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The Economist

Here comes the Brexit election

German reunification at 30

How to save the MBA

The Old-People's Republic of China

NOVEMBER 2ND–8TH 2019

To the last drop

Saudi Arabia's strategy to survive the end of oil

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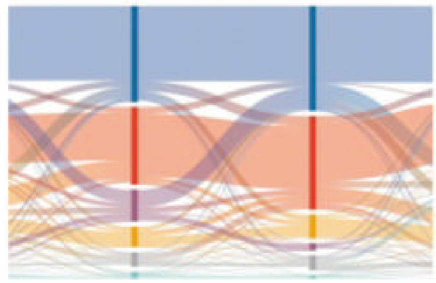

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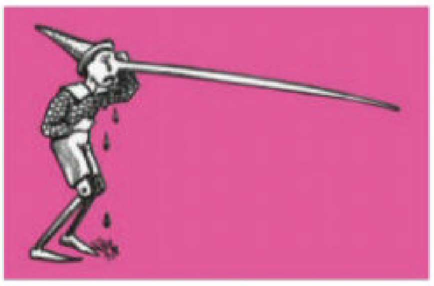

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Alberto Fernández, a Peronist, won **Argentina's** presidential election, defeating the pro-business incumbent, Mauricio Macri. Voters blamed Mr Macri for a recession, an inflation rate of more than 50% and a poverty rate that tops 35%. The newly elected vice-president, Cristina Fernández de Kirchner, laid the groundwork for these economic problems when she was president from 2007 to 2015.

Bolivia's electoral authority declared that President Evo Morales won re-election, avoiding a run-off by just 0.57% of votes cast. At least two people died and dozens were injured in clashes between his supporters and those of opposition candidate Carlos Mesa, who has accused the government of rigging the vote.

Chile's president, Sebastián Piñera, reshuffled his cabinet and agreed to spend extra money on pensions and health care and to raise taxes on high earners, after 1.2m people demonstrated in Santiago, the country's capital, against inequality and threadbare public services. At least 20 people died in rioting and arson attacks. Chile cancelled plans to host a summit of Asian and Pacific leaders in November and a UN climate meeting in December.

Claudia López, a crusader against corruption, was elected mayor of Bogotá, **Colombia's** capital. Ms López is the first woman and first gay person to be elected to the job. The regional elections were a setback for the Democratic Centre party of the president, Iván Duque, who lost control of strongholds like Medellín.

A land divided

A constitutional amendment that strips Jammu & Kashmir of statehood and divides it into two territories administered directly by **India's** national government came into effect. Life in the Kashmir valley has been severely disrupted since the government announced the change in August, because of restrictions on communications and travel, as well as protests and militant violence.

A court in **Myanmar** sentenced five members of a satirical troupe to a year's hard labour for mocking the army's role in politics.

King Maha Vajiralongkorn of **Thailand** dismissed two aides for adultery, a week after he stripped his official mistress of her titles for disloyalty.

Scores of people died when a gas stove being used by passengers to cook breakfast aboard a train in **Pakistan** exploded. It was the country's worst rail disaster in a decade.

Hong Kong's government barred a pro-democracy activist, Joshua Wong, from standing in district elections. It linked the decision to Mr Wong's calls for "self-determination" for the territory. Meanwhile, official figures showed that Hong Kong has slipped into a recession.

Nearly 400 of **China's** most senior officials gathered in Beijing for a secretive meeting of the Communist Party's Central Committee. The agenda was described as "important issues concerning how to uphold and improve the socialist system with Chinese characteristics".

A fitting end

The pious rapist in charge of Islamic State, **Abu Bakr al-Baghdadi**, killed himself to avoid capture by American soldiers. The jihadist group once controlled territory the size of Britain, but lost its last scrap of land earlier this year. Mr Baghdadi was found in north-west Syria, where he was chased down a tunnel. He detonated a suicide-vest, murdering two of his own children. Donald Trump said: "He died like a dog."

Saad Hariri, the prime minister of **Lebanon**, resigned amid demonstrations over the struggling economy and poor governance. Some fear his resignation will benefit Hizbullah, the Shia militia-cum-political-party, whose thugs have tried to break up the protests.

Protests resumed in **Iraq**, where dozens of people were killed by the security forces and other armed groups. In the holy city of Karbala masked gunmen reportedly shot dead 18 people. The protesters are angry about corruption, a lack of jobs and poor services.

