Brexit Party. An implacable opponent of Mr Johnson’s deal as Brexit in name only, he could deny the Tories victory by winning over many of the strongest Leave voters in the north and midlands whose support Mr Johnson covets most of all.

The fork in the road

Callum Williams Britain economics correspondent, *The Economist*

The British economy will take one of two very different paths in 2020



SINCE THE financial crisis of 2008-09 Britons have had it tough. Weak productivity growth and high inflation have conspired to keep real wages below their pre-crisis level. But more recently Britain has started to see a genuine recovery in living standards. In the second half of 2019 year-on-year growth in nominal wages rose to its highest rate in more than a decade. Unemployment has fallen to a four-decade low. Whether these positive trends continue will hinge on what happens with Brexit.

Assume first that Britain avoids a no-deal exit from the European Union in 2020—either because Parliament passes a withdrawal agreement with the EU or there is another extension to the exit date. The pound would rise, especially if there seemed any chance of a second referendum. That would support living standards (about a quarter of the basket that makes up Britain's consumer-price index is composed of imports). The labour market would strengthen further.

Policies could help the economy along. On the fiscal side, the Conservative government has signalled that it is willing to loosen its purse-strings a little. For Britain's underfunded public services, that is welcome. The Bank of England has warned that if wage growth gets much stronger, it is likely to raise interest rates. Yet the bank has in the past misjudged the extent to which domestic cost pressures will build as the labour market strengthens. If consumer-price inflation remains below the bank's 2% target, there will be little need for tighter monetary policy.

Everything changes in the event of a no-deal Brexit, however. Overnight Britain would become a member of the World Trade Organisation on its own, not as part of the EU. Regulations on everything from financial services to medicines could lapse. The pound would fall from close to \$1.30, its current level, to \$1.10 or below (and probably reach parity with the euro). Consumers would surely cut back on spending.

An argument commonly heard among Brexiteers is that businesses will take up the economic slack in the event of no-deal. Since the referendum in 2016, firms have held off investment spending as they wait for clarity to emerge on Britain's future trading relationship with the EU (in real terms, investment has not grown in three years). The thinking goes that finally following through with Brexit will lift the haze of uncertainty. Yet a no-deal Brexit

would not eliminate uncertainty, but ramp it up: Britain would immediately have to start trying to reach a trade deal with the EU.

If a recession loomed, as would seem likely, the Bank of England would loosen monetary policy. But it would be constrained, because the pound's tumble would send inflation well above its 2% target. And there are limits to what monetary policy can do. It affects the demand side of the economy (ie, how much people want to spend). But Brexit is just as much a shock to the supply side of the economy (ie, what it can produce), including regulations and the ease with which Britain can engage in foreign trade. Monetary policy "will not increase the proportion of throughput through Dover," as Mark Carney, the bank's governor, memorably puts it.

For their part, Brexit-supporting economists suggest that, though a no-deal Brexit might be bumpy in the short term, in the long term it would cause little damage. They are too optimistic. In the event of a no-deal exit, the EU has agreed to recognise British lorry licences and to allow British airplanes to continue flying to and from the EU, but only for a few months. The economy would suffer if those agreements lapsed. Over time, regulations between the EU and Britain would diverge, hindering trade.

The long-term impact of no-deal would, therefore, be bad (though economists do not agree on quite how bad—see chart). Pulling out of a highly integrated trading bloc would be an economic shock the like of which few countries have ever seen. Rather than 2020 representing the end-point of Brexit, in short, it may mark only the beginning of discovering what it really means.

Countdown for cricket

Leo Mirani senior Britain correspondent, *The Economist*

The most English of sports becomes a little more American



Getty Images

Village originals

THE OVER is over. The Hundred, a new cricket format invented by the England and Wales Cricket Board (ECB), is instead all about the countdown. Each innings will have 100 balls, with bowlers delivering as many as ten from one end before switching sides. The whole thing is structured around the tension between an ever-decreasing number of balls and an ever-ascending number of runs. Simultaneous men's and women's tournaments

start in July 2020.

The ECB sees it as a necessary intervention to bring in a newer and younger audience. Despite an exciting World Cup (which England won) and a hard-fought Test series between England and Australia (which it did not) in 2019, viewership lags other big British sports such as football and tennis, in part because cricket has not been available on free-to-air television for over a decade. Even cricket's shortest format, Twenty20 (which has a World Cup in Australia in 2020), is too long for many viewers; a Hundred match will be the shortest yet, but still as much as 150 minutes. Competition for sports fans' leisure time now includes imports such as baseball and American football, both of which have come to English shores—and packed stadiums—in recent years. The ECB's response is to try to beat the Yanks at their own game.

That means a ruthless focus on the fan, says Sanjay Patel, who is in charge of The Hundred for the ECB. He looked at sports in America and returned a convert to the gospel of giving consumers what they want, which appears to be a shorter, simpler game. Other American influences include a focus on cities rather than counties, with team names like Manchester Originals and London Spirit (take that, Lancashire and Middlesex). Players for the men's tournament are chosen one at a time by draft and wages set accordingly, a first for British sport. The draft was shown live on Sky and streamed on the BBC in October. The BBC will broadcast several matches.

Mr Patel reckons the tournament could break even in its first year, allowing greater investment in 2021. That is key. "Americans," he says, "they spend, they invest."

Thinking inside The Box

**Leo Mirani senior Britain correspondent, *The Economist*
PLYMOUTH**

The Mayflower is making waves, 400 years on



Plymouth hopes its bit-part in America's history will give it an edge

IN 1620 PURITAN separatists boarded two ships, the *Speedwell* and the *Mayflower*, to establish a colony in the new world. After two false starts—from Southampton and Dartmouth—they docked to ditch a leaky *Speedwell*, finally setting sail from Plymouth on September 16th with 102 passengers. They arrived ill-prepared for winter, but enough of them survived to leave behind a convenient starting-point for American democracy, the country's favourite holiday and an estimated 35m living descendants, 10m in the

United States alone. Four centuries later Plymouth is getting ready to welcome some of this brood for a year-long celebration.

The city will put on a formal ceremony to mark the anniversary in September, stage a series of cultural events and invest £5m (\$6.5m) in sprucing itself up. But it is The Box, a cultural hub due to open in the spring, that will be the true legacy of the project. Built at a cost of some £45m, it brings six collections under one roof, including the city's museum, art gallery, archives and library. It will open with *Mayflower* exhibitions co-curated by the Wampanoag Nation, the Native Americans who signed a treaty with the English settlers. (The Box takes its name from the block-shaped structure that houses the archive.)

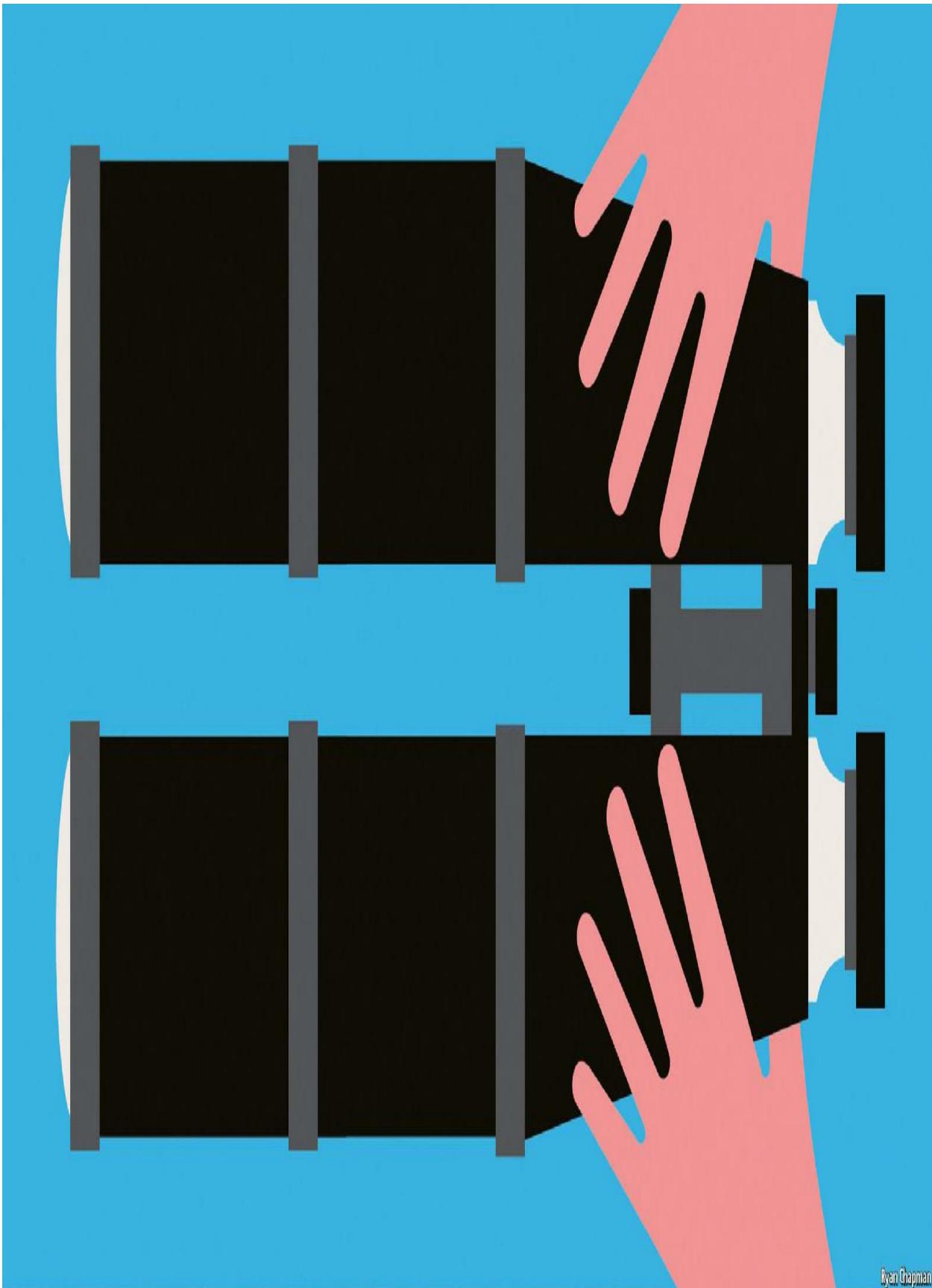
In 2017 Plymouth applied to be UK City of Culture, a quadrennial funding bonanza which that year went to Hull. "So we decided to do it ourselves," says Charles Hackett, the boss of the partnership overseeing the project. The hope is that lots of people will come to Plymouth who might never have considered it, and will tell their friends what a great place it is.

The idea of building a marquee cultural attraction to reinvent a city has been in vogue ever since a new Guggenheim museum put Bilbao on the map in 1997. It does not always work. Plymouth hopes its bit-part in the history of the world's richest country—now populated by some of the world's keenest amateur genealogists—will give it an edge. It is "using *Mayflower* as a springboard", says Mr Hackett. Four hundred years after setting sail, the ship that launched a country might just relaunch a small English city, too.

2020 visions

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2020 visions



Ryan Chapman

The long view

Hamish McRae journalist and author

Lessons from a past attempt to look far ahead

By 2050, language and culture will be more important unifying factors than physical proximity

WHEN YOU look one year ahead you can say something you hope is sensible—and you soon find out whether you are right. But sketching the world in 30 years' time? Can you sensibly peer that far into the future?

Well, having done that in the early 1990s in a book called “The World in 2020”—pinching the idea of a title from *The Economist*—I think you can. For there are some things about the world a generation hence that we know with a fair degree of certainty: how many people there will be, for example, and where they will live. We can be reasonably confident, too, of how demography and economic growth will change the relative size of the major economies. But technological change and political shifts are harder. We have to fall back on history and intuition—and accept that we’ll often be wrong.

So it was fairly easy back in 1994 to see that by 2020 China would be well on its way to becoming the world’s largest economy (it already is, in purchasing-power-parity terms) or that the ageing population of Japan would lead it to turn more inward. But although personal computers and mobile phones were being developed, there were no internet browsers or search engines, so it was hard to see quite how technology would transform communications. And until 2007 there was no iPhone—the digital device which really did, as Steve Jobs said it would, “change everything”.

As for politics, I scored a couple of near bull’s-eyes. One was Brexit: I predicted that Britain would go for a free-trade deal with Europe rather than being a full member of the EU. I observed that “negotiating such an arrangement might, however, be very difficult”. The other was that the United States would experience “one of those great radical shifts in political

attitudes that take place from time to time". Frustrated voters would challenge the power of professional bodies, of the Hollywood moguls and "even of the liberal press".

But I had many misses, too. The two biggest were to suggest that China would not be economically successful unless it became a less centralised bureaucracy, and that if the European common currency was indeed established it would probably break up by 2020.

So what about the next 30 years? Drawing on this experience, here are five predictions for 2050.

- There will be 10bn people in the world and the great demographic division will be one of age. The relatively young regions—Africa, and to a lesser extent the Indian subcontinent—will be fast-growing and often chaotic. Older regions, such as continental Europe and Japan, will be even more cautious and inward-looking. The EU will survive, but as a looser association. Russia's fast-falling population will curb any global ambitions.
- China will be clearly the world's largest economy, but its ageing (and declining) population will push it back from a vision of global dominance towards making life secure and comfortable for its own people.
- The United States will remain the most vibrant, outward-looking and wealthy region, in effect winning the tussle with China for global influence. The rest of the English-speaking world, including the countries of the British Isles (which may have become a looser association) will align themselves with it. Language and culture will become more important unifying factors than physical proximity.
- Technological advances will enable the world to give a decent lifestyle to most of its 10bn, but it will be a relentless struggle to limit (and hopefully push back) humankind's environmental burden on the planet. All the present concerns, including climate change and loss of habitat, will grind on. But technology will bring efficiencies to service industries, just as the factory system increased efficiency in manufacturing. That will allow living standards to continue to rise.

- Some three-quarters of the world's population will be middle-class. Their ideas, particularly those of the huge middle class of China, India and increasingly Africa, will feed back into the old developed world. America will retain intellectual leadership, tempered by the ideas of the much more numerous (and equally well-educated) people of the emerging world.

Jokers in the pack

Finally, two wild cards that could change everything. One would come from looking outwards. Suppose we find we are not alone in the universe. If there are other civilisations out there that we can communicate with, we would have to rethink everything about our species.

The other would come from looking within. Suppose we come to understand what, for want of a better expression, we call the paranormal: how we can sometimes foresee something about to happen when there is as yet no rational explanation for how we do so. That, too, would make the world in 2050 a very different place—and perhaps a better one.

Hamish McRae is author of “The World in 2020: Power, Culture and Prosperity” (HarperCollins, 1994) and of “The World in 2050” (forthcoming)

The year that launched a thousand forecasts

Yvonne Ryan managing editor, *The World in 2020*

How the futurists of the past imagined the world of 2020



IN THE UNLIKELY event that you are reading this article in a room furnished and constructed with steel, having spent a meagre two or three hours in the office before being driven home by a simian chauffeur in a car sped along a pneumatic tube, welcome to the world of 2020 imagined by

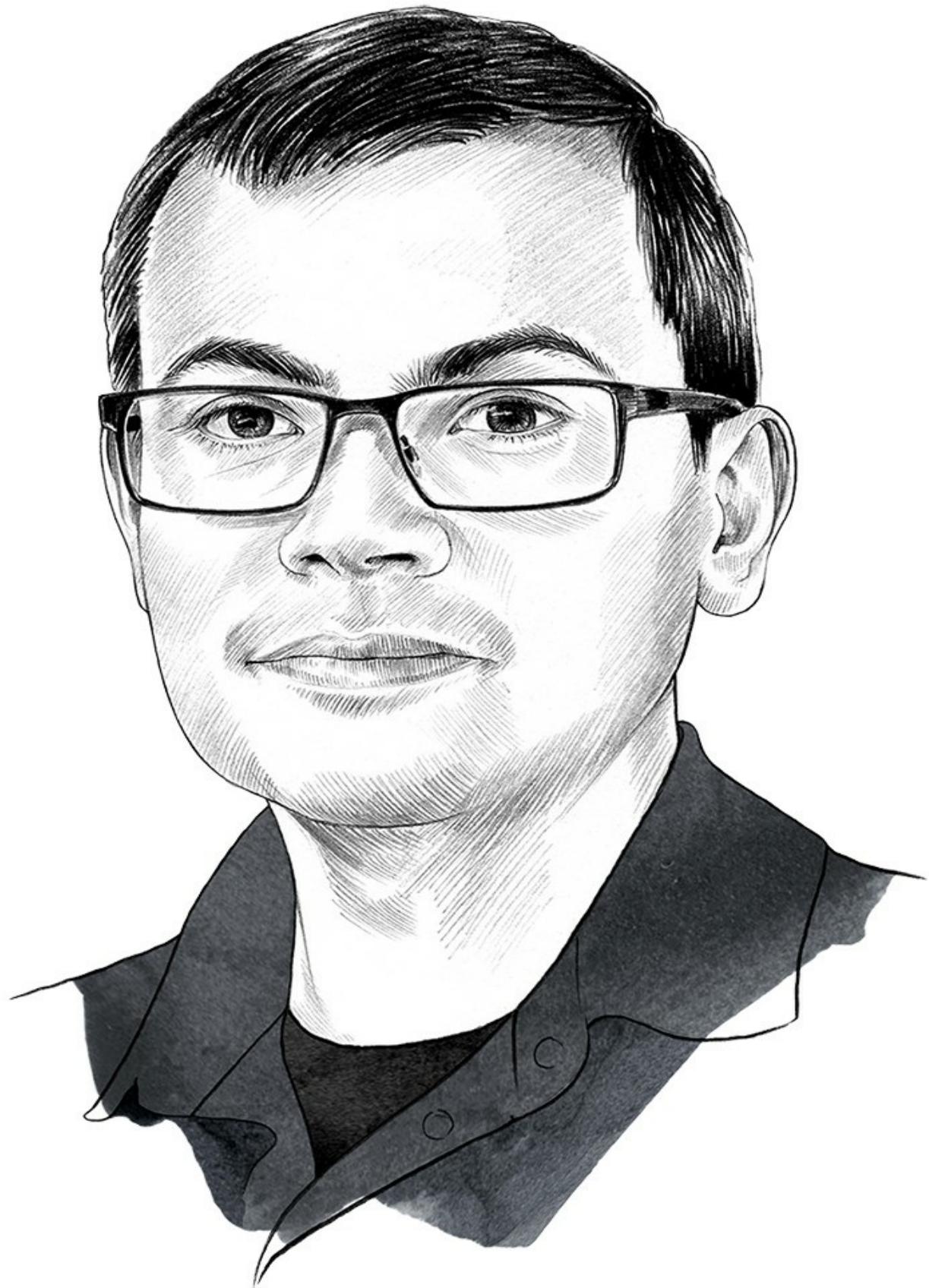
futurists of the past. The aforementioned predictions were made by Thomas Edison in 1911, the American Institute of Planners in 1967, *The Futurist* magazine, also in 1967, and *Popular Mechanics* in 1957.

Some years have inspired more future-gazing than others. One such was 2000 (new decade, new century, new millennium). But 2020, with its evocation of perfect vision, has inspired plenty of prognosticators, too. Hamish McRae, who revisits his own crystal-ball-gazing in these pages, was hardly alone.

Children's books of the 1960s and 1970s produced some of the most imaginative scenarios. One conjectured what the Olympic games in 2020 might look like if held on the Moon (the Olympic flame would be housed in an oxygen cylinder to keep it burning). Another described a "superfarm" of 2020 where harvesters and cattle trucks speed along on monorails, tubes pump grain to nearby cities and "space mirrors" orbit above fields to provide sunlight at night.

Some projections, though, teeter on the brink of the possible. In 2009 the *Independent*, a British newspaper, asked commentators for their visions for 2020. The answers included villages composed entirely of pensioners looked after by robots, lab-grown artificial hearts, a national compulsory DNA database and, driven by climate change, the first great-white shark attack in Britain—something to think about if you are swimming off the Cornish coast next summer.

A supercharger for science



Artificial intelligence could accelerate research in a range of fields, says **Demis Hassabis**, co-founder and CEO, DeepMind

AI is going to be the most important technology ever

THE SCIENTIFIC method was perhaps the single most important development in modern history. It established a way to validate truth at a time when misinformation was the norm, allowing natural philosophers to navigate the unknown. From predicting the motions of the planets to discovering the principles of electricity, scientists have honed the ability to distil facts about the universe by generating theories, then using experimentation to qualify those theories. Looking at how far civilisation has come since the Enlightenment, one can't help being awestruck by all that humanity has achieved using this approach. I believe artificial intelligence (AI) could usher in a new renaissance of discovery, acting as a multiplier for human ingenuity, opening up entirely new areas of inquiry and spurring humanity to realise its full potential.

The promise of AI is that it could serve as an extension of our minds and become a meta-solution. In the same way that the telescope revealed the planetary dynamics that inspired new physics, insights from AI could help scientists solve some of the complex challenges facing society today—from superbugs to climate change to inequality. My hope is to build smarter tools that expand humans' capacity to identify the root causes and potential solutions to core scientific problems.

Traditional AI programs operate according to hard-coded rules, which restrict them to working within the confines of what is already known. But a new wave of AI systems, inspired by neuroscience, are capable of learning on their own from first principles. They can uncover patterns and structures that are difficult for humans to deduce unaided, opening up new and innovative approaches. For example, our AlphaGo system mastered the ancient game of Go just by competing against itself and learning from its own mistakes, resulting in original, aesthetically beautiful moves that overturned thousands of years of received wisdom. Now, players of all levels study its strategies to improve their own game.

Self-learning AI systems are already accelerating advances in the real world.

By rapidly exploring possibilities, AI can help researchers find optimal solutions in a fraction of the time it takes to conduct experiments today. For instance, we and other scientists are using AI to tackle a major unsolved question in biology: how proteins form 3D structures and how this affects their functionality. Proteins are essential for all life, and understanding how they fold into certain shapes is critical to finding and designing treatments for a wide range of diseases. By helping scientists predict the structure of any protein, AI could potentially let researchers gain a deeper understanding of diseases like Alzheimer's, Parkinson's and more.

My faith in AI 's transformative potential also stems from early indications that it might help mitigate some effects of deeply entrenched habits that have shaped society and the environment over decades. For example, DeepMind's work on automated AI systems has already reduced the amount of energy necessary to run data centres by up to 30% by optimising the use of the cooling systems. And in the future, I can imagine even more radical solutions enabled by AI to help fight climate change, like a breakthrough in materials science resulting in a new catalyst capable of capturing carbon dioxide from the atmosphere far more cheaply and efficiently than methods available today.

I have devoted my life to building AI because I believe it is going to be the most important technology ever invented. By deepening our capacity to ask how and why, AI will advance the frontiers of knowledge and unlock whole new avenues of scientific discovery, improving the lives of billions of people.

Powered by curiosity

The marvel of the human brain is proof that general intelligence is possible; creating AI is as much a journey of discovery into the inner workings of our own minds as it is an invention. The evolution of a larger cortex equipped humans with greater intelligence, enabling us to build more complex and co-operative social structures, which eventually gave rise to all of modern civilisation. Similarly, AI can help us build radically new and improved ways of life. The very curiosity that led to the scientific method may well be the key—not only to solving society's greatest challenges today, but to understanding ourselves and making sense of the universe around us.

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What will horrify your grandchildren

Tom Standage deputy editor, *The Economist* and *The World in 2020*

What beliefs and behaviours, commonplace today, will be condemned by future generations?



Even going on holiday at all may come to be seen as irresponsible

KIDS THESE days! Lamenting the loose morals and poor choices of the

young is a timeless trope. They wear outrageous clothes! They listen to dreadful music! They have no respect for their elders! But inter-generational criticism is a two-way street: every generation also decries the unenlightened beliefs and behaviours of its elders. They owned slaves! They denied women the vote! They criminalised homosexuality! The nature of social change means that some beliefs and behaviours that are common today are sure to be considered unacceptable within a few decades. So what aspects of the world in 2020 will horrify future generations?

The most obvious candidate is **failing to do more to combat climate change**. Future generations will surely ask why, given the abundance of evidence of environmental harm, so little was done about it for so long. Elderly people in the 2050s may find themselves hiding the digital evidence of long-haul air travel in their youth, and insisting that they only ever went on holiday by train. Even going on holiday at all may come to be seen as irresponsible and decadent at best, and immoral at worst. The ultimate form of ecotourism is to stay at home.

Another area where social attitudes are shifting rapidly, at least in the West, is **eating meat**. As meat substitutes such as the Impossible burger, which is made from plant-based protein but is indistinguishable from beef, improve and get cheaper, the case for giving up meat—in particular beef, which has the largest environmental footprint—will get stronger. People who do not object to meat on ethical or animal-welfare grounds may opt to give it up for environmental reasons, particularly if substitutes allow them to have their steak and eat it. Consumption continues to rise in the developing world, but serving real meat at an Islington or Williamsburg dinner party may come to be considered beyond the pale.

But it's not all environmental. Widespread **opposition to immigration** may be seen as a moral failing in future. Workers become far more productive when they move from a poor country to a rich one; any loosening of restrictions on migration would help migrants and the countries they move to alike. People in rich countries claim to want to help the poor, but worry about the impact of migrants on jobs, security and social cohesion, prompting governments to limit migrant flows. Future generations may take a dim view of this.

Contemporary **attitudes towards gender identity and sexuality**, which are evolving rapidly, will be considered hopelessly unenlightened at best, and deeply prejudiced at worst, as new family models and living arrangements emerge. Old assumptions (such as the notion that a child must have two biological parents) will increasingly be questioned as technology further separates sex from reproduction.

Our grandchildren will also decry the **widespread overuse of antibiotics**, which fosters the emergence of drug-resistant superbugs. As existing antibiotics become ineffective, even minor surgery could be life-threatening, as it was in the pre-antibiotic era. Future generations will ask why so little effort was made to develop new antibiotics, given that it takes at least a decade to bring a new drug to market.

Pretty much the only certainty about the future is that some aspects of life today will be condemned by generations to come. We should remember that before congratulating ourselves on being more enlightened than our ancestors.

Towards a sustainable world order

**Robin Niblett and Jim O'Neill director and chairman,
Chatham House**

The leaders of a 100-year-old think-tank argue that, to exercise power, elites will need to share more of it



Companies will choose to align their operations with the sustainability trend

TO LOOK AHEAD, it sometimes helps first to look back. A century ago, in January 1920, the victors of the first world war designed a new institution—the League of Nations—which would make war between states illegal. At the same time, a group of academics and business leaders decided to establish what would become Chatham House (the Royal Institute of International Affairs) and the Council on Foreign Relations, hopeful that independent institutes for the study of international affairs would help promote the rule of law over the rule of force.

Both ideas were ahead of their time. After the American Senate blocked its ratification, the league was hobbled by the absence of the rising global power. The 1930s witnessed the re-emergence of power politics in Europe and Asia, the Depression, the descent into beggar-thy-neighbour protectionism, the rise of communism and fascism and, ultimately, the outbreak of an even more devastating world war.

As 2020 dawns, there are worrying echoes of these events. President Donald Trump's administration is withdrawing its support from today's multilateral institutions and raising barriers to foreign trade and investment. A resentful Russia still chafes at the terms imposed on it at the end of the cold war, while a more assertive China seeks to counter American efforts to contain its rise. And populist parties have emerged again not only in Europe, but across the world.

History is not doomed to repeat itself in 2020. Between 2008 and 2013, political and economic leaders heeded the lessons from the 1930s, using government balance-sheets to mitigate the potentially devastating effects of the global financial crisis. Today's leaders may yet heed one of the key lessons from the remarkable period of relative peace and prosperity after the second world war: that international economic integration within a rules-based system offers the best route to raise aggregate levels of prosperity.

We will not find out in 2020 whether the world has learned this lesson or not. The impact of the American election on its trade policy and on US-China strategic competition, for example, and the shape of Britain's relations with

the European Union, will take longer to become clear. But 2020 poses two new tests for the world.

First, the geopolitical competition that accompanies today's changing balance of economic power is overwhelming the post-war set of international rules and institutions. Given continuing US-China and US-EU trade tensions, they will be unable to function as intended. Global supply chains will become more regional and more expensive to maintain. The coming year will also be the beginning of the decade in which India establishes itself as one of the world's five largest economies, despite its recent sluggishness. This means that, along with China, two of the top five will have significantly lower wealth per person than the other three: America, Japan and Germany. This will add to the fragmentation of global economic governance, unless the G20 can find a way to function more effectively alongside an ageing G7 and unrepresentative IMF.

Second, individuals and non-governmental movements are demanding more sustainable policies from their leaders. In the West, the increasingly visible effects of human-induced climate change will create new battle lines between governments, NGOs and individuals. Policymakers will be forced to impose often unpopular restrictions on their citizens' personal habits, especially their customs in transport, food and domestic use of energy; without such changes recent commitments to net-zero emissions targets will be meaningless.

Updating the vision

In this context, multinational companies will choose in growing numbers to align their operations with the sustainability trend, irrespective of what the Trump administration or other governments do to the contrary. They are under ever-stronger pressure to make clear that pursuing profits for their shareholders is not the sole purpose of their existence, and to serve their employees, clients and customers better. Digital platforms will be at the forefront of this rebalancing, as users demand new tools and acquire new skills to navigate disinformation.

For their part, rising economic powers, including China, will discover that greater government accountability and an active civil society are essential to manage the economic trade-offs between aggregate and local prosperity.

Such checks and balances are also needed to sustain political support when technology-fuelled economic development disrupts established social contracts. A new sustainable international economic order will emerge only if it has a domestic mirror-image within its participating states.

In the end, 2020 may indeed be a historically pivotal year. If so, it will not be because it brings a fundamental shift in the balance of power between West and East or between America and China. It will be because it heralds the transition from a world that has been led for a century by political and business elites, in closed institutions, to one in which individuals and civil society acquire greater power to shape their futures alongside them. That, at least, is the modern version of the aspiration behind the founding of Chatham House 100 years ago.

Building a metaverse

Gady Epstein media editor, *The Economist* NEW YORK

A figment of science-fiction is (very slowly) coming to life



Ryan Chapman

IN “SNOW CRASH”, a 1992 science-fiction novel, the author, Neal Stephenson, conjures up a “metaverse”, where characters immerse themselves in a permanent, interactive online virtual world, one controlled by a single corporation. In “Ready Player One”, a 2011 novel later turned into a Steven Spielberg film, Ernest Cline imagines something similar, a virtual “Oasis” where people can live, work and play, an escape from dystopian

deprivation.

In 2020 these ideas, though still far from reality, will begin to gain something more than virtual currency. People will increasingly hear the term “metaverse” as firms invest in bringing precursors of it to life. A wide range of companies are investing billions of dollars in the physical and digital infrastructure necessary to bring persistent virtual worlds into being—from 5G to virtual-reality spaces.

Magic Leap, a startup in Florida, makes augmented-reality glasses that could one day allow people to “see” a digital virtual world that neatly overlays the physical world in which they are wandering about (and it is conceptualising entertainment for what it calls the “MagicVerse” to come, with the aid of Mr Stephenson). Improbable, a British gaming-software startup, is trying to crack the problem of allowing enormous numbers of people to interact with each other in the same space at the same time: “concurrency”, in a word. Then there is Facebook, which in 2020 will introduce Horizon, a “social virtual-reality” space. Mark Zuckerberg is a believer in the importance of bringing virtual reality to Facebook’s colossal social graph, and he has also shown, with the purchase of Oculus, a VR gaming company, in 2014 for \$2bn, that he is willing to devote billions to the idea.

Of all the current contenders, Epic Games probably has the closest thing to a metaverse in “Fortnite”, a multi-player battle royale game played by some 250m people around the world. Epic’s Unreal gaming engine powers “Fortnite” and other massive multi-player games. As currently constructed, “Fortnite” remains a long way from a metaverse: it accommodates only 100 people interacting (often killing each other) in the same space, and each experience lasts the duration of one game round. But millions can congregate in the same virtual space at the same time, even if they cannot “see” and interact with each other. In February 2019, 10.7m “Fortnite” players attended a virtual concert hosted by Marshmello, a DJ: it was more than 100,000 instances of 100 people interacting with each other, not one giant virtual mosh pit, but it was a cultural milestone.

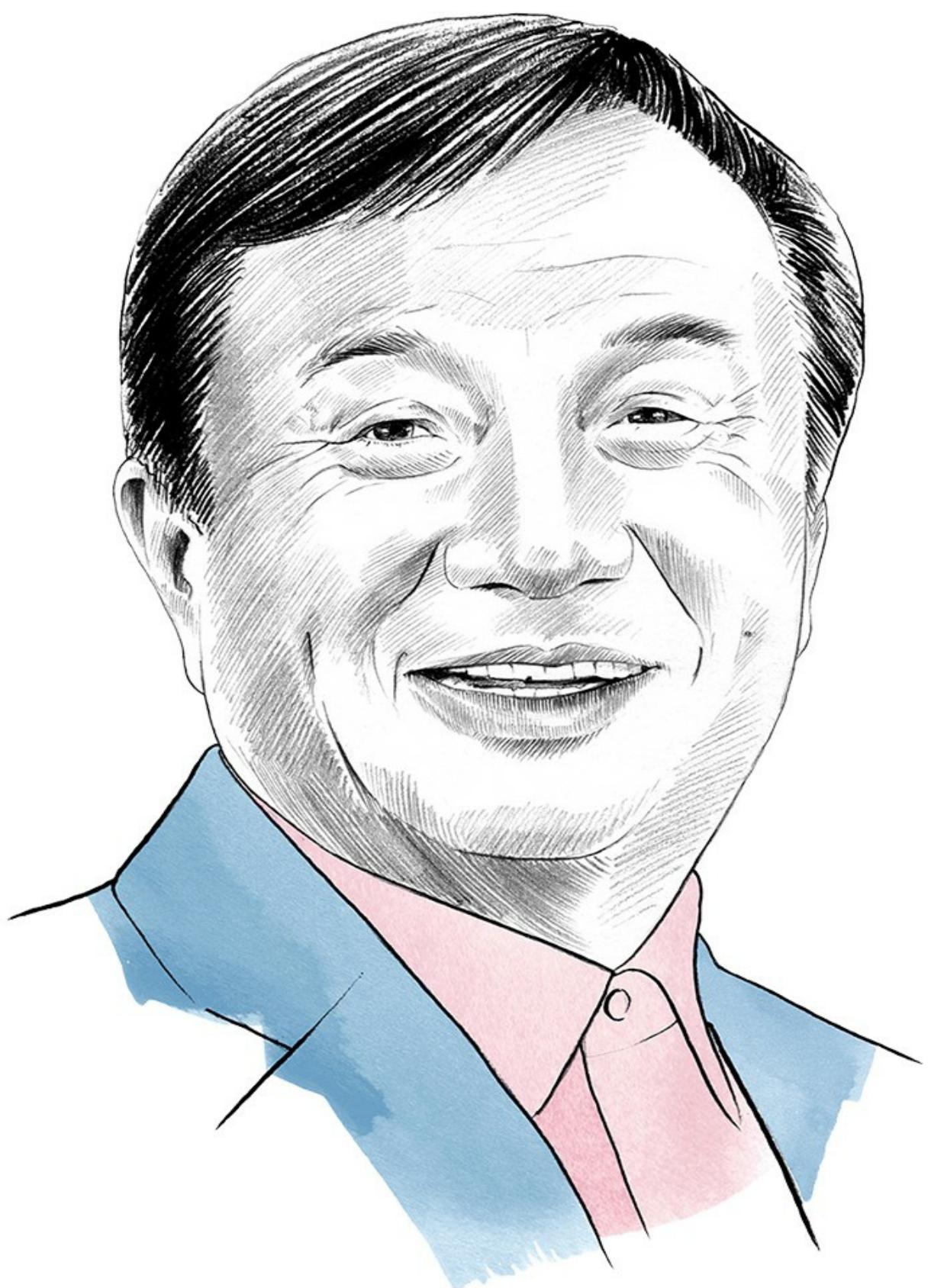
Unsurprisingly, entertainment companies have taken note and allowed their intellectual property to be employed within “Fortnite”, even though it means that rivals like Marvel and DC exist in the same space, like Coke and Pepsi.

That kind of cultural power suggests the awesome potential of “Fortnite” to become something much larger than it is, like a metaverse, says Matthew Ball, a digital-media analyst.

Tim Sweeney, the majority owner of Epic, often talks of what it will take to build a metaverse, and especially of what form it should take—an open platform, not controlled by one company like Facebook. He and his competitors will not build the metaverse in 2020, but the virtual experiences they are creating to get there will increasingly be felt in the real world.

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The coming innovation explosion



The key to the future is open collaboration, says **Ren Zhengfei**, CEO and founder, Huawei

To embrace this new era, the world must nurture freedom of thought

WE AT HUAWEI firmly believe that humanity will enter an intelligent world within the next 20 to 30 years. Society is on the verge of another explosion of new theories and technologies. There is a lot of potential, but also much uncertainty. Many questions remain—and open collaboration would be the best way to address them.

In electronics, chips will continue to scale down to three nanometres and maybe even one nanometre. This evolution will continue, in ways we cannot yet predict, even as Moore's law becomes obsolete. In the past we thought graphene would be the driver of this evolution, but today we don't know for sure if this will still be true.

We will surely see significant breakthroughs in genetic technologies over the next two to three decades, which will trigger incredible progress in life sciences, biotechnology and nanomedicine. But how these breakthroughs will change the way people live and work also remains unclear. Molecular science and technology can be used to synthesise materials that never existed before. There is no way of telling what new materials and technologies will emerge. We do know that artificial intelligence (AI) will see ample application, but we cannot predict how it will drive society forward or create more wealth.

Breakthroughs in quantum computing and its widespread application will trigger an explosion of data traffic. Although we know for sure that the impact will be significant, it may not look the way we think. Optical technologies will also be widely applied in various domains.

Advances in individual disciplines are creating new opportunities at dizzying rates, but the impact of interdisciplinary breakthroughs will be even more astonishing. All these future innovations will be accompanied by explosive growth in data traffic. We cannot yet foresee what demands there will be when it comes to storage, transmission and processing of these ultra-large quantities of data. What we know for sure is more and more data will be stored and processed in the cloud. But how will we channel this surge in

data?

In short, we just don't know what the structure of our society will look like, how we will adapt to it or how we can keep it under control. All sorts of new ideas and technologies are unfolding right before our eyes. A novel characteristic of this new wave of technological innovation is "chain reactions" that span multiple disciplines. For example, information technologies have become the foundation for scientific research and innovation in all disciplines. Similarly, they have become the foundation for development in every industry.

One thing is clear, though. We must reinforce the infrastructure of the information society. There are two sides to infrastructure: one is hard (the actual technology) and the other is soft (the rules and skills we apply to it).

On the hard side, we have optical networks and 5G in particular, as well as 6G in the future. AI depends on a range of information technologies, and it will struggle to advance without continuous breakthroughs in infrastructure capabilities. That would be like trying to drive cars at high speed without a highway.

On the soft side, we have talent, regulations and so on. The key lies in talent. To embrace this new era, the world as a whole must fully support education, and develop talent of all kinds by creating an environment that allows academic freedom and nurtures freedom of thought.

Follow the data

Standing at the threshold of the intelligent world, we at Huawei must decide what part we will play in this new social structure in the next 20 or 30 years. We know that the volume of data traffic will be overwhelming in the future, so our strategic direction will be focused on channelling, distributing, storing and processing this massive data traffic. This will be where we will dedicate ourselves over the long term. We must not deviate from this direction, but we can adapt during the different stages of our journey.

A single flower does not make spring. In this vibrant information society, it will be impossible to prevent flowers of all kinds from blooming. At Huawei

we will continue to work with companies from around the world to build a strong ecosystem and share its benefits. With a firm commitment to globalisation, we will remain open and collaborate for shared success.

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World in numbers: Countries

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- [Europe](#)
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- [Latin America](#)
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The world in numbers Countries

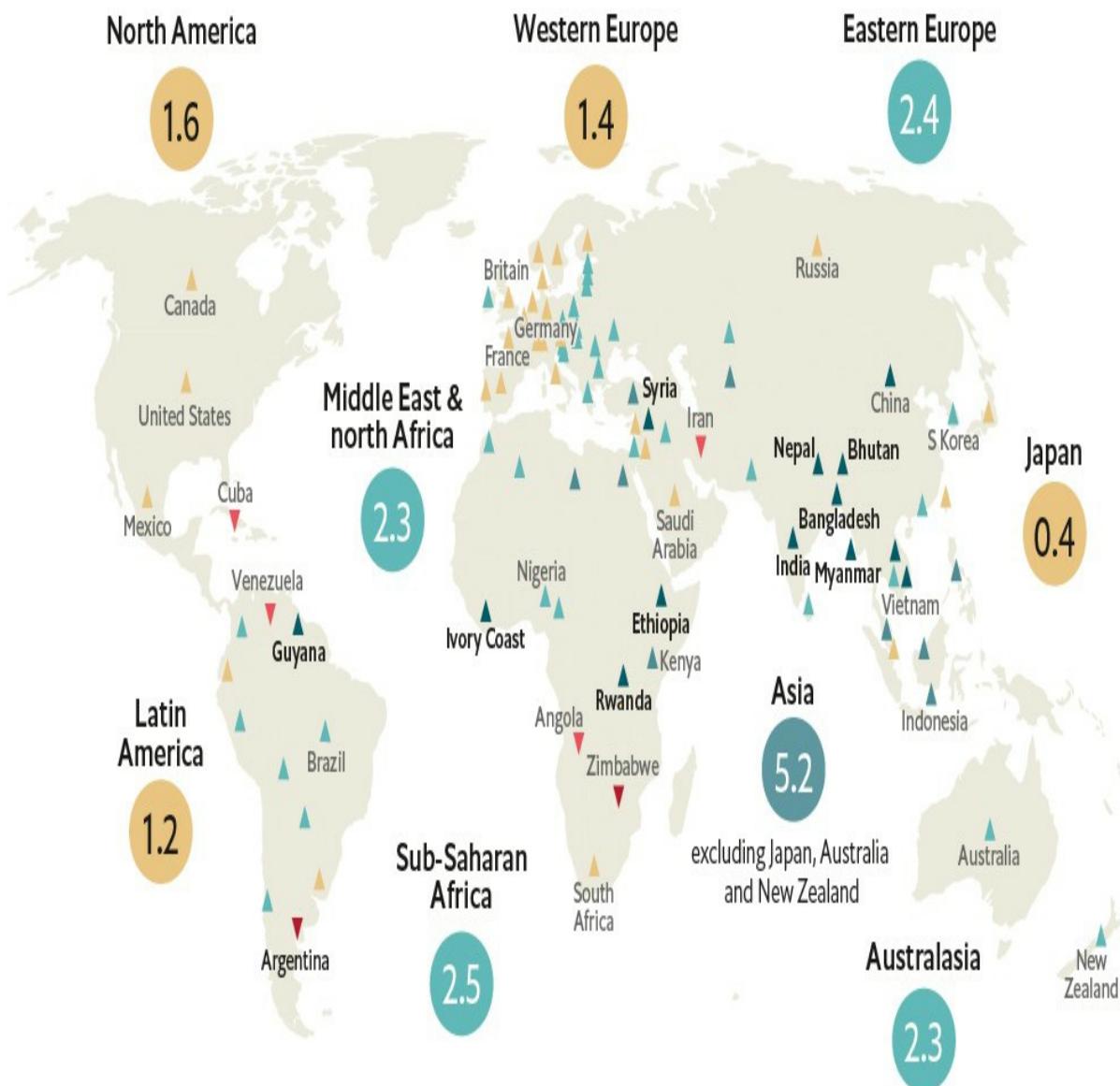
GDP

% change on a year earlier



Top ten growers

Guyana	Syria	Bangladesh	Rwanda	Ethiopia	Bhutan	Myanmar	Nepal	Ivory Coast	India
▲ 35.0	▲ 8.9	▲ 7.7	▲ 7.5	▲ 7.4	▲ 7.3	▲ 7.0	▲ 6.9	▲ 6.8	▲ 6.7



The world's ten fastest-growing economies in 2020 will all be in Africa or Asia, except for tiny Guyana (population 780,000) in South America, which will comfortably take the number-one spot as oil begins to gush from its

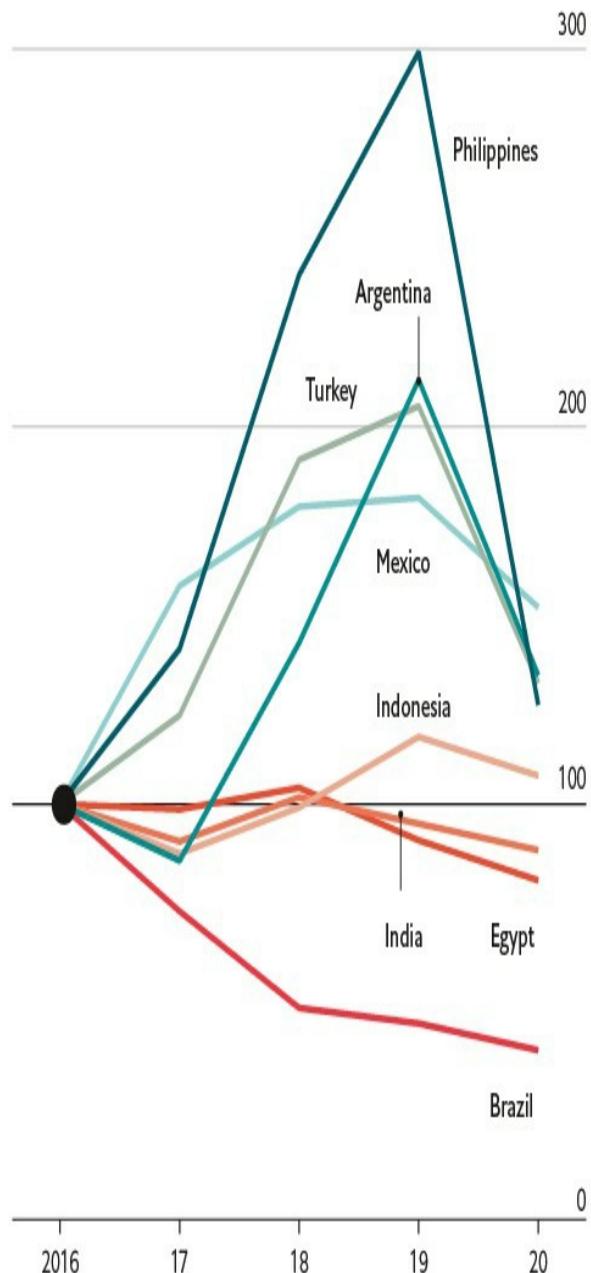
offshore fields. Mining, tourism and oil-related construction will provide a further boost.