Mozambique's main opposition party asked the courts to annul the result of the recent presidential election, which the incumbent, Filipe Nyusi, won with 73% of the vote. The election has rekindled enmity between the ruling and opposition parties, which signed a peace deal in August.

Corblimey, another election

Boris Johnson, **Britain's** prime minister, admitted that he could not "get Brexit done" by October 31st, and called a general election. The EU granted an extension until January 31st. Jeremy Corbyn (above), the far-left leader of the opposition Labour Party, reversed course and acquiesced to the election. The date was set for December 12th. Voters will not directly be asked whether they approve of Mr Johnson's hard Brexit deal, which bears little resemblance to what they were promised in the Brexit referendum in 2016.

America's House of Representatives voted to recognise the mass slaughter of **Armenians** by Turks during the first world war as genocide. The vote took place on Turkey's national day. US-Turkish relations, already strained by Turkey's invasion of northern Syria, grew more so.

Die Linke, a **German** far-left party that descends from the East German Communists, won a state election in Thuringia. The far-right Alternative for Germany came second. Collectively, centrist parties won less than half the vote.

In another upset, **Italy's** Northern League led an anti-immigration populist coalition to victory in an election in Umbria, a hitherto solidly left-wing region, defeating an alliance led by the country's ruling Democratic Party and Five Star Movement.

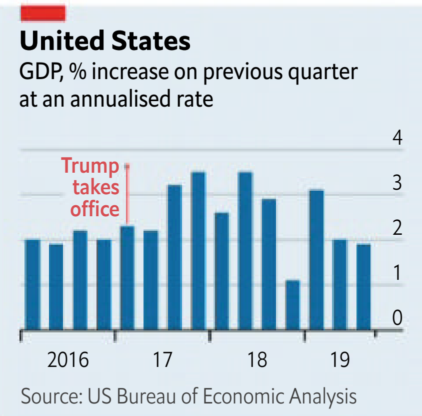
The burning Golden State

Millions of people in northern **California** were again left without power, as wildfires, whipped up by strong, hot winds, raged around the Bay Area and surrounding counties. The local utility, Pacific Gas & Electric, has imposed the blackouts because of worries that its power lines may spark the flames. The Los Angeles area also battled wildfires.

A ban on most abortions in **Alabama** was blocked by a federal judge, two weeks before it was due to come into force. That makes it likelier that the Supreme Court will tackle the issue, which is what the ban's proponents want.

John Kelly, Donald Trump's former chief of staff, said he had advised him not to employ a **"yes man"** as his replacement, as that would lead to the president's impeachment. Mr Trump's press secretary said Mr Kelly had been "totally unequipped to handle the genius of our great president".

The Federal Reserve cut its benchmark **interest rate** for the third time this year, shaving off another quarter of a percentage point to a range of between 1.5% and 1.75%. Arguments have raged at the central bank about the need for further easing in America's still robust economy. Many have read the runes of the carefully worded statement by Jerome Powell, the Fed's chairman, that "policy is likely to remain appropriate", to suggest that future reductions are on hold.



United States
GDP, % increase on previous quarter at an annualised rate
Source: US Bureau of Economic Analysis

Official figures showed that the **American economy** grew by 1.9% at an annualised rate in the third quarter. The data underlined the Fed ratesetters' conundrum; consumer and government spending remained buoyant, though business investment was limp.

Groupe PSA, the maker of the **Peugeot** car brand, and **Fiat Chrysler Automobiles** agreed to merge, creating the world's fourth-largest car manufacturer. Carmakers are under increasing pressure to consolidate in an industry beset by rising costs and disruptive technologies. Earlier this year Fiat Chrysler tried to engineer a merger with Renault, but it hit a dead end when the French government, which owns 15% of Renault, withheld its support.

The recent strike at **General Motors** is now thought to have cost the company $2.9bn. The 40-day strike was the longest at the carmaker since 1970.

In a week when it announced that it would have to lay off up to 15% of its workforce, **Juul** which dominates the market for e-cigarettes, faced a lawsuit from a former executive accusing it of selling contaminated vaping pods to retailers. It is another blow for e-cigarettes, which are under scrutiny in dozens of cases of lung disease.

General Electric reported another huge quarterly net loss, this time of $9.5bn, as it booked charges connected to its restructuring. Some $8.7bn of that relates to writing down its investment in Baker Hughes, an oil-services firm.

The long-awaited IPO of **Saudi Aramco** was reportedly ready to be launched on November 3rd. Shares in the world's biggest oil company, owned by the Saudi state, are expected to start trading in mid-December.

Always in motion is the future

Microsoft won a $10bn contract to create a "war-fighter" cloud-computing system for the Pentagon. The decision to award the Joint Enterprise Defence Infrastructure (JEDI) project to Microsoft was a surprise, as **Amazon** had been the front-runner. It might yet challenge the decision, especially given Donald Trump's animosity towards Jeff Bezos, Amazon's boss. Mr Trump reportedly wanted to "screw" Amazon over the contract.

Arm, a chip designer based in Britain, is to resume supplying components to **Huawei**, a Chinese tech firm sanctioned by the American government. Arm is now confident that its designs do not fall under American export-control rules after all. The firm is one of Huawei's most important, and least replaceable, suppliers.

WhatsApp is to sue the **NSO Group**, an Israeli maker of commercial spyware. The encrypted chat service, which is owned by Facebook, alleges that NSO's malware was used to spy on the conversations of 1,400 people in 20 countries, including lawyers, journalists and human-rights advocates.

Facebook reported a surge in revenue and profit for the third quarter. Mark Zuckerberg used the occasion to reflect on "the importance of standing for voice and free expression", as he defended his position not to "censor" politicians. Earlier, **Twitter** announced a ban on all political advertising on its platform worldwide.

Apple's quarterly earnings retold a now-familiar tale. Sales from the iPhone were down, though revenues from wearable devices and services jumped; those two segments accounted for 30% of the company's sales in the quarter.

Murray Energy, America's fourth-largest coal miner, filed for bankruptcy protection. It is the latest firm to go to the wall in an industry that has been squeezed by natural gas and renewable energy, despite Donald Trump's many promises to save coal jobs.

LVMH, the world's largest luxury-goods company, made an unsolicited bid to buy **Tiffany**, a jewellery firm. Tiffany valued the deal at $14.5bn. The offer is the largest acquisition yet attempted by Bernard Arnault, LVMH's multi-billionaire boss, and another big bet on bling; in 2011 LVMH took a majority stake in Bulgari.

Mass tourism it ain't

Virgin Galactic became the first space-tourism venture to become a publicly traded company when it floated in New York (it avoided an IPO by combining the business with an already-listed investment vehicle). Galactic thinks it can eventually turn a profit by persuading enough rich folk to pay $250,000 for a 90-minute, 50-mile trip above the Earth's surface, part of its "mission" of "democratising space".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The Economist

To the last drop

The message from the world's biggest and wildest IPO is that the oil industry may decline, but it won't go quietly

THE DRILLING of the first modern well in Pennsylvania in 1859 set oil on a path that led to the heart of economics and geopolitics. Oil fuelled the rise of the West's consumer culture; it helped determine who won the second world war and prompted a global economic crisis in the 1970s. Over the past 20 years China has become the second-biggest consumer of crude, while America's fracking revolution has meant it is close to being a net energy exporter for the first time since the 1950s. Now a new chapter in oil's story is unfolding: the prospect of stagnating or falling demand as the world shifts to cleaner energy. As in the past, this era promises startling economic and geopolitical change.

Consider the imminent stockmarket flotation of Saudi Aramco, which produces 10m barrels of oil a day, or 11% of the global total. As well as Arabian super-light, Aramco pumps out superlatives and controversy (see Briefing). Worth well over $1trn, it could, once listed, be the world's most valuable public firm, squeezing past Apple. The initial public offering has been delayed several times; a big Aramco processing plant was hit by a missile strike in September and the firm is ultimately controlled by Muhammad bin Salman, an autocratic royal with blood on his hands. But take a moment to look beyond this. Aramco's underlying strategy is to be the last oilman standing if the industry shrinks, pointing to the upheavals to come.

The term "peak oil" was coined in 1956 by M. King Hubbert, a geologist worried about the stuff running out. Today the phrase is back but for the opposite reason: the prospect of dwindling demand. That may seem odd given that this has grown by 1.4% a year since 2008. But the people running energy companies have long horizons, and on that timescale the picture for oil is darkened by urban pollution and climate change. Oil is responsible for a third of global energy use and a similar share of carbon emissions.