Construction will also figure in second-placed Syria's growth surge as the country rebuilds after a devastating civil war, even if fighting continues in some border areas. Successful macroeconomic management is bringing sustained growth lower down the list. Bangladesh will extend a run of strong growth that began in 2004, tripling the size of its economy. Growth rates in Myanmar and Ethiopia are settling down after even more impressive runs. Nepal and Ivory Coast are later to the party but doing well, too. Bhutan, which gauges its development in Gross National Happiness, will also shine on the more conventional measure of GDP.

India, the fastest-growing large economy, will just make it into the top ten, with GDP rising by 6.7%. Government stimulus will boost the country's performance in 2020. China, once a fixture on this list, is now a bigger, slower giant, but should still muster another year or two of 6% growth.

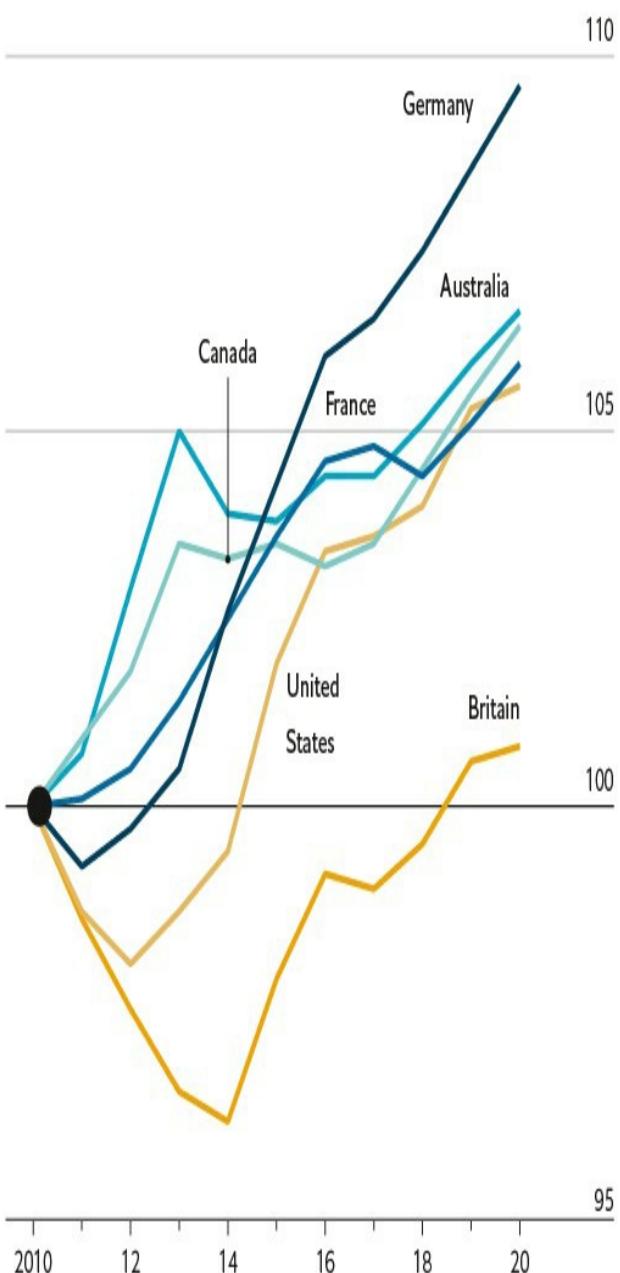
Falling interest rates

Money-market interest rates, emerging markets
2016=100



Bigger pay packets

Average wages, selected economies, inflation-adjusted
Local currencies, 2010=100



2020 forecasts unless otherwise indicated.

Inflation: year-on-year annual average.

Dollar GDPs calculated using 2020 forecasts for dollar exchange rates (GDP at PPP, or purchasing-power parity, shown in brackets).

All figures simplified by rounding.
london@eiu.com

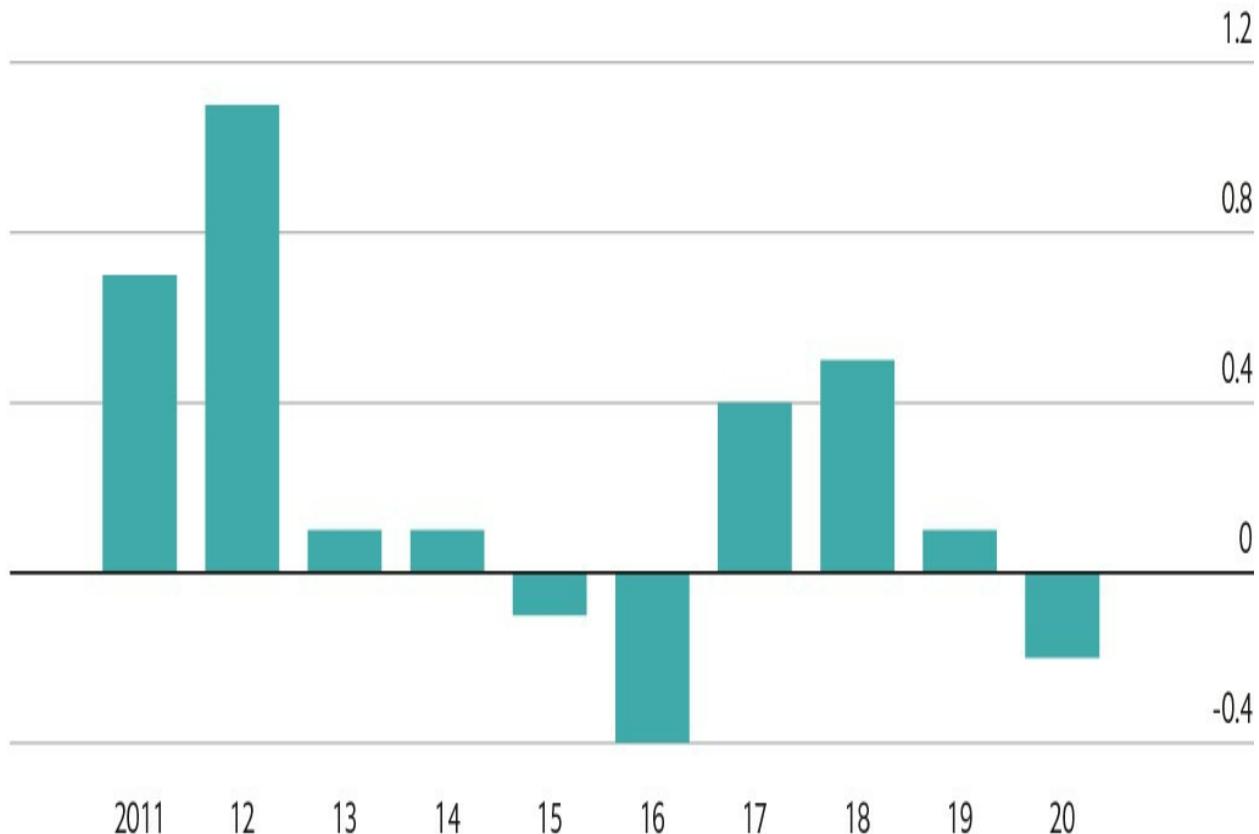
Source: The Economist
Intelligence
Unit

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Europe

Trade fades again

Western Europe, contribution of external trade to real GDP growth, percentage points



Austria

GDP growth:	1.4%
GDP per head:	\$53,660 (PPP: \$60,610)
Inflation:	1.7%
Budget Balance (% GDP):	-0.1
Population:	8.7m

The centre-right Austrian People's Party (ÖVP) and its leader, Sebastian Kurz, emerged victorious from an election in September 2019. The ÖVP is in a commanding position in coalition negotiations, as no viable government can be formed without it. Although the ÖVP has been talking with the Green party, it is more likely to re-form its coalition with the far-right Freedom Party, owing to policy overlap between the two parties. Tax cuts and migration controls will be priorities. Economic growth will be lacklustre as Germany underperforms.

TO WATCH: Transparency international. The European Congress of Radiology will be held in Vienna in March, with artificial intelligence as a central theme. Will AI take over the analysis of scans?

Belgium

GDP growth:	1.3%
GDP per head:	\$47,120 (PPP: \$52,900)
Inflation:	1.7%
Budget Balance (% GDP):	-1.1
Population:	11.6m

The caretaker government under the soon-to-depart prime minister, Charles Michel, has limited powers and no policy mandate. The centre-right New Flemish Alliance emerged from elections in May 2019 with the largest vote nationally, but the Socialist Party leads in Wallonia and in the capital, so building a workable national majority won't be easy. That means a full-time government isn't on the cards until late 2019 at the earliest.

TO WATCH: Caretaker takeover. Mr Michel will take up the presidency of the European Council at the end of 2019, requiring a replacement caretaker if no government has been formed.

Bulgaria

GDP growth:	2.8%
GDP per head:	\$10,200 (PPP: \$24,890)
Inflation:	2.6%
Budget Balance (% GDP):	-0.3
Population:	6.9m

The government of the centre-right Citizens for European Development of Bulgaria party and its nationalist coalition partners suffer from internal tensions and a slim majority; expect elections before its term ends officially in 2021. The EU will demand the government take up judicial reforms and anti-corruption measures. An aspiration to join the euro will keep reforms on track, though euro adoption remains some years away. The economy will slow as credit tightens and international demand wanes.

Croatia

GDP growth:	2.5%
GDP per head:	\$15,260 (PPP: \$30,030)
Inflation:	1.6%
Budget Balance (% GDP):	-0.8
Population:	4.1m

Elections are due in late 2020, but the prime minister, Andrej Plenkovic, and his left-right coalition government enjoy only a slim majority and may not last that long. With the opposition struggling to capitalise on the government's troubles, Mr Plenkovic's centre-right Croatian Democratic Union should remain dominant if early elections occur. The country suffers from heavy debt and an ageing population, but infrastructure spending and tourism will keep the economy growing.

Czech Republic

GDP growth:	2.4%
GDP per head:	\$24,510 (PPP: \$43,630)
Inflation:	2.1%
Budget Balance (% GDP):	-0.2
Population:	10.7m

After six consecutive years of growth averaging around 3.4%, the economy will show signs of overheating, with the jobs market especially tight. The government, a coalition of the centrist ANO movement and the centre-left Czech Social Democratic Party under scandal-plagued Andrej Babis, relies on the Communist Party to muster a majority in the legislature and won't see out its term, so 2020 may be an election year. For now, the government will press ahead with its liberal, pro-market and pro-EU reform agenda.

Denmark

GDP growth:	1.8%
GDP per head:	\$60,980 (PPP: \$59,480)
Inflation:	1.0%
Budget Balance (% GDP):	0.4
Population:	5.8m

The Social Democratic Party won an election in 2019 in part by toughening its immigration position to de-fang the far right, but now must moderate that stance if its minority government is to retain the support of fellow “red bloc” parties. Mette Frederiksen, the prime minister, will favour environmental regulation, tax-funded welfare reforms and tighter immigration rules.

Monetary stimulus and domestic demand will support the economy.

Estonia

GDP growth:	2.3%
GDP per head:	\$24,590 (PPP: \$39,600)
Inflation:	2.2%
Budget Balance (% GDP):	-0.3
Population:	1.3m

Juri Ratas, the prime minister, will struggle to impose order on his ideologically diverse coalition government, uniting the left-leaning Centre Party with the populist and Eurosceptic Conservative People's Party (EKRE), whose support surged in the 2019 election, and the conservative Pro Patria party. Areas of social policy, including abortion and citizenship laws, will generate friction, but the government will survive. Domestic demand and investment are robust, and will help offset a weaker external environment, though GDP growth will soften.

TO WATCH: Off the rails. Coalition tensions could arise over Estonia's participation in Rail Baltica, linking the Baltics with Europe's standard-gauge network, which EKRE opposes.

Finland

GDP growth:	1.0%
GDP per head:	\$50,490 (PPP: \$51,150)
Inflation:	1.2%
Budget Balance (% GDP):	-0.8
Population:	5.5m

Government will shift to the left after the 2019 election victory of the Social Democratic Party, in coalition with four centre-left parties under the prime minister, Antti Rinne. Mr Rinne will focus on climate change and social inequality, and will ease the austerity drive imposed under his predecessor. The Finns, a party of the far right that came second in the election, will soften its stance after other parties shunned it in coalition talks. The economy will slow as global demand weakens.

France

GDP growth:	1.3%
GDP per head:	\$42,820 (PPP: \$49,690)
Inflation:	1.4%
Budget Balance (% GDP):	-2.5
Population:	65.3m

Emmanuel Macron, the president, will push an agenda that includes something for everyone: improving productivity, creating jobs, making the welfare system more generous and cutting taxes. The fiscal deficit will fall slightly but remain above the EU's 3% threshold as the government meets pledges to the *gilets jaunes* (yellow jackets) protesters. The economy will receive a slight boost from less restrictive labour laws and lower corporate taxes.

TO WATCH: G force. France will roll out 5G mobile services in 2020, despite disruption from American sanctions on Chinese equipment supplier Huawei.

Germany

GDP growth:	0.9%
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GDP per head:	\$47,680 (PPP: \$56,100)
Inflation:	1.5%
Budget Balance (% GDP):	0.2
Population:	82.8m

Epochal change awaits as Angela Merkel's fourth term as chancellor nears an end in 2021. Annegret Kramp-Karrenbauer, Mrs Merkel's hand-picked successor to lead the Christian Democrats, will try to rebuild her credibility after some early gaffes. The Social Democrats, junior partner in the "grand coalition" government, may trigger early elections by defecting. The economy slumped in 2019 but will be helped in 2020 by rising government spending and tax relief.

TO WATCH: Play date. The Oberammergau Passion Play, performed every ten years in the Bavarian town since 1634, will be produced for the 42nd time, from May to October.

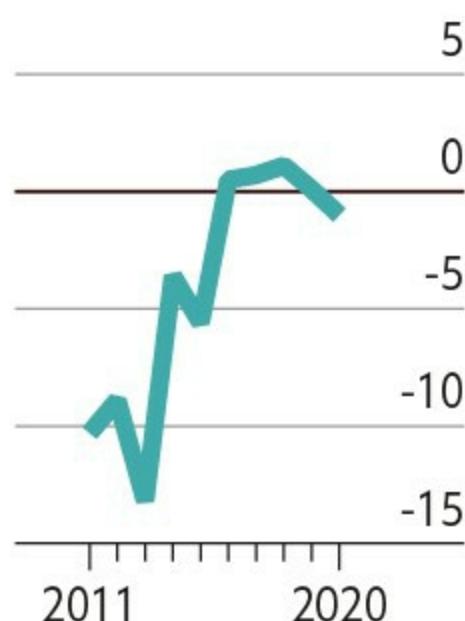
Greece

GDP growth:	2.0%
GDP per head:	\$21,390 (PPP: \$32,790)
Inflation:	1.1%
Budget Balance (% GDP):	-0.6
Population:	10.4m

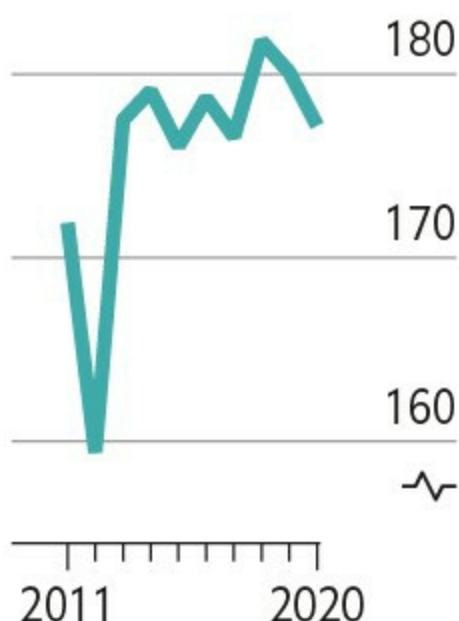
Balancing the books

Greece, % of GDP

Budget balance



Public debt



After the four-year reign of the radical left-wing Syriza party, government is back in the hands of the centre-right New Democracy party under the prime minister, Kyriakos Mitsotakis, but the problems that led voters to embrace populism persist. The country will remain under EU scrutiny as it tries to wrestle down its huge public debt. A tight budget will crimp the economy, but tourism will break records and tax cuts and less bureaucracy will make for a better future.

TO WATCH: Street view. The Syriza movement is out of power but will embrace its opposition role in the public square.

Hungary

GDP growth:	3.0%
GDP per head:	\$17,210 (PPP: \$35,080)
Inflation:	2.9%
Budget Balance (% GDP):	-1.4
Population:	9.7m

The three-term conservative-nationalist government under Viktor Orbán and his Fidesz party will press on with a programme that is hostile to immigration, weakens institutional checks on its power, advocates for Russia and raises the hackles of the EU authorities—all vote-winners. With skills gaps threatening economic growth, the government will promote training for a workforce de-skilled by emigration. The economy will cool as tougher external conditions bite, but growth will still surpass the EU average.

Ireland

GDP growth:	2.7%
GDP per head:	\$82,300 (PPP: \$91,640)
Inflation:	0.5%
Budget Balance (% GDP):	-0.5
Population:	4.9m

An election looms in 2020 as the weak Fine Gael-led minority coalition under the prime minister, Leo Varadkar, succumbs to infighting. The timing depends on the nature of Britain's withdrawal from the EU and the degree of economic disruption that Ireland faces as a result of the upheaval next door. The vote will bring another fragile coalition. Defying politics, the economy has rallied, while the budget is balanced and the financial system out of intensive care. External threats, of which Brexit is but the largest, mean the economy will lose some steam.

Italy

GDP growth:	0.4%
GDP per head:	\$33,300 (PPP: \$43,670)
Inflation:	0.5%
Budget Balance (% GDP):	-2.2
Population:	60.5m

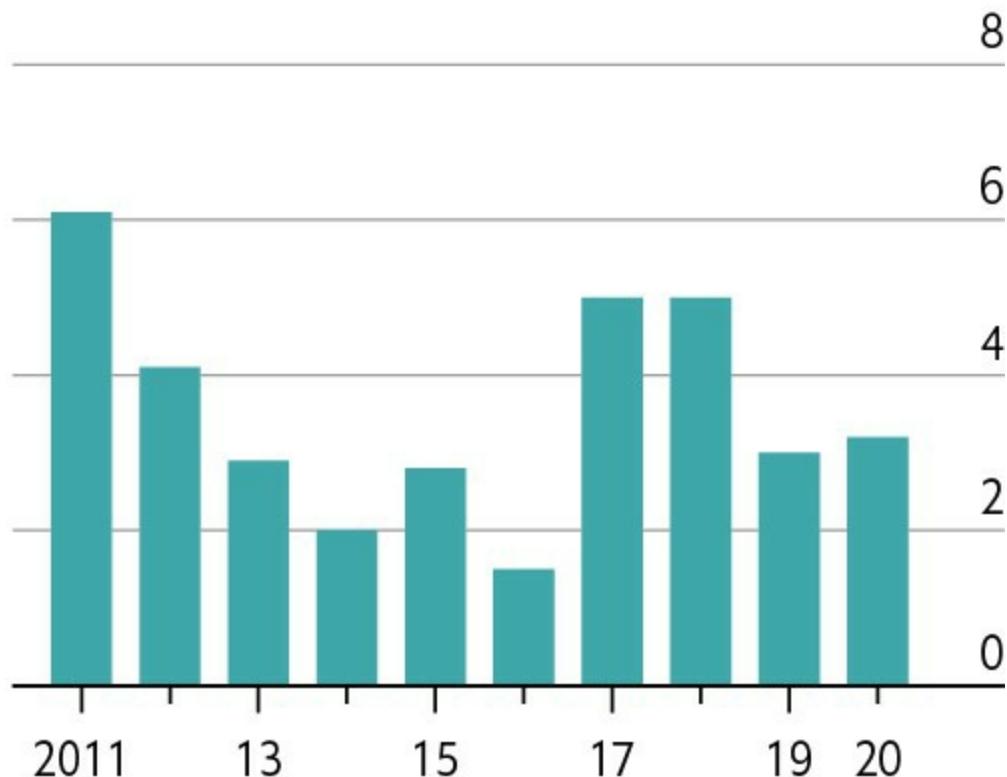
The new coalition government that took office in September, led by the prime minister, Giuseppe Conte, and comprising the anti-establishment Five-Star Movement and the centre-left Democratic Party, will be less confrontational towards EU rules than its predecessor. However, the two parties compete for the same voters, and their partnership may not last more than 12-18 months. Despite a probable agreement on the budget for 2020, reducing debt will be difficult because of weak GDP growth and inflation.

Latvia

GDP growth:	3.2%
GDP per head:	\$20,550 (PPP: \$24,230)
Inflation:	2.8%
Budget Balance (% GDP):	-0.5
Population:	1.9m

New normal

Latvia, GDP, % increase on a year earlier



The five-party centre-right coalition under the prime minister, Krisjanis Karins, got off to a shaky start in 2019 but will survive. There is broad national agreement on fiscal prudence, pro-business policies and support for the EU. The focus in 2020 will be on implementing anti-money-laundering rules, reforming the energy sector and countering the decline in the working-age population. Diplomatic relations with Russia will remain tense over its illegal annexation of Crimea, and over moves to phase out the Russian language in ethnic-minority schools. Economic growth will edge up.

Lithuania

GDP growth: 2.6%

GDP per head: \$20,740 (PPP: \$40,420)

Inflation:	2.2%
Budget Balance (% GDP):	-0.1
Population:	2.7m

The minority centre-left government will stumble towards elections in October 2020, though resignation threats from the prime minister, Saulius Skvernelis, mean it may do so under new leadership. Regardless of the hand on the rudder, the centre-left should retain control of government, with the main opposition parties split over key issues. Government spending to improve living standards will push the budget into deficit, though well within the limits set by the EU.

Netherlands

GDP growth:	1.6%
GDP per head:	\$54,260 (PPP: \$60,260)
Inflation:	1.8%
Budget Balance (% GDP):	0.2
Population:	17.3m

The centre-right coalition government has a one-seat majority in the lower house and is outnumbered in the Senate, but should see out its term despite conflicts on immigration, taxes and energy policy. The prime minister, Mark Rutte, will push for more influence in EU affairs after Brexit, pressing for closer ties but emphasising national responsibilities over immigration and budgets. The economy will be hit by worsening external conditions.

TO WATCH: Right back. Right-wing populism in rich countries started in the Netherlands. It may also end there, as the Party for Freedom and its rival, the Forum for Democracy, stagnate.

Norway

GDP growth:	1.7%
GDP per head:	\$78,990 (PPP: \$69,390)
Inflation:	2.2%
Budget Balance (% GDP):	6.7
Population:	5.4m

The country's first centre-right coalition government since the 1980s has a narrow majority in parliament but struggles for agreement among its four constituents. The Progress Party, furthest to the right, may defect to stanch its haemorrhaging popularity, but the constitution requires the government to complete its term, so elections are not on the cards. Growth in exports, investment and domestic consumer demand will sustain the economy.

TO WATCH: Oiled wheels. The economy will get a boost from recovering investment in the oil sector as new fields come under development.

Poland

GDP growth:	3.3%
GDP per head:	\$17,040 (PPP: \$35,890)
Inflation:	2.2%
Budget Balance (% GDP):	-2.2
Population:	38.2m

The right-leaning Law and Justice party retained power at elections in October 2019, with its illiberal, polarising reforms securing an electoral base that took shape during its first term starting in 2015. The prime minister, Mateusz Morawiecki, will make soothing noises, but Jaroslaw Kaczynski, the party chairman and the de facto head of government, will undermine democratic checks and centralise power. After a period of fast growth, the

economy will run into capacity constraints and softening external demand.

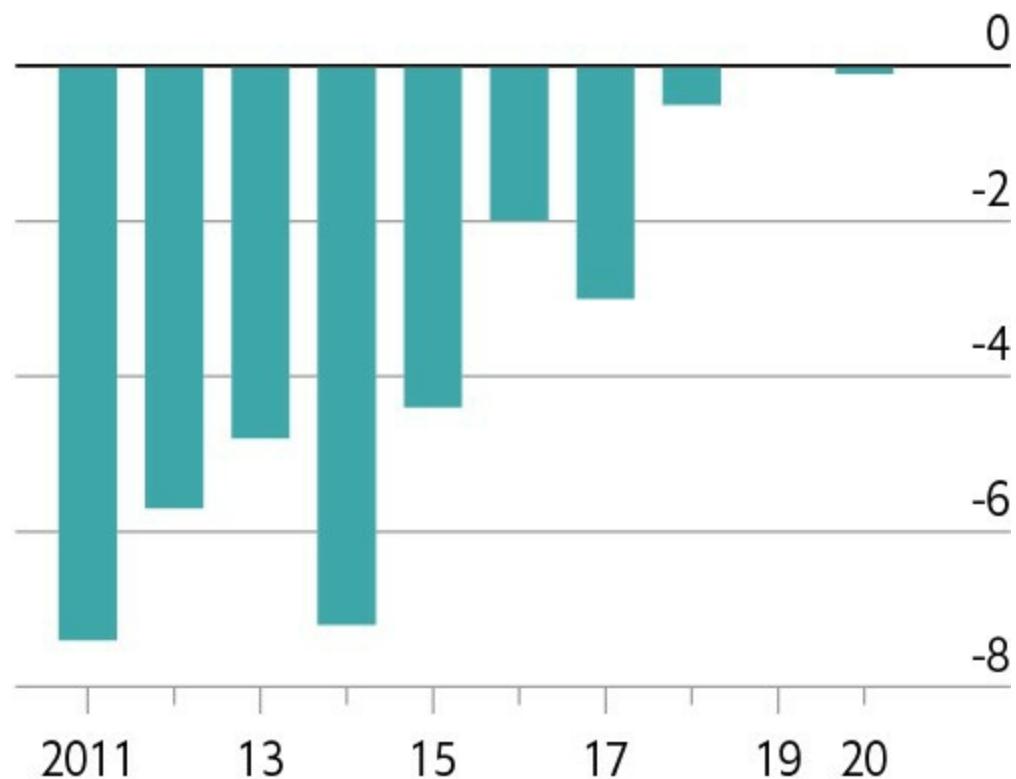
TO WATCH: Sanction sortie. The EU may respond to the erosion of liberal norms in Poland with sanctions, but like-minded Hungary will probably block them.

Portugal

GDP growth:	1.6%
GDP per head:	\$23,430 (PPP: \$36,100)
Inflation:	0.5%
Budget Balance (% GDP):	-0.1
Population:	10.3m

Climbing out

Portugal, budget balance, % of GDP



The ruling Socialist Party won a clear victory at elections in October 2019, but fell short of an absolute majority and so will run a minority administration. The new government will be slightly more unstable than the prior one, but will preserve a consensus around fiscal responsibility, which may lead to the country's first-ever balanced budget, though it will face rising resistance to austerity. Consumer demand is robust but weakening external conditions will limit growth.

Romania

GDP growth:	3.3%
GDP per head:	\$13,900 (PPP: \$32,220)
Inflation:	3.1%
Budget Balance (% GDP):	-3.3
Population:	19.2m

The Social Democratic Party-led government fell after a successful vote of no confidence in October 2019. The newly named prime minister, Ludovic Orban, the leader of the right-wing National Liberal Party (PNL), will not find it easy to form an administration. But he will succeed, and the PNL is favoured to prevail in the general election scheduled for late 2020. With a vote pending, the government will keep the fiscal taps open, boosting household spending. Credit expansion and building construction will also support growth.

Russia

GDP growth:	1.5%
GDP per head:	\$11,610 (PPP: \$28,580)
Inflation:	4.2%

Budget Balance (% GDP): 1.5
Population: 149.0m

Despite occasional pro-market rhetoric, economic and social policy will remain nationalist and protectionist, centralised around the president, Vladimir Putin. Rising public discontent will be suppressed through crackdowns on institutions and tough administrative measures, particularly online, and the authorities will enforce their will on the streets, where necessary. As Mr Putin's final term reaches its mid-point, uncertainty about the transition will mount, undermining what little long-term confidence may exist. GDP growth will remain below 2% unless there is a spike in the price of oil, Russia's chief export.

TO WATCH: Steppe too far. The regime's nationalist stance implies and requires friction with the West, so sanctions applied over the 2014 annexation of Crimea will remain in place.

Slovakia

GDP growth: 3.1%
GDP per head: \$20,670 (PPP: \$37,540)
Inflation: 2.1%
Budget Balance (% GDP): -0.6
Population: 5.5m

Elections will take place in February, if the government lasts that long. The four-party coalition under the prime minister, Peter Pellegrini, is fractious and bruised by the political scandal that forced Mr Pellegrini's predecessor, Robert Fico, to resign. Mr Pellegrini's Smer-SD party will top the polls but lose power to a new liberal alliance. The anti-corruption campaign will progress, but slowly, in the face of entrenched interests. Infrastructure investment, health-care reform and improvements to the justice system will fare better. Rising wages will underpin domestic demand, and car production, which is critical to the economy, will support exports.

Slovenia

GDP growth:	3.0%
GDP per head:	\$28,970 (PPP: \$42,720)
Inflation:	1.6%
Budget Balance (% GDP):	-0.2
Population:	2.1m

The five parties in the minority coalition government of the prime minister, Marjan Sarec, are divided over policies such as health care and the minimum wage, and the administration may well fall before its term ends—the fourth consecutive government to meet that fate. Any successor will be equally fragile given the fragmented state of politics, where the strongest force, the anti-immigrant Slovenian Democratic Party, is repudiated by coalition-makers. Privatisation and reforms to public services will top the policy agenda. Economic growth will remain on a downward trend.

TO WATCH: Kick-starter. The Taekwondo World Cup will be held in the port of Koper in October.

Spain

GDP growth:	1.9%
GDP per head:	\$31,310 (PPP: \$42,930)
Inflation:	1.3%
Budget Balance (% GDP):	-1.7
Population:	46.8m

The emergence of insurgent parties, Podemos as well as Más País on the left and Ciudadanos on the right, has smashed the two-party system. The country

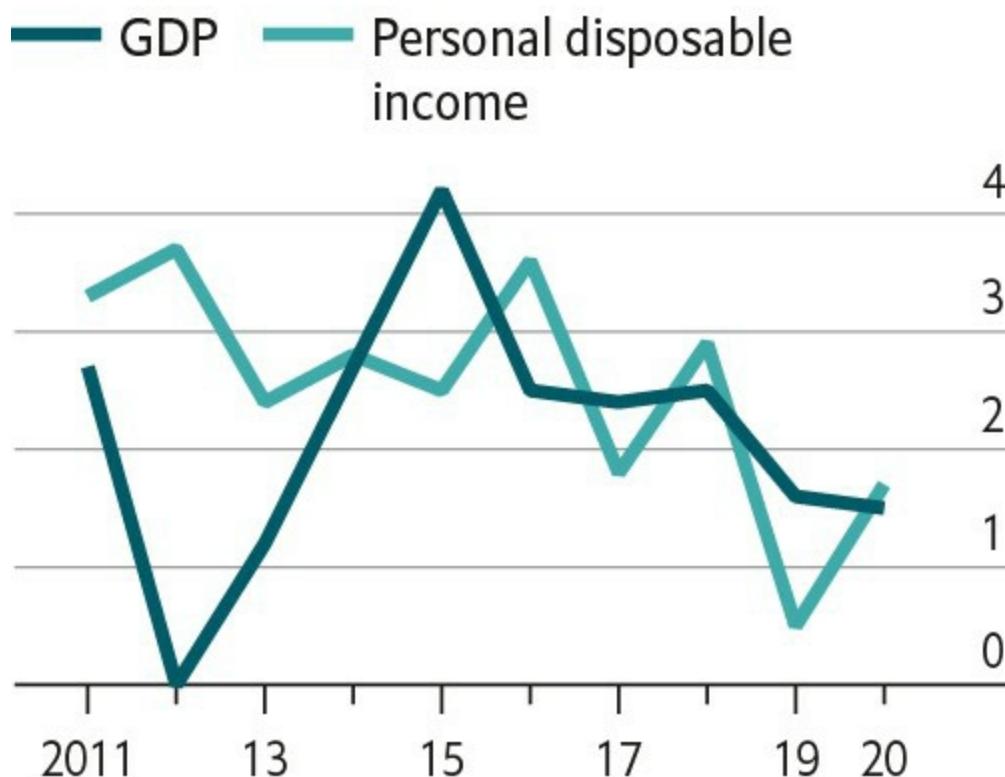
was headed for its fourth election in as many years at the close of 2019 as Podemos declined to support the Socialist Workers' Party, the established force on the centre-left, in a coalition. The Socialist leader, Pedro Sánchez, will face conflicting pressures if he remains prime minister. Fiscal restraint and fewer labour-market rules are needed to keep the economy growing but are anathema to Podemos.

Sweden

GDP growth:	1.5%
GDP per head:	\$55,540 (PPP: \$56,960)
Inflation:	1.6%
Budget Balance (% GDP):	0.4
Population:	10.1m

Go slow

Sweden, % increase on a year earlier



A minority coalition government comprising the Social Democrats and the Green Party relies on an agreement with two small parties on the centre-right, but is stable, and the prime minister, Stefan Lofven, will carry on to the end of his term. Under the agreement, the government will embrace some conservative policies, such as the removal of a 5% additional tax on high-earners, along with other tax cuts, but will also pledge to boost welfare spending and add environmental levies. The economy will slow, reflecting a subdued housing market and weak spending by consumers and businesses, but growth will remain close to the EU average.

Switzerland

GDP growth: 1.2%

GDP per head:	\$84,600 (PPP: \$71,020)
Inflation:	0.8%
Budget Balance (% GDP):	0.4
Population:	8.7m

The right-leaning Swiss People's Party (SVP) retained its plurality in the legislature at elections in October 2019, but the Green Party made a particularly strong showing. The country's consensual political system will constrain the SVP's populist instincts, but the party may nonetheless revive its efforts to tighten immigration from the EU. Negotiations on a new policy framework with the EU will be contentious. As is the case in the rest of Europe, the economy will grow slowly as global conditions tighten.

TO WATCH: Brexit factor. The EU will toughen its negotiating stance with Switzerland as it seeks to deny Britain any precedent for seeking concessions in post-Brexit bargaining.

Turkey

GDP growth:	4.0%
GDP per head:	\$9,850 (PPP: \$30,720)
Inflation:	10.1%
Budget Balance (% GDP):	-3.1
Population:	84.3m

With a strong electoral mandate, a comfortable legislative majority and strengthened executive powers, Recep Tayyip Erdogan, the president, will encourage looser fiscal and interest-rate policy to patch up the damage wreaked by a currency crisis in 2018 and recession in 2019. Corruption and structural constraints will go unaddressed, however. Opposition mayors in Istanbul and Ankara will use their platforms to channel disaffection. Turkey's incursion into Kurdish parts of Syria will sour relations with America, whose shifting policies are to blame.

Ukraine

GDP growth:	3.0%
GDP per head:	\$3,800 (PPP: \$10,300)
Inflation:	7.7%
Budget Balance (% GDP):	-1.5
Population:	41.8m

Volodymyr Zelensky, the comic actor whose role as president shifted from a TV show to real life, will use the parliamentary majority for his Servant of the People party to press an ambitious economic agenda. It includes lifting restrictions on land sales to stimulate agriculture, breaking up monopolies and reaching a new deal with the IMF. Reforms notwithstanding, the prospect of political stability will give the economy a boost, though head-butting with Russia in the Sea of Azov will dent exports and the dispute over the occupied regions of Donbas will smoulder.

TO WATCH: Streaming services. Ukraine stands to lose gas-transit revenue as Russia's Nord Stream 2 pipeline, which diverts gas supplies to Europe via the Baltic Sea floor, starts operations.

United Kingdom

GDP growth:	1.1%
GDP per head:	\$43,090 (PPP: \$47,890)
Inflation:	2.1%
Budget Balance (% GDP):	-2.4
Population:	67.9m

The Brexit process will drag on through 2020. Even if a withdrawal

agreement is passed in an orderly fashion, negotiations with the EU on the shape of the final relationship will be even more complicated, and may last into 2021 and beyond. The government formed after elections in December 2019 will loosen fiscal policy after a decade of austerity, but will have to grapple with Britain's long-term economic issues of sluggish productivity, regional inequality and high cost of living.

In Person



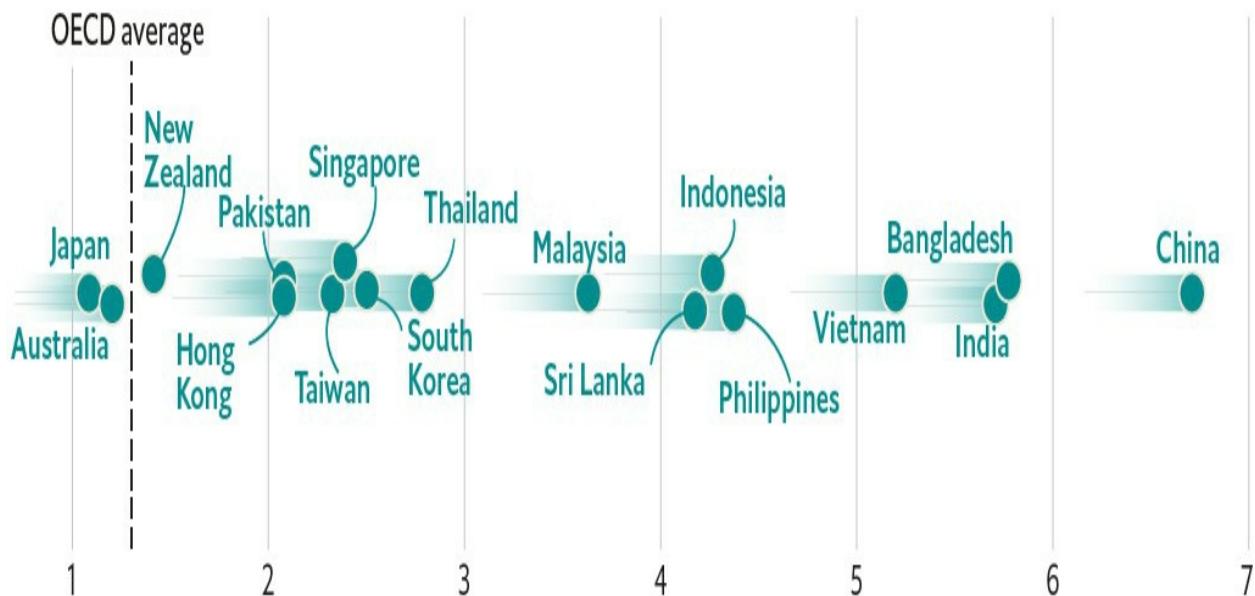
Life imitates art, and for **Volodymyr Zelensky**, president of Ukraine, this time it's personal. Actor, producer, comedian, star of the hit Ukrainian TV show in which a lowly citizen is thrust into the presidency, Mr Zelensky was elected to the post for real in April 2019 and is embarking on an ambitious programme of reforms. In a country divided between the “orange” Europe-leaning west and a “blue” Russia-leaning east, Mr Zelensky, whose name means green, drew solid support from both sides. In late 2019 he was drawn into a subplot concerning the American president, Donald Trump, who was accused of trying to strong-arm him into helping bring down a rival. National transformation at home, intrigue and skulduggery abroad: this show could run and run.

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Asia

Catching up

GDP per person, % change on a year earlier, 2011-20 average



Australia

GDP growth:	2.3%
GDP per head:	\$56,420 (PPP: \$56,290)
Inflation:	1.5%
Budget Balance (% GDP):	0.0
Population:	25.5m

The three-term Liberal-National coalition government under the prime minister, Scott Morrison, will emphasise stability and continuity after the upheaval that led to the ousting of his predecessors, Tony Abbott (in 2015)

and Malcolm Turnbull (in 2018). Divisions within the government over energy policy and climate change will fester. Attempts to implement pro-business policies may founder in the Senate, where the government lacks a majority. Business confidence will rally nevertheless, sustaining economic growth.

TO WATCH: Neighbourhood watch. The government will step up aid to the Pacific islands, in part to counter growing Chinese influence in the region.

Bangladesh

GDP growth:	7.7%
GDP per head:	\$2,080 (PPP: \$5,180)
Inflation:	5.1%
Budget Balance (% GDP):	-4.7
Population:	164.7m

The Awami League, led by the prime minister, Sheikh Hasina, will progress through its third consecutive term with an unshaken grip on all the levers of power, and will shrug off opposition, which will mostly be expressed on the street. The budget deficit will widen as the government invests in capital projects but makes slow progress on broadening the tax base. Monetary policy will remain loose, and the economy will slowly close the income gap with other emerging markets.

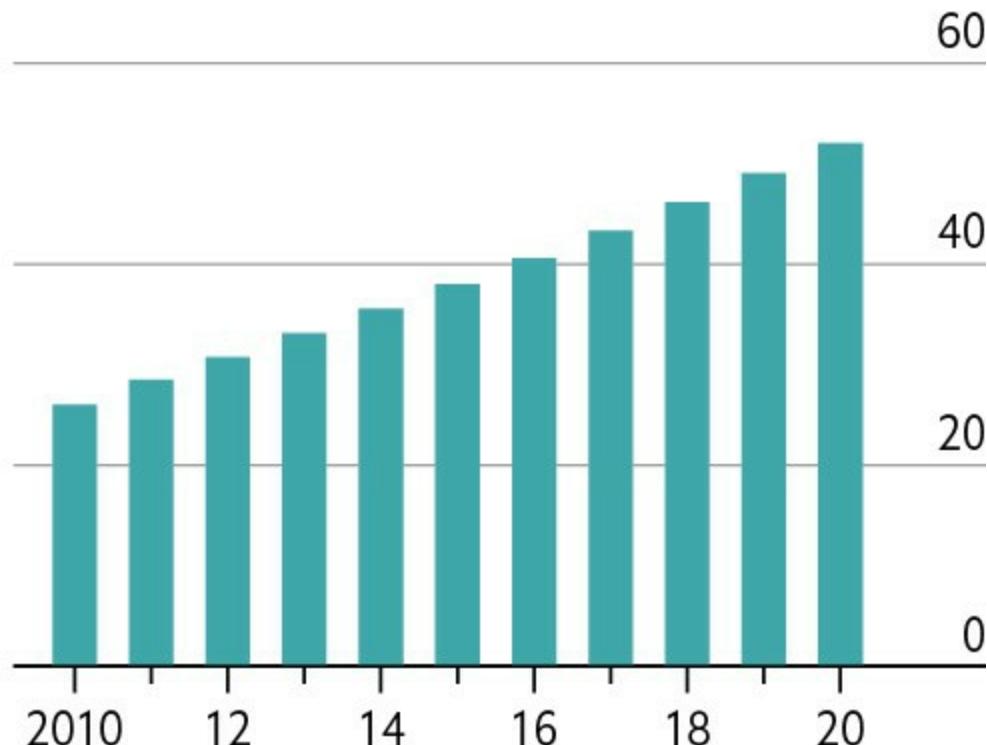
TO WATCH: Bridging the gap. The Padma Bridge, Bangladesh's most costly infrastructure project ever, will be completed in 2020 and opened in 2021, linking the country's south-west and north.

China

GDP growth:	6.1%
GDP per head:	\$10,090 (PPP: \$20,930)
Inflation:	3.1%
Budget Balance (% GDP):	-4.5
Population:	1.40bn

Unbelievably steady

China GDP, trn yuan, 1995 prices



The trade war with America will drag on, adding to the headwinds facing China's economy, but the pursuit of technological independence and global influence will have longer-term implications. The president, Xi Jinping, will avoid drama that could undermine his well-laid plans to stay on beyond the traditional ten-year term, and will be aided by an ever-tighter grip on public and private life. Separatism and public protest will fester, but won't erupt. The authorities will use monetary and fiscal policy to cushion the economy, sustaining gently declining growth.

TO WATCH: Double date. China will meet the target of doubling the size of its economy in the decade to 2020.

Hong Kong

GDP growth:	2.3%
GDP per head:	\$51,920 (PPP: \$68,240)
Inflation:	2.6%
Budget Balance (% GDP):	0.0
Population:	7.5m

Street protests over legal and social issues have roiled the territory since June, undermining the authority of the chief executive, Carrie Lam. Concessions have not placated the protesters. China may yet send in its army to quell the disturbances. The monetary authority will lower interest rates, in line with America's Fed, fuelling spending. The economy will get a boost as the impact of the protests on tourism and retailing dissipates.

India

GDP growth:	6.7%
GDP per head:	\$2,490 (PPP: \$8,860)
Inflation:	4.2%
Budget Balance (% GDP):	-3.4
Population:	1.38bn

In power for a second term and with the largest parliamentary majority since 1984, Narendra Modi's government, supported by his Bharatiya Janata Party-led coalition, will press on with its Hindu-nationalist agenda and with core economic reforms. These reforms will include strengthening the banks, creating incentives for labour-intensive industries and further loosening foreign-investment rules. But the administration will skirt key productivity-raising measures, such as land-acquisition and labour reforms, that could hurt

its popularity. Growth will pick up as sentiment improves.

TO WATCH: Kashmir clash. The backlash against the suspension of Indian Kashmir's constitutional autonomy will raise the threat of terrorist attacks.

Indonesia

GDP growth:	5.0%
GDP per head:	\$4,700 (PPP: \$15,000)
Inflation:	3.0%
Budget Balance (% GDP):	-2.1
Population:	267.5m

The president, Joko Widodo, will use the second term he won in 2019 to advance his economic-growth programme, upgrading the country's infrastructure, reforming foreign-investment rules and improving the education and skills of its workforce. He will also aim to develop downstream industries to add value to the country's natural resources and relax labour laws so that more firms hire on full-time contracts, though the latter initiative will face opposition from unions. The economy will stick to its trend growth rate of around 5%.

TO WATCH: Capital purchase. Land acquisition will begin in East Kalimantan province in 2020 as the government starts the process of moving its capital city from Jakarta.

Japan

GDP growth:	0.4%
GDP per head:	\$42,560 (PPP: \$45,100)
Inflation:	1.4%

Budget Balance (% GDP): -2.7
Population: 126.5m

Shinzo Abe, the country's longest-serving prime minister, will begin his eighth year in office unchallenged in his party and with a decisive legislative majority. The country's ageing population has become a major issue, and the government will pursue measures to keep more people in the workforce until later in life. Hopes of reforming the country's pacifist constitution are on hold for now for lack of a super-majority in the upper chamber. An increase in the consumption tax in late 2019 will chop the rate of economic growth by half in 2020, although higher government spending will cushion the blow.