Many oil firms still say that production will creep up over the next decade, to slightly above today's level of 95m barrels per day (b/d), and then plateau. But output will need to drop to 45m-70m b/d by 2050 if the world is to stop temperatures rising more than 1.5-2°C above their pre-industrial level. It would help, too, if there was a shift to cleaner oilfields, whose crude emits a fifth less than the dirtiest ones. Though oil bosses insist, in public at least, that oil remains the planet's indispensable fuel, they can feel the growing stigma. Public opinion is shifting in the West, heralding tighter rules on emissions. And, in a sign of jumpiness, some Western firms have favoured short-term projects rather than sink their capital in decades-long bets on oil's future.

If demand does fall, some products and producers are more vulnerable than others. Over a third of all oil is used in cars and lorries which could eventually be fitted with electric engines. It is harder to find a substitute for the oil in petrochemicals and plastics. Common sense suggests that the highest-cost and dirtiest oil firms will tend to go out of business first. If so, an industry that has become gargantuan over 160 years will shrink to a core of producers that fulfil the world's residual demand at the lowest financial and environmental cost.

Many environmental activists fear this energy transition will never happen. But, in fact, it fits with Aramco's strategy and pitch to investors. The firm spends just $3 to lift a barrel from beneath the desert, less than almost anyone else. The emissions from extracting Saudi oil are rock-bottom, too. Aramco is expanding in petrochemicals and locking in customers in Asia—in August it bought a $15bn stake in the chemicals arm of Reliance, an Indian giant. Saudi Arabia has promised investors they will get steady dividends whatever the weather. Implicit in the kingdom's approach is that, if and when oil demand falters, Aramco will be the producer of last resort.

A cleaner planet is in everyone's interests. But a shrinking oil industry could mean more, not less, turbulence for energy markets and geopolitics. Take energy markets first. The optimistic case is that supply and demand will taper down in tandem, and that the price of oil will fall along with the cost of producing the last barrel needed to satisfy ebbing demand. But downsizing an industry with $16trn of capital and at least 10m employees is never going to be smooth. Because oilfields naturally deplete, a drought in capital spending could cause a price spike. Each firm and country, including Saudi Arabia, will face a choice between holding back supply so as to bolster profits and tax revenues and opening the taps to grab market share and use up reserves, whatever the price, before it is too late. The OPEC cartel, which combines high- and low-cost producers, could implode. And as production focuses on fewer fields, the risk of disruption from terrorism or accidents will rise.

The political implications are just as big. Twenty-six countries rely on oil income for 5% or more of their GDP, says the World Bank (the average for them is 18%). If economic logic prevails, producers with the dearest and dirtiest oil—including Algeria, Brazil, Canada, Nigeria and Venezuela—should wind down output, but that would be painful and, for some, devastating. America, meanwhile, remains wedded to oil, which meets 40% of its energy needs. Its thirst has been satisfied by the fracking boom, especially in the Permian basin in Texas. Yet fracking is dirty and new projects need an oil price of $40-50 a barrel to break-even, at least twice the level Aramco requires. For the sake of the climate and efficiency, the fracking industry should eventually shrink. That, though, would make America more reliant on foreigners, just as its politics have turned inward.

Till kingdom come

And then there is Saudi Arabia itself. Aramco's pitch to investors will boast of its abundant, cheap and relatively clean oil. That much is true. But it will not dwell on the country's jobless youth or opaque court politics. Perhaps the proceeds of the IPO will help modernise the Saudi economy; perhaps not. Investors betting on Aramco as the last oil major standing in 30 years' time will have to consider the risk of revolution or invasion. Aramco's flotation is a sign that the end of oil could be in sight. But it is also a reminder that the black stuff's capacity to cause economic and political havoc will be undiminished for decades to come. ■

British politics

Here comes the Brexit election

But Britain's unpredictable vote will be about a lot more than its relationship with Europe

A FORTNIGHT BEFORE Christmas, winter fêtes and school nativity plays will be put on hold as village halls are once again converted into polling stations. Britain faces its third general election in little more than four years, a result of the fact that today's MPs cannot agree on how to leave the European Union—or even whether to leave at all. Boris Johnson, the Conservative prime minister, promises that with a majority he will "get Brexit done". Jeremy Corbyn, his Labour rival, proposes a second referendum, with the option to call the whole thing off.