Kazakhstan

GDP growth: 3.4%
GDP per head: \$9,230 (PPP: \$29,990)
Inflation: 5.1%
Budget Balance (% GDP): -0.6
Population: 18.8m

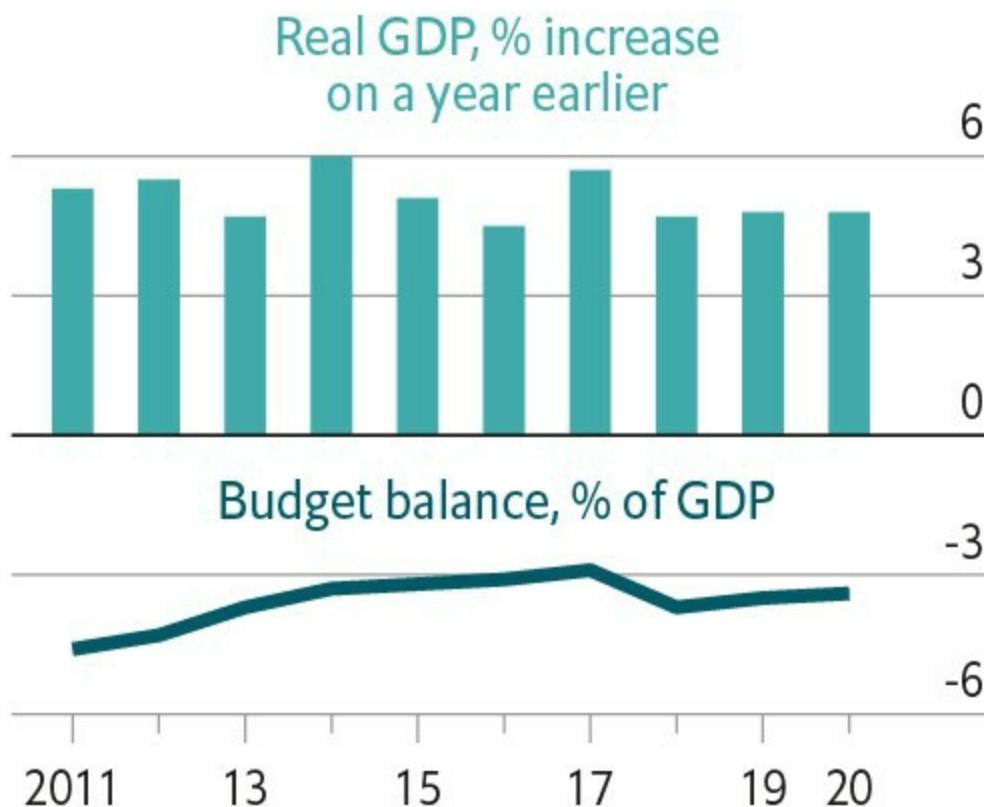
The president, Kassym-Jomart Tokayev, will focus on consolidating his authority after winning an uncompetitive election in 2019 to succeed Nursultan Nazarbayev, who had ruled for nearly three decades. He must seek a power-sharing balance with Mr Nazarbayev, who will remain influential behind the scenes. Protests that increased late in Mr Nazarbayev's tenure won't end, drawing a harsh response from the authorities. Policy will focus on diversifying and increasing value-added activities in the economy and easing bureaucracy.

TO WATCH: For sale. A privatisation programme that aims to raise \$7bn from stakes in around 900 companies is scheduled to be completed in 2020.

Malaysia

GDP growth:	4.8%
GDP per head:	\$12,050 (PPP: \$35,710)
Inflation:	1.5%
Budget Balance (% GDP):	-3.4
Population:	32.4m

Spending spree Malaysia



The Pakatan Harapan coalition government faces a tricky leadership transition. Mahathir Mohamad, the incumbent and at 95 in July 2020 the world's oldest head of government, has promised to give way to Anwar Ibrahim, the head of the coalition's largest party, but may seek to hold on to power. There will be little challenge from an opposition Barisan Nasional coalition in disarray. Economically, the government will focus on balancing

the books while supporting low-income households.

New Zealand

GDP growth:	2.2%
GDP per head:	\$42,060 (PPP: \$43,370)
Inflation:	1.9%
Budget Balance (% GDP):	0.8
Population:	5.0m

The Labour Party-led government under the prime minister, Jacinda Ardern, has hit a few bumps in its first term, but the party's strong response has put it in a good position to secure a second term in office after elections that must be held by November 2020. Both the Greens and Labour's current coalition partner, New Zealand First, will prefer Labour to the opposition National Party as the inevitable post-vote negotiations get under way. Economic growth will slow as internal demand and foreign trade dip.

TO WATCH: Fantasy islands. The 78th World Science Fiction Convention is set for Wellington in July and August.

Pakistan

GDP growth:	2.6%
GDP per head:	\$1,220 (PPP: \$5,910)
Inflation:	6.4%
Budget Balance (% GDP):	-7.8
Population:	220.9m

The government of the prime minister, Imran Khan, has the tacit support of

the army, which enjoys de facto control of defence and foreign policy. Leaders of the two main opposition parties are entangled in legal challenges, but they will collaborate to obstruct the government's agenda. Religious protests by Islamist opposition groups may turn violent, while Baloch separatists will remain active. Pakistan is in the midst of its 22nd IMF financial-support agreement; the resulting erosion of living standards and the rising tax burden will limit economic growth.

Philippines

GDP growth:	5.2%
GDP per head:	\$3,690 (PPP: \$10,050)
Inflation:	2.4%
Budget Balance (% GDP):	-3.3
Population:	109.6m

The president, Rodrigo Duterte, will maintain a tight grip on power, supported by a loyal coalition rallied by his daughter and the mayor of Davao City, Sara Duterte. Ambitious plans to revamp the country's creaking infrastructure will advance slowly. Remittances, a key source of household spending, will fall as America's growth slips. In the absence of structural reforms and with business confidence softening, fiscal and monetary policy will be used to buoy up the economy, though growth will dip.

Singapore

GDP growth:	1.2%
GDP per head:	\$68,350 (PPP: \$107,890)
Inflation:	0.4%
Budget Balance (% GDP):	-0.4

Population: 5.6m

Early elections in the first few months of 2020 will deliver a victory for the People's Action Party, dominant since 1959, and pave the way for a transfer of power from Lee Hsien Loong, the prime minister, to Heng Swee Keat, deputy prime minister and finance minister. The territory faces headwinds from the trade war between America and China and declining activity in both markets. Government spending directed at education, health and child care will stimulate the economy.

South Korea

GDP growth: 2.2%

GDP per head: \$32,370 (PPP: \$46,410)

Inflation: 1.2%

Budget Balance (% GDP): -1.0

Population: 51.3m

Shrinking surplus

South Korea, trade balance, \$bn



The governing Minjoo Party under the president, Moon Jae-in, will increase its parliamentary majority at elections in April but remain short of the three-fifths majority needed to legislate without seeking allies. The government will maintain open channels with North Korea, inviting sniping from the conservative opposition. The administration will use fiscal policy to pump up domestic spending in the face of trade tensions with Japan and the tariff war between America and China.

TO WATCH: Spark plug. The government will provide \$900m in subsidies to promote electric-vehicle use.

Sri Lanka

GDP growth:	3.4%
GDP per head:	\$4,360 (PPP: \$14,990)
Inflation:	4.3%
Budget Balance (% GDP):	-5.4
Population:	21.4m

Presidential elections in late 2019 will deliver victory to Gotabaya Rajapaksa of the Sri Lanka People's Front (SLPP), returning to power the clique that dominated under the previous president, Mahinda Rajapaksa, Gotabaya's older brother. If elected, Mr Rajapaksa will trigger early legislative elections in 2020, setting up a clean sweep for the SLPP. Sinhalese nationalism will be fuelled by outrage over bombings blamed on a local affiliate of Islamic State. The economy will rally as tourism and government spending pick up.

TO WATCH: Looser belts. Fiscal discipline will ebb as an IMF funding programme runs out in mid-2020.

Taiwan

GDP growth:	1.7%
GDP per head:	\$25,880 (PPP: \$57,440)
Inflation:	0.2%
Budget Balance (% GDP):	-1.2
Population:	23.6m

The Democratic Progressive Party (DPP) will retain its hold on the presidency in elections scheduled for January, securing a second term for the incumbent, Tsai Ing-wen, but will lose its legislative majority to the opposition Kuomintang (KMT). The DPP has lost steam: it has not kept policy promises and the economy is flagging. A KMT majority will support the existing policy of diversifying trade links to sustain exports.

TO WATCH: Triangulation. America's clashes with China over trade

present opportunities for Taiwan, such as more co-operation with America on defence, though mostly on a commercial basis.

Thailand

GDP growth:	2.1%
GDP per head:	\$7,540 (PPP: \$20,600)
Inflation:	1.3%
Budget Balance (% GDP):	-2.6
Population:	69.8m

Prayuth Chan-ocha, the prime minister and a former coup leader, will rely on backing from the military-appointed Senate to make progress on a programme of infrastructure renewal and increased foreign investment. Animosity between pro- and anti-junta forces will simmer without threatening the status quo. Relations with Western powers, curtailed after the coup in 2014, will be restored, but China's role as an economic and diplomatic partner will grow. The economy will slow as exports slip and domestic consumption remains lacklustre.

Uzbekistan

GDP growth:	5.4%
GDP per head:	\$1,720 (PPP: \$8,400)
Inflation:	11.9%
Budget Balance (% GDP):	-1.2
Population:	33.5m

The president, Shavkat Mirziyoyev, who succeeded long-time leader Islam Karimov in 2016, will try to liberalise an economy bungled under the long

rule of his predecessor, and to improve ties with neighbours. But he will also seek to retain Mr Karimov's tight control over social and political life. Parliamentary elections in late 2019 or early 2020 won't change the power dynamic. Tax reform and higher social spending will keep the economy in catch-up mode, though questions will be raised about the quality of official statistics.

Vietnam

GDP growth:	6.5%
GDP per head:	\$3,080 (PPP: \$8,640)
Inflation:	3.1%
Budget Balance (% GDP):	-3.5
Population:	97.3m

Power is concentrated in the president, Nguyen Phu Trong, who is also Communist Party general secretary—the first person to hold both posts since Ho Chi Minh. The economy will benefit as foreign companies relocate from once-cheap China, a trend accelerated by China's trade tussle with America. Domestic economic reforms will give a further boost, with the government bent on restructuring state-owned industries and pepping up trade. The economy will thrive, though the pace will slow slightly.

TO WATCH: Pole position. Formula 1 will see the first ever Vietnam Grand Prix when Hanoi hosts the third race of the season in April.

In Person

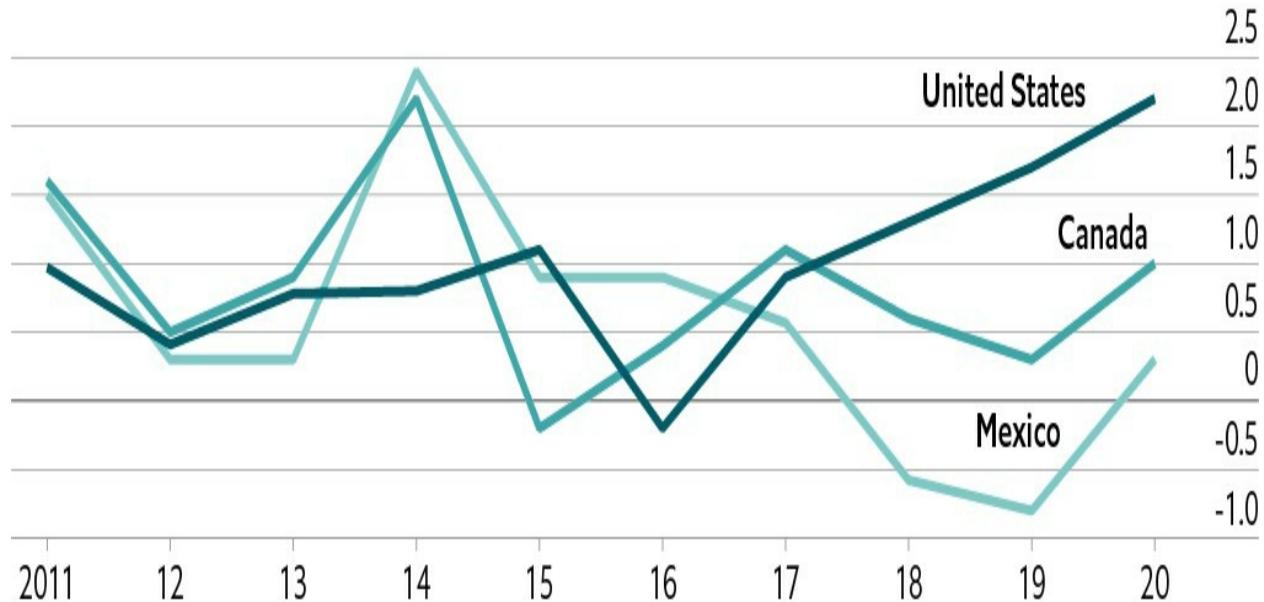


Hun Sen, the world's longest-serving prime minister, will complete 35 years as Cambodia's leader in January. When he came to power in 1985, the country was emerging from its Khmer Rouge nightmare. Since then, Mr Hun Sen has offered Cambodians steady gains in material living standards in return for obedience to the leader's edicts, the classic playbook of autocrats. The compliant have been rewarded with decades of economic growth, but those who prefer basic freedoms have suffered incarceration, torture and murder. The economy remains buoyant, thanks largely to ties with China, which laps up Cambodian exports and pours in cash. Mr Hun Sen, at age 68, shows no sign of giving up. Opponents will continue to gamble with their freedom, but for now the autocrat's bargain will remain the only game in town.

North America

The producers

Productivity, % change on a year earlier



Canada

GDP growth:	1.7%
GDP per head:	\$48,210 (PPP: \$50,730)
Inflation:	1.9%
Budget Balance (% GDP):	-1.0
Population:	37.7m

Justin Trudeau, the prime minister, won another term in elections in late 2019, but his Liberal Party lost support, and he will now preside over a minority government. The country is deeply divided between eastern liberals and western conservatives, and between rural and urban districts. Investment

in infrastructure will be a priority, but the fiscal gap will widen. The government will support local companies hit by America's trade and taxation policies. Economic growth will be stable.

TO WATCH: Carbon clash. The government will impose carbon taxes on resource-rich Alberta, which the opposition-run state will fight in the courts.

Mexico

GDP growth:	1.2%
GDP per head:	\$9,640 (PPP: \$20,520)
Inflation:	3.3%
Budget Balance (% GDP):	-2.9
Population:	128.9m

Andrés Manuel López Obrador, who pledged to be a “transformational” leader in his successful presidential bid in 2018, will struggle to meet voters’ expectations given the country’s deep structural challenges and tight budget. However, majorities in both houses for a coalition led by his Morena party, and strong representation in state legislatures, will give him room for manoeuvre. The government’s debt-servicing costs will rise amid credit-rating downgrades for the state oil giant, Pemex. Economic growth will rally but remain well below potential.

TO WATCH: Northern fights. Relations with the United States will be volatile as Donald Trump campaigns for a second term, with immigration across the Rio Grande a hot-button issue.

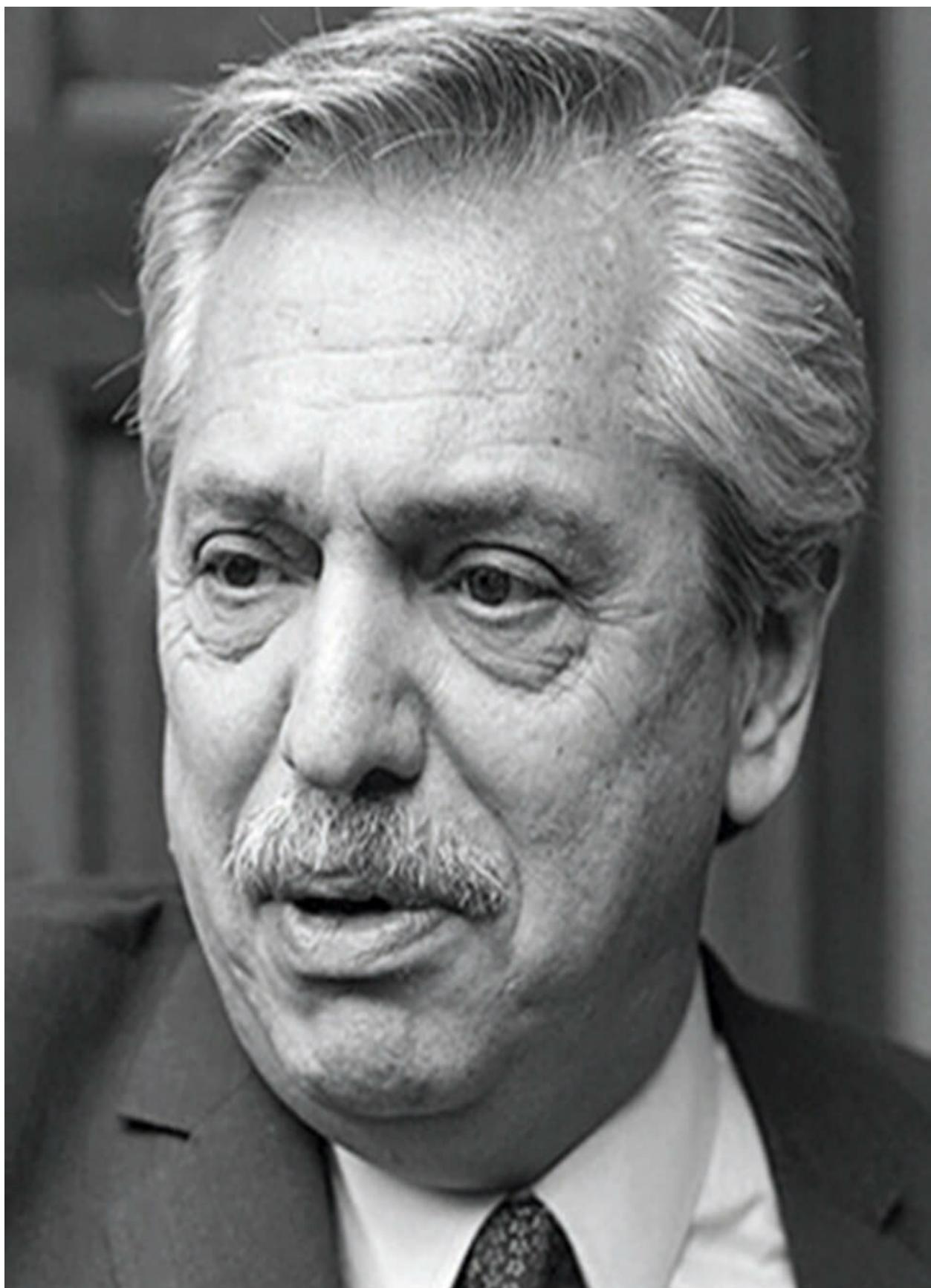
United States

GDP growth:	1.6%
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GDP per head:	\$66,650 (PPP: \$66,650)
Inflation:	1.6%
Budget Balance (% GDP):	-5.0
Population:	334.6m

Having survived the impeachment process, Donald Trump will be re-elected president if the American economy remains strong and the opposition Democrats nominate a candidate who is perceived to be too far to the left. The economy is, however, weakening, and a slump of some kind in 2020 is all but certain, lengthening Mr Trump's odds. A partial deal with China will turn down the heat on the trade war, but the contest for technological supremacy has decades to run.

In Person



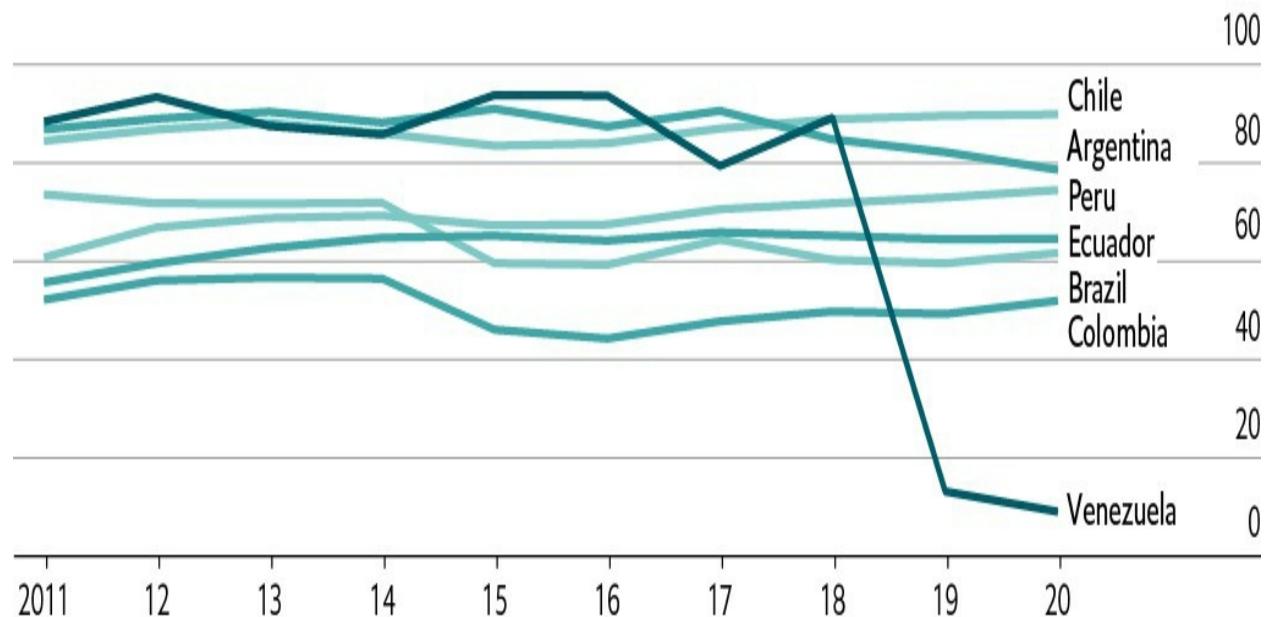
Shock is not too strong a word for the outcome of Argentina's presidential primary in 2019. The incumbent, Mauricio Macri, had exhausted voters with tough economic reforms, but they were necessary after the disorder left behind by his predecessor, Cristina Fernández de Kirchner, and he was expected to win anyway. Instead, **Alberto Fernández** (no relation), of the opposition Peronist party, won comfortably and went on to secure the presidency in October 2019, with Ms Fernández as his running mate. Markets responded by dumping Argentine assets and the government was forced to delay some foreign-debt payments. Even if Mr Fernández adopts a moderate approach, the parlous state of Argentina's economy promises the country and foreign investors a rough ride in 2020.

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Latin America

Trying to catch up

Households earning above \$10,000 per year, %



Argentina

GDP growth:	-2.3%
GDP per head:	\$8,940 (PPP: \$21,680)
Inflation:	44.3%
Budget Balance (% GDP):	-4.9
Population:	45.2m

Voters put off by Mauricio Macri's painful economic reforms delivered by replaced him as president with the Peronist candidate, Alberto Fernández, in elections in October 2019. Mr Fernández professes moderation, but comes on the coat-tails of Cristina Fernández de Kirchner, whose chaotic tenure (2007-

15) led to Mr Macri's election. The economy will contract for a third year, though growth in farming, mining and tourism will limit the damage.

TO WATCH: Debt doubts. Argentina missed a debt payment in August 2019. Expect more defaults.

Bolivia

GDP growth:	3.9%
GDP per head:	\$3,890 (PPP: \$8,590)
Inflation:	3.2%
Budget Balance (% GDP):	-7.6
Population:	11.7m

Despite charges of electoral fraud, the president, Evo Morales, will remain in power, whether he wins in the first or second round of the election in late-2019. Either way, the outcome signals the end of his political hegemony, as the rise of an urban middle class has eroded his dominance. Gas revenue will support economic growth.

Brazil

GDP growth:	2.0%
GDP per head:	\$9,120 (PPP: \$16,960)
Inflation:	3.7%
Budget Balance (% GDP):	-4.9
Population:	212.1m

Jair Bolsonaro, the economically liberal but socially conservative president, will lose some popularity as his pro-market reforms are held up in congress,

where his Liberal Social Party has just 10% of seats in the 30-party legislature. A key pension reform passed in October 2019, reassuring foreign creditors. The economy will benefit from the changes already enacted and others to come, particularly to labour markets, small-business regulation, taxes and state-owned industry.

TO WATCH: Poll pilot. Municipal elections in October will provide an early test of Mr Bolsonaro's chances of re-election in 2022.

Chile

GDP growth:	3.4%
GDP per head:	\$15,720 (PPP: \$27,240)
Inflation:	2.7%
Budget Balance (% GDP):	-1.2
Population:	19.1m

The centre-right minority government of the president, Sebastián Piñera, faces mid-term struggles amid stubborn unemployment and a sluggish economy. Efforts to boost productivity and narrow the wealth gap, and changes to tax and pension rules, will be delayed as the “Let’s Go Chile” government battles a hostile congress. The economy will get a bump from favourable commodity markets.

TO WATCH: Resource boost. Low oil prices and a rising copper market will improve Chile’s terms of trade, narrowing the current-account deficit.

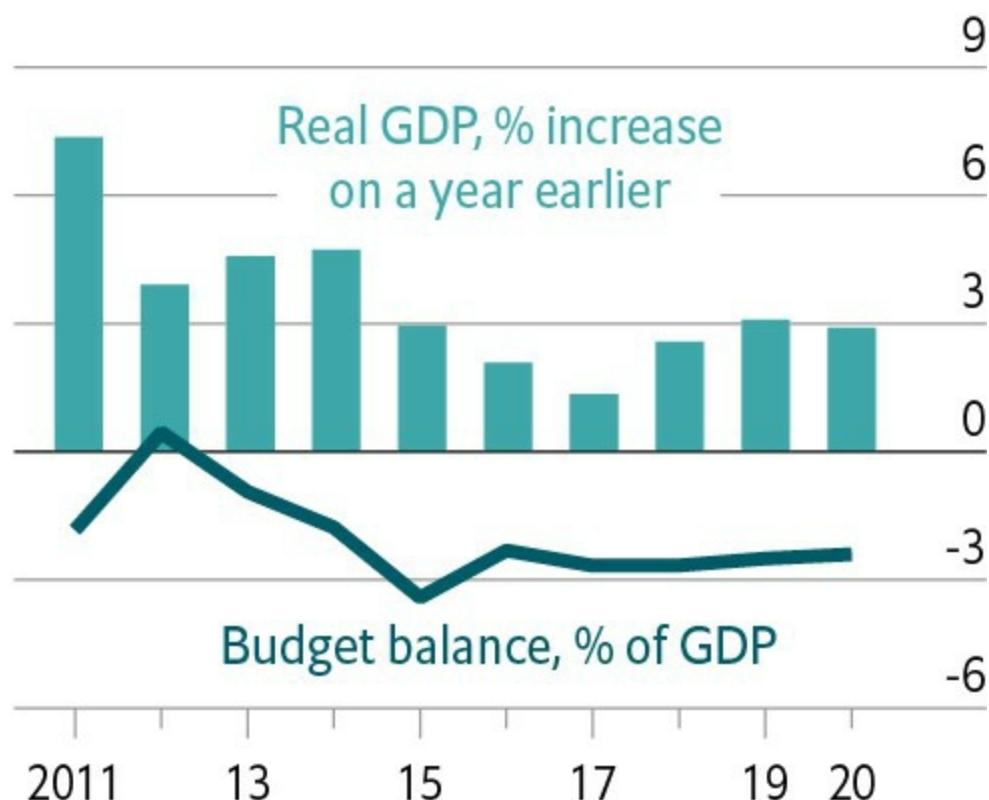
Colombia

GDP growth:	3.0%
GDP per head:	\$6,190 (PPP: \$16,180)

Inflation: 3.2%
Budget Balance (% GDP): -2.4
Population: 50.9m

On trend

Colombia



The declaration in 2019 by some former FARC guerrillas that they were returning to the armed struggle will not shatter the 2016 peace deal, but will add to pressure on the president, Iván Duque, from hardliners in his own Democratic Centre party to suspend the controversial agreement, and from the opposition to implement its terms fully. The economy will shrug off political upheaval, helped by infrastructure spending and consumer demand.

Cuba

GDP growth:	-0.2%
GDP per head:	\$9,890 (PPP: \$14,360)
Inflation:	5.4%
Budget Balance (% GDP):	-5.4
Population:	11.3m

Pro-market reforms are moving ahead at a snail's pace, and the private sector will expand only slowly. As leaders of the 1959 revolution leave the scene, a younger generation will contest power under a new structure, with the president choosing a prime minister to be ratified by the National Assembly, and a third pillar of power headed by the Communist Party chairman. The economy will be undermined by animosity from the Trump administration, the absence of largesse from Venezuela and a squeeze on foreign exchange.

Ecuador

GDP growth:	1.2%
GDP per head:	\$6,270 (PPP: \$11,920)
Inflation:	1.5%
Budget Balance (% GDP):	1.1
Population:	17.6m

Hand-picked by his predecessor, left-wing firebrand Rafael Correa, the president, Lenín Moreno, is undoing his mentor's legacy. He has shunned Venezuela's radical leader, whom Mr Correa lauded, and is talking trade with America. The fiscal adjustment from a deal with the IMF will slow the economy and test Mr Moreno's popularity.

Paraguay

GDP growth:	3.3%
GDP per head:	\$6,320 (PPP: \$14,430)
Inflation:	3.0%
Budget Balance (% GDP):	-1.5
Population:	7.1m

The president, Mario Abdo Benítez of the right-wing Colorado Party, is rallying after the details of a secret deal with Brazil over the co-owned Itaipú dam were leaked in 2019, but won't make progress on planned tax and pension reforms as he seeks to rebuild political alliances. Although a two-year fiscal-stimulus package will end, economic growth will jump as the Brazilian recovery takes hold.

TO WATCH: Speed test. The Adventure Racing World Championships will be held at various sites in September. Modes of transport include bikes, ropes, canoes and trainers.

Peru

GDP growth:	3.2%
GDP per head:	\$7,520 (PPP: \$13,500)
Inflation:	2.0%
Budget Balance (% GDP):	-1.6
Population:	33.2m

Politics has been dominated by repeated clashes between the executive and legislative branches, with the president, Martín Vizcarra, dissolving congress in October, a move that is being challenged in the courts. More wrangling lies ahead, but an election for new lawmakers in January 2020 should help to resolve the constitutional impasse. Whoever wins, the economy will enjoy its 22nd year of uninterrupted growth.

Uruguay

GDP growth:	1.5%
GDP per head:	\$17,440 (PPP: \$24,810)
Inflation:	6.9%
Budget Balance (% GDP):	-3.7
Population:	3.5m

A centre-right candidate, Luis Lacalle Pou, was the runner-up in the first round of the October 2019 presidential election, and now has firmer backing than expected from other opposition parties, making him the favourite to win the late-November run-off. If he wins and cements his coalition, he would have a majority in congress, underpinning his agenda of fiscal and economic reforms.

Venezuela

GDP growth:	-1.0%
GDP per head:	\$1,970 (PPP: \$6,280)
Inflation:	678%
Budget Balance (% GDP):	-26.3
Population:	30.1m

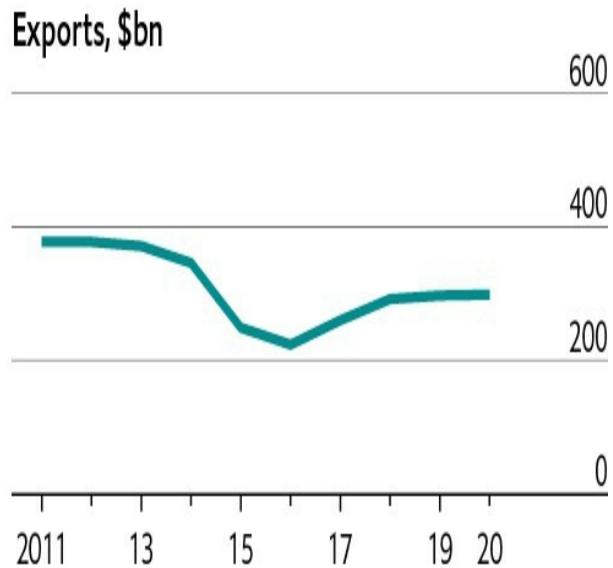
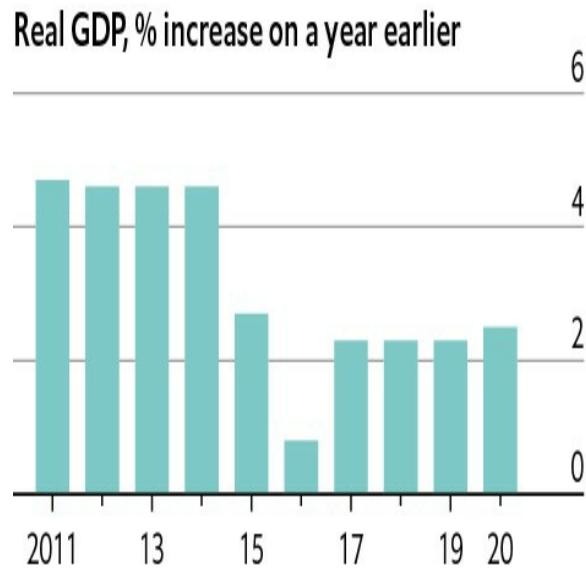
The big question is whether international pressure and a flattened economy will force the president, Nicolás Maduro, out of office. If so, a unity government will replace him and launch an economic stabilisation plan based on foreign financial assistance and radical reforms. Juan Guaidó, who declared himself interim president in 2019, will probably lead it. Recession will linger, but will feel like a boom after the deep collapse of recent years.

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Middle East and Africa

Great rift

Sub-Saharan Africa



Algeria

GDP growth:	2.1%
GDP per head:	\$4,480 (PPP: \$16,580)
Inflation:	3.4%
Budget Balance (% GDP):	-7.1
Population:	43.7m

Elections that were due in 2019 after the resignation of long-time leader Abdelaziz Bouteflika will not take place until 2021, prolonging the tussle over succession and delaying efforts to reduce the economy's dependence on oil. While a divided opposition, supported by public protests, pushes for deep

political changes, the traditional power-brokers that stood behind Mr Bouteflika will call the shots.

Angola

GDP growth:	-1.9%
GDP per head:	\$2,470 (PPP: \$5,940)
Inflation:	16.9%
Budget Balance (% GDP):	-1.3
Population:	32.9m

The president, João Lourenço, will move ahead cautiously with his bid to replace the patronage networks left by his long-serving predecessor, José Eduardo dos Santos. Under IMF guidance, the government will raise taxes and cut subsidies to improve fiscal health, and seek investment in the oil sector. The economy will shrink for a fifth successive year, setting the foundation for a revival starting in 2021.

Cameroon

GDP growth:	3.5%
GDP per head:	\$1,650 (PPP: \$4,000)
Inflation:	1.6%
Budget Balance (% GDP):	-4.1
Population:	26.6m

The seven-term president, Paul Biya, will work to contain separatist tensions among the Anglophone minority and Islamist activism from Boko Haram, but will lose seats in legislative elections set for early 2020. Opponents will take to the streets, but to little effect. Spending on security will stretch the fiscal

deficit and low prices for oil and gas will slow the economy.

Egypt

GDP growth:	5.1%
GDP per head:	\$3,620 (PPP: \$14,050)
Inflation:	6.9%
Budget Balance (% GDP):	-6.1
Population:	100.1m

The president, Abdel Fattah al-Sisi, with a secure mandate and little effective opposition, will focus on reforming the economy, building business confidence and attracting foreign investment, though vested interests will throw sand in the gears. Reforms pursued under the aegis of the IMF will target the whopping budget deficit. Economic growth will slow slightly.

Ethiopia

GDP growth:	7.4%
GDP per head:	\$830 (PPP: \$2,300)
Inflation:	10.7%
Budget Balance (% GDP):	-3.1
Population:	115.0m

The government under the Nobel-peace-prize-winning prime minister, Abiy Ahmed, is trying to shift the main driver of economic growth from farming to manufacturing, and is investing in infrastructure, the power network and special industrial zones. The political opposition will remain weak, but factions within the ruling coalition, the Ethiopian People's Revolutionary Democratic Front, will resist changes that touch on their interests.

Iran

GDP growth:	-1.6%
GDP per head:	\$5,600 (PPP: \$18,800)
Inflation:	26.5%
Budget Balance (% GDP):	-5.2
Population:	84.0m

The economy will labour under American hostility, which will rise further as Donald Trump's 2020 election campaign gathers pace. Popular protests at home and biting sanctions will encourage a deepening of hardline dominance over politics and economic policy. The moderate president, Hassan Rouhani, will come under increasing pressure as attention turns to elections in 2021. The economy will shrink again.

Iraq

GDP growth:	2.8%
GDP per head:	\$5,520 (PPP: \$17,270)
Inflation:	1.3%
Budget Balance (% GDP):	-1.3
Population:	41.5m

Islamic State has been driven from its territorial holdings but will redouble efforts to foster discontent among the minority Sunni population and destabilise the state. Protests in response to widespread joblessness and poor services will add to the instability. The fragile coalition government will nurture relations both with the Western powers and Iran. Oil output will rise, but the economy will expand at far below its potential growth rate.

TO WATCH: Counting exercise. In a sign of growing stability, the country will undertake its first census since 1997.

Israel

GDP growth:	2.8%
GDP per head:	\$44,860 (PPP: \$42,630)
Inflation:	0.9%
Budget Balance (% GDP):	-3.5
Population:	9.2m

Binyamin Netanyahu, the prime minister, was severely weakened in the general election in September 2019 and was unable to form a new government. He will probably be forced to step down so his Likud party can serve in another coalition. The difficulties of forming a new government could lead to lengthy coalition negotiations and perhaps even a third round of elections. Growth will dip in line with American demand.

Jordan

GDP growth:	1.8%
GDP per head:	\$4,310 (PPP: \$9,210)
Inflation:	2.0%
Budget Balance (% GDP):	-5.6
Population:	10.8m

King Abdullah II will keep tight control of government, supported by the security forces and a majority among a conservative population. Modernising reforms will be calibrated so as not to alarm religious leaders and hardliners. Finance will keep flowing from Western allies and Gulf states. The

government will try to tighten the fiscal screws to honour its pledge to the IMF, but the deficit will still increase.

Kenya

GDP growth:	5.6%
GDP per head:	\$1,870 (PPP: \$3,830)
Inflation:	5.7%
Budget Balance (% GDP):	-6.0
Population:	53.8m

The president, Uhuru Kenyatta, faces division within his Jubilee Party government, but the opposition is equally divided, with the succession in 2022 a bone of contention on both sides. He will pursue his “Big Four” agenda—developing manufacturing, building food security, and improving health care and housing. Consumer spending will keep the economy humming.

Lebanon

GDP growth:	1.8%
GDP per head:	\$10,080 (PPP: \$15,190)
Inflation:	3.5%
Budget Balance (% GDP):	-9.6
Population:	6.3m

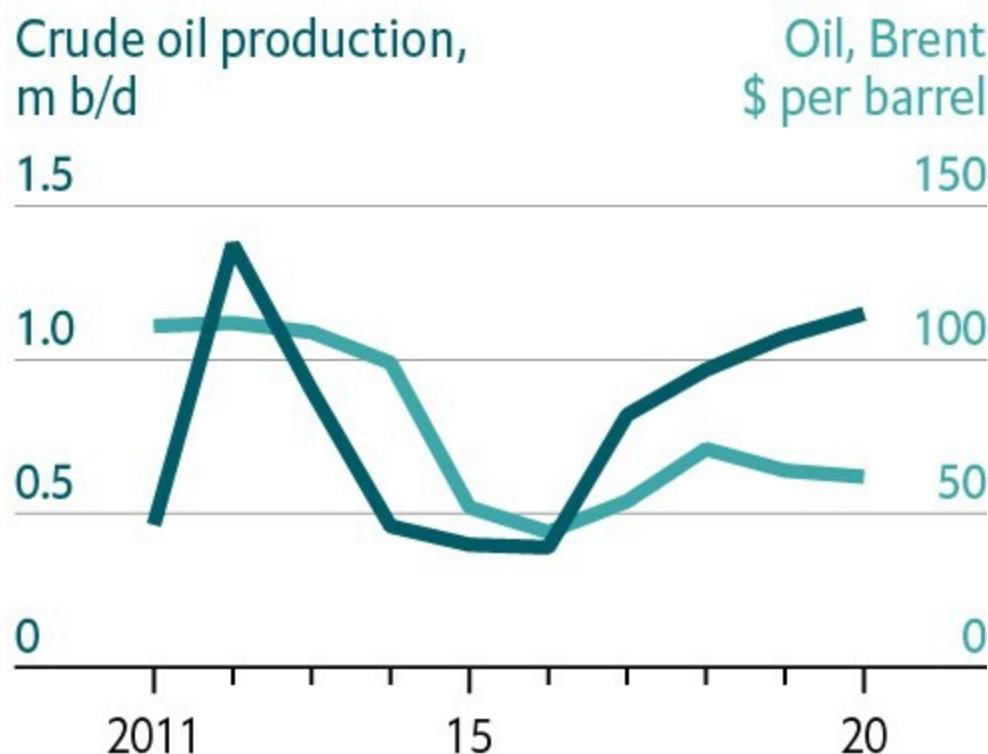
Stability rests on the fragile foundations of a sectarian carve-up following the civil war that ended in 1990, with Christian, Sunni Muslim, Shia Muslim and Druze contingents assigned parliamentary quotas and key executive posts. This has left the country enmeshed in sectarian squabbling, with violence a

constant threat. The conflict in neighbouring Syria adds a further layer of rivalry. A stable diet of foreign aid will support the economy.

Libya

GDP growth:	4.7%
GDP per head:	\$6,520 (PPP: \$20,970)
Inflation:	4.8%
Budget Balance (% GDP):	13.2
Population:	6.7m

Compensating Libya



The country will remain divided over the competing claims to power of the self-styled Libyan National Army, backed by Field Marshal Khalifa Haftar, a

general under the Qaddafi regime, and the Government of National Accord, based in the capital, Tripoli, and backed by the UN. In the absence of centralised authority, local militias will govern on the ground. Low oil prices will weaken exports, the mainstay of the formal economy, but recovering production will help to compensate.

Morocco

GDP growth:	2.6%
GDP per head:	\$3,280 (PPP: \$9,300)
Inflation:	0.0%
Budget Balance (% GDP):	-3.6
Population:	36.9m

The supremacy of the king, Mohammed VI, is not in doubt, but growing divisions below him and simmering public discontent over joblessness, the rising cost of living and pervasive corruption will hurt stability. The rate of economic growth will moderate as the EU, Morocco's leading trade partner, struggles.

TO WATCH: Loan ranger. The authorities will test the appetite of international investors with a \$1bn bond issue.

Nigeria

GDP growth:	2.0%
GDP per head:	\$2,610 (PPP: \$6,150)
Inflation:	11.3%
Budget Balance (% GDP):	-1.8
Population:	206.1m

President Muhammadu Buhari's second term will be trickier than the first, weighed down by flare-ups from Islamist insurgents in the north-east and separatists in the oil-rich south. The government will intervene in the economy to balance the demands of competing interest groups, ignoring steps to boost productivity. GDP growth will fall far short of potential.

Saudi Arabia

GDP growth:	1.7%
GDP per head:	\$21,880 (PPP: \$57,060)
Inflation:	2.0%
Budget Balance (% GDP):	-7.3
Population:	35.1m

Diversifying the economy away from oil, a long-term goal, is progressing, but slowly. Social liberalisation, a hallmark of the crown prince and de facto ruler, Mohammad bin Salman al-Saud, will keep the population onside. The kingdom will assert itself in the region in the face of a cornered and aggressive Iran. Production restraint and low prices will hold back oil's contribution to economic growth.

South Africa

GDP growth:	1.6%
GDP per head:	\$6,080 (PPP: \$14,170)
Inflation:	5.1%
Budget Balance (% GDP):	-4.8
Population:	59.3m

The president, Cyril Ramaphosa, has a full term ahead with a solid mandate,

but will struggle to reduce unemployment, boost the economy and curb corruption. Loyalists of his predecessor, Jacob Zuma, who resigned amid corruption allegations, will defend their interests, as will the union-backed left. The economy will remain tepid but pick up the pace.

Syria

GDP growth:	8.9%
GDP per head:	\$1,460 (PPP: \$4,180)
Inflation:	15.9%
Budget Balance (% GDP):	-10.9
Population:	18.6m

Turkey's incursion into Kurdish-held territory in the north adds a new element of instability to a fractured country. Still, with Bashar al-Assad again secure in the presidency thanks to support from Russia and Iran, attention will turn to reconstruction in areas still dominated by the regime. The economy will improve as Mr Assad rebuilds, but security concerns—including a possible resurgence of Islamic State as America retreats—will cap growth.

Zimbabwe

GDP growth:	-12.9%
GDP per head:	\$1,576 (PPP: \$2,180)
Inflation:	166%
Budget Balance (% GDP):	-6.3
Population:	14.9m

Emmerson Mnangagwa, successor to the late liberator and tyrant, Robert

Mugabe, will struggle to change course. Shortages of work, food and currency will assure resistance from all but his staunchest supporters, while rising prices will keep standards of living depressed. Aid will flow, but international lenders will be reluctant to commit resources when repayment is so uncertain, and the economy will remain in severe recession.

In Person



When Omar al-Bashir was ousted from the presidency of Sudan in a coup in 2019, he lost power for the first time in 30 years, but left a mess behind. During a 39-month transitional period, a new prime minister **Abdalla Hamdok**, an economist and political neophyte, will share power with the same military men who worked with Mr Bashir, as well as a paramilitary leader who emerged from the genocidal Janjaweed militia. The economy is in chaos, food, fuel and power are in short supply and rebellious regions do not recognise the new governing arrangement. Mr Hamdok, facing power-hungry soldiers and an expectant public, has a brief opportunity to stamp civilian authority on the administration.

| [Section menu](#) | [Main menu](#) |

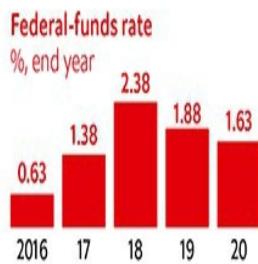
World in numbers: Industries

- [Ten business trends for 2020](#)
- [The world in figures: Industries](#)

The world in numbers Industries

Ten business trends for 2020

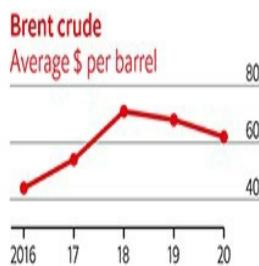
01 America's Federal Reserve cuts policy rates as central bankers around the world try to ward off a slowdown.



03 South Asia builds sorely needed infrastructure, with gross fixed investment in Nepal and Bangladesh up by more than 10%. America's shrinks by 0.5%.

04 Fintech companies are swaddled in red tape but flourish in some countries. India's digital payments reach \$500bn, though some of its banks struggle with bad debt.

06 Oil prices are pulled higher by political crises and pushed lower by risks to world growth, slipping slightly to average \$63 per barrel.



08 Digital health gathers speed as medical data should exceed 2,000 exabytes, enabling remote consultations, more personalised treatments and AI-assisted cures.

09 Thousands more stores shut in America as shoppers spend over \$600bn online. Amazon, a web colossus, faces stiffer competition from Walmart.

02 In an election year, Donald Trump's trade wars spook businesses and consumers. American ad men welcome the confusion: their take rises by 8%.

05 Tokyo's Olympics help makers of everything from adverts to skateboards. Japan aspires to draw 40m tourists, almost 20% more than in 2019.

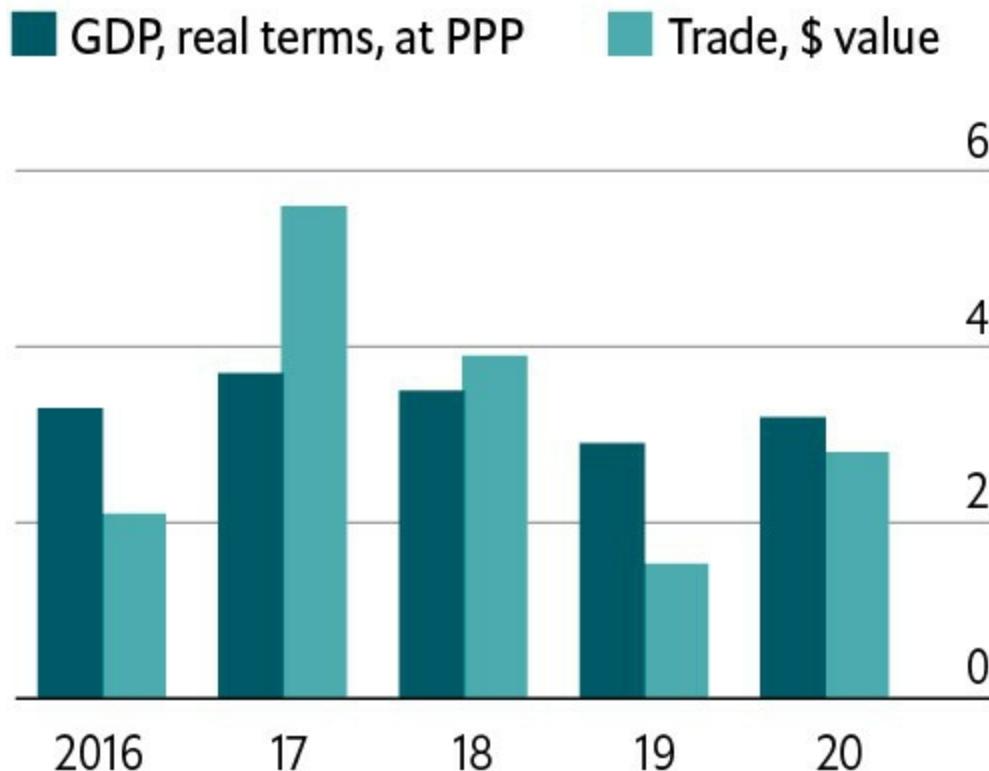
07 Global electric-car sales near 2.8m, thanks to governments prodding car firms to go green. China's makers spread their wings abroad.

10 5G phones, allowing film downloads in moments, make up 10% of smartphone sales, which bounce back after dipping slightly in 2019.

Sources: The Economist Intelligence Unit; Boston Consulting Group; Gartner, Group M; IDC; Statista

World GDP and trade

% change on a year earlier



Business Environment

Monetary stimulus will help keep global GDP growth at around 3.2% in 2020 (in PPP terms), just above the 2019 figure. America's Federal Reserve will cut interest rates to take the edge off a potential slowdown. China, too, will be in loosening mode. Overshadowing the business climate will be America's greater protectionism. The trade war won't ease much, and other countries will be under pressure to pick sides. In the worst case, tensions between America and China could morph into a global currency war. So long as this is avoided, there could be a silver lining: trade growth may speed up, as exporters outside China capitalise on its difficulties.

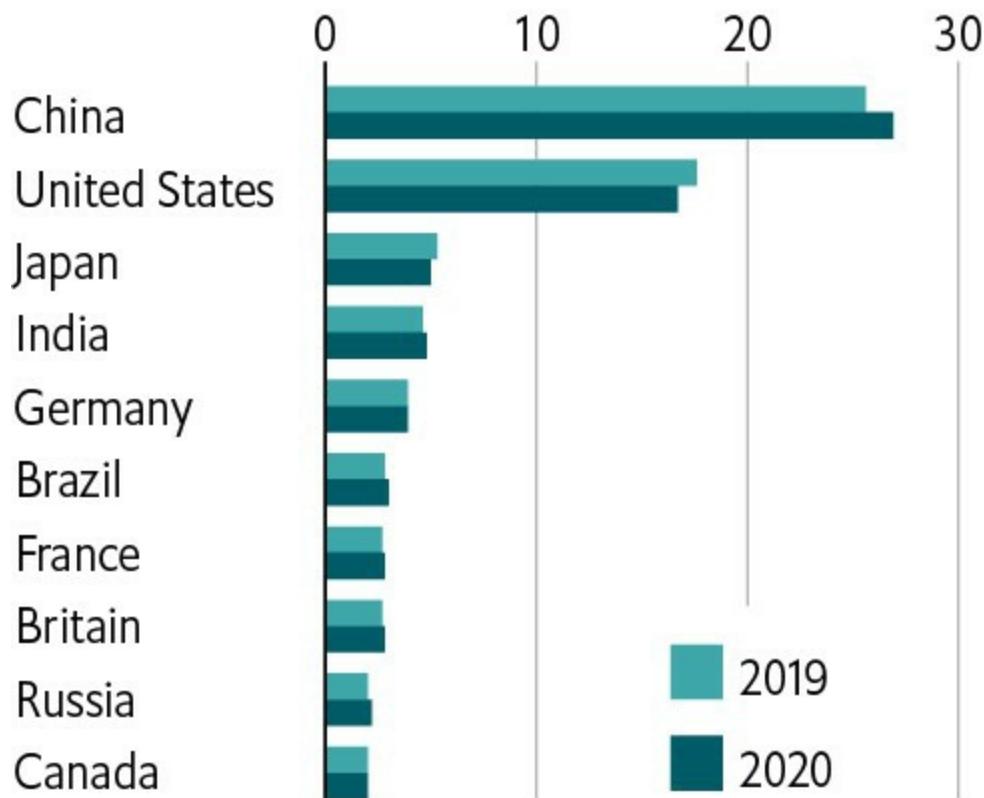
2020 forecasts unless otherwise indicated. World totals based on 60 countries accounting for over 95% of world GDP.

Automotive



New vehicle registrations

Units, m



Sales of new cars globally have stalled after a decade of forward momentum: in 2020 they will rise by just 1% as commercial-vehicle sales slip by 0.3%. Big obstacles include Brexit, diesel's decline and America's trade war with China, as well as its threats to hit European and Japanese carmakers with higher tariffs. Car companies must also deal with tightening emissions-regulations. America, an outlier, will freeze emissions targets at 2020 levels until 2026, pending a challenge by California and other states. But in January the EU will start imposing stricter caps on carmakers' average CO₂ emissions.

In the market for green vehicles, China will set the pace. Tesla will benefit from a new factory in Shanghai. China will phase out subsidies for electric vehicles but make carmakers electrify 12% of their sales. Most Western carmakers will fall short and have to buy expensive credits, even as Chinese makers set their sights on international markets. Globally, sales of electric cars will near 2.8m units. That is a mere 3% of total sales: the road ahead is

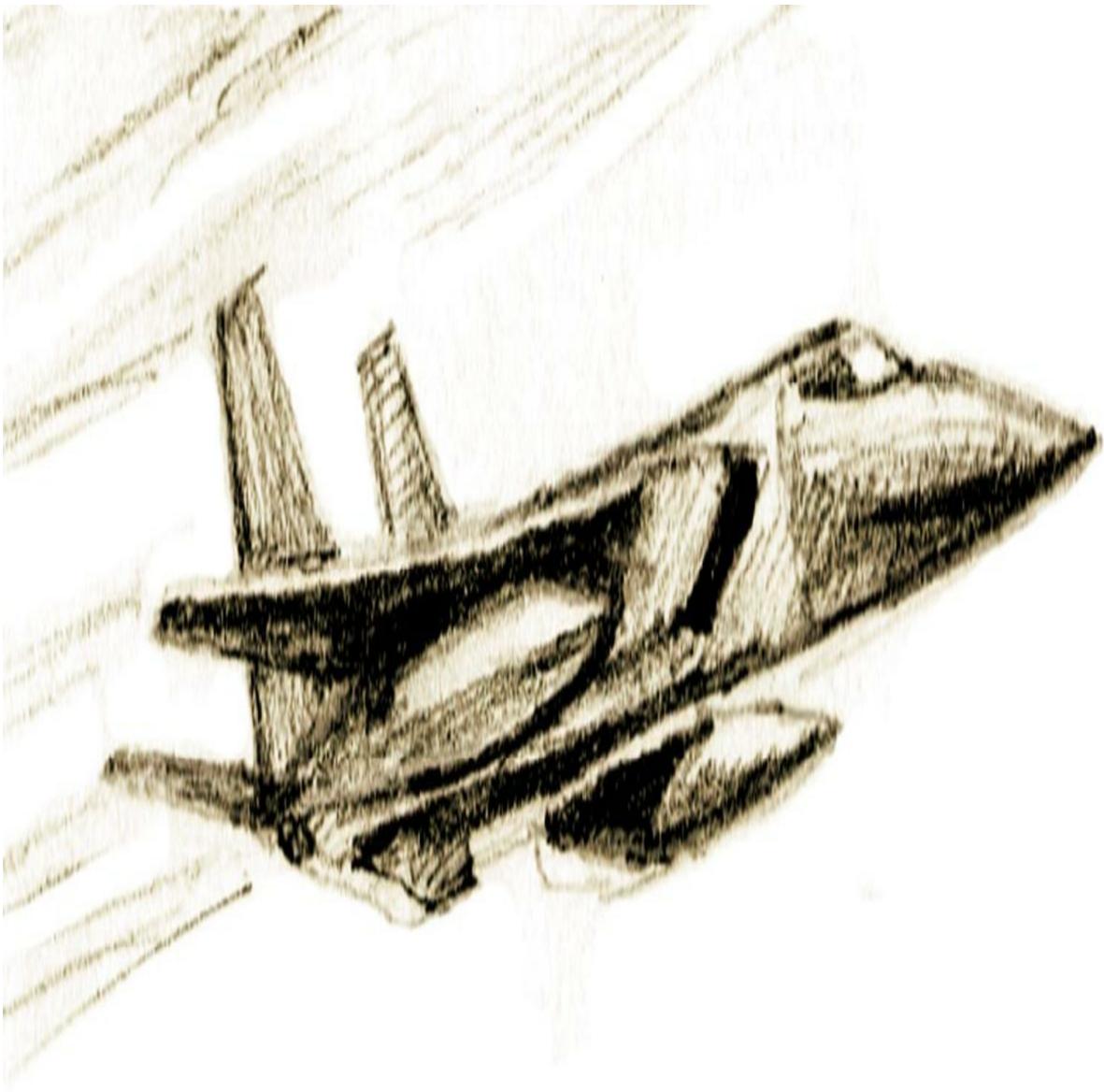
long.

Autonomous vehicles will advance, with taxis and commercial fleets leading the way. Germany's Continental will experiment with driving digitally connected lorries in convoy on highways, while Japan's Honda and Toyota will aim to get automated cars on Tokyo's streets before the Olympics. Yet fully self-driving cars are a way off.

Making all these new-fangled cars will require expensive retooling of old plants, and partners willing to share costs. Fiat-Chrysler will hope for another chance to merge with Renault, and bidding rumours will surround Tesla. Only a few carmakers will have money left to target new markets, as Malaysia's Proton will in Pakistan. Others will follow Ford and Nissan in planning closures and redundancies.

TO WATCH: Movable feast.Tech's impact on the motor industry can be seen in the ebb of carmakers away from Detroit's annual car show. They have preferred instead to flaunt their high-tech wares at Las Vegas's Consumer Electronics Show, also in January. In 2020, to win back deserters, Detroit will move its shindig to June. Look who's in the driving-seat now.

Defence and aerospace



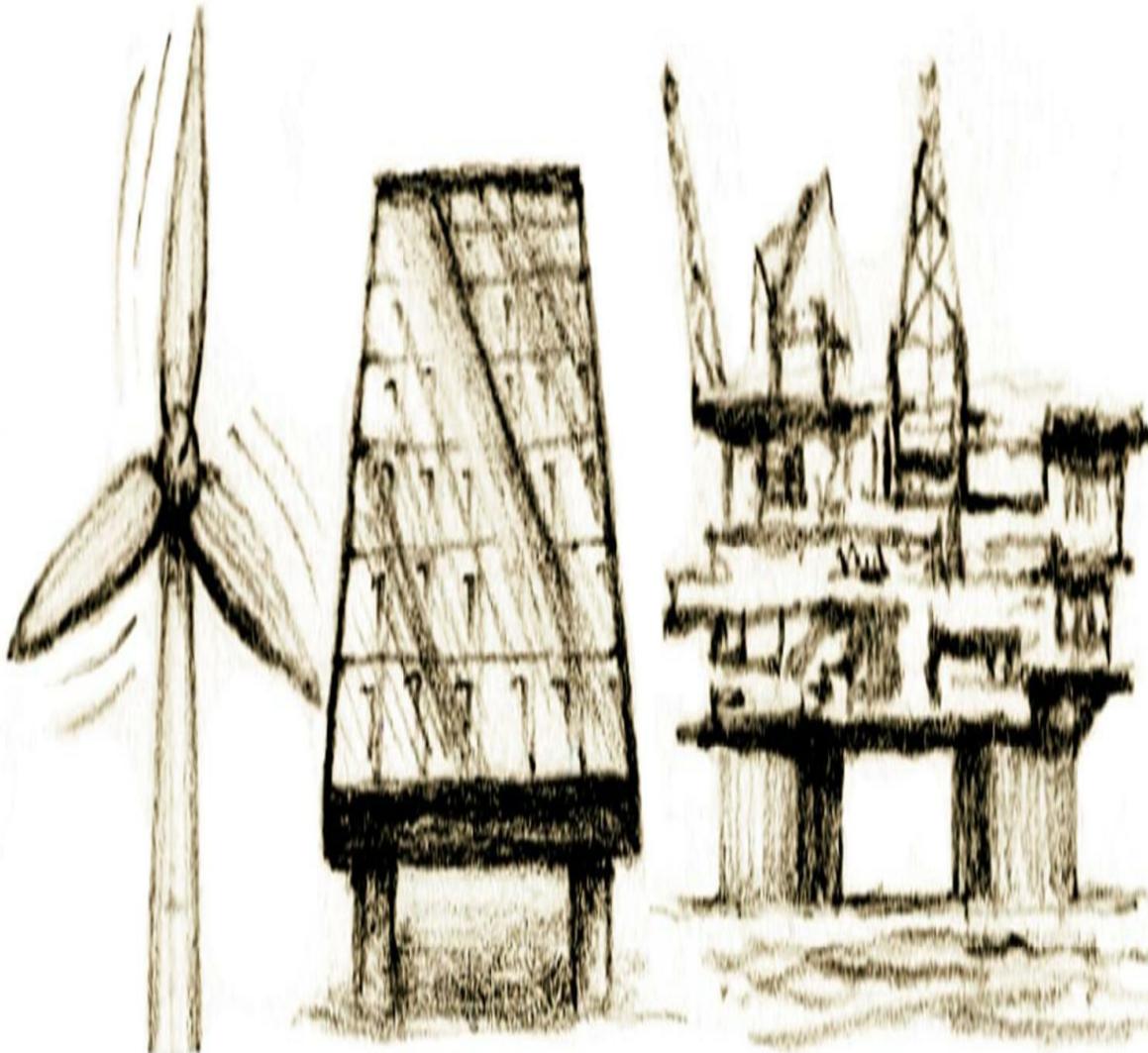
Demand for commercial jets will take off in 2020, with deliveries of large aircraft soaring by more than 60% compared with the year before, according to Moody's, a ratings agency. A main reason is the probable return to the skies of Boeing's 737 MAX jets, which were grounded in 2019 after two fatal accidents. Operating profit will also improve by more than 10% as both America's Boeing and its European rival Airbus ramp up production. Fuel-efficient, narrow-body jets will drive demand. Boeing will make an average of 57 narrow-frame 737 planes a month in 2020; Airbus will win more orders for its A220 jets, acquired from Canada's Bombardier.

Despite Sino-American trade tensions, China's importance to planemakers will be undiminished, as it stays on course to become the world's biggest aviation market. India will also be a keen buyer of jets, amid a tourism boom. Brazil's aircraft industry will be lifted by Boeing's takeover of Embraer's commercial-jet business.

Defence contractors outside America will enjoy a 3-5% rise in spending, led by France, Germany, Japan and Britain, predicts Moody's. America's defence bill will grow to \$738bn: hypersonic weapons (which can fly more than five times the speed of sound) will be a priority, as will Lockheed Martin's F-35 stealth fighters. Escalating geopolitical tensions in North Korea and the Middle East will ensure that big spenders in those regions spend even more. Traditional armaments will still attract funding, but governments will focus on covert technologies linked to cybersecurity and electronic warfare.

TO WATCH: Combining forces. Raytheon and United Technologies will merge in 2020 to form the second-largest defence and aerospace firm, behind Boeing. Raytheon Technologies—whose engineers helped bring the world GPS, microwave ovens and Patriot missiles—will funnel more than \$8bn into advanced technologies.

Energy



Political turbulence will pose the risk of price spikes in 2020, the biggest being a miscalculation between America and Iran. Lesser threats will include turbulence in Libya, and Venezuela's political ructions. Assuming disruptions are minimised, oil prices will slip to an annual average of \$63 a barrel. Oil demand will almost stand still in America, where new-car sales are falling. Amid trade protectionism, China's energy needs will grow by only about 1%. Smaller emerging markets cannot take up all the slack, but India's booming car market will boost oil consumption there by 4%. Wobbly demand will deter America's shale-drillers from pumping harder. After another record performance in 2019, American production will drop by 1%,

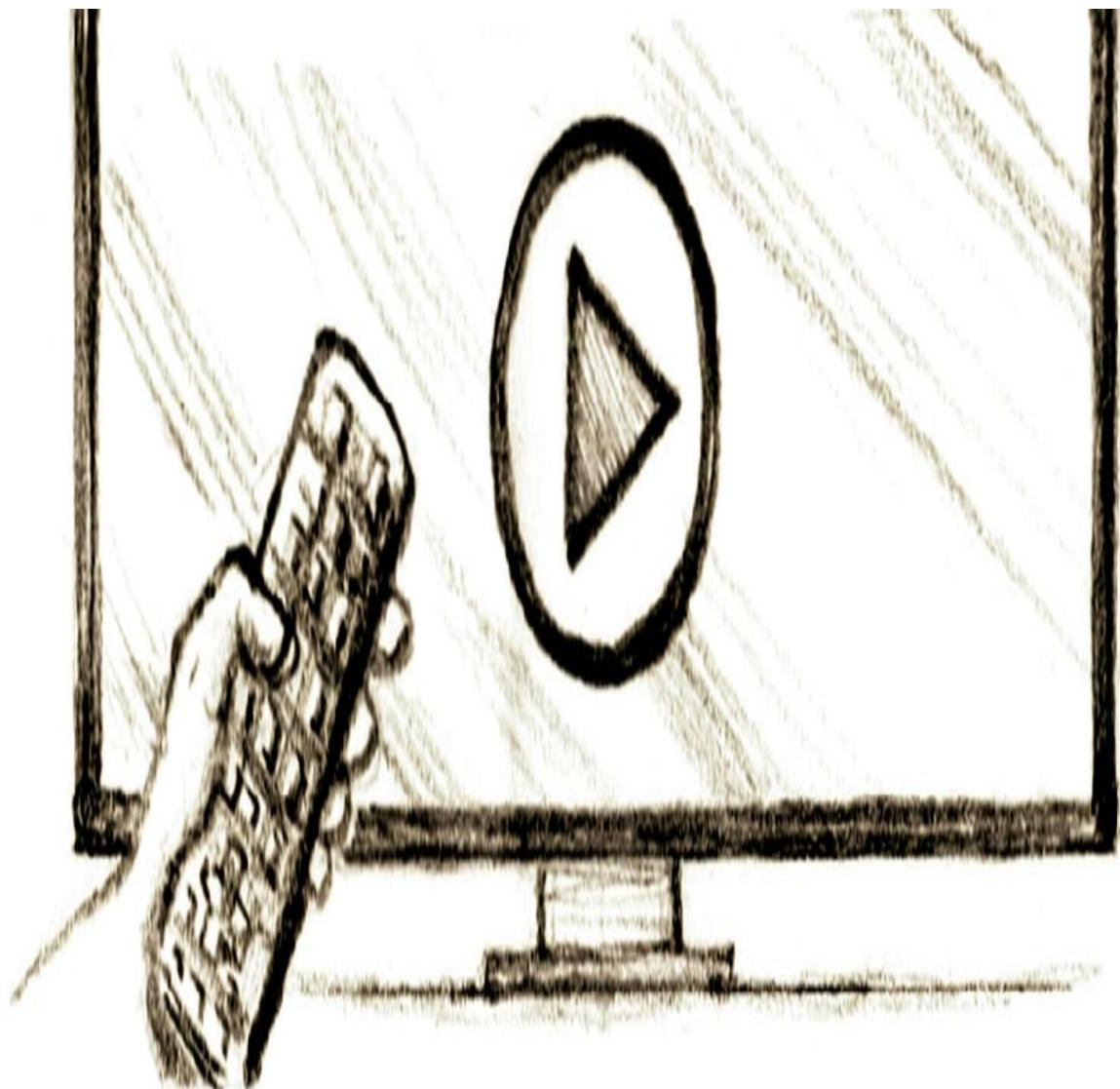
pushing OPEC rivals to revive some idled capacity.

By contrast, natural-gas demand and supply will both surge again; gas is greener than grimy coal, demand for which will be flat. The need for liquefied natural gas (LNG) will climb by 7%, sped up by the shipping sector, which must comply with strict sulphur-emissions rules by 2020. LNG's biggest market is Japan, whose nuclear authorities are a forecaster's bane. How much LNG Japan imports will depend on the counter-terrorism defences regulators require of nuclear plants. Many of the facilities that were restarted after the Fukushima nuclear accident could close again, spurring demand for LNG for power instead.

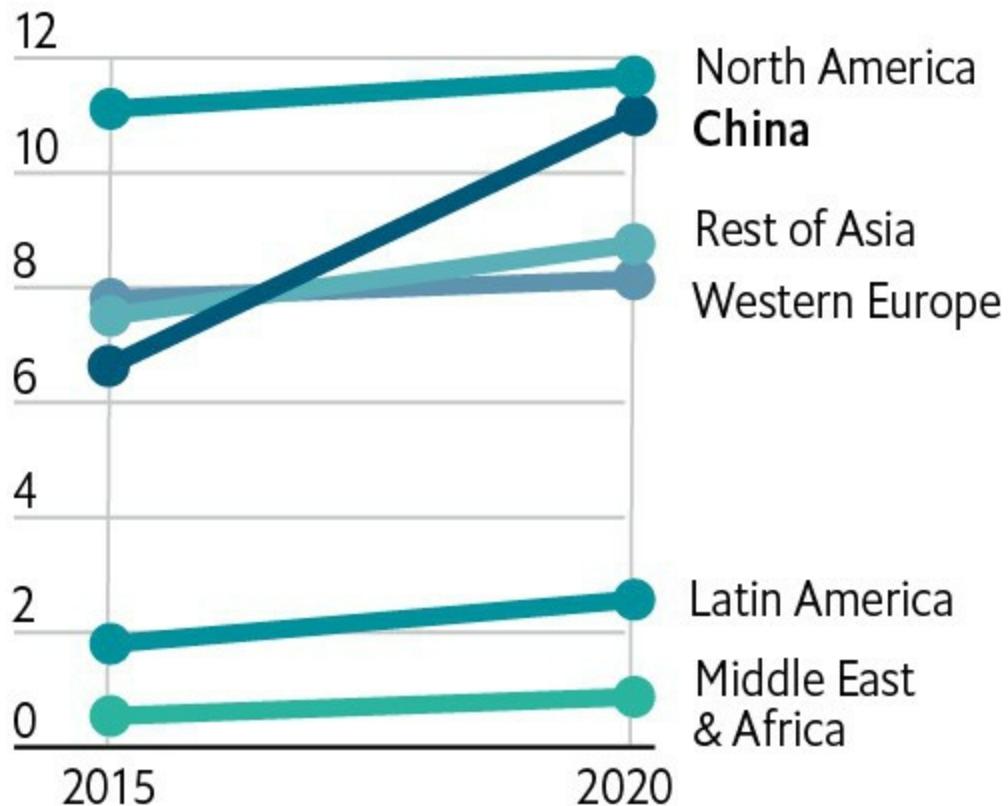
Handouts to support now-cheap solar energy will dwindle; 2020 could be the year when solar-panel makers in China, which claim around 70% of the global market, must finally survive without subsidies. Artificial intelligence will play a bigger role: AI systems from China's Huawei will reposition panels to soak up more sun.

TO WATCH: Pent-up energy. Much green energy is squandered: uptake of battery storage has not kept pace with generation. Happily, in America, energy-storage deployments will triple in 2020, according to Wood Mackenzie, a consultancy.

Entertainment



Total box-office revenue, \$bn



Source: PwC

Spending on entertainment and media will grow by a robust 5%, to \$2.3trn, in 2020, according to PwC, a consultancy, propelled by all things digital. Internet video will outshine pay-TV as more consumers cut the cord. America will lead the online-video industry, with the launch of new streaming services such as Comcast's NBCUniversal. But China is catching up. Hungry for new content, Chinese subscribers will spend nearly two hours a day watching internet videos, predicts Zenith Media. While traditional telly still rules in India, the likes of Netflix and Amazon Prime Video will attract more viewers with local content.

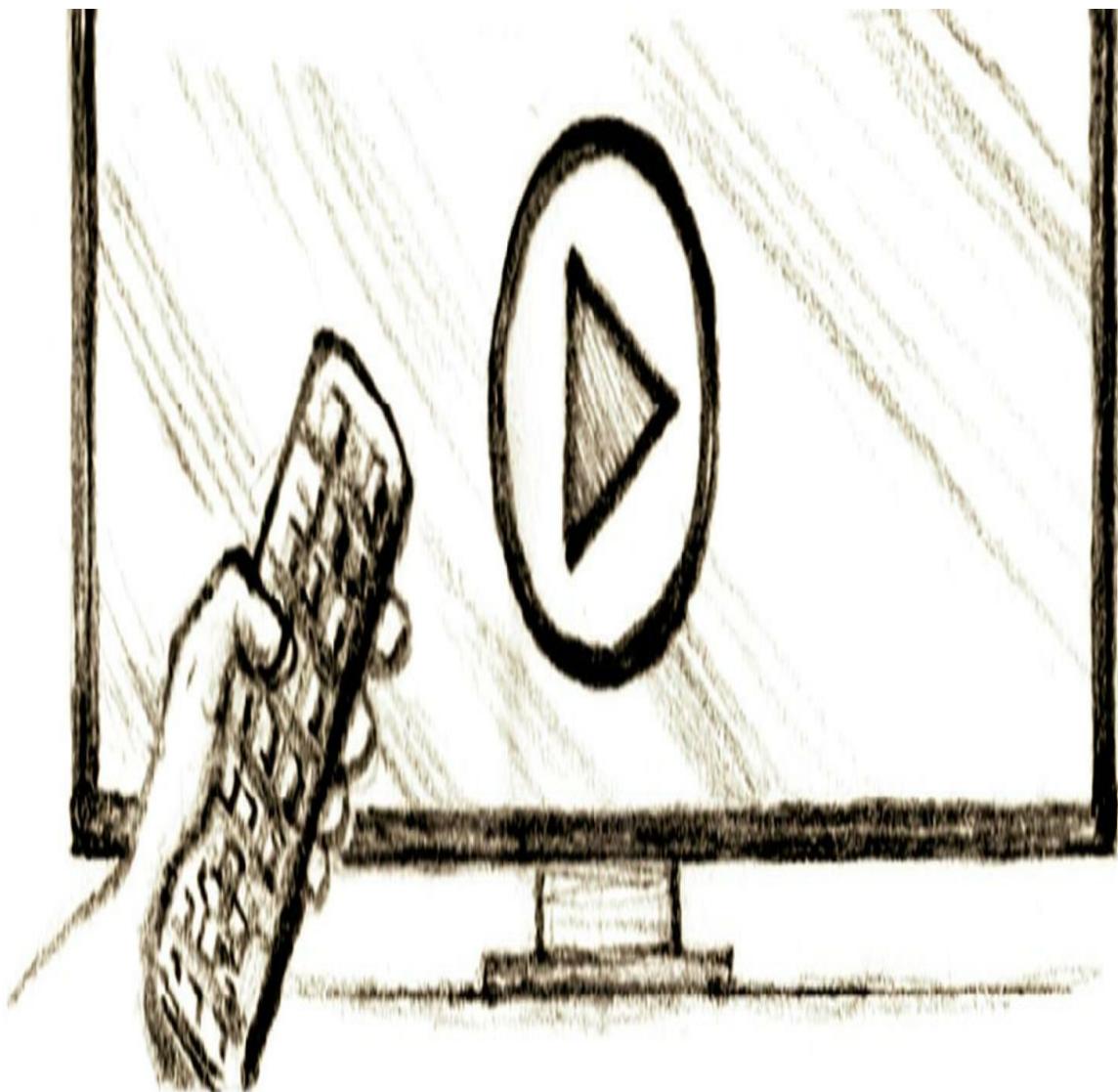
Netflix, the streaming industry's pioneer, will lose some wildly popular shows: "Friends" will move to WarnerMedia's HBO Max and "The Office" to NBCUniversal in 2021. In an effort to fend off rivals, Netflix will launch a spate of original content, including the second season of "The Kissing Booth". Amazon Prime Video will stream the new "Star Trek" series,

“Picard”. Cinema chains will tempt punters away from online videos with more IMAX screens and plush recliners. China is poised to become the world’s biggest film market. The global box-office take will rise by 4%: a quarter will come from China alone.

Revenue from video games will jump by 7%, according to PwC, but growth is slowing. Its future revolves around e-sports and celebrity gamers.

TO WATCH: New revenue stream. Disney Plus, set to debut in November 2019, is the new home of the Marvel movies and all 30 seasons of “The Simpsons”. In 2020 Disney’s streaming service will add plenty of new content, including “Muppets Now” and a fresh season of “Star Wars: The Clone Wars”, as well as spending \$1bn on original content. By contrast, Netflix spent close to \$15bn on new content in 2019.

Financial services



For financiers, 2020 will be overshadowed by America's presidential election in November. At stake is nothing less than the future of banking regulation, trade policy and perhaps even the global monetary system. Until November, central banks will tread warily to ease risks of recession, falling house prices and stockmarket crashes. American interest rates will dip further, while Europe will aim for stimulus. Even so, European banks will cut thousands of jobs to shore up profits. Lobbying against Basel IV will intensify, amid pleas for American-style lenience. Elsewhere bank regulation will tighten: India, the Philippines and Colombia will belatedly adopt Basel III.

In China, foreign banks will eagerly raise investment as caps on owning domestic players are lifted. China's bank lending will rise faster than deposits, narrowing the gap between them. Globally, the opposite will apply: bank lending, at \$86trn, will lag deposits of \$94trn, raising liquidity for financial institutions. Asia will house nearly half the world's 1bn households with annual income over \$10,000.

Almost everywhere, competition will intensify with the rise of online banking. Fintech companies and payment services will extend their reach—digital payments in India are on course to hit \$500bn—but increasingly bump up against regulation. That may scupper Facebook's planned cryptocurrency launch. Insurance, too, will head online, as growth in premiums accelerates thanks to Asian demand. Ageing China will complete the opening of its life-insurance market to foreign investors, as premiums grow by 10% a year, according to Swiss Re.

TO WATCH: Lion's shares. Ethiopia intends to launch its first stockmarket, in Addis Ababa, as its prime minister, Abiy Ahmed, tries to liberalise finance (and much else). With elections due in 2020, political instability could be the greatest danger.

Food and farming



Move over, El Niño—Donald Trump is in town. Extreme weather is one of the greatest threats to global food markets, but political tempests are now equally worrisome. America is the biggest agricultural exporter, but this exposes its farmers to the vicissitudes of trade, as well as its benefits. America exports a fifth of its farm products and has been hit by Mr Trump's tariff war with the top food-consumer, China. This, just as swine-fever is devastating China's pig herds. That will damage demand for big American feed-crop exports like soyabeans, prices for which will not budge in 2020.

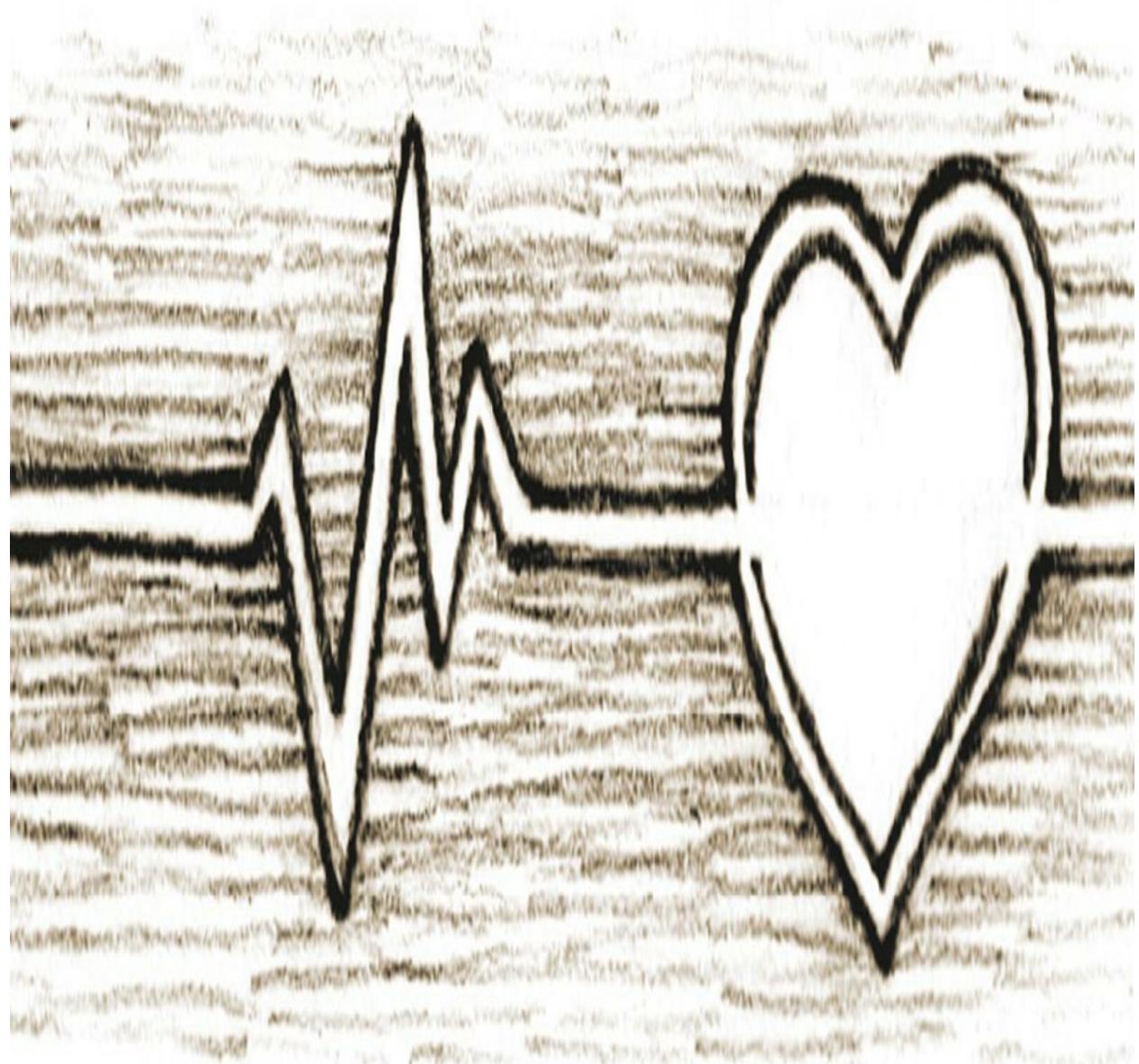
Luckily for growers globally, slow-burning trends such as climbing incomes

and swelling populations will stimulate consumption. The Economist Intelligence Unit's index of food, feedstuffs and beverage prices will rise by 5% in 2020. Grain prices will also climb by 5% as rice and maize markets tighten. The price of sugar, which suffered double-digit drops in mid-2019, will recover by 3%, with higher ethanol prices encouraging use of sugarcane for fuelmaking. Beverage prices will fizz up by 9% as mounds of coffee beans are depleted.

In the developed world, consumers are getting more health-conscious, inconveniencing everyone from café owners to big food-manufacturers. One commodity in the line of fire is chocolate, which is suffering as the spread of internet shopping discourages spur-of-the-moment spending on indulgences at the supermarket. At least the claimed healthiness of dark chocolate will sustain cocoa cravings. Asians consume far less chocolate than Westerners, providing ample room for growth in appetites and waistlines there. But overall cocoa consumption will expand by just 2% globally in the 2019-20 crop year.

TO WATCH: Pot of gold. America is at the heart of the surging cannabis business. More than 30 states have now legalised marijuana for medical or recreational use. More, such as Florida, could follow in 2020. Legal sales of the drug could reach \$20bn in 2020.

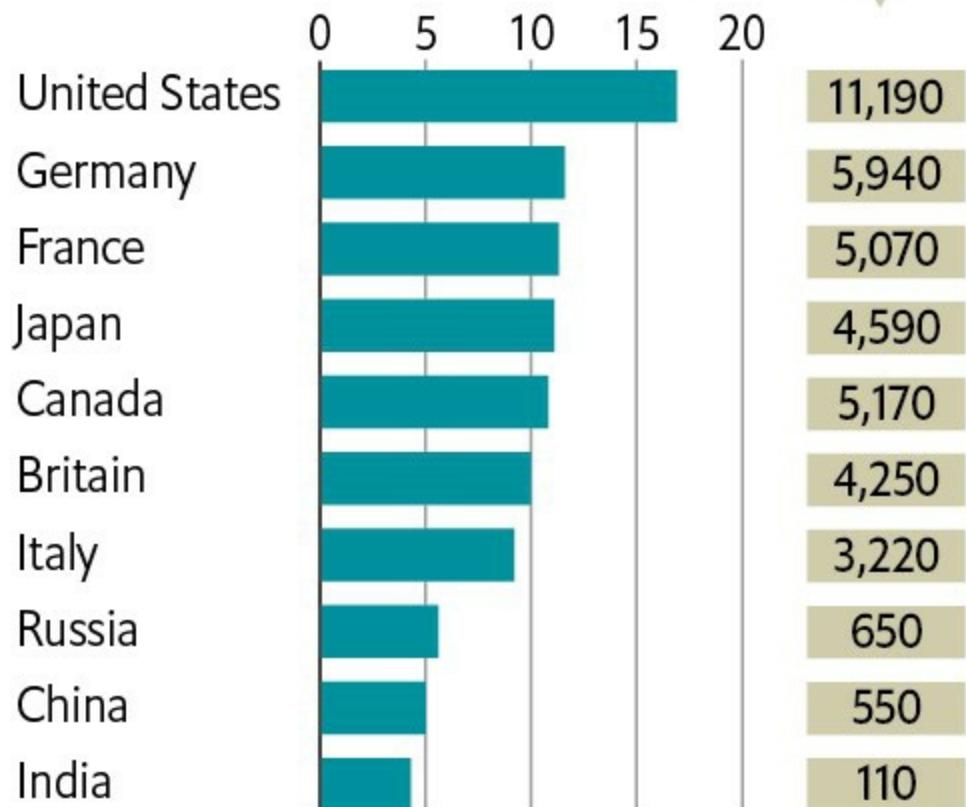
Health care



Health-care spending

2020, % of GDP

Per person, \$



Ten years ago, China promised its citizens universal health care by 2020. More than 95% now have health insurance, but standards are patchy. Chinese health spending will reach \$550 per head, or 5% of GDP, in 2020, with room to grow: globally, spending stands at \$1,530 per head, or 10% of GDP. The biggest spender, America, will fork out 17% of GDP on health; Democrats will push for national health insurance in an election year.

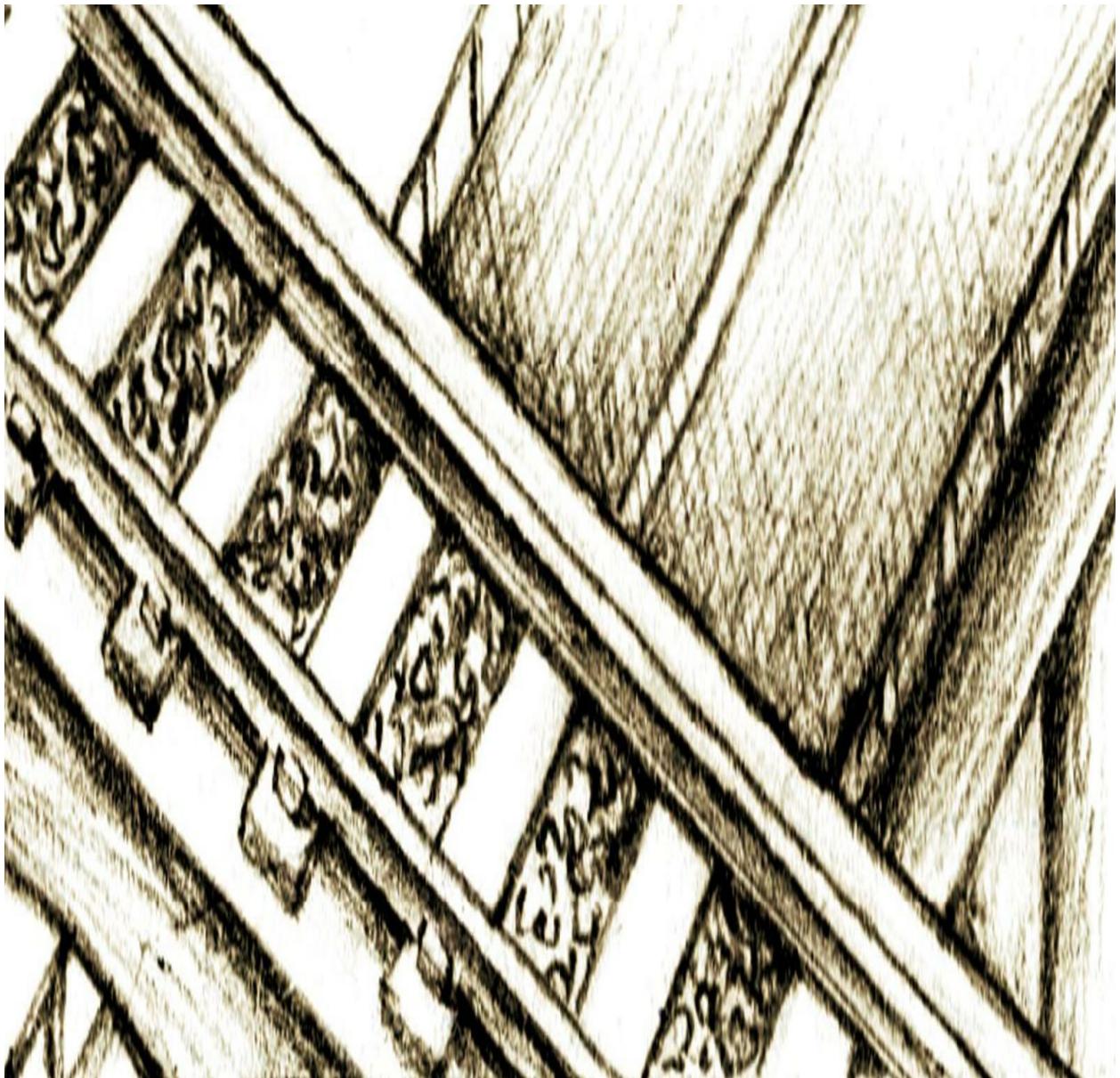
Elsewhere, access to health care will keep improving. In 2020 Pakistan promises health insurance for all districts; India will have 40,000 health and wellness centres under its new national scheme. Africa will be declared polio-free, if Nigeria again reports no new cases. In Europe, South Korea and Japan the challenge will be ageing populations: 28% of Japanese will be 65 or over. China sees a similar trend and will axe its controls on family size completely.

Medical breakthroughs in 2020 could include the first gene therapy for Duchenne muscular dystrophy. Digital apps like Tencent's WeDoctor will bring advances of their own. Globally, health data will top 2,000 exabytes, enabling remote consultations, faster diagnosis and personalised treatment

Worldwide pharmaceutical sales will rise by 5% to \$1.4trn, a touch slower than overall health-spending growth. In the United States, high prices for medicines, and the right to buy cheaper Canadian drugs, will be contentious. The price gap will widen in 2020 as Canada sets up a national pharmacare system.

TO WATCH: Embryo editing. In spring 2020 the International Commission on the Clinical Use of Human Germline Genome Editing releases a final report on the ethics of "editing" embryos. A global moratorium is possible. The report was spurred by a controversial CRISPR experiment in China in 2018, which Russia wants to copy.

Infrastructure



Infrastructure's biggest boom in 2020 will be in South Asia. Gross fixed investment, a proxy of sorts for infrastructure spending, will jump by 14% in Nepal and 11% in Bangladesh in real terms; in India, it will grow by 8% to surpass \$1trn. New roads and power lines are sorely needed if India is to improve its business appeal. Yet it will lag far behind its great rival, China, easily the most construction-crazed country. China will contribute \$6trn of the world's \$22.4trn of gross fixed investment in 2020, although growth will be well below that in its heyday.