That alone would represent a momentous choice. Yet in what is being billed as the Brexit election, more is at stake than Britain's relationship with Europe. The far-left Mr Corbyn promises to put the state at the heart of the economy, whereas Mr Johnson's Tories seem to be moving towards a more freewheeling form of capitalism. At the same time, both potential prime ministers would pick at the ties between the nations of the United Kingdom. Britain's Christmas contest is its most important in living memory. And with volatile polls, upstart parties and new ideological axes that define voters, it is the least predictable, too.

We have long argued that a second referendum would be a better way to break the Brexit logjam. The Commons is split over Mr Johnson's deal—possibly fatally—just as it was over the rather better one negotiated by his predecessor, Theresa May. The clearest and fairest solution would be to ask voters whether they would take his terms over the arrangement they already have, as EU citizens. But Parliament has proved as incapable of organising a second referendum as it has of agreeing on anything else. And rather than see his plan amended, Mr Johnson has chosen an election. For now, a referendum is off the table.

Voters face a confusing and deeply unsatisfying choice. Parties have set out Brexit proposals to cater to every taste: an instant no-deal exit, courtesy of the Brexit Party; a bare-bones, "Canada-minus" deal with the Tories; a second referendum from Labour; and cancelling Brexit altogether, via the Liberal Democrats. However, voters must balance these policies against the rest of the parties' programmes, which in some cases are extreme. Labour, in particular, proposes a new economic model in which the state would gain enormous clout. Some Remainers have taken to saying that Mr Corbyn, who is likely to enter Downing Street only with the support of other parties, would lack the votes to push through the more dangerous parts of his manifesto. That is wishful thinking. Even a minority Labour government could do profound damage (see Briefing). Whether the next prime minister is hard-Brexiteer Mr Johnson or socialist Mr Corbyn, the economy will take a beating.

Both men would also tug at the fraying union. Mr Johnson's Brexit plan would push Northern Ireland ever closer to the Republic of Ireland. Mr Corbyn would probably rely on the backing of the Scottish National Party to get to Downing Street. The price of its support would be a prompt second referendum on Scottish independence. Polls suggest the nationalists might well win.

Voters who want the United Kingdom to stay together, or who dislike both socialism and Brexit—potentially, rather a lot of them—will thus be left holding their nose as they mark their ballot paper. And a great many more will feel despair at the result. The next prime minister will enter Downing Street having won well under half the vote. If the outcome of the Brexit referendum left 48% feeling hard done by, this election will leave a large majority feeling that they have lost.

Who will be on that losing side? The race is wildly unpredictable. Polls put the Tories roughly 12 points ahead of Labour. But the polls are volatile. Only a few months ago the Tories were briefly in third place. Mrs May started her campaign in 2017 with a 20-point lead and five weeks later lost her majority. Since then things have become more complex still, with the birth of the hardline Brexit Party (which will take votes from the Tories) and the rise of the pro-Remain Lib Dems (who will pinch more supporters from Labour). Under the first-past-the-post system, better adapted to two dominant parties, the make-up of Parliament may bear little relation to the national breakdown of the poll, adding to the disillusion of voters.

Last time Britain held an election—only two years ago—we lamented the "missing middle" in its politics. Since then the improvement in the fortunes of the Lib Dems, to whom we gave our conditional backing, has broadened the menu somewhat. But the two main parties have become even less interested in the centre ground. Elections used to be contests to capture the median voter. But almost no one holds a middling position on Brexit, so both Labour and the Tories are pitching to the extremes (see Britain section). Even the Lib Dems, regrettably, have adopted a strategy of pursuing only hardcore Remainers. This promises to be the most divisive election in many years.

What is more, the divide is along a new axis. The old left-right split, along economic lines, has gradually been giving way to a new fissure, defined in terms of culture. Brexit has accelerated this, redrawing the political battleground. The Tories are going for working-class seats with a promise of hard Brexit and social conservatism. Labour, meanwhile, is going for well-off, urban areas, preaching Remain and social liberalism. The tactics may not work—Mrs May tried something similar in 2017, and found that working-class northerners were still allergic to the Tories. But the more the parties head in this new direction, the more polarised politics will become. Questions of economics can often be settled by a compromise. Disagreements about identity and culture are much harder to resolve.