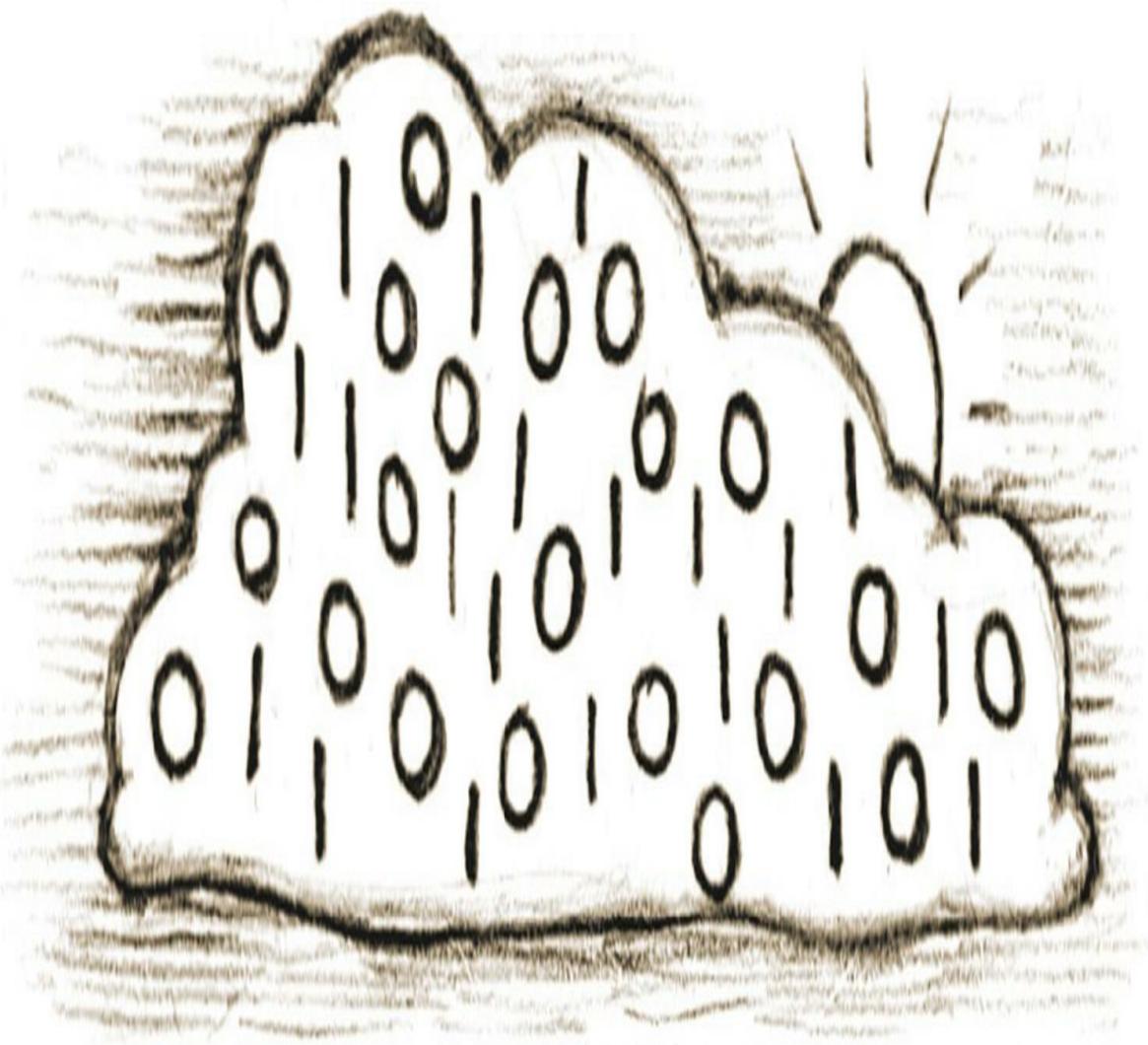
China's impact on infrastructure may be felt most keenly abroad, via its "Belt

and Road” building spree. It will speed work in countries far (see To watch) and near, for example in South-East Asia. Consider Indonesia, where the president, Joko Widodo, wants to improve linkages across the archipelago’s 13,000 islands. Controversy often clings to China’s investments, but given his government’s ambitious plans—work on a new capital, on Borneo, will start in 2020—“Jokowi” will take China’s money.

While emerging-world investment in infrastructure expands by 5%, rich countries will manage only 1%. Britain will try to galvanise infrastructure spending after Brexit. Few, however, would bet on its biggest project, the much-delayed Crossrail train-line linking London with its commuter belt, opening fully in 2020. Despite big talk from Donald Trump, America’s infrastructure spending will be hit by political discord and shrink by 0.5%.

TO WATCH: Magic in a magical land. Sub-Saharan Africa will be the second-zippiest-growing region for infrastructure investment. Leading the way is Mozambique. Chinese cash will play a big part. Another spur is the need to rebuild after cyclones Idai and Kenneth wrought havoc in early 2019.

IT



In 2020 tech types could find themselves longing for the glory days: 2018 saw a high-water mark for many firms' tech budgets, warns Forrester, a research company. Growth in IT spending will slip below 4% in 2020 after two years of gains of around 5%; economic slowdowns in America and China, pivotal for the tech market, are the cause. Nevertheless, America's spending will be biggest and fastest, climbing by a still-strong 6%. That will be roughly matched by China and India. The two mighty emerging markets will account for just one in ten dollars spent on tech, however, compared with four in America—putting recent talk about China's threat to America's tech supremacy in perspective. Black spots for spending growth will include

Brexit-hit Britain, and Latin America.

IT firms will hope to profit from companies' appetite for efficiency, which ought to spur investments in back-office systems. A further tech driver will be the cloud, spending on which will grow by 16%, according to Gartner, another research outfit. Support will also come from demand for software-as-a-service. Microsoft and Google will strive to displace the king of the cloud, Amazon Web Services, but AWS will reign supreme, perhaps earning \$40bn-50bn in 2020. In more penny-pinching times, programs to help companies manage their finances and workforces will be among those generating double-digit growth. Software will expand by 6%, twice as fast as lumbering hardware.

Scepticism will haunt blockchain and artificial intelligence. Technology that opens up virtual-reality experiences will compete with augmented-reality gizmos (think Google Glass). Gradually, the lines between them will blur, until users can switch between imaginary realms and embellished versions of the real world.

Media



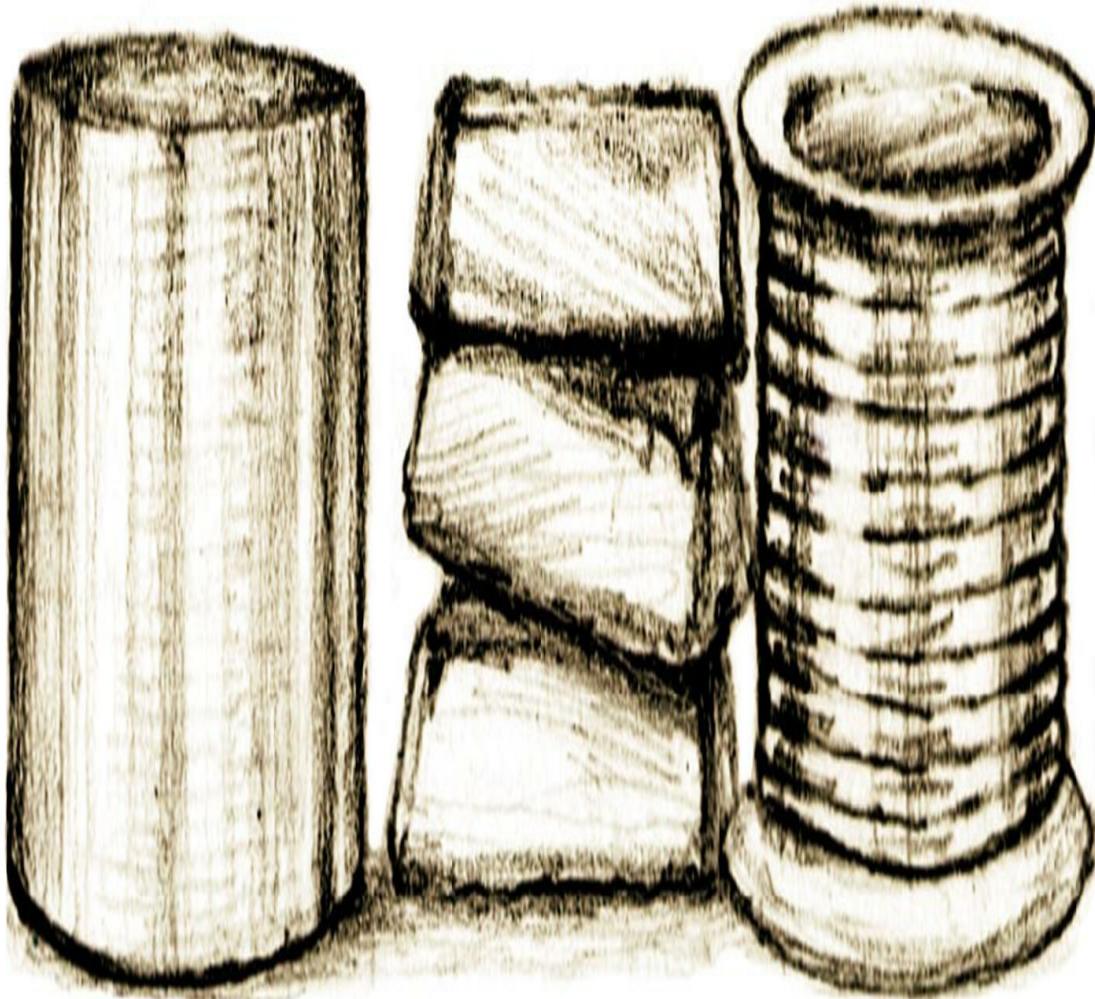
After taking a slight hit in 2019, ad spending will increase by 5% in 2020, forecasts Magna Global, a consultancy. Digital will jump by 11% to \$338bn, making up more than half of total ad sales as smart homes, internet video and cloud storage gain ground. Mobile makes up the bulk of digital ads and is growing faster than desktop-based ad revenue. Display advertising on mobile phones will rise to \$126bn, forecasts PwC, with the onus on ads within apps rather than in browsers. The Tokyo Summer Olympics and cricket's T20 World Cup will prompt plenty more.

Elections in America, the world's biggest ad market, will propel spending by

8% there, says GroupM, a media company, helping it outpace China (6%). Meanwhile Brazil will challenge Germany as the world's fifth-largest ad market, as Google, YouTube, Facebook and Instagram become more popular. At 13%, India will post one of the strongest increases. Advertising will whet Indian consumers' appetite for cars, online shopping and chemical-free beauty products.

Newspapers will attract just 7% of global ad spending in 2020, says Zenith Media. Magazines, radio and outdoor advertising will draw 16%. At 31%, television will fare rather better, but its share is shrinking rapidly amid the rising threat from ad-free streaming options like Netflix and Amazon Prime Video. Cinema is the main bright spot in non-mobile, as snazzy screens and popular franchises draw big audiences.

Metals and mining



Metal-makers will rue their exuberance in the good years as a self-inflicted supply glut depresses prices. An even bigger worry for 2020 is that America's trade war with China forces manufacturing and construction companies to reduce demand. Consumption of some metals, like steel, will shrink owing to a generally slowing global economy. American steelmakers will wonder when the touted infrastructure-spending programme will begin.

Nonetheless, prices for base metals will advance by 4% in 2020 as producers run down stocks. Aluminium prices will jump by 9%. Supply-wise, China's aluminium overcapacity—in 2020 its producers will make 39m tonnes of the

68m produced globally—will dull enthusiasm for plant-building elsewhere. When it comes to copper, China gobbles up half of what's consumed each year. Urbanisation there, as well as renewable-energy targets, will buoy copper consumption. Globally, the metal will be in high demand for electric-vehicle batteries, and prices will rise by 7%. Strikes at South American and Indonesian mines may cut output at times, despite the advent of new facilities like Peru's Toromocho mine.

Like copper, tin has high-tech uses—for electronics, robotics and in renewables. Consumption will hit a ten-year high of 365,000 tonnes, spurring producers to open new mines.

Retail

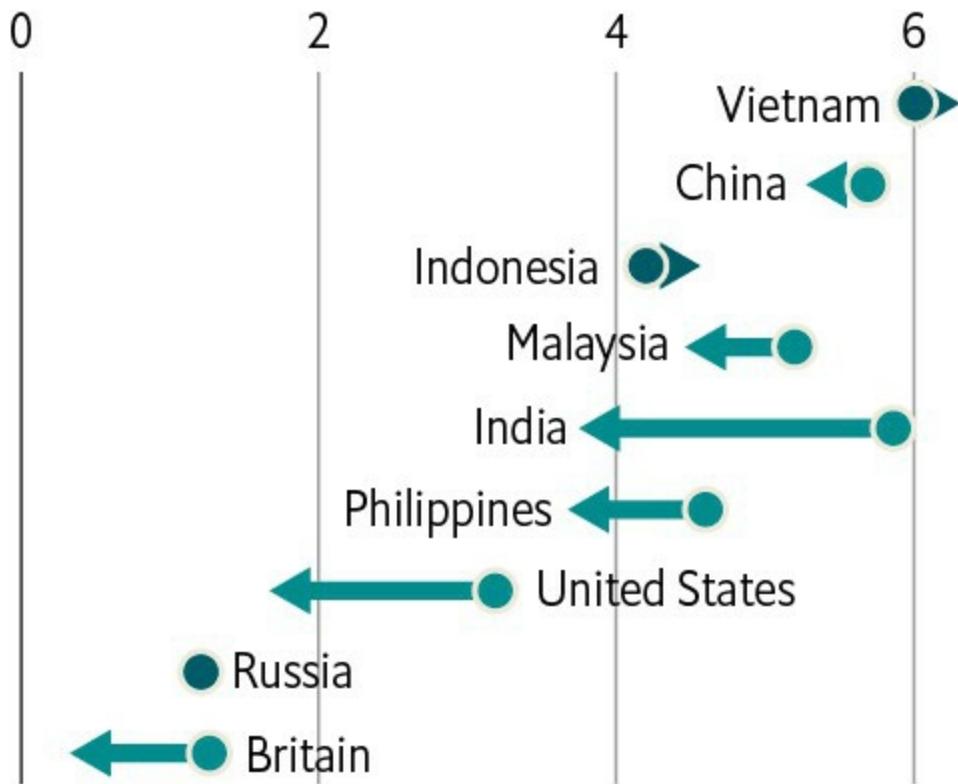


Retail sales

% change on a year earlier

2019

2020



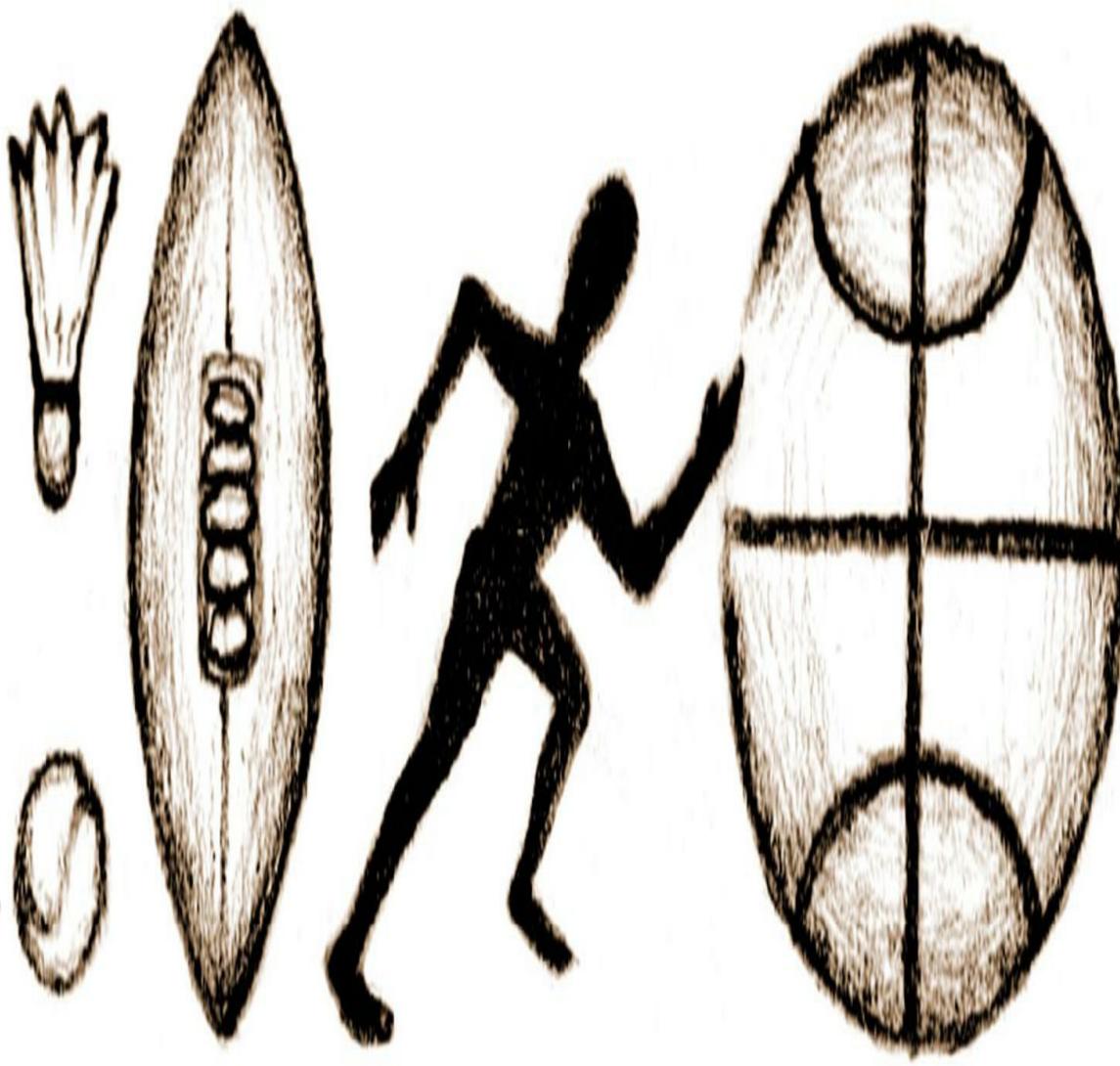
Rising political uncertainty and changing consumer tastes will put the brakes on retail-sales growth globally, which will dwindle to 2% in 2020. Bricks-and-mortar retailers will struggle in the face of relentless competition from the likes of Amazon. The situation is particularly dire in America, where more than 12,000 stores faced extinction in 2019: that could rise in 2020 as the economy slows. Donald Trump's tariffs on Chinese-made goods will make matters worse. Although overall consumer prices will rise by less than 2%, some products could see much larger jumps.

Walmart, the world's biggest retailer, will reap the benefits of a vigorous online push to stave off Amazon; Walmart's online business is thriving, and it projects sales in America to rise by nearly 3%. But Amazon will challenge Walmart's lead in the grocery market and could launch a new brand of grocery stores in 2020, if not before. For growth, Walmart will look overseas to markets like India, where it aims to open about 30 stores by 2020. India's

retail sales are forecast to rise by 4% in 2020, partly driven by foreign brands. As online shopping increases, e-commerce revenue there will jump to \$120bn. The picture is brighter in China, though the trade war with America will dent sales a little.

Overall, retail sales will rise by 3% in Asia, 2% in North America and 0.5% in western Europe. Consumer-led expansions in some African countries will push up purchases by a zippier 4%.

Sport



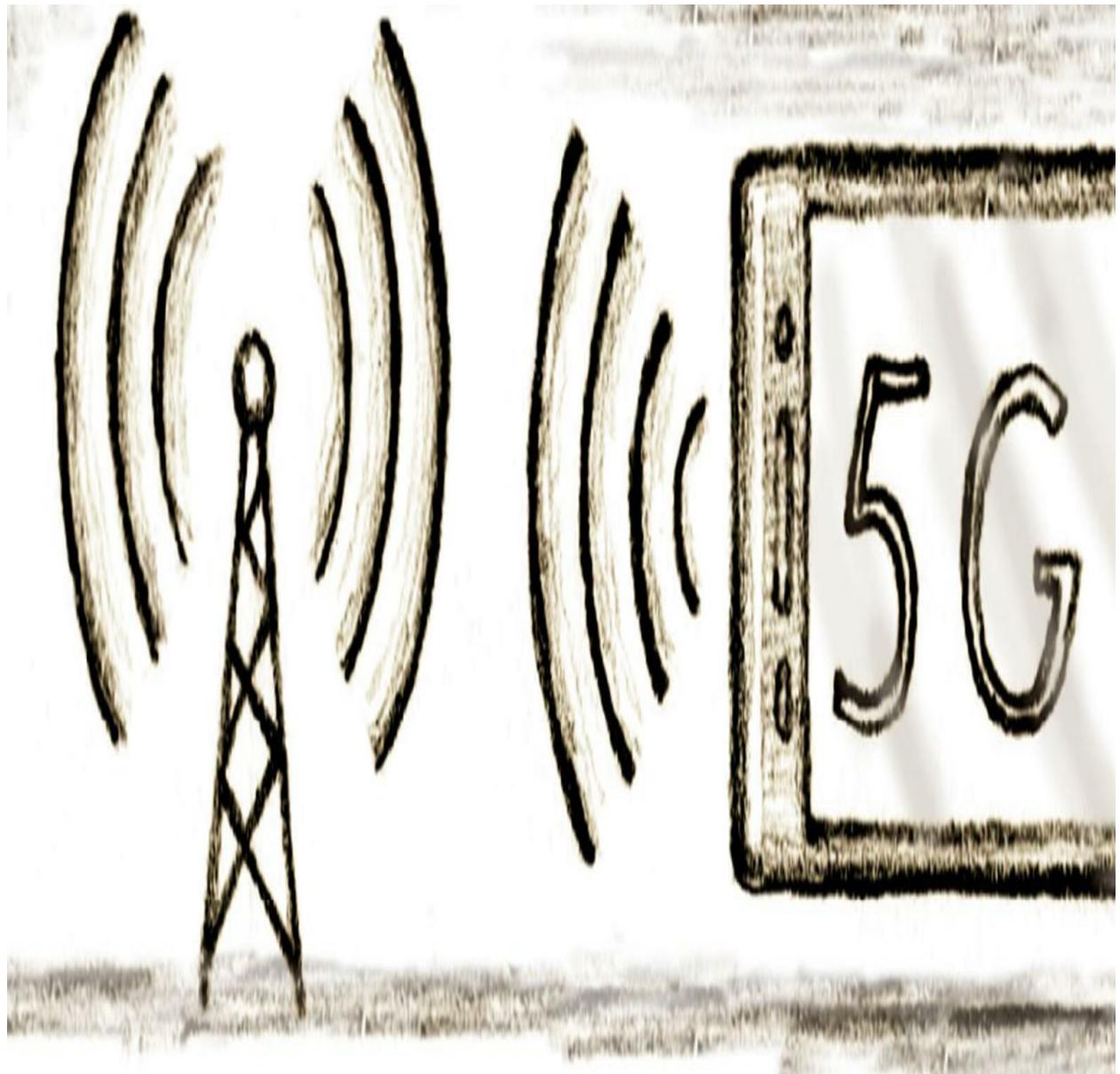
The year will be one of headline-grabbing quadrennial sports events. Tokyo's Olympics and Paralympics have already attracted a record \$3bn in Japanese sponsorship. This will contribute to the €198bn (\$221bn) that will be earned from professional sports events globally in 2020 through the sale of media rights, sponsorship, tickets and merchandise. Add in amateur sports and the global sports industry could be worth \$550bn.

Under the motto "Discover Tomorrow", Japan is putting technology in the spotlight at the Olympics: self-driving cars, robot workers and hydrogen

vehicles will all feature prominently. Congestion-reduction measures during the games will spur a mass experiment in teleworking by Tokyo-dwellers.

Technology's expanding role will fuel controversies. One big question at the UEFA European Football Championship will centre on Portugal: can it retain its crown? Another: the success, or otherwise, of harnessing video-assistant-referee technology to verify goals at the tournament. In the social-media age, the battle for media rights will be more heated than ever: sports-media rights will be worth \$22bn in North America alone. Live-streaming will be increasingly important. Sports gambling, though bedevilled by legal debates in America, will boom. It will grow by around 9% annually, according to Technavio, a research company.

Telecoms



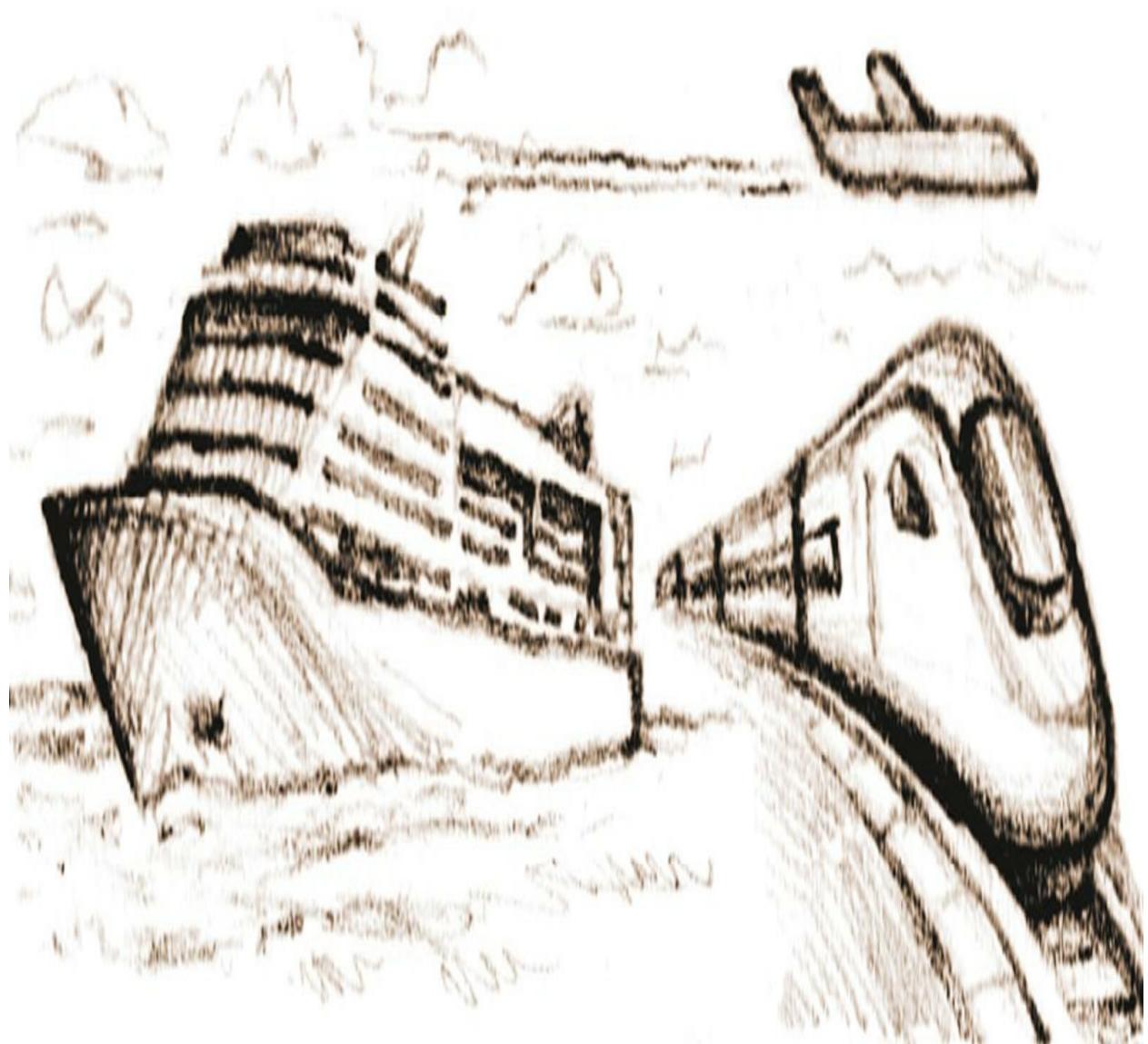
As the internet's reach lengthens and smartphones get cheaper, mobile and data subscriptions will gain in popularity. But with demand for voice-related services lagging, telecoms firms will need to find new sources of revenue. Rather than focusing on adding subscribers, many will try to lure existing clients with add-on services. Innovation will focus on mobile education, health-monitoring apps and payment systems. While 5G networks attract investment, incumbents will also look to online streaming for growth; AT&T will launch HBO Max in 2020.

Apple, Huawei and Samsung will still be the leading names in smartphones. China's Huawei will challenge Samsung for the top spot, despite travails in America. With fewer users upgrading their fancy smartphones, growth will be strongest where fewer consumers have them and cheap phones sell well: India, Indonesia and Brazil. Helped by low-end models, smartphone sales will bounce back after a slight dip in 2019. Gartner estimates that new 5G-enabled phones will comprise 10% of total sales.

The picture for dealmaking will be brighter in 2020, thanks to lower regulatory hurdles in some markets. Operators will join forces with phone-makers to make augmented reality, AI and holographic displays in smartphones the order of the day. And they will ally with tech players to create the telecoms infrastructure to support drones and flying taxis.

TO WATCH: Premium play. Reliance Jio has already disrupted the mobile industry with ultra-cheap packages. Next, the Mumbai-based firm will try to change the way Indians watch films. From mid-2020, Jio Fiber will let premium subscribers watch films at home the day they are released. The operator will also turn on its Internet-of-Things platform, aiming to draw in 1bn homes.

Travel and tourism



The airline industry has pledged to stabilise net carbon emissions in 2020—ambitious, given that passenger volumes are set to expand by 5% and freight traffic by 4%, says the International Air Transport Association (IATA). A global trade war (otherwise unwelcome) could reduce emissions by cutting cargo shipments and deterring over 3% of passengers, says IATA.

Ever-optimistic, the travel and tourism industry still banks on growth. International departures will climb by 4% to 1.3bn as receipts soar by 6% to \$1.4trn. The most popular destination will be France, the biggest earner Spain. Japan, the Olympic host, hopes to draw 40m visitors, up by 9m from

2019, while Chile and Argentina will lure eclipse-watchers.

Profits for airlines will not come easily. Amid intense competition from low-cost carriers, fares will grow by just 1.5%. They could dip lower if Boeing's 737 MAX—grounded since March 2019 after two fatal crashes—returns to the skies, expanding airline capacity sharply. Airlines and airports will struggle with strikes, rising environmental costs and chaotic air-traffic control.

Hotel prices will rise by just 1% as rivalry in online bookings and rentals intensifies. Airbnb, Booking.com, Expedia and Ctrip will dominate, while conventional tourism agencies flail. Marriott International will phase out plastic shampoo bottles by December 2020. In May, the Viking Sun will complete the longest-ever passenger cruise—at eight months, not for the faint of stomach.

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Business



Reuters

Splinternet of Things

Vijay Vaitheeswaran US business editor, *The Economist* NEW YORK

The transformative potential of 5G will be diminished by America's blacklisting of Huawei

FOR YEARS, technologists have gushed about the promise of the "Internet of Things" (IOT). With ubiquitous sensors and universal connectivity, punters have been told, the IOT will transform ordinary workshops into smart factories. Passengers will enjoy safe travel in autonomous cars and cargoes will be tracked seamlessly across borders. Consumers will enjoy blazing-fast connections on mobile devices that allow whole films to be downloaded in an instant.

This heady vision was promoted so heavily for so long by tech vendors that it began to seem like a chimera. It is not. The two essential technologies speeding the IOT's arrival, inexpensive sensors and super-fast networking kit, are advancing fast. Gartner, a research group, predicts that the global number of devices embedded with sensors will leap from 8.4bn in 2017 to 20.4bn in 2020.

The second enabler is 5G, a telecoms-networking technology superior to today's 4G mobile networks. Hans Vestberg, chief executive of Verizon, an American telecoms giant, has restructured his entire firm around 5G's potential, arguing that it will bring many benefits beyond blazing-fast speed. For example, an IOT network based on 5G connections would allow a million devices to be clustered within a square kilometre, as they might be on a dense factory floor or at a crowded sports arena—far more than the 60,000 or so possible with 4G.

Alas, the once-bright prospects for a speedy global roll-out are turning into a tale of the good, the bad and the ugly. The good news is that several big markets will see 5G networks deployed at scale in 2020. Verizon expects three-quarters of the phones it launches in 2020 in America to be 5G-capable, and AT&T, a rival firm, expects to offer nationwide coverage by mid-year. Huawei, China's telecoms-equipment giant, has spent \$46bn developing 5G kit, and expects to deploy 1.5m base stations across hundreds of Chinese

cities by the end of 2020. Europe has been held back by market fragmentation, but the European Commission is pushing to have an EU-wide commercial roll-out of 5G by the end of 2020.

The bad news is that the usefulness of all this will be limited at first. Unless consumers spend a fortune on the latest 5G handsets, they will not be able to enjoy super-fast downloads. Most companies will not have sensors embedded in all of their factory machinery for a few years yet, though vendors like Siemens and GE will be keen to help them set up such “industrial internets”. There are also barriers to the use of IOT devices in some industries (privacy concerns in health care, for example) that require policy reforms. As the various hurdles are overcome over the next few years, reckons Michael Chui of the McKinsey Global Institute, a think-tank, IOT technologies will create between \$3.9trn and \$11.1trn in economic value globally by 2025.

The ugly aspect of the 5G story involves geopolitics. A decision to ban Huawei from America’s telecoms networks and to deny it access to vital intellectual property from American suppliers has dealt a severe blow to the market leader. President Donald Trump has cited security concerns. Huawei points out that no evidence of wrongdoing has ever been presented.

America has also been strong-arming its allies around the world to reject Chinese kit. Some, like Australia, have done so. Others, like Britain, may restrict Huawei to peripheral parts of their networks. In countries where Huawei is banned, telecoms operators must rely on more expensive, non-Chinese 5G kit made by Finland’s Nokia, Sweden’s Ericsson or South Korea’s Samsung. Sensing opportunity, Ericsson plans to open a new manufacturing plant in Texas in 2020 to make 5G equipment that is palatable to the White House.

Still, vast swathes of the globe, from Russia to Malaysia to Peru, will remain open to Huawei in 2020. This is not only because they are in China’s geopolitical orbit, though this is true for many Asian and African countries. Huawei’s 5G equipment is also more advanced: Chinese firms represent over a third of global patent applications for 5G-related technologies, with Huawei alone representing 15% of the world total. And Huawei’s equipment is less expensive than rivals’ kit.

The result is likely to be a bifurcated IOT, dividing the world between countries willing to use Chinese telecoms gear and those that share America's concerns over security. Part of the 5G dream was that of a unified global standard for networking. Once that is fractured, the resultant divide poses huge headaches. Multinational firms with operations in Shenzhen and Silicon Valley cannot use the same IOT systems in both. Global developers of IOT devices relying on seamless 5G, such as new virtual- and augmented-reality applications, may be handicapped by interoperability issues among markets.

Frank Appel, chairman of Deutsche Post DHL, a giant logistics and package-delivery firm, warns that if information cannot be exchanged easily between different networks, "we have to go back to paperwork and print and input into the system...I don't know how we will manage." Verizon's Mr Vestberg observes that 5G would then be a step back to 1G and 2G, which used network standards that did not allow seamless global connectivity. Vincent Peng, a board member at Huawei, warns that this could result in a disastrous "digital Berlin Wall". Unless a political settlement is soon reached between China and America on 5G, 2020 will be remembered for the arrival of the Splinternet of Things.

A papal anti-Davos

Henry Tricks Schumpeter columnist, *The Economist* ASSISI

In Assisi, Pope Francis hopes to anoint a new economic model



The visible hand

“The economy of Francesco” will be named in homage to the nature-loving saint

THE MEDIEVAL town of Assisi rises above vineyards and olive groves in

Italy's fertile region of Umbria. Its shops sell the finest local wines, oils and truffles. It is sometimes hard to imagine that Saint Francis, Italy's patron saint, who is buried beneath the basilica, started a mendicant holy order here. The town evokes a genteel prosperity, not poverty.

It is here, in March 2020, that Pope Francis will host a gathering of students, academics and socially conscious entrepreneurs. They will draw up what the dark-robed friars of Assisi's Sacred Convent hope will be a *magna carta* for a new type of economy: one that reproduces the small-scale market economy and social harmony of Assisi. "The economy of Francesco" will be named in homage to the nature-loving saint.

The explicit aim is to find more sustainable ways of living that ease the burden on the poor, via the development of a "circular economy" in which all benefit, including the planet. The implicit one is to explore alternatives to the free-market capitalist system—even if that model has helped lift swathes of humanity out of poverty. As a sort of papal anti-Davos, it will attempt to complement the pope's "*Laudato Si'*", an encyclical about climate change published in 2015. That won the pontiff a strong following among environmentalists. The follow-up is unlikely to do the same for economists.

Pope Francis has every right to weigh in on business. God and Mammon go back a long way together. In Umbria, friars built the first pawn shops, permitted the charging of interest on bank loans and encouraged thriving market economies of which Assisi is a proud beneficiary. Today, some friars say they remain in favour of competitive capitalism, provided it is fair. But there's the rub. In their view, the Anglo-Saxon version has become "narcissistic".

The difficulty is coming up with an alternative that does not turn into a system of command and control. The dean of one Italian university evokes an idea of "radical simplicity" for a Franciscan economy. A businessman close to the Vatican champions "gracious growth". But even Italian business-school students hoping to attend the papal get-together admit they have no idea what those ideas mean.

The pope himself is erratic when it comes to remedies. He has claimed that business is a "noble vocation" and has recently thrown his weight behind

carbon pricing as a market response to climate change. But he also equates free markets with tyranny and overlooks the fact that many problems—not least in countries like Italy—are caused by markets not being free enough.

Where he stands on firmer ground is in preaching about ethics. He would do well to use the world's most prominent pulpit to exhort businesses to behave with a stronger sense of morality towards their workers, local communities and the environment. If he eventually writes an encyclical about business ethics as thoughtful and lyrical as the one he wrote about climate change, it will get far more attention than if he ends up proposing half-baked policies that any thinking economist can quickly rubbish.

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A good crisis ahead?

Tom Easton Mumbai bureau chief, *The Economist* MUMBAI

A severe economic crunch in India may be inevitable—and beneficial



2020 in brief

IKEA unpacks its largest store in the world (almost twice as big as its usual ones) in the Philippines, as it expands into Asia

AMONG THE many things that will surprise a newcomer to India is the optimistic take a lot of people in business have about a prospective crisis. It

says much about the current environment that the year cited with nostalgic affection is 1991, when a long-running infatuation with socialism culminated in an economic collapse followed by a painful reversal of policies, leading to decades of growth. A creeping return to the “licence Raj” of the pre-1991 period, this time comprising countless required permits, tariffs, taxes, subsidies, restrictions and outright government machinations, has once again begun pushing India to the edge. Profits and investments were the first to slow. More recently, so too has consumption. Sales have been falling for a vast array of goods including scooters, biscuits, underwear and even cheap essential medicines—the latter an unprecedented event, say pharmaceutical manufacturers.

An increasingly panicked government has responded with a barrage of solutions across the economic spectrum. What little money can be extracted from shrinking tax receipts is being thrown into those companies which claim their demise will do the greatest systemic damage, starting with banks (through capital infusions) and cars (through expedited government purchases). Other tools drawn from the socialist kit are also being deployed. Price controls, for example, have been proposed for sanitary napkins, disinfectants and antibiotics, to preserve access for the poor. Finally, and somewhat shockingly to hard-pressed businesses, the government even gave a nod to capitalism, cutting the country’s crushingly high, non-competitive, corporate-tax rate.

But none of these efforts is likely to revive India’s business environment or rekindle animal spirits, because they fail to address the root cause of the decline. That, as business people are increasingly willing to whisper, if not scream (to avoid retribution from the government), is structural rather than cyclical. The Indian economy has become more mired in the sludge of a statist swamp. Solutions like price controls, rather than ensuring access to goods, will only reduce their availability, quality or both. Sops to favoured industries foster inefficiency and corrosive lobbying. Even the tax cuts are not what they seem because taxes on taxes, in the form of surcharges and distribution levies, remain. Survival of the fittest in this environment elevates accountants who can minimise costs, rather than entrepreneurs who can create value—and jobs.

Although a collapse brings no joy to India Inc, it nevertheless creates an underlying sense of optimism for three unrelated reasons. The first two stem from global economic trends which are running in India's favour, if only the state would get out of its economy's way. The cost of the country's most burdensome import, energy, has been stable or declining (notwithstanding the occasional spike), while ever-lower prices for solar panels and wind turbines are making alternative-energy sources viable and not merely a green dream. At the same time, America's trade spat with China has made many global businesses eager to find a new base for their vast supply chains. The ideal place to relocate would be overflowing with desperately poor farmers seeking higher-paying manufacturing jobs, an abundance of underemployed engineers and a large potential domestic market. In short: India. To date, the beneficiaries of these external factors have been smaller countries such as Bangladesh, Thailand and Vietnam. That India has so far missed a great opportunity has not been lost on anyone.

The third reason has to do with India's politics. Many believe that only a powerful jolt such as an economic crisis can force India's clamorous democracy, and its bureaucrats and protected industries, to accept reform. The Bharatiya Janata Party (BJP) won a sweeping victory in May and the opposition has no economic ideas of its own, besides another debilitating version of socialism.

No shortage of talent

A chief obstacle is that no one in the BJP is seen as capable of opening up the country's stilted markets or even understanding what is required. Yet there are no illusions at the top about the need for a prosperous business sector to generate the tax revenues necessary to fund social programmes. Precisely the kind of intellectual capital required for reform is abundant, if only the government were desperate enough to tap into it. Few countries in the world are lucky enough to have such a wide pool of business talent, ranging from the droves of India's global academic and corporate elite to the street-hawkers in Mumbai's old business centre who earn a living out of thin air. The year ahead for Indian business, in short, may be awful—but filled with promise.

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China keeps score

Stephanie Studer China business correspondent, *The Economist*, SHANGHAI

Enter corporate social-credit responsibility



Reuters

WHAT MANY who talk in feverish conversation about the Communist Party's social-credit system do not often realise is how much of it is still downright boring. Pilot initiatives led by a handful of eager local governments are scoring the "trustworthiness" of their adult citizens. Dog-owners in Jinan lose a few points if they forget to tie up their mutt in public. Residents of Suqian can earn theirs by donating bone marrow. Among the rewards for good behaviour are free access to local badminton courts and

discounts at tourist sites.

These schemes are among the practical manifestations of a national honesty drive due to go mainstream in 2020. The administration of Xi Jinping, China's leader, pictures a time when "the untrustworthy are unable to move an inch." In the hands of a repressive government, the dystopian ramifications of this are alarming. In a separate initiative, more than 13m people have been placed on blacklists that bar some from buying plane tickets or sending their children to private schools.

However, companies will have the most to lose, come 2020. Sceptics are right to point out that the vast undertaking to score them will take years for officialdom to finesse. But all foreign and domestic firms already have a unique social-credit code. Multinationals are rated on 300 measures (the majority of them rooted in existing laws). Testing is under way of a master database that will hoover up the quantities of information that firms must already funnel to government agencies, then crunch these into ratings. The European Union Chamber of Commerce in Shanghai says the system "will fundamentally change how business is done in China."

Most multinationals (and many privately held domestic firms) would rather the Communist Party stay well out of their affairs. The social-credit system will force them to engage with its apparatus in new ways. A high score will earn a firm fast-tracked approval for financing and swiftly issued customs certificates. A low score will multiply audits. Although a lot of the data that must be handed over are humdrum, related to things like taxes and product quality, some are sensitive, such as the behaviour of staff.

A company's score will affect the personal score of its executives. If a firm is blacklisted, the scores of its bosses will take a hit. The meshing of the two systems will encourage job-seekers to shun low-scoring companies. A firm must monitor suppliers and partners too, as their score influences the company's own. This mutual snooping is the point: to build a self-regulating market with strong incentives to exclude "misbehaving" peers.

Multinationals could stand to gain. Most are compliant to a fault, so ratings could favour them over domestic rivals. Scores may be a useful way to vet partners. Besides, China can already make life hard for them without

wielding the social-credit system.

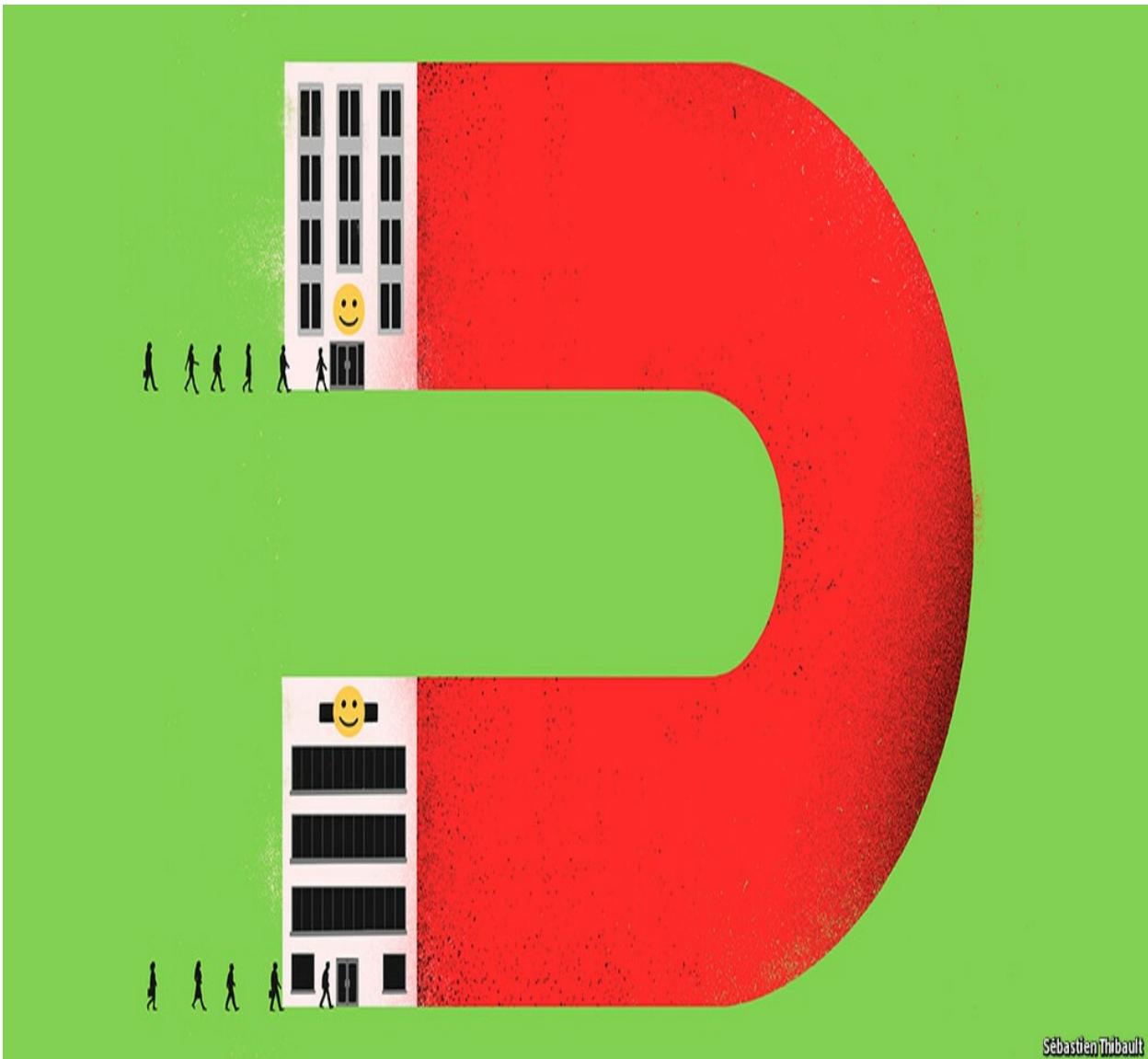
Yet the temptation is plainly there. Woolly draft rules penalise businesses that “endanger the national interest” or “undermine the legitimate rights” of Chinese customers. That second rule ensnared FedEx in June 2019, a move seen as retaliation for an American ban on Huawei, a Chinese national champion. In 2018 the aviation regulator warned airlines that if their websites did not list Taiwan as a province of China, their transgression would be logged in their social-credit records. In 2020, the reckoning begins.

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Culture vultures

Philip Coggan Bartleby columnist, *The Economist*

The latest fashion for business success



Sébastien Thibault

Culture is back with a vengeance

2020 in brief

Facebook launches an independent oversight board to take decisions on disputed content. The board initially consists of at least 11 members and can overturn decisions made by Facebook's own moderators

"W HEN I HEAR the word culture, I reach for my revolver." That quote, often misattributed to the Nazi leader Hermann Göring, is now out of date. As far as investors in business are concerned, the sentiment today is: "When I hear the word culture, I reach for my chequebook." Having the right culture is seen as a vital ingredient for corporate success. Expect to hear lots of chief executives talking about their company's culture in 2020.

The business world is prone to waves of enthusiasm for new concepts. In recent years the fashion has been for firms to have a "mission" that is more than just making money. For example, Nike, a sportswear manufacturer, says that "our mission is what drives us to do everything possible to expand human potential." A closely related idea is that businesses should have a "brand purpose" that brings benefits to society. The hope is that talented people will be more willing to work for a company with a reputation for doing good.

Corporate culture is more concerned with how a company is run than with its aims. It is not a new notion. Back in the 1980s Tom Peters and Robert Waterman wrote "In Search of Excellence" and attributed the success of leading businesses to their cultures. But whereas other 1980s enthusiasms like power dressing have yet to return, culture is back with a vengeance. Ben Horowitz, co-founder of Andreessen Horowitz, a leading venture-capital firm, has just published a book with the subtitle "How to Create Your Business Culture".

In a sense, creating the right culture has the same aim as having an appealing corporate mission. In both cases the aspiration is that workers will be enthused to be more productive. And if they are more productive, profits will rise and shareholders will be rewarded.

As with all other management fads, a focus on culture will inevitably generate a lot of grandiose statements. But really culture is about actions

rather than words. Chief executives can write pious memos about treating workers with respect, but such words are meaningless if the boss shouts at any employee who brings bad news. Ideally, as Amy Edmondson wrote in her book “The Fearless Organization” (2018), companies will create an environment of “psychological safety” in which employees feel free to speak up when things go wrong (or when the boss makes a stupid suggestion).

In a successful organisation, new recruits absorb the culture very quickly. Take the US Marines, which has *Semper fidelis* (always faithful) as its motto and where the culture becomes so ingrained that people say, “Once a marine, always a marine”. Businesses want to create a culture where employees instinctively know what action to take in any situation, without reading a memo, because they are so steeped in the ethos of a company. In this model, the culture may trickle down from the top, but decision-making is delegated to the workers.

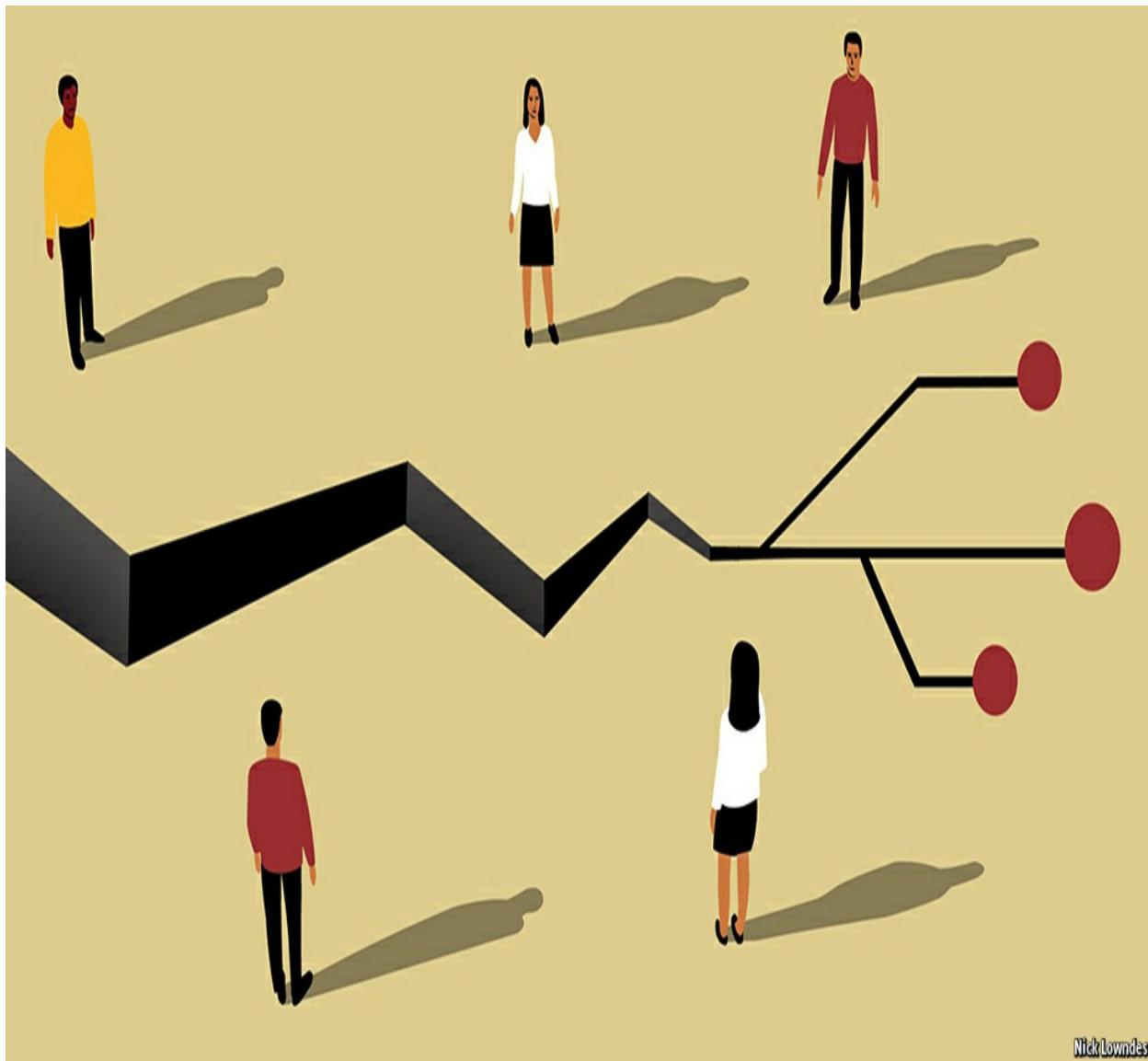
In the real world, it is pretty hard to pull off the trick of combining top-down and bottom-up. It is easy to think of examples where people have very little authority to vary the way they work, from call-centre employees reading from a set script to fast-food workers preparing food in accordance with a strict set of instructions and in a narrowly defined period of time.

But in 2020 that won’t stop executives trumpeting the unique qualities of their culture to all and sundry. In a service-dominated economy, building a better mousetrap is no longer enough to get the world to beat a path to your door. Creating a culture that will attract and retain employees, and will impress customers, is the answer. Or at least, that is what businesses now believe.

Techquake ahead

Alexandra Suich Bass senior correspondent, politics, technology and society, *The Economist* DALLAS

But the big one will not come just yet



Nick Lowndes

OBSERVERS OF THE technology business are a bit like San Franciscans.

They know a big earthquake is overdue but are unsure when it will hit. Anti-tech tremors are already frequent in America. Politicians of all persuasions rail against big tech firms on a weekly basis. In Washington, DC, antitrust watchdogs at the Department of Justice and Federal Trade Commission have reportedly launched investigations into Facebook and Google. Attorneys-general in many states are working on probes of their own. A recent poll found that two-thirds of Americans favour breaking up large tech firms by undoing recent mergers to boost competition.

Could 2020 be the year Silicon Valley is shaken up? Despite public anticipation, a seismic shock is not imminent. Very little is going to happen in an election year, and antitrust investigations are long slogs that will take at least 18 months to lead to charges.

In the meantime, keep an eye on two places. One is Brussels. Margrethe Vestager, who is in charge of competition at the European Commission and has spearheaded the world's anti-tech crusade, will be busy bringing cases against big tech firms for anti-competitive behaviour and tax avoidance. In September she was appointed to a second term, with a wider digital remit, and she will ensure that the commission carries on vigorously probing big tech firms, including Amazon and Google. Expect more billion-dollar settlements in 2020.

The other place to watch is California. The Golden State might be the birthplace of Silicon Valley, but it no longer gives it special treatment. While the federal government has dallied, California has pushed forward with policies of its own to bridle tech firms.

California has passed a privacy law, effective from January 1st 2020, that gives more protection to consumers whose personal data are collected. Meanwhile a national privacy bill continues to be debated in Washington (and will eventually pass in 2021). This will inspire more states to debate and pass privacy bills of their own. California will also lead the country in other areas of tech policy in 2020, from net neutrality to taxation to defining the rights of gig-economy workers.

Tech may have an uneventful year in Washington in 2020. But it should not get too comfortable. The industry is standing not on bedrock, but on sand.

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Oil change?

Charlotte Howard energy and commodities editor, *The Economist* NEW YORK

Much of Venezuela's oil may remain below ground



Reuters

VENEZUELA IS HOME to the world's largest proven oil reserves. The scale of its wealth below ground is matched only by the misery above it under Nicolás Maduro's rule. Its economic future depends crucially on when—or whether—its oil industry recovers.

The demise of Venezuela's oil sector began years before Mr Maduro came to power. His predecessor, Hugo Chávez, sacked the professional managers of

Petróleos de Venezuela (PDVSA), the state-owned oil company, seized control of foreigners' oil projects, slashed PDVSA's investment and directed its profits to social programmes. The decline accelerated under Mr Maduro, who appointed a general with no industry experience to be PDVSA's boss. Production dropped by 28% in 2018 alone.

Things have got worse since January 2019, when America announced new sanctions. Venezuela can no longer sell its oil to America. Nor can American companies sell PDVSA the so-called diluents it needs to blend with its extra-heavy crude to make it marketable. Rosneft, a Russian energy giant, has been some help, providing vital diluents and peddling Venezuelan oil abroad. Nevertheless, exports in August were 808,000 barrels a day (b/d), 40% below the level in January, according to Kpler, an energy-data firm.

How fast would things change if a political breakthrough led to a lifting of American sanctions? A certain level of output could resume quite quickly simply by replacing equipment that has been broken or stolen, says Paola Rodríguez-Masiu of Rystad Energy, a data and research firm. Rystad estimates that Venezuela could bring about 500,000 b/d back online in relatively short order. But beyond that ramping up output would be harder.

One shortage is people: sacked PDVSA executives have resettled, taking their expertise to oilfields from Colombia to Canada. Venezuela's oilfields also need capital—lots of it. Mature fields are declining, reservoirs have been damaged by poor management and the Orinoco basin requires new rigs, pipelines and other infrastructure. Francisco Monaldi of Rice University estimates that boosting production to 3m b/d could take a decade and require \$120bn of investment. Because Venezuela itself does not have the cash, foreign investors would have to supply it. Attracting them, in turn, would require reforming Venezuela's hydrocarbons law to allow foreign firms to be majority shareholders in oil projects.

Even then, it is unclear which firms would find Venezuela attractive. Abundant American shale has made many companies more selective about where they invest. The break-even price of oil projects in Venezuela is 40% higher than in America and more than 60% higher than in nearby Guyana, according to Rystad. And the carbon-dioxide emissions per barrel are three times the global average and six times those in Saudi Arabia. In 2020 and

beyond, long-suffering Venezuelans should not count on oil coming to their rescue.

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Electrifyingly fast

Simon Wright industry editor, *The Economist*

Super-rich petrolheads will be able to go electric



Getty Images

Silent but costly

2020 in brief

Airbnb begins trading on Wall Street, but it may get there via a direct listing rather than a more traditional initial public offering

ELECTRIFICATION IS THE preoccupation of the car industry. At the

pricier end of the market, once the preserve of Tesla, models are now available from Audi, Jaguar, Mercedes and Porsche. Drivers after a cheaper option also have more choice. Volkswagen has ambitious plans to electrify its cars and in 2019 launched the ID.3 hatchback, the first of a range of vehicles that will eventually sell in their millions. In 2020 electric cars that serve a far more rarefied market will also go on sale: wildly expensive hypercars with batteries that propel them at outrageous speeds.

Manufacturers such as Ferrari (whose chairman sits on the board of *The Economist*'s parent company) and McLaren have embraced hybrid powertrains, which couple internal combustion and batteries, not for green reasons but because they can propel cars even faster than petrol engines alone. The hybrid SF90 Stradale, which goes on sale in 2020, will be Ferrari's most powerful road car, with a top speed in excess of 210mph (340kph). But with a rumoured price of \$500,000, it barely qualifies as a true hypercar, prices of which start in the millions. Several new entrants think the hyper-rich will be willing to pay even bigger money for pure battery power.

The most prominent new firms are taking oddly similar approaches. Each uses a recognisable name from yesteryear. The flying-swan emblem of Hispano Suiza, which last made limousines in the 1940s to rival Rolls-Royce, is back on a bonnet. Automobili Pininfarina revives the name of the firm that designed the bodywork for Ferrari's most beautiful cars. Piëch Automotive, which hopes to trade on the name of a notoriously grumpy former boss of Volkswagen who died in 2019, seems a more hopeful appeal to nostalgic petrolheads.

Other existing specialist carmakers are also entering what promises to be a lucrative business. Supercar firms are fantastically profitable, and the most profitable part of the supercar business is exclusive models made in small production runs for loyal customers. That's why Lotus—a British firm now in the hands of Geely, a Chinese carmaker—plans to launch the Evija in 2020. Rimac, a Croatian firm partly owned by Porsche, is preparing to follow up its absurdly swift Concept One, of which it made eight examples, with the unimaginatively named but no less rapid Concept Two.

The idea of making eye-wateringly expensive cars in very limited numbers to attract wealthy collectors is borrowed from the established supercar firms. In

2019 Ferrari unveiled two models, the Monza SP-1 and SP-2, inspired by racing cars from its past. Only 500 of each will be made, costing around \$1.7m each. But the new carmakers have even more limited ambitions in terms of production, if not price. Pininfarina will make only 150 of its Battista and charge over \$2m. Drivers of a Hispano Suiza Carmen are even less likely to meet another one. Just 19 examples will reside in the climate-controlled garages of sheikhs or oligarchs with \$1.7m to spare. Rimac plans to make around 150 cars and Lotus is aiming for 130. Both hope to relieve customers of \$2m a time.

Existing supercar firms will not worry too much. All are contemplating pure electric cars of their own. And the sort of person who buys a \$2m hypercar is a collector who will almost certainly already own several expensive cars. Adding a pure EV to the fleet will not make them less likely to buy another high-performance, low-volume hypercar from McLaren or Aston Martin.

How many of these firms will survive? Small hypercar-makers packing internal-combustion engines have appeared and disappeared with alarming frequency in the past. Some, such as Pagani and Koenigsegg, are still going but the likes of Lotec, Cizeta-Moroder and Laraki have vanished. Without the capital and expertise of a big firm behind them, the future for some of the newcomers could be as silent as the cars they are making.

Playing a different game

Tim Cross technology editor, *The Economist*

Streaming has transformed television and music. Now it's coming to video games



Steve Carroll

Streaming games is far harder than streaming other sorts of media

2020 in brief

Apple, rumour has it, could launch **augmented-reality glasses** as an iPhone accessory in mid-year. Amazon, meanwhile, experiments further with its Echo Frames, launched in September 2019 by invitation only

IT IS A familiar bit of corporate one-upmanship. In February 2020 Sony will launch the PlayStation 5, a newer, faster, slicker version of its bestselling video-game console. Not to be outdone, its arch-rival Microsoft will respond with a new edition of its Xbox machine later in the year.

But the most significant development in the \$140bn video-gaming business (now bigger than the film, TV or music industries) will have nothing to do with the consoles that have hitherto shaped the industry. In 2020 some of the world's biggest tech firms will attempt to bring online streaming—which has already revolutionised television and music—to video games.

Google will be the first of the giants out of the gate. Its Stadia service is due to launch in November 2019. Hot on its heels will be Microsoft, which plans to launch a product called xCloud in 2020. Both could be joined by Amazon, which, based on job postings and industry rumours, is widely thought to be working on a game-streaming service of its own. A gaggle of second-tier players, including Electronic Arts, a games publisher, Nvidia, which makes specialist graphics chips, and Sony itself either already have services available or are working on them.

The idea is to replace expensive consoles or gaming PC s with a service that does the computational heavy lifting in a faraway data centre. Subscribers would be able to play the latest games on smartphones or laptops. By cutting the cost of entry, firms hope to attract new players.

If, that is, they can make the technology work. Streaming games is far harder than streaming other sorts of media. Films and music can use buffering—downloading the next few minutes in advance—to smooth out hiccups in an internet connection. A game's unpredictable nature makes that impossible. Interactivity poses another problem: button presses must travel from the player's controller all the way to the data centre for processing, and the results be transmitted back. Depending on conditions on the network, that can

add tens or hundreds of milliseconds of latency. In fast-paced, twitchy games, such delays can be very noticeable.

These technical hitches are one reason why previous attempts at game streaming, most notably by a firm called OnLive, have foundered (OnLive shut down in 2015). But the internet has changed since then. Amazon, Microsoft and Google are the world's biggest cloud-computing providers (in that order), and have data centres around the world, which should help ameliorate latency. Microsoft already has a 20-year gaming pedigree and a stable of in-house developers; Google and Amazon have been investing in development studios of their own. Game on.

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Flying into a storm

Charles Read Gulliver correspondent, *The Economist*

To continue its ascent, the aviation industry will have to become greener



EVEN AS GLOBILISATION has slowed, the airline industry has soared. Since 2009 global air-passenger numbers have grown by 80%, faster than in any decade since the second world war. Airlines have gone from being chronically lossmaking to being highly profitable. Since 2015, for the first time, carriers have made returns exceeding their cost of capital. Airports are rushing to expand. In 2019 the first phases of the world's largest airports, in Istanbul and Beijing, were opened, each with capacity for 90m travellers a year. Yet in 2020 that growth will begin to slow. Weak economies are partly to blame. So are environmental rules.

At first glance, that seems odd. Aviation (along with shipping) is excluded from the Paris agreement on limiting global warming. Flying produces just 2.4% of man-made greenhouse emissions. But that share is growing rapidly. The International Civil Aviation Organisation (ICAO), a UN regulatory agency, forecasts that the industry's emissions could rise between three- and sevenfold by 2050 if nothing substantial is done.

And so the ICAO is introducing CORSIA (mercifully short for Carbon Offsetting and Reduction Scheme for International Aviation) to limit aviation emissions. From 2020 airlines will have to buy offsets for any additional carbon produced by international flights above existing levels. Green groups have criticised the scheme for being too limp, and rightly so. The source of CORSIA's offsets, the Kyoto protocol's Clean Development Mechanism, is a joke. A study published by the European Commission in 2017 found that 85% of its offset projects had failed to reduce emissions.

And so support is rising, particularly in Europe, for governments to tax aviation more heavily. Sweden introduced such an environmental tax on air fares in 2018; France is following in 2020 and the Netherlands in 2021. More countries are likely to follow, particularly if Sweden's *flygskam*, or "flight shame", movement—which encourages travellers to avoid going by air—takes off around the world.

The manufacturers of airliners will thus have to work out how to make their aircraft less polluting. Using biofuels made of plant matter is one option. But there is unlikely to be enough land to produce the feedstock needed to supply the world's aircraft without pushing up food prices. Going electric is another. Unfortunately, the current generation of batteries are so heavy that they are

only able to power short flights. Reaching net-zero in carbon emissions by 2050 in any industry is hard. Few industries face as big a task as aviation.

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Deep green sea

Charles Read Gulliver correspondent, *The Economist*

Shipowners face a batch of new environmental laws. Not all of them will help limit global warming



AFP

Not as green as it looks

2020 in brief

The WTO rules on EU counter-tariffs against Boeing, in the latest round of the **Airbus-Boeing** trade war

THE GOLDEN age of piracy on the high seas ended long ago. Thick rulebooks now exist to protect the safety and security of ships, as well as the

crews and cargoes they carry. But when it comes to pollution the industry is still a free-for-all, with little regulation.

In 2020 that will change. From January 1st the International Maritime Organisation (IMO), the United Nations agency for shipping, will cut the global limit on the sulphur content of marine fuel from 3.5% to 0.5%, to reduce sulphur emissions, which cause air pollution and acid rain. It could swell the industry's annual fuel bills by \$60bn, reckons Wood Mackenzie, a consultancy. That is not all. The IMO has brought in rules forcing ship-owners to install equipment by 2024 to clean the dirty ballast-water their ships suck in and discharge, costing \$50bn. Last year the IMO agreed to halve the industry's carbon emissions from 2008 levels by 2050—even though the technology does not yet exist to do this.

Although ships produce just 2% of the world's carbon emissions, by burning heavy fuel oil they produce 13% of the world's sulphur emissions and 15% of its nitrogen oxides. And if left unregulated, by 2050 ships will be producing 17% of carbon emissions, the EU forecasts.

Up to 595,000 premature deaths and 14m cases of childhood asthma are caused by sulphur from ships. The new sulphur limits will reduce those. But the same emissions have the side-effect of reducing global warming by scattering sunlight in the atmosphere. The new rules will reduce around 80% of this cooling effect after 2020.

The IMO has done no analysis to see whether increased global warming, as a result of the reduction in sunlight-scattering sulphur emissions, could kill more people than succumb each year to air pollution caused by ships. Paradoxically, these new green rules may not be entirely good news for the environment.

Green energy meets people power



A renewable-energy revolution is just around the corner, says **Hayden Wood**, CEO and co-founder of Bulb

Huge numbers of people are deciding to switch to green energy

ARE YOU FED fed up of hearing about how machines are going to disrupt traditional industries? Me too. So I'm going to talk about something else. About how one of the largest industries, energy, is going to be transformed by something much more human: people power. In the year ahead, this shift will gather pace as people vote with their feet to make clean energy a normal everyday choice.

Most traditional energy companies around the world got big without the organic growth seen in other sectors—they are privatised state industries, not intrinsically entrepreneurial businesses. In Britain—even now, after years of deregulation—the “Big Six” energy companies still have 75% of the market, despite their reputation for price hikes and poor service.

Certainly, the established players have paid lip service to clean technology, spending hundreds of millions of dollars on brand campaigns supporting action on climate change while simultaneously paying out far more on lobbying for regulations not to change. Their revenues and investments are rooted in fossil fuels.

The pace of change towards clean energy has been far too slow. We remain in thrall to fossil fuels, and oil consumption is still growing. In 2018, 80% of the world’s energy consumption still relied on hydrocarbons, according to the International Energy Agency. And it is not hard to see why—the IMF recently reported that national governments spent a staggering \$5.2trn in 2017 subsidising the fossil-fuel industry.

I believe that business-as-usual for these companies is about to end. The old guard’s slow adoption of clean-energy technologies will be seen for what it really is: strategic avoidance. As politicians continue debating what to do, the big incumbents will have to be at the forefront of decarbonisation. This remains a gargantuan task. Energy accounts for more than two-thirds of all carbon emissions. Limiting global warming will need as much as \$30trn in clean-energy infrastructure investment by 2040, according to Goldman Sachs

Research.

Change, however, is now under way. Huge numbers of people are deciding for themselves, by making the rational economic choice to switch to green energy. When our own company, Bulb, started in 2015, 1% of British households were on renewable-energy tariffs. Today that figure is closer to 10%. Renewables now account for more than a third of the world's total power-generating capacity. In America, renewables overtook coal in energy output during the past year. In Britain, renewables are accelerating as a share of the total energy generated, jumping from 8% in 2011 to 37% in 2019. And though it's true that the amount being invested globally in renewables has dipped slightly (due to decreasing subsidies), more renewable-energy generators are plugging into the grid than ever.

A further catalyst for this change is the emerging breed of 21st-century energy companies. These green energy providers are thriving with a message that is really resonating: reduce both your energy bills and your carbon footprint at the same time. These young companies have developed their own technologies and are committed to renewable energy. They are making waves in countries like Germany (Naturstrom), America (Arcadia) and Japan (Looop). Bulb is rapidly expanding into continental Europe and the United States.

The renewable movement

The new generation of energy providers are ensuring that people don't have to compromise to make a sustainable choice. Increased transparency—delivered by technology, smart meters and energy apps—allows consumers to see exactly how their behaviour directly influences both their energy costs and carbon emissions.

Decades of advocacy and persuasion are finally paying off. Extinction Rebellion, Greta Thunberg, David Attenborough and hundreds of thousands of activists like them have broken through into the public consciousness. As a result, millions of people are thinking afresh about where their own energy is coming from.

Do you remember how we transformed telephony from fixed-line phones to

mobile phones, television from watching whatever was on TV to whatever we fancied, from buying newspapers to customising our news feeds? The people-led, tech-powered energy revolution is going to be just the same. The coming era of accessible green energy will be viewed in hindsight as the start of a historic turning-point for us all.

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Finance



Recession? Don't bet on it

John O'Sullivan **Buttonwood columnist, *The Economist***

The big surprise in 2020 may be how quickly market sentiment recovers

2020 in brief

China lifts the limits on foreign ownership in futures firms, fund managers and securities companies from January, April and December respectively, in an attempt to make the country's financial-services sector more attractive to foreign investors

PAUL SAMUELSON was the rare sort of economist who understood that a well-crafted joke can have a greater impact than pages of complex maths. One of his famous quips was that declines in the stockmarket have predicted nine of the last five recessions. The joke dates from the mid-1960s. But it may well turn out to have particular relevance for financial markets in 2020.

Samuelson was one of the architects of the efficient-market hypothesis, which holds that stock prices, like oil prices and currencies, cannot be predicted. That is largely because such prices already have forecasts about events in politics and economics embedded in them. To predict the markets is to make forecasts about forecasts. If it were easy, we would all be rich.

Even so, it is wrong to think that all such attempts are futile. Useful things can still be said about how the markets might behave in 2020. To start with, we have a handle on the immediate outlook for the economy. Leading indicators of the world economy point to a continued slowdown. Forecasts for GDP growth are being revised down. And fears of a recession in America are growing. As such worries take firmer hold, share prices are likely to suffer for a while—perhaps quite badly. Yet there is reason to believe that recession fears will recede later in the year. The big surprise in 2020 may well be how quickly the mood in markets starts to recover.

Today's investor anxiety is clearly evident in the thirst for rich-world government bonds, the safest of assets. In Germany and Switzerland, interest rates are negative not just on overnight deposits but also on bonds that mature in the distant future. Yields on ten-year bonds have dipped below short-term interest rates. In the past, this has been a reliable signal that a recession is coming. A survey conducted by Bank of America finds that two-fifths of fund managers expect one in the next year. The same proportion thinks the trade war between America and China will never be resolved. Surveys of business confidence are similarly gloomy.

So the big question for markets in 2020 is whether there is something on the horizon that can spur a little optimism. Don't expect much good news in the early part of the year; signs that the slump in business sentiment is starting to infect the confidence of consumers are more likely. As recession fears build to a peak, stock prices will come under greater pressure. Long-term bond yields will fall further in America and plunge deeper into negative territory in Europe.

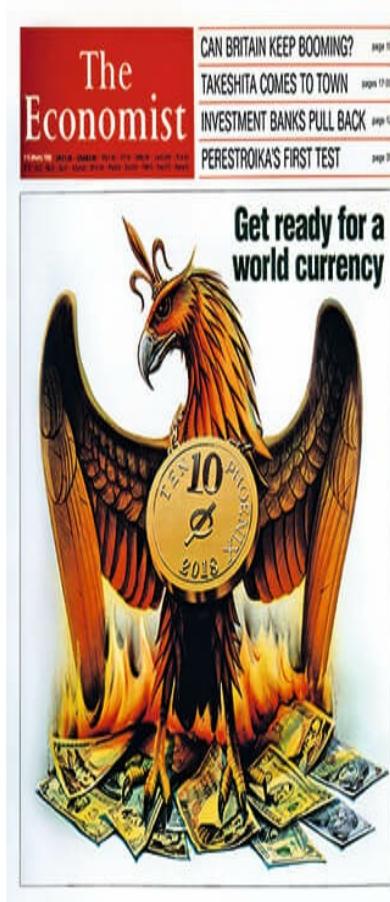
Yet misery is rarely eternal. There are forces at work to counter it. One is monetary policy. Sceptics are right to point out that with interest rates already so low, central banks are short of ammunition with which to fire up the economy. But interest-rate cuts in America and China, and bond purchases by the European Central Bank, will at least keep credit flowing smoothly to businesses and consumers. That will put a floor under stock prices.

It will probably take more than that to lift overall spirits in financial markets. But it would be unwise to bet against such a revival by the end of 2020. If government-bond yields fall further, politicians will wake up to the logic of economic stimulus by fiscal means—tax cuts and spending increases, funded by borrowing. Such policies fell out of fashion because their implementation is often ill-timed: it takes an age for politicians to agree on anything. But as recession fears grow, the pressure on them will build. As investors start to price in aggressive fiscal stimulus, stock prices will revive and bond yields will start to rise. As Samuelson noted a half-century ago, the markets sometimes predict disasters that don't happen; 2020 could be one of those years.

The road to Libraration

Ludwig Siegele US technology editor, *The Economist* SAN FRANCISCO

Even if Facebook's digital money does not launch in 2020, it will still be a crucial year for cryptocurrencies



Fast forward from 1988

At some point something like the Libra is bound to take off

EVERYTHING BUT the kitchen sink. That is what listed companies in the United States usually put under the heading "risk factors" in filings with the

Securities and Exchange Commission (SEC). Often the warnings are mere boilerplate, but the one in a recent Facebook filing was new and necessary: “There can be no assurance that Libra or our associated products and services will be made available in a timely manner, or at all.”

It is indeed highly unlikely that Libra, the digital currency which Facebook announced with great fanfare in June 2019, will see the light of day as planned in 2020, if ever. The fierce backlash from regulators suggests that they will be loth to give their approval any time soon, especially to a firm as mistrusted as Facebook. But 2020 will be a crucial year for cryptocurrencies even so. Libra has triggered a struggle that will come further to the fore: between private and government-controlled digital monies.

Bitcoin and other cryptocurrencies, much like the early digital-music services such as Napster, are a first stab. They are hard to use for the average consumer. Their value fluctuates widely. The capacity of the underlying technology, decentralised databases called blockchain, is limited; processing transactions can take hours. These systems burn a lot of energy: that is how they protect themselves against being attacked. And it is not always clear who controls them.

Libra is meant to fix all that and become what Spotify and other streaming services are to Napster. Transferring money is to become as easy as sending a text message: Facebook is planning to create a Libra button in its apps. Libra will be based on a blockchain, but pegged to a basket of currencies to keep its price stable. It will have enough capacity to allow instant transactions and will be overseen by a foundation based in Switzerland.

Libra is not the only project of its kind. The biggest rival is Gram, a currency being developed by Telegram, a messaging app which has more than 200m monthly users. The project was supposed to launch in October but the SEC stopped it with an injunction, arguing that it had violated securities law (Gram may now launch in April). Thousands already use a currency called Stellar Lumens in conjunction with Keybase, a keeper of online identities, which also offers a messaging service.

It is easy to see why regulators are worried. Libra and the like could gain much more traction than Bitcoin and its ilk—and be used to launder money,

finance terrorists and steal users' data. But the biggest concern is about the impact on the world's financial system and, in particular, national currencies: governments fret that the new monies might supersede their own. One reason why Libra has taken so much flack in Washington, DC, is the fear that it could one day dethrone the dollar.

Such prospects have given urgency to plans by some central banks to launch government-controlled digital currencies, with some expecting China to be the first to do so (a possibility Facebook is trying to turn into an argument in favour of Libra: if you stop us, Beijing will take the lead). America's strategy of using the SWIFT banking network and the dollar clearing system as weapons to enforce sanctions also makes cryptocoins look more attractive to targeted countries, such as Iran and Venezuela. Routing around the dollar was the motivation behind the petro, Venezuela's ill-fated cryptocurrency.

The idea has come up even in improbable quarters. In August 2019, Mark Carney, the governor of the Bank of England, surprised fellow central bankers when he argued that the dollar's dominance was unhealthy for the world economy and that it ultimately needed to be replaced by a global virtual reserve currency—which sounded a bit like Libra. Facebook is unlikely ever to replace the Fed, but at some point something akin to Libra is bound to happen.

The battle for the bank

Lionel Barber editor, *Financial Times*

The Bank of England's new governor will have to defend it against assaults on its independence



Old Lady in peril

2020 in brief

Mastercard launches **Mastercard Track**, a B2B payments system designed

to move businesses away from cheques, which make up over half of business payments in the United States

IF ALL GOES according to plan, on January 31st 2020 a new appointee will take over as the 121st governor of the Bank of England, succeeding Mark Carney, a Canadian who opined on many matters, including monetary policy. That timing, which coincides with Britain's new Brexit deadline, now looks improbable. When eventually installed, the governor will have to navigate an even tougher political landscape than his (or quite possibly her) nimble predecessor.

In 2020 the bank will no longer be able to take for granted the independence it has enjoyed since the Blair-Brown government gave it greater freedom in 1997. For more than two decades, it has set interest rates without obvious interference from Downing Street or the Treasury. But with politics still fragmented and polarised by Brexit, parties dominated by the hard left and the right will be eager to yoke the bank to their pet causes. The battle for the bank will begin in earnest.

By comparison with the Federal Reserve and the European Central Bank (ECB), the Old Lady of Threadneedle Street has come through the aftermath of the global financial crisis relatively unscathed. An allegedly partisan Mr Carney took his knocks during the Scottish and Brexit referendum campaigns, but he did not face assault by presidential tweet like the Fed's Jay Powell, or the German-led offensive against Mario Draghi at the ECB.

After several years of ultra-low or negative interest rates, and a barrage of quantitative easing to stimulate demand, the world is discovering the limits of central-banker power. Monetary policy is no longer the only game in Frankfurt, London or Washington. In 2020, in the quest for economic growth, the emphasis will shift to fiscal policy, especially in Britain.

Both the Conservative and Labour parties have committed themselves to higher public spending, declaring an end to austerity. In 2020, whatever the precise outcome of Brexit and Britain's election, the debate will focus on structural impediments to growth such as weak productivity and the poor performance of regions outside London. The bank will be expected to be "onside".

Now the Carney rule is over

In theory, the bank will continue its role as the government’s “intellectual conscience” on economic policy, an independent counsel offering discreet advice in testing times. In practice, efforts to secure its de facto co-option are more likely. In Labour’s case, there has been talk of using Royal Bank of Scotland, in which the state still retains a stake more than a decade after the financial crisis, as a vehicle for direct lending to manufacturing and the it sector. This would pose a threat to the Bank of England’s responsibility for financial stability bestowed by the Tory-Lib Dem coalition government in 2010.

Brexit compounds the risks. In 2019 debate about the impact of leaving the European Union revolved around goods rather than services—a perverse state of affairs given that services account for more than three-quarters of Britain’s economic output. In 2020, come what may, the bank will not be able to remain above the regulatory fray with regard to services.

The central question will be how much of the EU regulatory framework remains and how much divergence will be pursued in London or tolerated by Brussels. The City of London reluctantly backed the post-crash imposition of higher capital buffers for banks and the ring-fencing of lending. In 2020 some observers predict a “pincer movement” by the private sector and the Tories (should they remain in power) to roll back regulation.

The bank will argue that, given the industry’s size and complexity, Britain’s financial services will need a level of resilience at least as great as that currently planned. This itself exceeds that required by international baseline standards. A Conservative-led government with a Brexit tinge would be tempted to pursue divergence to boost the British economy in the short term. But this could be dangerous in the medium term, even risking a repeat of the crash, says a top official at the bank.

Among Mr Carney’s achievements was his modernisation of the bank’s management, bringing more women into senior roles, for example, and making the culture a little less stiff. Perhaps his greatest success was containing the “Balkan wars” in Whitehall, in particular power-plays between the bank and the Treasury. With fiscal and supply-side measures coming to

the fore, the scope for hostilities in 2020 is ample. At the very least, the need for greater co-ordination between the central bank and the government will be paramount.

Britain's institutions—from Parliament to the judiciary—have been tested in the age of Brexit. The new governor will need a deft diplomatic touch at home and abroad if the integrity of the bank is to remain intact.

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Rates of decline

Patrick Lane deputy digital editor, *The Economist*

Lenders face a glum year



Reuters

2020 in brief

Some of Wall Street's biggest banks join forces to test **DirectBooks**, a new corporate-bond-ordering system. The platform allows dealers and investors to share pricing data and other information

HEADING INTO 2019 big banks could look forward to the year ahead with varying degrees of optimism. Most American lenders were already enjoying double-digit returns on equity—an important gauge of profitability. Many European banks were still struggling to emerge from their post-crisis slumber. But both lots could expect that life would get easier in one important respect: monetary policymakers were raising interest rates (in America) or winding down bond purchases (in the euro zone).

Sadly, over the past year those hopes went into reverse: as trade wars rumbled and global growth slowed, central banks on both sides of the Atlantic cut rates and their counterparts in many other countries followed suit. As a result, banks almost everywhere can expect a thinner time in 2020.

At the core of banking is the margin between the interest rates at which banks raise funds on the one hand, and lend to borrowers on the other. Rising interest rates tend to be good for them. They can pass higher rates on to borrowers quickly (payments may even be linked to official rates), while their funding costs, especially from retail deposits, take longer to catch up. Lower rates, by contrast, hurt. The squeeze on margins is especially tight when policy rates are close to zero or negative, as they are in the euro zone and elsewhere. Depositors are loth to pay banks to hold their cash, while maturing loans have to be replaced by new ones that command lower rates.

European banks have been groaning under negative rates for three years (and Japanese ones for even longer). They will have to endure them throughout 2020. In September 2019 the European Central Bank reduced its deposit rate from -0.4% to -0.5% (ie, increased what it charges banks for excess reserves) and said it would resume bond-buying. Although it has exempted some reserves from negative rates, following the practice of central banks in Japan and Switzerland, banks will be pinched further.

In America, the Federal Reserve cut rates in July, September and October 2019—and a presidential Twitter barrage, urging it to go further and faster, is sure to continue. Jamie Dimon, boss of JPMorgan Chase, the country's biggest bank, has said that his firm is preparing for zero or negative rates, even though he thinks they are unlikely. (At the time of writing, the target range for the Fed's policy rate was 1.5-1.75%).

What can banks do to beat the squeeze? One answer is to increase revenue from other sources, starting with fees. Although retail customers may balk at paying interest on deposits, payments for current accounts are standard in America and becoming more common in Europe. That said, competition will limit banks' fee-raising powers. These days established banks not only battle each other but are also under fire from the guerrilla army of online banks that are springing up everywhere (see next story). And American customers, especially, are used to being wooed by generous cashback offers on credit cards; that habit may be hard to break.

Extracting more revenue from other lines of business looks scarcely easier. Some banks have made a sensible-looking long-term bet on wealth management. But even the rich are cautious when returns are low; 2020 is unlikely to be the year when that bet pays off. And as companies both big and small struggle with sluggish global growth, so will their banks: they will want fewer loans, less trade finance and so on.

If corporate banking is heading for a cyclical downturn, much of investment banking is in a secular slump. Trading revenue, especially in fixed income, has been declining for years: activity has been slow and technological advances have slimmed margins. If business does pick up, American banks will scoop most of the gains. Several European banks—notably, in 2019, Deutsche Bank—have beaten a retreat.

None of this gloom, thank goodness, amounts to anything like a crisis (although trouble could blow up in India and China, where several middle-sized banks needed rescuing in 2019). It means something much less dramatic, a continuation of a constant theme of the past few years: the banks that fare best will be the ones that apply themselves to grinding down costs and exploiting digital technology, both to save money and to serve customers. But in 2020 it will still be pretty good to run a big American bank—and a little more miserable to run a big European one.

Mad as a banker

Stanley Pignal European business correspondent, *The Economist* PARIS

In Europe, better a borrower than a lender be



Reuters

IF ALICE WERE ever to purchase a flat in Wonderland, her mortgage might look like something that more and more European banks will offer in 2020: a loan in which she pays back less than the amount borrowed. Such negative interest rates, a topsy-turvy quirk of economics, are the upshot of central banks pushing ever harder to keep the economy stimulated. What is good news for borrowers poses headaches for lenders and the wider economy.

A lucky few have already been able to get paid to borrow money. Governments, which are usually the most creditworthy borrowers, are chief among them. In August 2019, Germany issued €824m (\$916m) in bonds for which it will pay back only €795m in 2050. Companies such as LVMH and Nestlé, purveyors of Louis Vuitton handbags and KitKats respectively, have also persuaded investors to lend them money for less than nothing.

Investors agree to lend at negative rates because they are more interested in parking money safely even if at a slight loss (return of capital) than on notching up interest payments (return on capital). Inflation these days is low enough not to gnaw away at future returns. Banks that leave excess money at the European Central Bank are now charged for the privilege of doing so—so they might as well lose a little less by lending it out.

This is precisely what the ECB (and other central banks with negative benchmark interest rates, such as those in Sweden, Denmark and Switzerland) want to achieve. Cheap money ought to mean more borrowing, which results in more spending and thus higher economic growth.

Being paid to borrow used to be the stuff of economists' thought experiments. Now it is mainstream. Many bonds issued in the past with conventional (positive) interest rates are now trading in negative territory, because desperate investors are pricing the bonds at above their face value.

Negative interest rates are clearly great news for borrowers. But savers such as pensioners, who rely on bonds to generate an income, are being squeezed. Low interest rates have savaged the profits of European banks. As a result, a few have imposed fees on customers with positive cash balances. The mere prospect of penalising savers in this way has raised hackles in Germany, the spiritual home of thriftiness.

But Europe will have truly gone through the monetary looking-glass only when ordinary people can avail themselves of negative-rate loans in the manner of the German government. Europe has already had its first sub-zero mortgage: Jyske Bank, a Danish lender, started offering mortgages in the summer of 2019 with an interest rate of -0.5%.

Economists have long wondered whether there is a limit to how far into

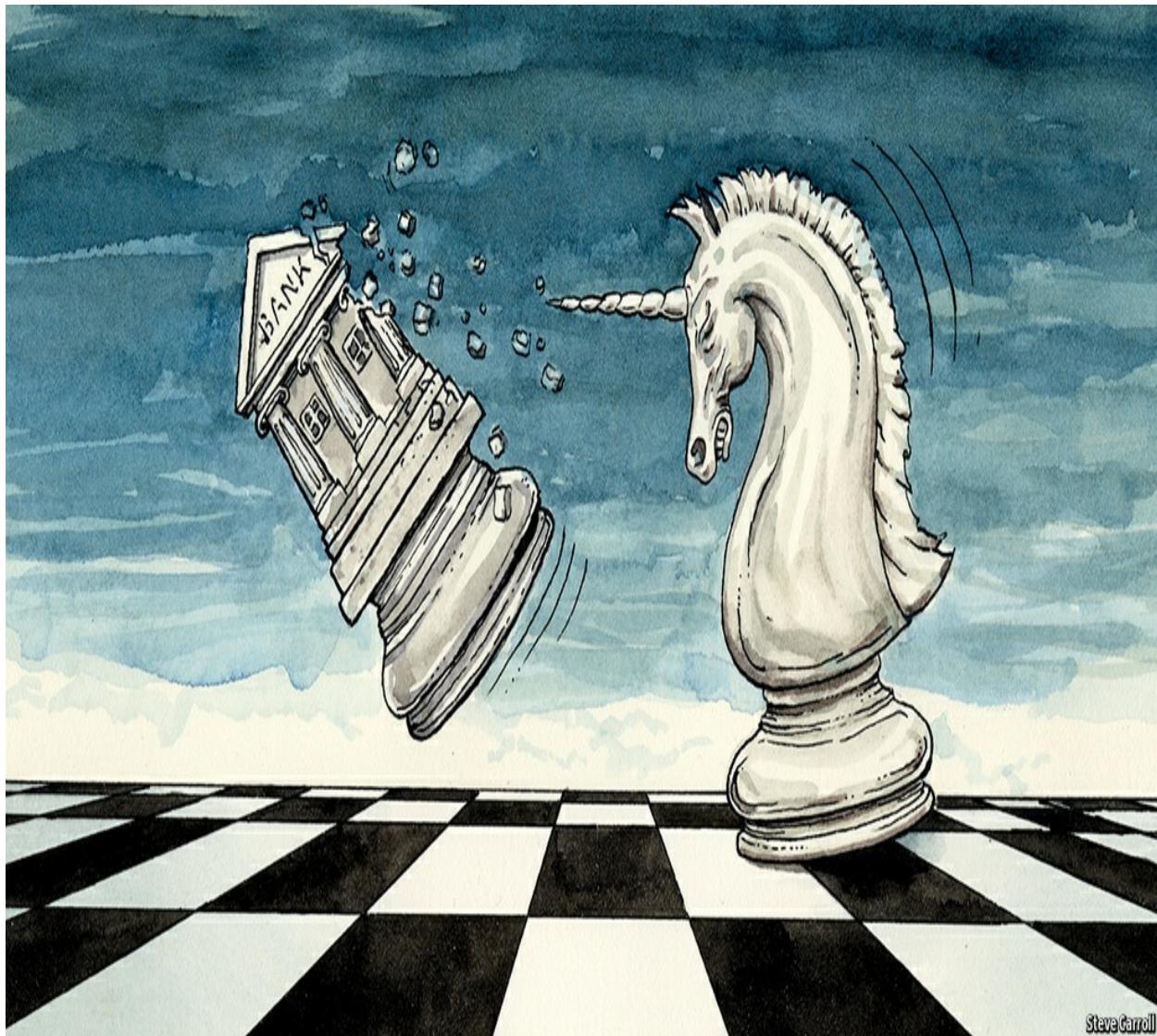
negative territory rates can go. Savers being charged to keep money at banks could, in theory, take it out and park it under a mattress. If that seems like madness, consider the alternatives.