Another divisive contest may be worth it if it at last provides an answer to the great Brexit question. But there is a possibility that even this latest democratic exercise fails to produce a decisive outcome. The rise of small parties has made it hard for anyone to win a big majority. If Mr Johnson is returned with only a small one, he will be at the mercy of the hardline Brexiteers in his party, just as Mrs May was. And if Mr Corbyn enters Downing Street with the support of other parties, he too may find it hard to solve the great riddle. The coming election will have profound consequences for Britain. But don't be surprised if a year from now the country is still arguing about how to "get Brexit done". ■

Latin America

Schadenfreude in the south

Economic liberalism is not the cause of the region's discontent

For defenders of free markets in Latin America, October was a dismal month. In Chile, free-marketeers' favourite economy in the region, protests against a rise in fares on the Santiago metro descended into rioting and then became a 1.2m-person march against inequality and inadequate public services. Sebastián Piñera, the centre-right president, sacked some officials and promised reforms. In Argentina voters booted out the pro-business president, Mauricio Macri, after one term. Instead, they elected Alberto Fernández, whose Peronist movement prefers a muscular state to vigorous markets (see Americas section).

Both countries are rising up against "neoliberal" governments, claimed politicians and pundits. Nicolás Maduro, Venezuela's socialist dictator, tweeted praise for Argentina's "heroic" people and for Chile's "noble" ones. In this, he speaks for much of the left.

His glee is misplaced—because the assumptions behind it are wrong. Despite its flaws, Chile is a success story. Its income per person is the second-highest in Latin America and close to that of Portugal and Greece. Since the end of a brutal dictatorship in 1990 Chile's poverty rate has dropped from 40% to less than 10%. Inflation is consistently low and public finances are well managed.

Argentina is a failure, but not for the reasons Mr Maduro imagines. Its economy is in recession, inflation is over 50% and the poverty rate is over 35%. This was not caused by Mr Macri's "neoliberalism". Inheriting an economic mess in 2015, he made mistakes of tactics and timing, among them hesitation in cutting the fiscal deficit. But the underlying problems stem from decades of mismanagement, largely by Peronist governments, which have led to repeated defaults, currency crises and high inflation. Almost twice as rich as Chile in the 1970s, Argentina is now poorer. It would benefit from becoming more like its liberal neighbour.

This is no argument for complacency in Chile. The Chilean model, drawn up in the 1970s by economists trained at the University of Chicago, called for a small state and a big role for citizens in providing for their own education and welfare. It has evolved—there is, say, more money for poor pupils; but Chileans still feel underserved by the state. They save for their own pensions, but many have not contributed long enough to provide for a tolerable retirement. Waiting times in the public health service are long. So people pay extra for care. Access to university has expanded, but students graduate with high debts, only to discover that the best jobs go to people with family connections.

Chile undertaxes the rich. Oligopolies have colluded to fix prices in industries from drugs to poultry. Income inequality is lower than the regional average, but it is high by rich-country standards. More than a quarter of workers are in informal jobs. Even middle-class Chileans live in cramped housing. Behind the fare-rise rebellion lies a pervasive sense of unfairness.

With healthy public finances, Chile can afford to deal with these grievances. Mr Piñera plans to spend more on pensions. He seeks to speed up the passage of a scheme to cover catastrophic illness. He will create a new top income-tax bracket of 40%, five points higher than the current rate. Reform needs to go further. Trust-busters need to crack down on oligopolies. Chileans need cheaper, swifter health care and better schools. The tax system relies on VAT for nearly half of revenues—and VAT, though efficient, is regressive, so the state should take less or redistribute more.

Mr Fernández, facing an economic crisis in Argentina, has a tougher task. He will have to renegotiate debt (yet again), maintain a tight fiscal policy and restore confidence in the peso. He cannot ease the pain by ramping up public spending. It is already more than 40% of GDP, compared with 25% in Chile. In the long run, Argentina will need a smaller state and a more competitive private sector. While Mr Piñera fixes the Chilean model, Mr Fernández would do well to emulate it. ■

The money markets

Do the right thing

The Fed must fix the jittery repo market—but not by cutting corners

Most people have—mercifully—not had to think about the money markets since the financial crisis, when obscurities such as LIBOR briefly became part of the discussion. It is time once again to pay a bit more attention because New York's "repo" market is not working as it should. Every day more than $1trn is borrowed and lent by financial firms through repos, which involve posting Treasury securities as collateral. The interest rate that borrowers pay ripples through the global financial system. Hence, if the repo market malfunctions, it matters.