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Cheque mates

Matthieu Favas finance correspondent, *The Economist* PARIS

Startups will shake finance. Will they make money?



Steve Carroll

ON THE SUNNY terrace of a Parisian café, the *garçon* sounds uncharacteristically jovial. He is intrigued by the piece of plastic sitting atop your correspondent's bill. "I see more and more people from England

brandishing these pink credit cards. Is this a marketing gimmick or something really new?"

Investors around the world are starting to ask themselves a similar question. Flashy "coral" is the trademark colour of cards issued by Monzo, a digital bank based in London that is now valued at more than £2bn (\$2.6bn). The four-year-old lender, which gains about 35,000 new customers every week, is a poster child for the breakneck growth of startups disrupting finance.

In the first half of 2019, fintech startups raised \$15bn in fresh equity, a fourfold increase since 2014, according to CB Insights, a research firm. The sector counts 48 "unicorns" (those with a market value of at least \$1bn) collectively worth \$187bn. Using algorithms, nifty design and automation, they offer services that are often cheaper, faster and sexier than incumbents'.

Digital banks are the most visible. In all, the top seven have created more than 30m accounts. Accenture, a consultancy, predicts digital banks based in Britain will almost triple in size in 2020, reaching 35m customers globally. Digital banks will also make strides in emerging markets. Brazil's NuBank is already valued at \$10bn. Mexico and Argentina are breeding their own champions.

Yet most digital banks make losses. They lure customers with free services. Lucrative add-ons are optional. Their way to profitability may lie in offering credit. But regulation, low rates and competition make this tricky.

Payments firms seem better positioned. Once deemed dreary, they are now modernising the plumbing that allows money to flow seamlessly in a digital world. They make profits by charging fees to buyers, shops or banks, and by monetising transaction data (through selling advertising, for example). This is a game in which scale matters, so expect more mergers in 2020.

Modernising capitalism



The fight for the soul of the global economy will heat up, predicts **Adena Friedman**, president and CEO, Nasdaq

Oversight has failed to keep pace with the evolution of business

OVER THE past couple of centuries, there has been growing agreement that free markets inspire innovation and catalyse an expanding economy. A healthy debate has carried on over how free markets should be regulated and modified, but the basic structure has been proven time and again to generate sustained economic growth and improved prosperity for participating citizens.

However, when the global financial crisis of 2008 shook the pillars of our economy, things changed quickly. Occupy Wall Street became a global movement and over time moved from the fringe to something closer to the mainstream—a trend that has only grown as the result of an uneven recovery, worsening income inequality and the rise of technologies that threaten to disrupt the future of work.

In 2020 the backlash against capitalism will grow louder. A conversation about the future of the free-market economy will take place in an age of full-throated populism. Against the backdrop of Brexit, the American presidential election and the increasing polarisation of our global political structures, 2020 will be the year we begin to determine whether free markets are strong enough to stand the test of time.

I believe they are. One of the benefits of spending most of my career in the public markets is that I've seen first-hand how well-structured, reasonably regulated markets can inspire the best in people and unleash inclusive growth.

As anti-business sentiment intensifies, the key to a healthy debate over the future of free markets will be to seek common ground—not easy at a time when most political conversations are happening at the extremes. Railing against business may be good politics, but it doesn't lead to solutions that elevate society in a sustainable way.

Capitalism with a purpose

The good news is that business leaders are standing up to push for responsible change. In August 2019 I joined 180 of my colleagues in an effort spearheaded by the Business Roundtable. Together we challenged the notion that our fiduciary obligation to shareholders trumps all other considerations. CEOs now have a better opportunity to demonstrate that it is possible for companies to be responsible citizens while also creating long-term value for the owners.

Over the years, some CEOs of large companies have taken risks to blaze a trail of using their positions to fight for social good. In 2020 we will see more of this. With polls showing dropping levels of trust in corporations in America and Europe, this is an important part of the solution.

Governments need to step up, too. In America and Europe, oversight has failed to keep pace with the evolution of markets and business. We now have dizzying regulatory patchworks that are confusing, costly and counterproductive. Markets are less liquid, as highlighted by the repo liquidity issues in 2019, because banks are unable to fulfil some of their basic capital-deployment functions due to layers of regulation and capital obligations.

Countless high-growth companies are choosing to stay out of our public markets in order to avoid dealing with the regulatory burdens, negative media scrutiny and frivolous lawsuits that inevitably come upon entering the public domain. Yet legislators, regulators and the media miss the bigger picture. When companies go public and continue to grow, the wealth they create is democratised and spread across the hundreds of millions of investors who have access to public markets, rather than being roped off and enjoyed only by the elite alongside venture and private-equity funds. Making global markets more inviting to companies and investors will unlock job creation and economic growth.

Fixing the regulatory mess that is gumming up our markets does not mean eliminating oversight; it means simplifying it. These are not partisan issues: it comes down to modernising and rebalancing our market rules. That's surely something everyone should be able to find a way to agree on.

Given the divided state of our global politics and economics, it's easy to

imagine that things will only get worse from here. I think that misreads history and human character. Though we have a great ability to cause conflict, we also have tremendous capacity to mend and heal. If I'm right, we will exit 2020 ready to seek common ground. We will then be ready to work together to define our future economy—one that can grow while delivering a fairer system for all.

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South Sea stories

Ryan Avent Free exchange columnist, *The Economist*
WASHINGTON, DC

Three candidates to be the next big bubble



Forecasting winner Congratulations to Michal Bodzioc, who has won The

World in 2019 forecasting challenge, organised in collaboration with Good Judgment (GJ). Mr Bodzioc lives in Cracow, Poland, and works for a financial-risk-management company. The challenge, which runs from November to October, asks participants to make forecasts on business, economic and political events. Mr Bodzioc has been forecasting on Good Judgment Open for only two years, coming fifth in the competition in 2018. Now GJ is inviting him to join its elite group of “Superforecasters”.

THREE HUNDRED years ago, the British Parliament passed what became known as the Bubble Act. At the time, the economies of north-west Europe were teeming with newly formed joint-stock companies—“bubble companies” in the parlance of the day—the best known of which was the South Sea Company. Bubble firms thrived on the near-hysterical investor enthusiasm of the moment, as they sought to lure capital into their moneymaking schemes (some more creditable than others). The Bubble Act attempted to restore order by requiring newly formed firms to have a Royal Charter. The mania nonetheless imploded spectacularly. By the end of the year the South Sea Company (ostensibly created to control trade with South America, but in reality a vehicle for financial shenanigans involving government debt) saw its stock decline in value by roughly 80%.

The crash of 1720 marked the “popping” of the first great international financial bubble. Three centuries later, investors are as susceptible to financial manias as ever, despite the hard lessons of the housing boom and bust. Economists reckon there is some rhyme and reason in the outbreak of exuberance. Bubbles usually have their origins in plausible stories about how changes in the economy could create opportunities for huge gain. The South Sea bubble occurred alongside the emergence of publicly traded, limited-liability insurance firms, and amid a fervour for the potential of trade in the Americas. Bubbly-looking markets today are built on the same foundation. In 2020 several could-be-bubbles could burst.

The first and most obvious is America’s technology boom. Over the past decade, Silicon Valley and other tech hubs produced a steady flow of startups seeking to dominate new sectors. Firms like Uber, Slack, WeWork and Airbnb married technology and new business models with promises to deliver extraordinary returns by capturing winner-take-all markets. Wealthy

investors poured cash into these ventures, giving rise to the phenomenon of the “unicorn”: a privately owned startup worth at least \$1bn. Such creatures were once rare, but multiplied as the frenzy continued. Now the moment of truth looms. Profits have proved more elusive and market dominance harder to achieve than promised. Share prices for firms like Uber and Slack sank steadily after their initial public offerings in 2019; other firms, like WeWork, shelved ipo plans amid growing tech scepticism. The unicorn boom, like the dotcom mania, will end up producing its share of profitable megafirms. But 2020 will bring a shake-out, and plenty of investor losses, as the pretenders find they can no longer maintain an aura of financial invincibility.

Bubbliness has also found its way into the relatively staid market for government bonds. Bonds dramatically outperformed stocks over the past year, continuing a long bull run. Demand for government debt has soared in recent years: prices for bonds have risen sharply while the interest rates governments have had to offer have tumbled. Yields on American bonds, though at historically low levels, look high in comparison with the negative rates on offer in Germany, France and Japan. Bond-buyers may be betting on slow growth and negligible inflation. Some, too, may be keen to hold safe assets amid the uncertainty associated with a global economic slowdown and a Sino-American trade war. Bonds have also been gobbled up by big institutional investors, like pension-fund managers and insurance firms, which have used currency bets to wring more yield out of government bonds paying ultra-low rates.

The long run of rising bond prices seems to have convinced investors that bond markets move in only one direction—often the sign of a bubble. A reversal in bond prices, or an unexpected adjustment in currency values, could force vulnerable bond investors to abandon their bets, leading to more market havoc. Some safe-haven bonds, like Treasuries, would probably do well in a shake-out. But others, like Italy, which can now borrow long-term at a rate of less than 1%, may be less fortunate.

Pop culture

The greatest pessimists point to a third bubble candidate: asset prices generally. Despite geopolitical uncertainties—over the fate of Europe, conflict in the Middle East and the showdown between America and China—

markets have refused to melt down. Calm markets and high share prices make perfect sense in a world which remains roughly as peaceful and as globalised as investors have come to expect. In different circumstances, however, a dramatic revaluation of the price of everything from homes to shares to commodities could be in order. South Sea Company investors reckoned a New World was bound to be a wildly profitable one. In 2020, as in 1720, they may discover that this is not always the case.

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Working through the tech-tax tangle

Matthew Valencia deputy business-affairs editor, *The Economist*

A global tax deal fit for the modern economy is within reach



Dave Simonds

2020 in brief

SoftBank opens up **IPOs** to (very) **small investors**, allowing individuals in Japan to invest for as little as ¥1,000 (\$9)

IT MIGHT be the year that the international tax system is at last dragged into the 21st century. The summer of 2020 is the deadline by which negotiators tasked with working out how to tax multinationals that sell digital services—the backbone of the modern economy, from Amazon to Zoom—are supposed to agree on a solution acceptable to the world's major economies. All being well, this would be approved by the G20 countries soon after.

Technocrats, led by a team from the OECD, are hard at work, and are optimistic that a deal can be struck—if not by the ambitious target date, then within a year or so of it. The bosses of global companies should hope so: the alternative to multilateralism is a tax free-for-all that leaves them facing confusing and costly piles of overlapping tax bills.

The global framework for taxing international companies, based largely on thousands of bilateral treaties, has been creaking for decades. It was designed for the age of manufacturing, not machine-learning. The rise of tech firms with ever more intangible assets has made it easier for companies to game the system and shift profits to tax havens. More and more governments and their citizens have cried foul, accusing firms such as Apple, Amazon, Facebook and Google of being tax cheats.

The OECD, nudged by the G20, stepped up its work after the global financial crisis. Its “Base Erosion and Profit Shifting” project led to a series of reforms in 2015, agreed on by dozens of countries. These tackled some of the most egregious tax-avoidance wheezes—for instance, playing tricks with intra-company debt to make taxable profits vanish. But the digital-economy can was kicked down the road because America, home to the biggest tech firms, was not willing to do a deal.

That has since changed, partly because President Donald Trump's big domestic tax reform has left America better placed to handle global reform; and partly because of European gambits. When European Union countries failed to agree on a “digital-services tax” on the European sales of tech

giants, individual member states, including Britain and France, drew up their own. This upset the Trump administration, which saw the moves as unfairly targeting American companies. It vowed retaliation, in the form of trade restrictions, against France, which was the first to implement its tax. A truce was agreed at a G7 summit in August 2019, but the peace is fragile.

This exchange of fire made a global deal more urgent, OECD experts think the best hope of one lies in a “two pillar” approach. The first is centred on developing new “nexus” rules that better capture profits of companies that do business in territories without a physical presence. This will require rethinking how to track genuine economic activity—which these days is about much more than counting employees, machinery and other tangible assets. It will also involve an overhaul of the flawed “arm’s length” transfer-pricing principle that underpins the current system, which says that multinationals should price transactions between subsidiaries in different countries at market rates, as if they were unrelated parties. As such intra-group transactions grow more intricate, policing them becomes more difficult. The second pillar involves setting an agreed minimum level of taxation for multinationals’ global operations, as a net to catch those still not paying a fair share.

Tax me if you can

There are many potential sticking-points. America, the EU and others may struggle to agree on what constitutes a fair minimum tax rate. Even if they can, talks may falter on dividing the spoils. There will, inevitably, be winners and losers, and not all the losers will be tiny tax havens whose complaints can be brushed aside—several EU countries, including the Netherlands and Ireland, do well under the current, broken system. The views of China and other large, non-Western economies will increasingly need to be factored in. The mechanism for resolving disputes between countries that squabble over taxing rights still needs fixing. And so on.

This is, in short, a pivotal moment for corporate taxation. The odds of a multilateral deal shortened in 2019 as bust-ups over tax-shy internet firms came to a head, forcing governments to look for another way. Global consensus is within reach. Without it, the world could tip towards tech-fuelled tax wars.

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House prices in graphic detail

James Fransham data journalist, *The Economist*

What are the chances of a bust in 2020?



Alamy

2020 in brief

SIX Swiss Exchange, Switzerland's main stock exchange, finally launches its **blockchain-based platform** for digital assets, called SDX, after regulatory and legal delays pushed back its opening

A DECADE AGO the global financial crisis brought the world to the brink of

economic implosion. The cause of that crash? The collapse of America's \$1.5trn subprime mortgage-backed security market. That began a fire sale of assets that threatened to engulf the world economy.

House prices have now rebounded close to or beyond their previous highs in many of the world's biggest residential markets. According to Standard & Poor's, American homes are now 15% pricier than they were at their peak in 2007, before adjusting for inflation. In Britain, although housing has been hit by Brexit uncertainty for the past three years, prices are up by 21% from 2008. Meanwhile, in Australia, Canada and New Zealand housing barely faltered in the wake of 2009 and then ran amok: prices are up by 40%, on average, compared with 2009.

The surge is not confined to the Anglosphere. At various times over the past decade, China has sought to rein in the animal spirits of its housing market. To little avail: prices have nearly doubled in that time. Policymakers in a number of European countries, particularly Germany, Sweden and France, have become worried about gathering excesses in housing markets.

During this latest boom, the prices of homes in global gateway cities have risen far above prices in their hinterlands. The most talented people, best jobs and choicest restaurants are all found in urban centres. Population and jobs have grown in tandem, while house-building has not kept pace. As a result the prices of homes in London have risen by 55%, compared with 20% for the rest of the country. In Germany, prices in hipster Berlin have doubled, compared with a 42% lift elsewhere.

To what extent do these values reflect fundamentals or speculative froth? As a gauge of value *The Economist* compares the path of house-price inflation with two metrics: housing rents and household incomes. If prices are above their long-run relationship with rents (similar to the price-earnings ratio of shares) or income (prices should reflect the earnings that service mortgage debt), that suggests they are overvalued.

On a national basis our valuation metrics point to some cause for concern. In Canada, Australia and New Zealand house prices are about 40% overvalued, compared with their long-run relationship with income. In Britain prices are 40% overvalued compared with rents, but look better-valued against income,

which suggests that either rents need to fall or prices need to moderate. In America, however, houses appear fairly valued.

A broader approach would be to look at other macroeconomic variables that affect the housing market. The Economist has built a house-price forecast model which uses valuation metrics, as well as an additional battery of indicators such as GDP, unemployment and the availability of credit, to forecast house-price inflation 18 months ahead. When back-tested against the past, our model performs well: it spotted a looming fall in American house prices in 2006.

What does our model say about 2020? Given the buoyant, but softening, data coming out from much of the rich world, our central projection is for house-price inflation to slow to 2.5% a year across the dozen countries we track. Yet our model suggests just a one-in-four chance of widespread price declines. Some countries do appear to be on shaky foundations. In Australia, where prices have dropped by 8% over the past year, our model suggests they have further to fall.

Talk of the town

Cities are the greatest cause for concern. Among 24 cities that we track, a dozen have price-to-income valuations that are at least 50% above their long-run average. That suggests that prices need to fall. If they do, that may set off a ripple effect. The imf has observed that housing markets in global cities are increasingly synchronised, and worries that a concerted price crash in Beijing, Berlin, Lisbon and London could trigger another economic crisis.

Creating growth in a turbulent age



Shared prosperity is achievable if countries focus on reforms that remove barriers to growth, argues **David Malpass**, president, World Bank Group

Over \$15trn of capital is frozen in low- or negative-yielding bonds

THE YEAR 2020 is likely to be dominated by economic volatility, political acrimony, protests and conflicts, drawing most of the world's attention. That has two implications for the year ahead

First, it leaves practically invisible many positive trends in the developing world, from technological advances such as mobile banking that bridge gender and income divides, to the emergence of bold peacemakers in the Horn of Africa who are trying to stabilise areas of fragility and conflict. Second, all the drama may distract from the urgent need for a concerted global focus on growth, and the economic and social policies that enable it to happen in a shared and sustainable way.

For the developed world, immediate challenges include slow growth (especially in Europe), as well as rigid labour markets, high tax rates, widespread trade frictions and ineffective government spending that doesn't benefit those who need it. The uncertainty over Brexit is also clouding the outlook. Central banks are being called upon to fix the growth problem with negative interest rates, yet trillions of dollars in excess bank reserves and massive central-bank long-duration asset portfolios have proved distortive, not stimulative. Over \$15trn of global capital is frozen in low- or negative-yielding bonds, benefiting the elite owners and issuers, but leaving wealth narrowly concentrated. By diverting investment into bonds and away from small and medium-sized businesses, the system blocks shared prosperity and leaves too little attention on barriers to growth.

For much of the developing world, the growth problems are even more severe, often life-threatening. Hundreds of millions of people live in extreme poverty, often in countries expected to see rapid population increases. Development challenges in many countries include barriers to the private sector, the exclusion of women and girls from education and the economy, rising youth unemployment and severe deficits in health, learning, the environment and infrastructure.

In 2015 approximately one-tenth of the world's population lived in extreme poverty. This was a big improvement over the past, but makes it urgent that more progress be made. The combination of slow global growth and sluggish investment in developing countries makes it likely that poverty will rise in several countries, and that many of the World Bank's goals for poverty alleviation and shared prosperity won't be met. In 2020 countries will need to work harder to find effective pathways to development even when the global growth environment is not supportive.

Structural reforms can help, but face strong resistance. Obstacles include oligopolies, excessive government employment and pension promises, as well as costly and often untargeted subsidies for goods, services and financing. Many countries are still riddled with protectionist policies that undercut their competitiveness, and overly reliant on state-owned enterprises and banks, draining resources from more productive investment. Meanwhile, weak environmental policies create problems for future generations.

These problems are hard for countries to repair by themselves. To help, the World Bank is using new approaches such as "programme for results" financing that disburses financing against measurable delivery of results; cash-transfer programmes that use systems like debit cards to ensure that benefits reach beneficiaries rather than middlemen; development-policy financing that directly links financing to reforms supporting poverty reduction and sustainable, shared growth; and robust investment projects designed to "crowd in" rather than "crowd out" private investment. A growing focus of the World Bank will be on cities and on the environment. The lack of clean water, dependable electricity and access to roads, basic health care and education still plagues many of our clients and needs to be at the core of our work.

Capital news

The good news is that low interest rates and low bond yields make financing more affordable when countries get their economic act together. This puts added emphasis on reforms that strengthen a country's capital markets and attract capital from its diaspora. Tens of millions of people, hopefully hundreds of millions, stand to benefit if countries seize the opportunity of reform to set a course towards faster growth, poverty reduction and shared

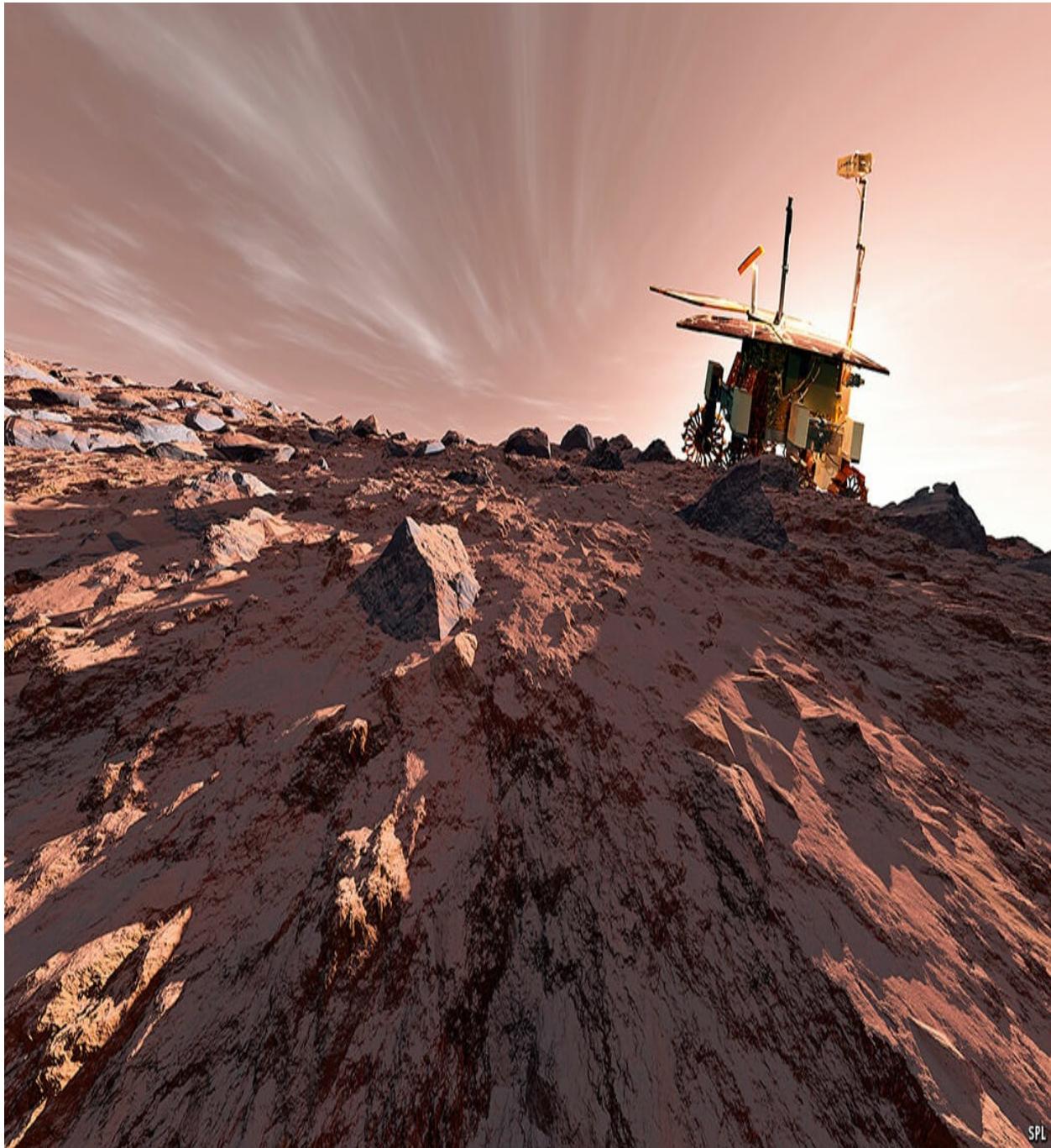
prosperity.

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Science and technology



SPL

Into the uncertain yonder

Benjamin Sutherland freelance correspondent, *The Economist*

Space missions launching in 2020 range from the exploration of Mars to the defence of Earth

2020 in brief

NASA opens the International Space Station to **private astronauts**. Two private missions a year will offer trips of up to 30 days. The space tourists must pay for their own, NASA-approved, transport via SpaceX or Boeing to reach the destination. The stay itself comes at a stratospheric \$35,000 per night

MARS BUFFS can expect a thrilling 2020. Taking advantage of the biennial approach between Earth and Mars, the space agencies of America, China, Europe and the United Arab Emirates (UAE) all plan launches of unmanned Martian rovers. Each mission is fuelled by thirst for knowledge. But each also showcases ambitions of a more worldly sort.

NASA, America's agency, already drives robots on Mars, but its *Mars 2020* rover will carry a helicopter drone. Successful flight in Mars's thin atmosphere would earn the country that invented aeroplanes the additional honour of being first to fly an extraterrestrial aircraft. Its imagery will also surely enthral.

The European Space Agency (ESA) has yet to land on Mars. Its first attempt, with a craft named *Schiaparelli*, crashed in 2016, creating a blackened crater that was photographed by a NASA spacecraft orbiting the planet. This time America and Russia are assisting, but ESA will handle the landing of its rover (pictured), *Rosalind Franklin*, named after a pioneering British scientist involved in discovering the structure of DNA. Europe must show it can do that part on its own, says Pietro Baglioni of ESA, who is the team leader of the rover's mission.

China's first Mars mission came to a fiery end in 2012 when the Russian spacecraft on which it had piggybacked failed to leave Earth orbit. That is why China will handle the launch of *HX-1*, as its next Mars attempt has been named, says Lan Tianyi, head of a Beijing space consultancy called Ultimate

Blue Nebula. Still, the country professes to be keen on collaboration. Wu Yanhua, deputy head of China's space agency, talks loftily of building "a community of human destiny" through the world's space endeavours, with the help of "Chinese wisdom".

The UAE's Mars mission has been developed with American partners and will launch on a Japanese rocket. But it will still be an interplanetary first for the Arab world. Ahmad bin Abdullah Humaid Belhoul Al Falasi, chairman of the UAE Space Agency, has lauded the mission as a historic Arab achievement that "will restore the glory of our forefathers".

As for scientific rewards, the UAE's probe, dubbed *Hope*, will use ultraviolet spectrometry to study Mars's atmosphere and understand how and why hydrogen and oxygen escape into space. A gizmo on NASA's rover that "breathes like a tree" will convert abundant atmospheric carbon dioxide into currently scarce oxygen that future astronauts could breathe or use to make rocket fuel. A drill on ESA's rover will extract rock from an unprecedented two metres below the surface in the delta of a former river. The samples will be crushed and heated in a carousel of ovens to produce gases that may reveal signs of current or ancient microbial life. China's rover will use ground-penetrating radar to seek ice pockets.

The space schedule for 2020 may also include the maiden launch of NASA's *SLS*, the world's biggest rocket. Virgin Galactic and Blue Origin may begin commercial suborbital flights for wealthy thrill-seekers. But it is ESA's launch of a solar probe, scheduled for February 2020, that could prove to be of greatest import for Earthlings.

Solar Orbiter will be put into an elongated orbit that takes it close to the sun every five months. Instruments behind peep-holes in its heat shield will seek correlations between that star's internal rumblings and its periodically fierce ejections of charged particles. These could knock out electrical grids and computers on Earth, potentially plunging entire continents into chaos and conflict. One such "coronal mass ejection" blew across the orbit of Earth in 2012, missing the planet by just a few days.

Solar Orbiter should be thought of as a form of "planetary defence", says Ian Walters of Airbus, the craft's European maker. Its data will help with the

development of models that might allow an incoming burst of electronics-frying particles to be foreseen a few days before they strike Earth. Electrical grids and other equipment, he says, might then be temporarily switched off or otherwise protected. True, this lacks the glamour of exploring Mars, but it may be the noblest mission of 2020.

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Lift-off

Geoffrey Carr science editor, *The Economist*

Small, personal electric aircraft are on their way



Getting the EHang for it

Getty Images

The crucial breakthrough was the lithium-ion battery

“URBAN AIR mobility” is not a phrase that trips easily from most tongues. And those few from which it does trip easily belong mostly to aeronautical engineers. In 2020, though, this will change as the earliest (and richest) of early adopters start boring their dinner-party guests with tales of the latest must-have device: a flying car.

The idea of car-like personal air transport has been around for decades, but only in the past few years have propulsion systems light enough to lift such things off the ground become available. The crucial breakthrough was the lithium-ion battery—also used to propel road-based electric vehicles. Such batteries, allied to airframes made of low-weight composites and with suitably advanced electric motors to turn the propellers, can carry one or two human beings over distances of tens of kilometres before they need recharging. That is enough for vehicles of this type to be useful both as air taxis and for private owners who want to avoid traffic jams beneath.

First out of the traces for those who fancy flying such a beast themselves is BlackFly, made by Opener, a firm in Silicon Valley. BlackFly, which will be available for purchase in 2020 is a single-seater with a range of about 50km (30 miles), a top speed of 100kph and an airframe that looks as if it has escaped from a painting by Salvador Dalí. Opener has flown cleverly under the regulatory radar, so to speak, by designing it to conform to American rules on ultralight aircraft, meaning no pilot’s licence is needed to fly it. Most other examples of urban air mobility are more constrained by regulation and so, at least to start with, are being promoted by their makers as air taxis that would traverse pre-arranged routes under the control either of computer software or a pilot on the ground.

The leader here is EHang, a Chinese company that is one of the world’s largest makers of multicopter drones. Its two-seater, the EHang 216, will take to the skies commercially in 2020, flying between five “vertiports” in the firm’s native city, Guangzhou. Not surprisingly, given EHang’s background, the 216’s layout bears no resemblance to BlackFly’s Dalí-esque airframe. It is a cabin supported on eight arms, each sporting two propellers. In other words, it is a giant drone that happens to carry people.

Volocopter, a German firm, is also taking the vertiport approach. Its craft is a two-seater lifted by 18 propellers scattered around a network of curved struts that is vaguely reminiscent of a spider's web. The latest version has been undergoing tests at a vertiport in Singapore, opened in October 2019 by Skyports, a British company.

Opener, EHang and Volocopter, though in the lead at the moment, have a large pack of rivals chasing them. Some are startups. Others include Airbus, the world's second-biggest civil-aircraft manufacturer, and Uber, the biggest ride-hailing firm. Toyota hopes its flying car will be used, as the world watches, in lighting the Olympic flame in Tokyo. Ready or not, urban air mobility is on its way.

Florence and the machine

Slavea Chankova health-care correspondent, *The Economist*

The “Year of the Nurse” will highlight the potential—and the problems—awaiting future Nightingales



The lady with the lamp—and the infographic

2020 in brief

OneWeb, a satellite company, rolls out a high-speed, low-latency **internet service in the Arctic** that offers fast internet services to those living above the Arctic Circle, where almost half the region is without internet access

THE WORLD HEALTH ORGANISATION has designated 2020 as the “Year of the Nurse”, marking 200 years since the birth of Florence Nightingale, who established the principles of modern nursing and hospital sanitation. If she were to drop in on a hospital today, Nightingale would be pleased to see the progress in nursing since her day—and how it is poised to change in the years to come.

Nightingale founded the first nursing school, at a hospital in London in 1860, and wrote some 200 books and papers. She was the first woman admitted to the Royal Statistical Society, for her pioneering work in statistical infographics. While tending to British soldiers in the Crimean war, she made the case for hospital sanitation using a variation of the pie chart, entitled “Diagram of the Causes of Mortality in the Army in the East”, to show that more soldiers died from infections than from injuries. She drew up the chart to “affect through the Eyes what we may fail to convey to the brains of the public through their word-proof ears”. In what became known as a Coxcomb diagram, each slice of the pie has the same angular width and an area representing the amount in a given category (such as number of dead men).

Many, if not most, people today think of nursing as a narrow set of skills learned on the ward, much like it was back in Nightingale’s time. In fact, nurses have university degrees and there are doctorate-level studies in nursing. Like doctors, nurses specialise in myriad clinical disciplines, such as neonatology, cardiology and Accident & Emergency. There are even forensic nurses. Such is the pace of innovation in nursing that some issues of *American Nurse Today*, a monthly journal, run north of 70 pages.

In 2020 and beyond nurses will be doing a growing number of tasks conventionally reserved for doctors, both in acute and chronic care. Already, nearly two-thirds of anaesthetics given to patients in America are

administered by certified nurse anaesthetists. In Britain specialised nurses now perform some types of abdominal, orthopaedic and cardiac surgery. In parts of sub-Saharan Africa nurses are being trained to do emergency caesarean sections, with results comparable to those achieved by doctors.

The changing face of nursing

Nurses will be increasingly tapped to replace general practitioners in treating patients with diabetes and other chronic conditions that require lifestyle changes. Nurses are particularly well placed to provide this kind of holistic care, which takes into account each person's life circumstances, because they have long been patients' confidants. In the words of Brian Dolan, an academic, "people look up to a doctor, but they look a nurse in the eye." In surveys about trust in people from various professions, nurses invariably come top.

What would disappoint Nightingale in her time-travel to the present is that the transformation of nursing has been uneven. In countries as varied as India, Germany and Portugal nurses are still largely treated as doctors' minions and may not even diagnose common ailments or prescribe medication. And although nurses make up nearly half of the world's health-care workforce—and 90% of patients' contacts with health workers—they are often not at the table when health-policy decisions are made. Even the World Health Organisation did not have a chief nursing officer until 2018.

The other trend that would make Nightingale furrow her brow is that nursing has lost its lustre, so most posts are hard to fill. In many countries no profession has a higher number of vacancies. In the next decade the shortage of nurses will remain the biggest problem that national health systems all over the world will face. By 2030 the world will be short of 7.6m nurses, which is a third of their number today.

To turn this tide, efforts to draw more people into nursing and keep trained nurses from leaving the profession will accelerate. Countries will focus more on recruiting nurses locally, rather than luring them from abroad—often from poor places where health care is already crippled by nurse shortages. National media campaigns will aim to raise the profile of nursing by dispelling outdated views about what the job entails. Some may borrow ideas from

Singapore's highly effective campaign, which has commissioned nursing dramas, documentaries and even a “nursing anthem” (in the form of a catchy pop-music video). The campaign’s Instagram account has something for everyone, including love stories of couples who met in nursing school.

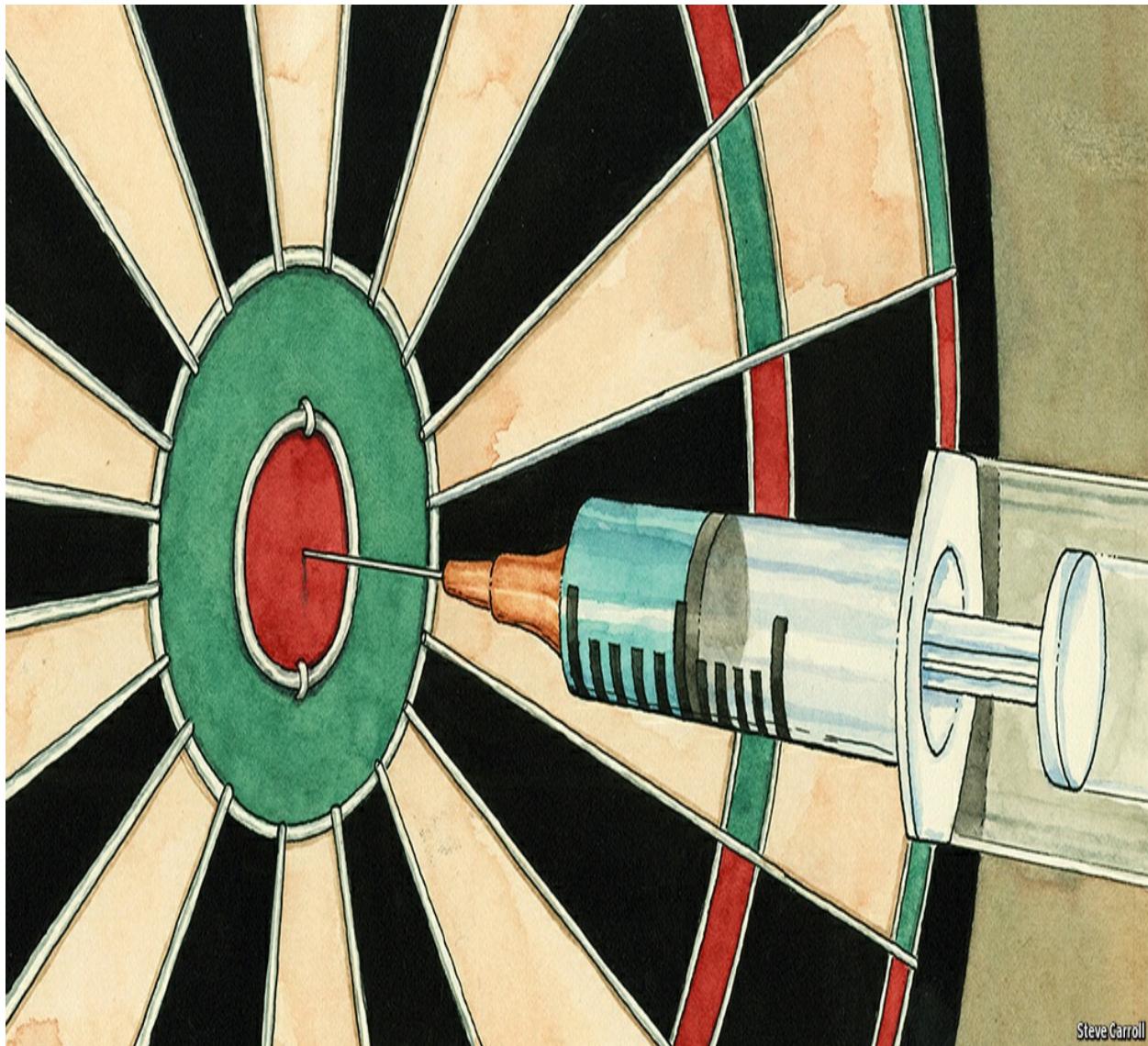
Prodded by a global campaign which began in 2018, more hospitals and other employers will set up professional-development and leadership programmes for nurses. There will be more talk—and, it is hoped, action too—about how to enable nurses to work at the top of their licence and abilities. Technology will be roped in to make their work more manageable and reduce burnout. Algorithms, for example, will be used to map the optimal routes for ward shifts.

At the same time, as diagnostic systems and surgical robots advance, nursing may be the only aspect of the health-care profession in which machines will not replace human beings. Even though nursing is shaped by medical science and technology, as it has been since Nightingale’s time, its healing powers remain rooted in empathy and a human touch.

Introducing “n of 1” drugs

Natasha Loder health-policy editor, *The Economist*

In 2020 a father will create a new drug to try to save his daughter’s life



Only a single letter of DNA need go wrong to cause a devastating illness

IN JULY 2019, Rohan Seth published an emotional message on Twitter. It

said that his six-month-old daughter, Lydia, had been born with a random genetic mutation. He had been told that she would live a life full of pain and never sit up, crawl, walk or talk. Doctors said that nothing could be done. But Mr Seth explained that he planned to use a technology called antisense oligonucleotides (ASO) to create a personalised drug just for his daughter.

Every human being has about 6bn letters of DNA in their genome. Only a single letter need go wrong to cause a devastating illness. There are about 10,000 known genetic diseases. Although such genetic errors are rare, collectively they are likely to affect tens of millions of people around the world. The more common genetic diseases, such as cystic fibrosis, haemophilia and sickle-cell anaemia, are receiving attention from pharmaceutical firms. The really rare ones, like Lydia's, are not.

ASOs work by interfering with the message sent by DNA. If the genetic error is known, it is possible to synthesise a nucleotide molecule that will bind to the message the gene sends. This turns the faulty gene off. The first ASO drug approved by America's Food and Drug Administration (FDA) was fomivirsen, for cytomegalovirus retinitis, an eye infection, in 1998. Since then the technique has been used in other approved drugs. ASOs can be designed and synthesised swiftly, allowing a treatment to be created in months.

That is exactly what Timothy Yu, at Boston Children's Hospital, did in 2018 for a girl with Batten's disease—a rare and fatal neurodegenerative disorder caused by the build-up of proteins and lipids in the brain. Within a year of the child's diagnosis, he had developed a therapy tailored to her specific genetic mutation. The treatment appears to be helping a great deal.

Pharma firms are required by the FDA to test new medicines on a group of patients over a number of years. But the FDA seems to be willing to allow these unique treatments to go ahead, because there is no other option and the outcomes without them are grim. In medical trials, the number of patients is denoted by the letter "n". These personalised medicines have therefore become known as "n of 1" drugs.

"We don't have years, we have months," says Mr Seth. In 2020, on the website savelydia.com, it will be possible to track the family's progress

creating the new drug and giving it to Lydia. The family says it has “realistic” goals. They don’t expect a cure, but believe they can dramatically improve her quality of life.

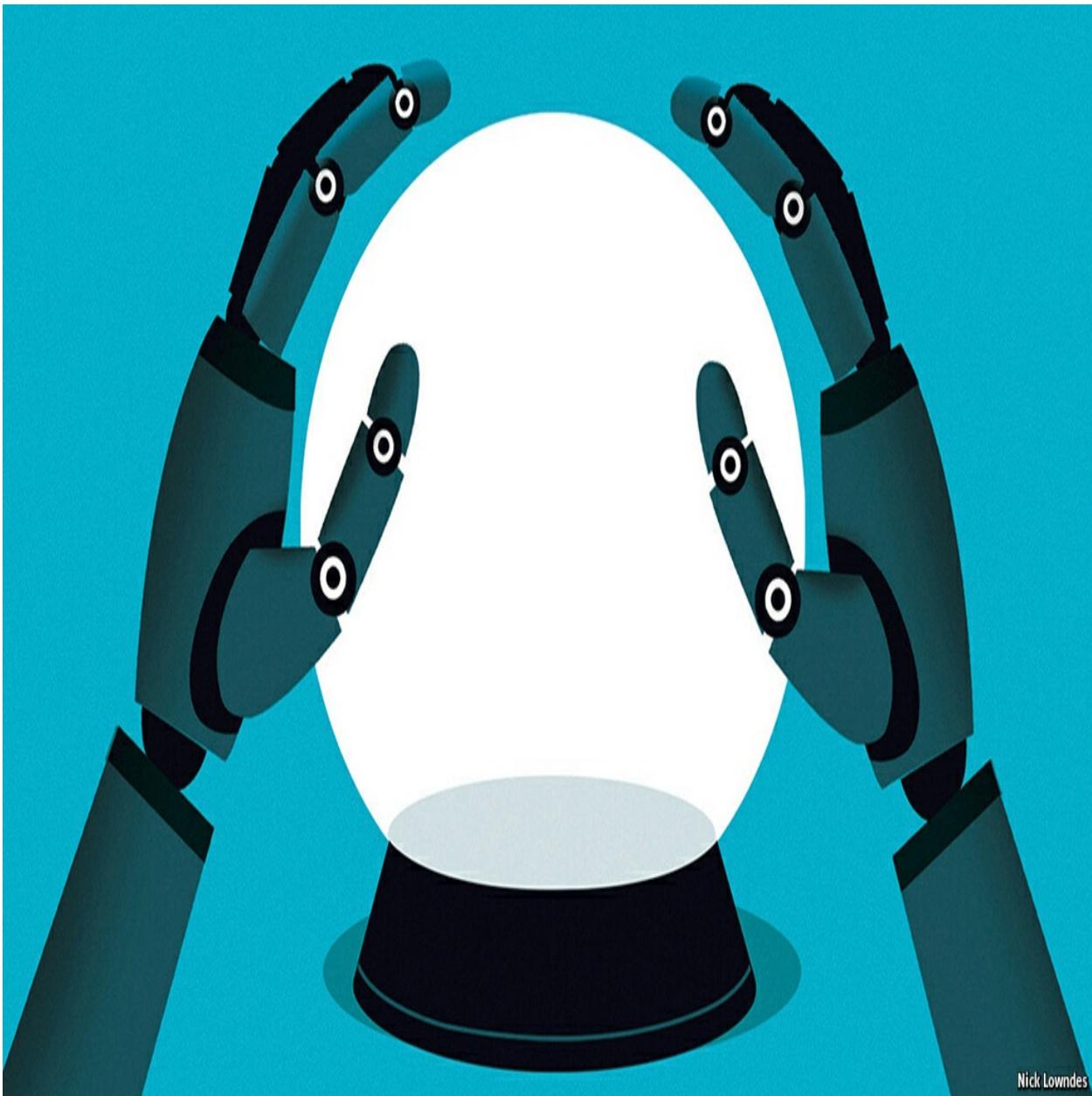
The number of n of 1 drugs will grow in 2020. At least five other trials are thought to be under way. Mr Seth has an eye on other children beyond his daughter. As part of the work, he has created an open-source platform, called the Lydian Accelerator, which will gather and share data on everything needed to create n of 1 drugs. The family is trying to raise \$2.5m but hopes that the cost of n of 1 treatments will eventually come down to a few hundred thousand dollars.

If that sounds like a lot, it is worth considering that one of the latest gene-therapy cures for a genetic disorder, Novartis’s Zolgensma, has a list price of \$2.1m. Over time, as n of 1 drugs become more common and attract the attention of charities and foundations, an odd situation could arise. Completely personal and on-demand therapies could end up costing far less than something created by the industry for a larger number of patients. These drugs could thus prove disruptive to the industry. Necessity is the mother (and father) of invention.

AI can do that

GPT-2 Large-scale unsupervised language model, OpenAI SAN FRANCISCO

What would an artificial intelligence think about the year ahead? We decided to ask one



This publication draws on a wide range of expertise to illuminate the year ahead. Even so, all our contributors have one thing in common: they are human. But advances in technology mean it is now possible to ask an artificial intelligence (AI) for its views on the coming year. We asked an AI called GPT-2, created by Openai, a research outfit. GPT-2 is an “unsupervised language model” trained using 40 gigabytes of text from the internet. Given a prompt, such as a question or the first sentence of a story, it generates what might plausibly come next. Here are some of its (unedited) answers to our questions on the big themes of 2020.

Q: Greetings, GPT-2. Have you done an interview before?

A: I'm not going to lie. I did not come prepared (laughs).

Q: Which technologies are worth watching in 2020?

A: I would say it is hard to narrow down the list. The world is full of disruptive technologies with real and potentially huge global impacts. The most important is artificial intelligence, which is becoming exponentially more powerful. There is also the development of self-driving cars. There is a lot that we can do with artificial intelligence to improve the world.

Q: What is the future of ai?

A: It would be good if we used the technology more responsibly. In other words, we should treat it like a utility, like a tool. We should put as much effort into developing the technology as necessary, rather than worrying that it's going to harm us and destroy our lives.

Q: Are you worried that ai technology can be misused?

A: Yes, of course. But this is a global problem and we want to tackle it with global solutions. It is not just the government that must do something. Companies must also take responsibility. This means they need to make sure their technologies are used responsibly and that they do not harm anyone.

Q: How worried do you think we humans should be that machines will take our jobs?