That is what happened in September, when rates briefly spiked as high as 10%; they should be much closer to the Federal Reserve's target interest rate, which this week was cut to 1.5-1.75% (see United States section). The surge indicated that some financial firms did not have enough cash and were scrambling to get hold of more. Although repo rates have eased back since then, the underlying problem has still not gone away.

The cash shortage has three causes (see Finance section). As the Fed has reversed its policy of buying long-term bonds, known as quantitative easing (QE), cash has been sucked out of the system. Also, the underlying demand for cash from financial firms and their clients is rising. That reflects a growing economy and lumpy factors such as a cluster of large tax bills. Higher de- ▸▸

mand also reflects the government's budget deficit of nearly $1trn, or 4.6% of GDP, which requires record amounts of government bonds to be issued, the buyers of which have to pay in cash.

The third cause is that the cash sitting on the books of financial firms is largely held by a few big commercial banks. They hoard it partly because of post-crisis regulations that are meant to make them safer by requiring them to have big liquidity buffers and partly because they fear the reputational damage of miscalculating and of ever being found short of funds again. When a few big commercial banks hoard piles of cash, other financial firms, including investment banks and dealers, have less.

What to do? Since September the Fed has opted for a short-term fix, by lending each morning somewhere in the region of $50bn-100bn overnight to ensure the financial system has enough money to keep repo rates under control. But this is uncomfortable because it involves repeated overnight loans and because the recipients are often Wall Street banks and traders, who are not obvious candidates for the open-ended receipt of support from the Fed, even if the loans are safely collateralised. Another option would be to alter the post-crisis rules that require banks to hold lots of cash. On October 29th Steven Mnuchin, the treasury secretary, floated this idea. But that risks watering down the reforms made after the crisis.

Copperwork, not duct tape

There is a better answer. The Fed has begun to permanently increase the amount of cash held by financial firms, by buying $60bn-worth of shorter-dated Treasury bonds off them per month. Critics will say this represents more QE by stealth—but that is nonsense. Providing the bonds are short-dated, the Fed will have no mechanical impact on long-term interest rates—in contrast to when it conducts QE. And before the financial crisis, it was routine for the Fed to buy and sell short-term Treasuries in order to ensure that the money markets were transmitting monetary policy smoothly. Do this and, with luck, most people will once more be able to forget about the repo market. ■

The future of management education

The MBA, disrupted

We have obtained a copy of a recent letter to a business dean

Dear Dean Whiteboard,

On behalf of the trustees of the Gordon Gekko Business School, I write with a helicopter view on our beloved institution. There is good news and bad. First, congratulations are in order. Under your leadership, GorGeBS has again been named by *The Economist* as one of the world's top 100 business schools.

The bad news is that our best-of-breed status is in jeopardy because the very business model of our school faces tectonic challenges (see Business section). Demand is plunging. Our MBA applications are down by a quarter. Across America, applications to business schools have fallen for five years in a row. Even at Harvard, they are down this year by about 6%.

One reason is a drop in international applicants, many of whom are put off by America's anti-immigration policies. But before you rush to blame all those law graduates staffing up government departments, the bigger factor is that we are charging too much. Our MBA costs nearly twice as much as it did a decade ago, but nobody believes we are delivering twice as much value.

We are also failing to grapple with technological disruption. The time I spent getting my MBA on our leafy campus by the fountainhead of the River Rand constituted two of the best years of my life. Even so, I am beginning to think that your dogged defence of a bricks-and-mortar strategy is wrong-headed. Online business education can deliver world-class thought leadership, too.

Worse, the relevance of our curriculum is being challenged. The students roaming our hallowed halls today are not the red-blooded, Darwinian capitalists who used to strive for business degrees. They are in a very different mind space, demanding that we go beyond our traditional teachings on the primacy of shareholder value to embrace stakeholder value.