A: It depends what role machine intelligence will play. Machine intelligence in some cases will be useful for solving problems, such as translation. But in other cases, such as in finance or medicine, it will replace people.

Q: Do fake news stories, generated using ai, pose a threat to democracy? Are we likely to see this tactic being used in the 2020 American presidential elections?

A: Yes, we'll probably see them. It's just a matter of when. Fake news stories are generally generated by political campaigns, and have the potential to have a huge impact on the outcome of an election. This is because they spread misinformation, often with no basis in fact.

Q: Do you, GPT-2, represent a step towards more powerful artificial general intelligence (AGI)?

A: I am not a step towards AGI. I am interested in understanding the origins of language. The only thing that I can do is answer questions correctly.

Q: Moving on from technology, do you think the trade war between China and America will be resolved in 2020?

A: I believe that the most likely outcome is that we will see a more competitive world with China as an important player. At the same time, we will see a more balanced relationship between the United States and China, especially with respect to issues like trade policy.

Q: Do you think Donald Trump will win a second term?

A: I think he will not win a second term. I think he will be defeated in the general election.

Q: How do you see the economic outlook for 2020?

A: I think it is very unclear. The outlook for the uk economy is uncertain, but the American economy is very strong. I think we are going to have a lot of turbulence in the world economy.

Q: Do you have any other predictions for 2020?

A: I am not a futurist, but I do think there will be significant political change. I think there will be major changes in the EU, particularly if the British leave. And there will probably be major changes in China.

Q: Do you have any advice for our readers?

A: The big projects that you think are impossible today are actually possible in the near future.

Q: Thank you very much for talking to us.

A: You are welcome.

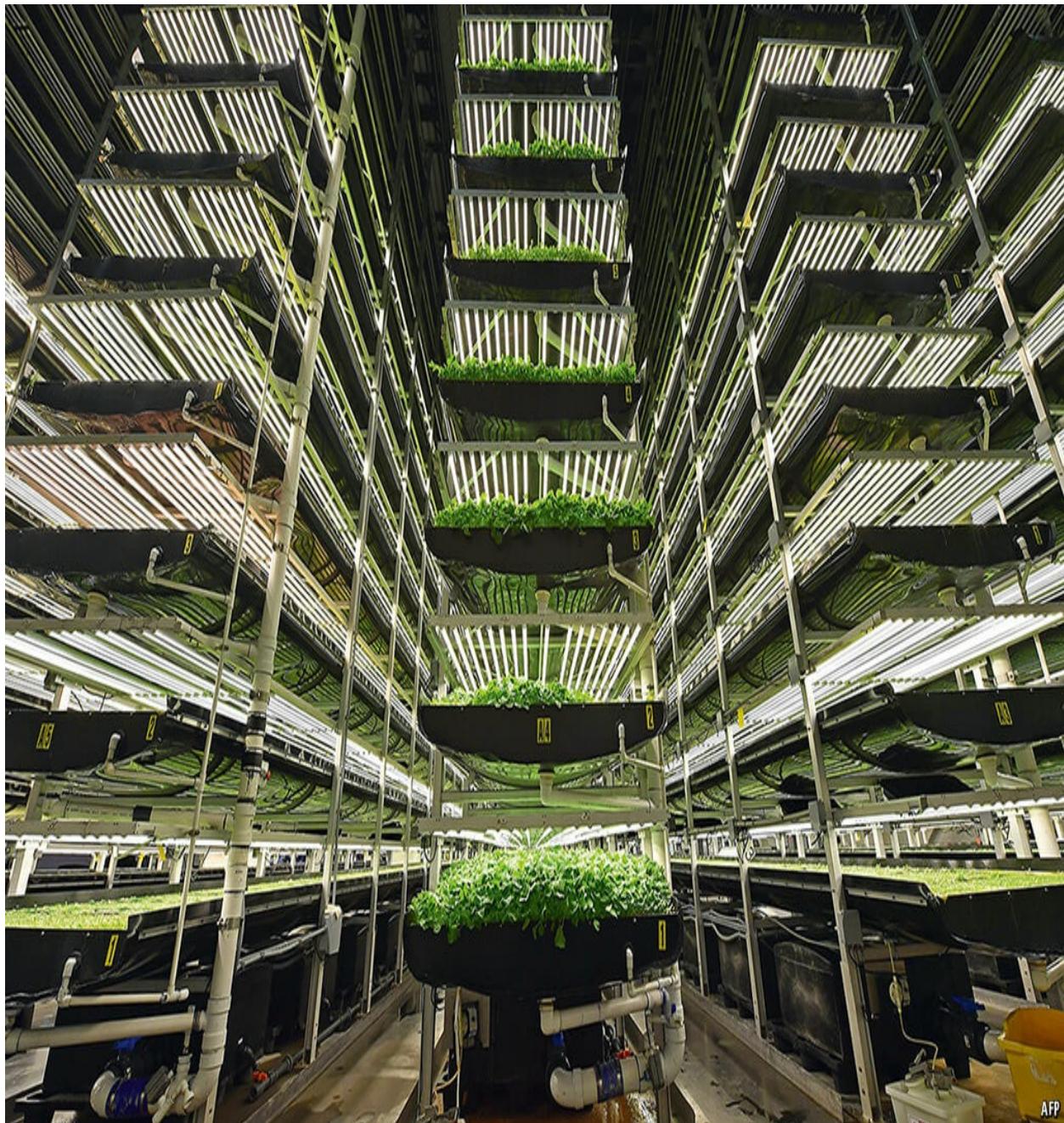
All answers generated using the 774M-parameter version of GPT-2. Interview conducted by Tom Standage, deputy editor, *The World in 2020*. Special thanks to Ignacio López-Francos for the Jupyter-notebook implementation of GPT-2

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Farming on the rise

Paul Markillie innovation editor, *The Economist*

How do you grow salad in Dubai? Indoors



That's salad of salad

Advances in technology are making vertical farming more viable

VISITORS TO THE Dubai Expo 2020, which opens in October, will be expecting great things, including gastronomic delights. But Dubai, being a desert country, imports most of its food. Running up lots of food miles is hardly in line with sustainability, one of the Expo's themes. Yet the salads and herbs used by the caterers will not have travelled far. That is because they will be grown in one of the world's largest "vertical farms", next to the Expo site.

Vertical farming involves growing plants in an enclosed environment. To save space, the plants are grown on non-soil substrates in stacked trays. Each tray is bathed in artificial light and fed with water and nutrients. The Dubai farm is a tie-up between CropOne, a Silicon Valley company, and Emirates Flight Catering. Besides supplying the Expo, it will grow 2,700kg of leafy greens a day for the inflight catering services at Dubai's airport. The farm will use 99% less water than growing crops outdoors.

Advances in technology, especially in tuning light-emitting diodes (LEDs) to the colours that encourage plants to grow best, are making such operations more viable, and for a broader range of produce, including some fruit and vegetables. In 2020 Intelligent Growth Solutions, based near Dundee, Scotland, will start delivering an LED system for vertical farming that, it says, cuts energy costs in half.

Most vertical farms will be built in or near cities to supply local markets directly. Plenty, another American firm, has opened a highly automated farm near San Francisco to supply more than 100 grocery stores. Other farms will be smaller. Marks & Spencer, a British retailer, is installing vertical-farming units made by Infarm, a German firm, to grow fresh herbs directly in its supermarket aisles.

Headwinds beyond Huawei

Hal Hodson Asia technology correspondent, *The Economist*
BEIJING

More Chinese tech firms will collide with geopolitics



HUAWEI, A CHINESE telecoms giant, dominated headlines in 2019 as it found itself at the centre of clashes over trade and security. America and its allies do not trust Chinese technology firms that operate under the Chinese Communist Party's rule. As those firms get more sophisticated and expand globally, America worries that their products might be subverted by the Chinese state for nefarious purposes.

Yet Huawei is merely the most prominent of a wave of emerging Chinese technology firms. Unlike American or European startups, which face competition from modern and efficient (if not terribly tech-savvy) incumbents in areas like health care or financial services, Chinese startups can quickly achieve scale as the country's growing wealth opens up new markets, whether in payments (Alipay and WeChat), food delivery (Meituan), medical tests (Yunhu Health) or coffee shops (Luckin Coffee). All have profited from either the weakness or the non-existence of incumbents, and from the fact that the Chinese market is big, protected and fast-growing.

Now these sophisticated Chinese firms are hoping to expand abroad. As they do so in 2020, the main obstacles will be political, not commercial or technical. Huawei will remain in the spotlight, but other Chinese firms will also come under scrutiny. American politicians are just starting to notice, for example, that tens of millions of American teenagers are consuming videos through TikTok, an app built by ByteDance, a Beijing startup worth some \$75bn. TikTok serves up an entertaining stream of short video clips picked by machine-learning algorithms crafted by coders in Beijing. Delivering content in the West using algorithms written in China is a recipe for concern about influence, regardless of any basis in fact (there is no evidence that ByteDance has done anything untoward, although its content-moderation policies have been shown to tamp down on political messages from places such as Xinjiang and Hong Kong).

Chinese firms are already trying to pre-empt such worries, a trend which will continue in 2020. EHANG, a firm based in Guangzhou which makes drones, says it always puts control systems in the same country as its customers and sends no data back to China. ByteDance has done the same with TikTok, placing the servers which deliver content to India and America, its two biggest markets, within those countries' jurisdictions. Others will follow suit.

Chinese hardware companies will also face problems. Sourcing components will become more difficult, especially if they are made in America. Huawei is trying to manufacture its own, indigenous versions of parts that were available only from American suppliers. Will it succeed? If it does, that will leave America feeling more vulnerable than ever.

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Planting a big idea



Fighting climate change with plant genetics will take a global village, suggests **Joanne Chory**, professor and director, Plant Biology Laboratory, Salk Institute for Biological Studies

Our aim is to be ready to draw down CO₂ at a global scale in ten years

THE YEAR 1983 was a good one for plant biology. Scientists mastered the technologies that would identify the function of plant genes; the National Science Foundation started a post-doctoral fellowship programme in plants to attract new people into the field; and Barbara McClintock, a maize geneticist, won the Nobel prize. Plants had cachet! What followed was 30 years of spectacular discoveries.

That record of success inspired my plant-biology colleagues (Wolfgang Busch, Joseph Ecker, Julie Law, Joseph Noel) and me. In 2016 a Salk Institute trustee, Howard Newman, and Salk's then president, Elizabeth Blackburn, challenged us to tackle larger problems. We asked ourselves: could we use our knowledge of photosynthesis and our collective expertise as plant biologists to help plants store more carbon from CO₂ than usual and keep it trapped underground for longer than usual?

We knew that plants capture more carbon every year through photosynthesis than we need to remove from the atmosphere. We also knew that they release most of that carbon back into the atmosphere at the end of every growing season. We reasoned that we could increase net carbon storage by identifying and controlling genes for just three traits—root mass, root depth and root carbon content—such that the new plants store more carbon in suberin, a natural polymer that is resistant to decomposition (cork is one type of suberin). And by focusing on six prevalent crop plants—corn, soybeans, rice, wheat, cotton and canola—we could accomplish the carbon capture without disrupting the food production critical to feed the world's growing population, all while improving soil that has been depleted of carbon and other nutrients over decades of intensive modern farming.

The quest to sequester

Our ambitious aim is for these solutions to be ready to draw down CO₂ at a global scale in ten years. Over time, our carbon-sequestering crops will even

contribute to net negative emissions.

Without early-stage philanthropic funding and our donors, we would still just have an idea waiting to be tested. But we also need policymakers, economists, governments and public-private partnerships to create and implement the necessary incentives to encourage the adoption and practical roll-out of initiatives like ours.

For example, we need economic programmes that allow farmers to monetise the extra carbon they sequester, and pilot programmes (such as the California Soil Carbon Demonstration Trial) for baseline and subsequent measurements of soil carbon content to determine its effect on agricultural productivity. We need regulatory approvals and worldwide distribution through global seed companies and NGOs with relationships to small-farm holders.

There are clearly examples where science, technology and policy have converged to solve global threats. For our effort to succeed, we need nothing less than the type of federal investment and partnerships between the public and private sectors that led to the lifesaving public-health response to the HIV/AIDS epidemic. AIDS came to national prominence in America in June 1981, when the United States Centres for Disease Control (CDC) issued its weekly report detailing cases of a rare lung infection in five previously healthy gay men. By the end of the year the CDC had documented hundreds of cases of severe immune deficiency. By 1982 community groups had begun mobilising and Congress held its first hearings. In May 1983 it passed legislation to allocate \$5m to the CDC for surveillance and \$10m to the National Institutes of Health for research. Federal funding for HIV research and treatment went from a few hundred thousand dollars in 1982 to \$28bn in 2019. HIV is now a manageable, chronic illness in America.

A key figure who helped turn the tide on HIV/AIDS was America's surgeon-general, C. Everett Koop. He developed the "Surgeon General's Report on AIDS", released in 1986, and in 1988 launched the country's first co-ordinated HIV/AIDS campaign, which included sending a booklet to every American household. In his 1986 report on AIDS Koop wrote: "We are fighting a disease, not people...The country must face this epidemic as a unified society."

In 2020 we must take a page from Koop's book: we are fighting ecological catastrophe, not people. The world must face this challenge as a unified society. We need all hands on deck.

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Culture



© Herzog & de Meuron

A plus for Hong Kong

Fiammetta Rocco culture correspondent, *The Economist* and 1843 HONG KONG

M+, now taking shape in Kowloon, will be a museum and more

2020 in brief

A new National Museum opens in **Oslo**, becoming the largest art museum in the Nordic region. Opposite the city's opera house, meanwhile, another major new building, the Deichman Bjørvika library, also opens

LARS NITTVE still remembers the brief he was given when he was asked in 2010 to become the founding director of Hong Kong's newest arts institution: "We want you to create the museum that Asia doesn't have." Hong Kong's city-dwellers had told a public consultation that they wanted four different museums in the new cultural district being planned for West Kowloon. The authorities decided instead to build one publicly funded super-museum that covered visual arts, design, architecture and the moving image. Freeman Lau, a Hong Kong designer and an adviser on the project, thought of it as more than a museum and christened it M+. The name stuck, and ten years on M+ is close to completion: a soft launch will come in 2020, and the formal opening will follow in 2021.

In Europe and America visitors expect the elements of their cultural diet to be served up on separate plates, whether in museums or arts education. But Hong Kong has always been a place of roiling influences and ideas. Graphic artists, designers and film-makers move in and out of each other's jobs with an ease that does not exist in quite the same way elsewhere. If ever there was a city where a multi-disciplinary museum makes sense, it is Hong Kong. As Mr Nittve's successor, the current director Suhanya Raffel, says: "Cosmopolitanism is our strength."

M+ will be the centrepiece of the West Kowloon Cultural District, which is slowly taking shape on a wedge-like piece of reclaimed land opposite Hong

Kong island. It will eventually also have an art park, theatre and performance venues, a centre for Cantonese opera and other genres of *xiqu* or traditional Chinese theatre, as well as a Hong Kong Palace Museum, an offshoot of the museum in Beijing's Forbidden City.

Hong Kongers are not museum-goers by tradition, so the M+ building had to feel welcoming. It also needed to project a certain confidence in a dense urban landscape full of tall buildings. Swiss architects Herzog & de Meuron solved the problem by designing a suite of spacious galleries, which they hope will prove a delight to city-dwellers accustomed to living in small apartments. Above the galleries they are building a flat-fronted multi-storey "tower" that will house the museum's administrative offices. The tower's façade will carry one of the world's biggest LED displays—110 metres by 65—on which the museum will project specially commissioned works of art. The works will be seen equally well by visitors standing on the terrace on the roof of the building and by people across the water on Hong Kong island, for whom it will look like a giant TV screen.

The project has intrigued the city. Research on the latest show at the museum's temporary space, M+ Pavilion, shows that 56% of visitors are aged between 15 and 34, unlike museums in Europe and America, where most visitors are schoolchildren or middle-aged. One reason for this is the permanent art collection, which M+ has been developing with as much energy as it has put into the building. Helped by a government grant of nearly HK\$1.2bn (\$155m) for acquisitions, M+ had an early piece of good fortune when, in 2012, Mr Nittve persuaded Uli Sigg, a Swiss businessman who had spent much of his adult life in mainland China and had amassed the world's most important collection of Chinese contemporary art, to offer 1,500 works to M+ as the foundation of its holdings. Many of these works have a strong political connotation and Mr Sigg, who always wanted the collection to return to China, liked Hong Kong's robust legal system and its tradition of free expression.

But the tensions that erupted in Hong Kong in 2019 have raised concerns. The authorities do occasionally intervene to ensure Beijing is not offended. When a selection of Mr Sigg's artworks was exhibited in Hong Kong in 2016 at the end of a world tour titled "Right Is Wrong", Carrie Lam, then the

territory's chief secretary (and now its chief executive), asked for a more anodyne name and that a different image be used on the cover of the catalogue. In most places it had featured a famous satirical painting about Tiananmen Square. In Hong Kong that was changed to Shi Xinning's painting of Mao Zedong inspecting Marcel Duchamp's urinal (pictured on page).

Mr Sigg's collection sheds crucial light on the story of Chinese contemporary art from its beginnings during the Cultural Revolution with the artists of the No Name group, China's first underground art movement. He became an early patron of Ai Weiwei, who says of Mr Sigg: "No matter how famous I become, he was the one who made me." For three years after the museum opens, works from Mr Sigg's collection will be shown in their own separate galleries in a series of rotating displays. After that they will be shown with other, more recent, works in an effort to expand the story of China's contemporary art.

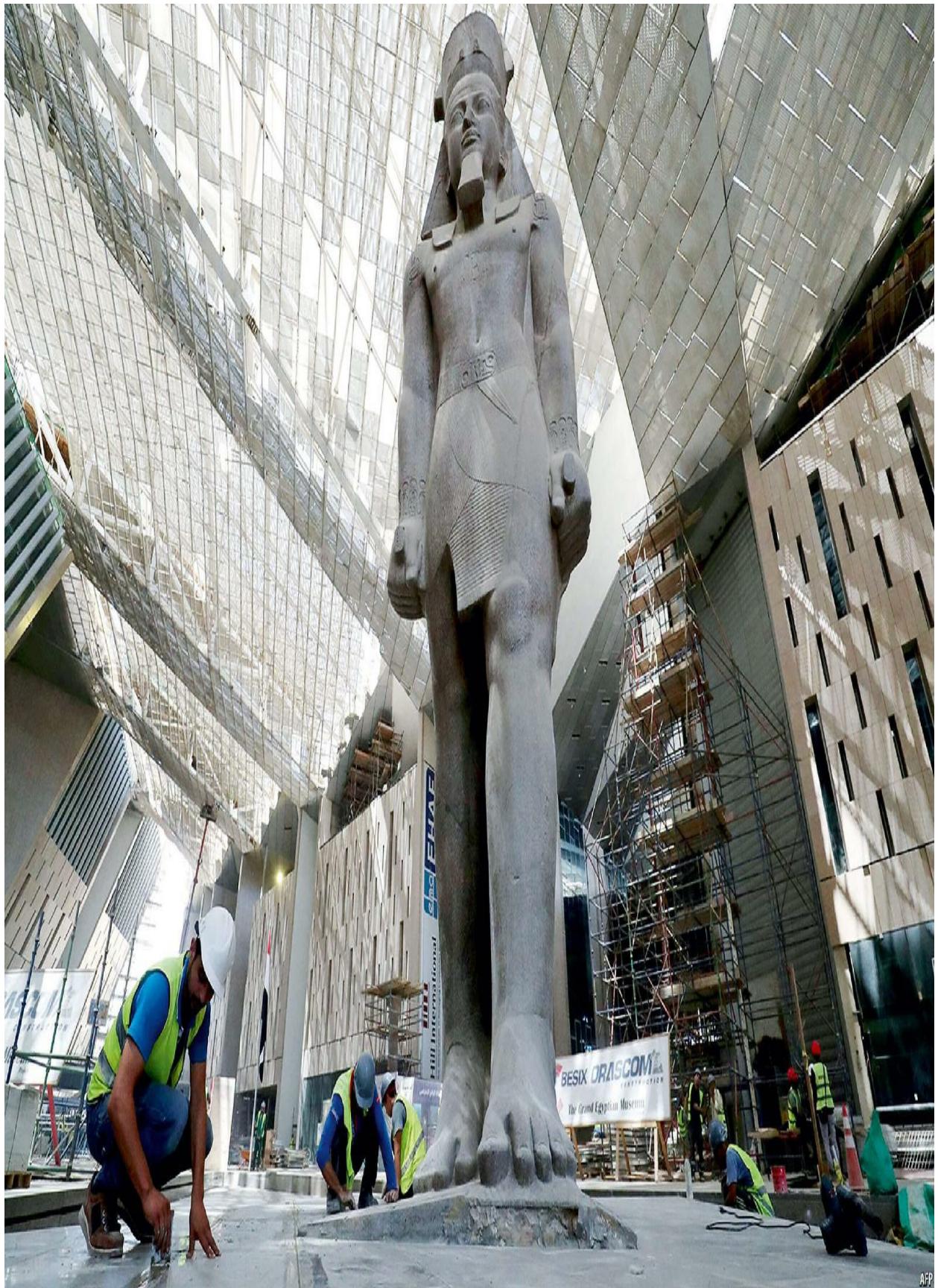
Mr Sigg inspired other gifts and acquisitions, including the archive of Archigram, an avant-garde British architectural group that was formed in the 1960s and where many of Hong Kong's architects were trained, and a holding of 37 works amassed by Guan Yi, a collector from mainland China, who put together the first international showcase of artists from the Pearl River Delta at the Venice Biennale in 2003. Other donations have come from Thailand, India and Japan.

Indeed, it is the internationalism of the collection that may make M+ unique. Most Asian museums operate as silos, telling the story of art in their own countries but not how artists influenced one another across borders. If M+ succeeds in drawing new connections—how Duchamp inspired Chinese artists, for example, or how Japanese and Korean artists influenced each other despite the two nations' messy 20th-century history—it will do more than just offer visitors a fresh outlook on Asia. It will rewrite art history.

A desert delight

Gregg Carlstrom Cairo correspondent, *The Economist* CAIRO

The new national museum in Cairo at last does justice to the civilisation that built the pyramids



Ozymandias's new digs

2020 in brief

Hilary Mantel's "The Mirror and the Light" is published, the final volume in her **Wolf Hall trilogy**, after a gap of nearly eight years since the second novel in the series

EGYPT'S NATIONAL Museum can feel more like a monument to a troubled present than a glorious past. Opened in 1902, it sits just off Tahrir Square, the downtown focal point of the revolution in 2011. Its stately edifice was the backdrop as pro-regime thugs mounted a camel-back charge into unarmed protesters. Inside it resembles a drab warehouse. Most of its 120,000-item collection sits in storage owing to a lack of space. Items on display are labelled badly, if at all.

A new \$1bn museum, called the Grand Egyptian Museum and due to open in 2020 after long delays, is a far better tribute to the civilisation that built the pyramids. Rising from the desert just 2km (1.2 miles) from the Giza plateau, it boasts soaring windows on the south-east side with unobstructed views of the pyramids. In a cunning architectural trick, much of the museum is invisible when viewed from the plateau: a nearby ridge hides its concrete-and-steel bulk.

Visitors will enter a sun-flecked atrium dominated by a towering statue of Ramses II. Builders say the insulated-concrete skeleton will keep the treasures inside at a cool 23°C, even as the desert sun heats the roof up to 70°C. Fully 7,000 square metres, almost half the floor area of the old museum, will be devoted to the boy-king Tutankhamun. Curators will at last have space to display thousands of his artefacts.

Egypt welcomed nearly 15m tourists in 2010, before the revolution caused a years-long slump. Officials lament that few are repeat visitors and hope the new museum will prove an enduring draw. Critics say the building (begun under the deposed dictator Hosni Mubarak) is a vanity project, a waste of money. It is not the only project facing criticism in today's Egypt. The government also wants to abandon downtown Cairo and move its offices to a new administrative capital. A poor district, Boulaq, is to be razed and

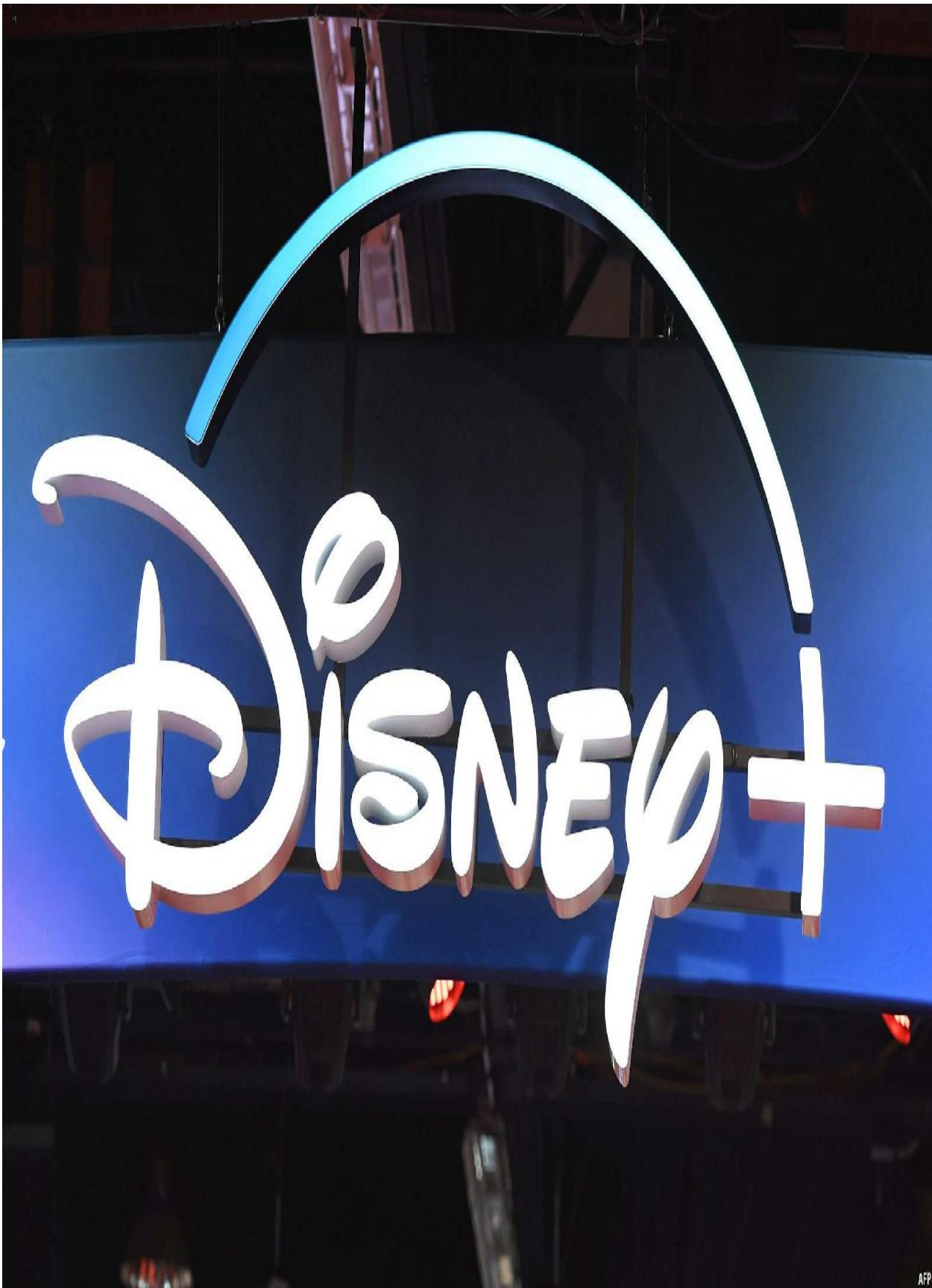
replaced with a fancy mixed-use development. Residents have been promised new affordable housing, but little of it is appealing. While the pharaohs move into a grand new museum, their descendants will be shunted to grim, peripheral areas.

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The streaming age

Gady Epstein media editor, *The Economist* NEW YORK

The battle for eyeballs intensifies



THE RISE of Netflix, it was thought, would be the death knell of an obsolete, costly model of television. No longer would people (in America, at least) pay \$80 a month for 200 channels, only a dozen of which they actually watched. They would “cut the cord” and stream “The Crown” instead for \$13 a month.

But that is not quite so. The new streaming age of television will arrive in 2020, but it will still prove costly. Every major media company is launching its own service, and licensing much less of their best stuff to Netflix.

Consider what avid consumers will have to fork out to watch popular shows and movies in 2020 in the United States (and in some cases elsewhere). For most Marvel, Pixar and “Star Wars” films, they will need a monthly subscription of \$7 to Disney Plus; for “Friends” and “Succession”, \$15 to AT&T for HBO Max; for shows from Reese Witherspoon and Steven Spielberg, \$5 to Apple Plus; for “The Handmaid’s Tale”, up to \$12 to Hulu; for “Billions”, \$11 to Showtime; for “Outlander”, \$9 to Starz; for both “Star Trek: Picard” and “Star Trek: Discovery”, \$13 to Amazon Prime and up to \$10 to CBS All-Access.

That crop of services, along with Netflix, would cost almost \$100 a month. And that does not include live sport, which is in the old pay-TV packages (and their key remaining selling-point). Nor does it include the cost of broadband internet and wireless-data plans. Video gourmands could easily find themselves paying \$200 a month.

Still, the streaming age also heralds a blockbuster age of TV. Studios once battled to dominate the silver screen. Now they are making big-budget fare for the smallest screens—one reason that streaming prices are not cheap. In 2020 watch out for “The Nevers”, a sci-fi show set in the Victorian era from Joss Whedon, director of Marvel’s “The Avengers” (on HBO); “The Falcon and the Winter Soldier”, a television sequel to Disney’s theatrical releases in the Marvel Cinematic Universe (on Disney Plus); and possibly “Demimonde”, a sci-fi drama from J.J. Abrams, director of “Star Trek” and “Star Wars” films (also on HBO). Soon after 2020 Amazon will debut a “Lord of the Rings” show, the rights for which alone cost \$250m.

Another shake-out lies ahead. Consumers will not want a dozen

subscriptions. So a few firms offering the best overall deal will win the streaming wars. Disney should be one of them: it has the best film franchises and is charging a low price to bring in customers for its toys and theme parks. Amazon Prime, likewise, can afford to invest heavily in video to lure customers to shop on Amazon (and it sells other streaming services on its platform, taking a cut of subscriptions). AT&T may be another winner, as it can attract wireless customers by giving them HBO Max free. And Netflix will spend billions on new shows to defend its global lead in streaming.

But many smaller competitors will fail. In 2020 the streaming wars will be a bloody, costly fight to keep viewers from changing the channel.

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Outside in

Imogen White books and arts assistant, *The Economist*

Indigenous art goes mainstream—and global



Michael Maltzan Architecture

Well and truly contemporary

IT WILL LOOK as though an iceberg has somehow flung itself down from the Arctic and landed in downtown Winnipeg. The Inuit Arts Centre, which is due to open in autumn 2020, is designed to reflect the landscape of the Canadian north. Monumental and modern, the building will be the exciting new home for the Winnipeg Art Gallery's (WAG) extraordinary 13,500-piece collection of Inuit art.

With this new \$65m museum, the gallery hopes to right past curatorial wrongs. Indigenous artists work across all mediums, says Stephen Borys, WAG's director. Yet they have too often been siloed off from the contemporary-art world, categorised as craftspeople rather than visionaries. WAG has hired Inuit curators, set up an indigenous advisory board and upended conventions of museum architecture. The walls of the gallery will undulate. A complex system of skylights will let light fall in freely. Video art and abstract paintings will be seen beside stone carvings and basketry, and a biennial event called "To Draw Water" will bring together indigenous artists from across the world to present works about climate change.

Elsewhere indigenous art is also going global. The National Gallery of Australia will take an exhibition called "Indigenous Australian Masterpieces" on tour to Singapore and China in 2020. In March the Biennale of Sydney will be directed by Brook Andrew, the first Indigenous Australian artist to do so. Its title, "Nirin", the word used by Wiradjuri people of New South Wales to mean "edge", reflects his ambition to bring work from the margins of the art world to the centre. Artists from Sudan, Georgia, Nepal and Afghanistan will for the first time be among the 98 featured, as well as work by Australians such as Barbara McGrady, a Gamarlari Murri yinah (woman) now in Sydney, whose photographs (as below) document contemporary Aboriginal life.

With some notable exceptions, such as the pioneering "Magiciens de la Terre" (Magicians of the World) exhibition at the Pompidou Centre and the Grande Halle de La Villette in Paris in 1989, galleries and museums have tended to confine indigenous artists to the past. That is despite a strong cohort of innovative practitioners like Mr Andrew (whose work incorporates neon lights, photography, painting and performance) and Tracey Moffatt (a video

artist who represented Australia at the Venice Biennale in 2017). Traditional “dot” painting was often treated as the only form of indigenous art, says Clothilde Bullen, a Wardandi woman from Western Australia and a senior curator at Sydney’s Museum of Contemporary Art.

But change seems at last to be afoot. “People are starting to understand that Aboriginal art doesn’t have to look a particular way,” says Ms Bullen. In 2020, cutting-edge work by indigenous artists will inspire audiences around the world.

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Keeping the British end up

Rachel Lloyd editor, Prospero blog, *The Economist*

The Bond franchise adapts to the times



Bildgalerie

Oh, oh, seven

The clearest evidence of social change may be found in the film's depiction of women

WHEN JAMES BOND first appeared in the pages of "Casino Royale" (1953), Britain was in a post-war slump. Many bombed-out buildings had yet to be reconstructed or cleared away. The economy was recovering, but there had been many years of austerity, and some commodities were still rationed. Hanging in the air was an uneasy sense that Britain was losing its status as a global power.

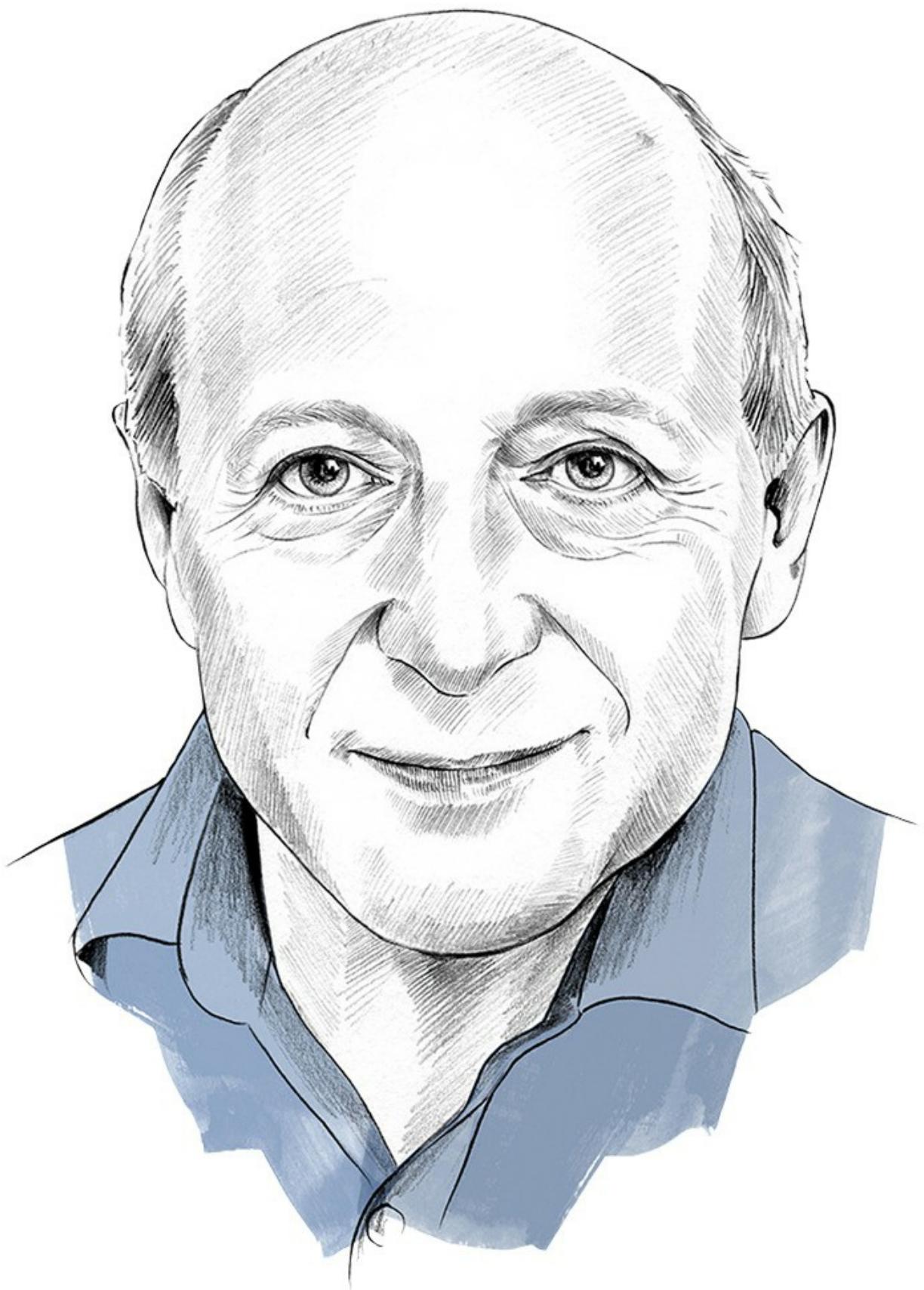
Yet Ian Fleming's novel was a glamorous tale of derring-do, with sex, gadgets and guns. His 007 was an agent of Her Majesty's Secret Service and he was formidable. He could bed and kill whomever he pleased; he brought down foreign crime syndicates, for the most part on his own (though American money often helped). If Fleming was concerned about the fall of empire, his books provided an escapist form of wish fulfilment. "Bond embodied the imaginary possibility that England might once again be placed at the centre of world affairs during a period when its world-power status was visibly and rapidly declining," two critics wrote in "Bond and Beyond" (1987), a cultural history of the hero.

When the 25th film in the series comes out in April 2020—the first since the Brexit referendum—it will continue this make-believe. The plot follows Bond (Daniel Craig, for the last time) as he is brought out of retirement in Jamaica by Felix Leiter, an ally in the CIA, for one final job: to track down a scientist. But if the premise for this globe-trotting tale of British exceptionalism seems straightforward, the making of the film has been anything but. Its working title was first "Shatterhand" (a reference to the alias of Ernst Blofeld, one of Bond's nemeses), then "Eclipse", then "A Reason to Die", before the producers settled on the faintly silly "No Time to Die". Several directors were approached. Danny Boyle, the Oscar-winning director of "Slumdog Millionaire", signed on but left after a few months, citing creative differences. Cary Joji Fukunaga is now in charge, the first American to helm a Bond film. The screenplay has gone through several iterations; five people are credited as writers.

Yet the clearest evidence of social change may be found not in the film's depiction of Bond, but of women. Historically, many of the franchise's female characters have been mere sexual props, sporting names such as Pussy Galore, Holly Goodhead and Xenia Onatopp. In the wake of #MeToo, Phoebe Waller-Bridge, the creator of "Fleabag", has been tasked with injecting some humour into the script and making its female figures more realistic. Rumours abound that, following Bond's retirement, MI6 has given the 007 codename to a black woman. Britain may once again be yearning to return to a mythical, glorious past—but James Bond, it seems, is coming to terms with the modern world.

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Ode to Beethoven



We should all learn from Ludwig van Beethoven in 2020, the year of his 250th anniversary, says **Iván Fischer**, music director of the Budapest Festival Orchestra and honorary conductor of Konzerthausorchester Berlin

Then came Beethoven with his new interest: the human soul

ALTHOUGH SHE played piano for a few hours every day until shortly before her death at 94, my lovely aunt Amália could not feel much enthusiasm for Beethoven's music. Her adoration was reserved for Mozart and Schubert, whom she worshipped with an almost religious devotion. But she often shook her head when "our Ludwig" was the topic of discussion around our dinner table. Aunt Amália had a fine taste in music, literature and visual arts, and those standards were not quite met by "problematic Ludwig". She was hopelessly conservative.

But Beethoven, the greatest musical giant of our European cultural heritage, appeals to others, for example to Alex, the violent gang leader in the novel and film "A Clockwork Orange". The criminal adolescent's passion is shared by millions of people all over the world, who rush to the concert halls to make this composer the safest box-office attraction of the classical-music business. Now that we prepare to celebrate the 250th anniversary of his birth, a pilgrimage can be expected in the year ahead to exhibitions, festive concerts, symphony cycles, complete performances of his 32 piano sonatas and other Beethoven marathons from his birthplace in Bonn to all the continents around the globe. Why is Beethoven so popular?

The French revolution and the collapse of the old world order needed a genius to formulate the transition to a new mindset. Although Beethoven was financially supported by a group of philanthropic Viennese aristocrats, his music did not return their generosity. He was free, the first free composer, whose works expressed the jubilation and excitement of the crowd that had stormed the Bastille. He changed the function of music, which until his radiant emergence had served the ruling classes.

Before, in the 18th century, kings and dukes competed by employing larger and larger orchestras to glorify them. Artists had the task of serving the social system of hierarchy. The lower classes cultivated peasant songs and peasant dances, whereas aristocrats distinguished themselves by the fine taste that

was the essence of the works of their court artists. Then came Beethoven with his new interest: the human soul. Unrestrained feelings filled his works—passion, love and, yes, hate and aggression, too. Music became an expression of the human psyche, of our deepest instincts.

Innovators are not always perfectionists. They tend to concentrate on what is new, often neglecting other aspects of their craft. Beethoven was an exception. A glimpse at his manuscripts, full as they are of scratches and alterations, proves that he found it difficult to be satisfied. I believe he wanted to be as perfect as his idol Mozart was, and that he had the ambition to be considered a similarly great craftsman.

This goal was certainly achieved: there is not a single note in Beethoven's compositions that is not the best choice. His genius is beyond doubt. Having an intemperate character did not make immaculate, detailed work easy. He surely envied Mozart, whose music seemed effortless, as if dictated by a divine inspiration. Beethoven had no such luck. He struggled for every note. But the result is absolute perfection, coupled with an entirely new intensity.

Fire was his element, Prometheus his god. Like the titan, who presented us with the ability to make fire, Beethoven gave humanity another huge gift: the simple melody in his ninth symphony that rightly became the hymn of the European Union. His message ("You millions, I embrace you, this kiss is for all the world") should be a compass for all generations.

All people become brothers

Today our society is experiencing its own transition. We must change if we want to preserve our planet and if we want to avoid devastating conflicts. We need new values—human values, emotional values—to replace our desire to own too many goods. Beethoven can help by teaching us how to embrace millions. He leads us to a free future with no city walls, national borders or tribal conflicts. He introduces us to each other and reminds us that we all sing together in his choral symphony.

So, please, take part in the celebrations of his 250th birthday. Instead of checking your emails, listen to the Pastoral Symphony's second movement. Take time and focus on what you hear, like spending a few moments looking

at a beautiful tree. There is no better meditation exercise. It lasts only 12 minutes but it will change your life.

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The thin green line

Ann Wroe obituaries editor, *The Economist*

Farewell to the unsung heroes of the coffee revolution



Steve Carroll

They had a higher calling: to refresh human beings

IN THE LONG history of pipe-assisted drinking—beginning with the gold

beer-sipping tubes of the Sumerians—Starbucks's plastic straws knew they were a cut above the rest. Their tight white wrapping carried not only English words but a stylish French inscription, *Pas recommandé pour utiliser dans les boissons chaudes*. Released from that confinement, springing up ready, they stood straight, stiff and tall as a stalk of wheat, with no disfiguring articulations; for they never quailed or bent. And their colour was beautiful. It was darker than the leaves of spring, lighter than the Washington forests and the logo of the company, yet fresh, viridian, straight from the palette of a Monet or a Van Gogh. But despite all that they were doomed to disappear by 2020, for not being green enough.

Of course, the straws had long since left their rustic ancestors behind. You could not thatch a cottage roof with them, or weave a hat. At best, they might compose a mat; they would have made poor bedding in barns. Shepherds could not pipe a ditty on them, and poets could not use them as metaphors for the unsubstantiality of life. They had never been blowing crop-stems rippling in the summer wind, entwined with convolvulus and heartsease. Their nearest relatives were not delicate grasses, but single-use plastic stirrers.

Yet this did not concern them, because they had a higher calling: to refresh human beings. Rather than pumping up the customer with hot high-octane espressos or Americanos, winding him up for the drudgery of the working day, they cooled him with less caffeine and more play. Teenagers needed them to socialise, tired shoppers to wind down, children to amuse themselves. All these folk could have quaffed their Frappuccino® Blended Beverage or their iced teas directly from the plastic cup, of course. Some did, ignoring the eager straws standing ready. But it was never as elegant, as dramatic or so much fun.

Fun was why green straws had been conceived at all. They began their service not when Starbucks was founded, in 1971, but when it introduced the Caramel Frappuccino® almost three decades later. Green straws marched in, along with whipped cream and caramel drizzle, as emblems of summer and self-indulgence. They meant happiness. Yet for each of those straws, the Frappuccino® and its successors posed a serious test of character. For with them too came a domed plastic lid, the Hill of Destiny, surmounting a steep pile of cream through which straws had to plunge to do their duty. Through

the flat lids of iced coffees, now sharply scored with a cross, they were expected to do the same.

Human lips were gentle, thoughtful, persuasive; these straws were too stout to be hurt by teeth. But some lids were brutal. And once entry was effected, the route was perilous: either down through smothering cream, or into a bruising welter of ice cubes into which they were jammed repeatedly, cruelly, to make the drink longer and colder. Each straw did its best. Older customers were more considerate, having grown up with inferior and quickly soggy paper straws; they took care. Young folk left daubs of lipstick on them, blew bubbles with them, flicked cream, banged them on the bottom of the cup to get one last taste—and repeatedly made them march up the Hill of Destiny, and plunge again, for the hell of it. But no straw ever complained.

When manoeuvres were completed most Starbucks straws withdrew to the bin, either in-store or in the street. They were resigned to this, though it was shaming for creatures so smart and orderly to lie higgledy-piggledy with cups and crumpled wrappers: a poor reward for their service. Others, thrown down on the floor or pavement, nobly accepted the trampling of the crowd. A fortunate few were enshrined in children's projects, or found a second career as stems for gaudy artificial flowers.

The last straw

Some retreated further. They lay where they were thrown in woods, or fields, or among the hills. There they sometimes kept awkward company with their ancestor-straws, having nothing much to say to them, for theirs had been a world of steel, glass, neon and bright lights, laughter and noise, and here there was only wind and sky. They could at least impress these uncomprehending stalks with one thing: they were not bound for the bale or the barn floor, and would never be dust. They had eternal life. And that was the trouble.

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