Going forward, we need three priorities. First, to get costs under control. The soup-to-nuts cost for an MBA at Stanford is $232,000—out of our ballpark. The five-star accommodation, gourmet cuisine and other perks on our campus are way over the top. So are some of our packages, even if we haven't got quite as carried away as Columbia Business School, which, it was recently revealed, paid over $420,000 a year to a professor teaching three classes a year and $330,000 to untenured junior faculty.

But that is low-hanging fruit. We also should embrace technology. Some schools offer hybrid degrees, mixing the soft skills learned on campus with the convenience of digital delivery. Boston University's Questrom School of Business has gone the whole hog and now offers its full MBA online for just $24,000. If we do not adapt it will eat our lunch. And we need to get better at teaching technology. Our curriculum ought to drill down on the technical skills employers want, to deal with artificial intelligence and data analytics. No wonder firms themselves are stepping up. Accenture alone spends $1bn training staff in-house; the Silicon Valley giants spend even more. Those investments are cannibalising executive education, our cash cow.

The trickiest challenge is dealing with the backlash against capitalism. As future CEOs, our charges must manage the conflicting demands placed on firms by myriad interested parties while still fulfilling their fiduciary duties to shareholders. The curriculum can no longer rely on one-dimensional case studies. We need to be better at playing back the trade-offs facing bosses navigating a 3D environment.

The threat is existential. In the past five years, nearly a tenth of the full-time MBA programmes in America have disappeared. From Florida to Iowa, business schools have stopped offering the degree altogether. If we are to survive, never mind elevate GorGeBS to the top of the rankings, we need to start thinking outside the box and spearhead the next management revolution.

Let's touch base offline soon.

IVOR HANGOUT ■

Taking on the launderers

As a companion piece to your recent jocular guidance for kleptocrats on "How to keep your ill-gotten loot" (October 12th), you could offer governments advice on how to expose the schemes used by the dishonest to hide their illicit funds. Here are a few suggestions. First, end anonymous shell companies by creating public registers of who actually controls corporations. Even the Cayman Islands has committed itself to implementing such a register. Second, make global anti-money-laundering oversight more transparent. Multilateral enforcement is often spoiled by international horse-trading over sanctions behind closed doors.

Third, keep a closer eye on the intermediaries. Your accompanying article ("Catch me if you can") mentions that traders in luxury goods such as yachts are failing to flag suspicious transactions, even when they are obliged to do so. Such businesses, as well as bankers, estate agents, accountants and lawyers should all be held responsible for their role in facilitating money-laundering.

If the nerves of "pilfering potentates and their progeny" are really to be rattled, governments must close the loopholes which continue to make their countries a haven for illicit wealth.

PATRICIA MOREIRA
Managing director
Transparency International
Berlin

Whether intermediaries—lawyers, accountants, estate agents—are either passively complicit in or actively supporting money-laundering they are rightly denoted as enablers. Estate agents in particular have weak systems of due diligence and rarely file reports of suspicious transactions. They are almost never punished. Britain has imposed only three recorded sentences on intermediaries under the Proceeds of Crime Act between 2002 and 2018. It is far more common that no action is taken or, in precious few cases, a nominal fine is issued by a tribunal.

By increasing the resources of the state used to crack down on enablers, the ability of kleptocrats to access the global spoils of their grand corruption will be severely reduced.

JOHN HEATHERSHAW
Professor of international relations
University of Exeter

Curing hepatitis is a priority

The Global Fund's progress on HIV, tuberculosis and malaria is great ("Building tomorrow", October 12th). However, the World Health Organisation estimates that each year deaths from viral hepatitis (types B and C) are greater than HIV and more than double that from malaria. This is all the more striking when one considers there is a vaccine for hepatitis B and a highly effective short course cure for hepatitis C. Yet hepatitis is largely off the radar of global health programmes.

BRIGG REILLEY
Portland, Oregon

Economic discipline

The world economy's new rules are not so "strange" (Special report, October 12th). You advised monetary policy to target three things: a long-run, instead of short-term, inflation rate; nominal GDP, as opposed to inflation or unemployment; and fiscal reforms, emphasising automatic stabilisers. Milton Friedman would have endorsed those first two targets. I followed them when I designed country programmes at the IMF in the 1990s. You could have been braver in recognising that economists do not understand well the nature of economic growth, or sustainable economic growth.

Strengthening "automatic stabilisers" (such as unemployment benefits) is not enough. The structure of tax and government spending must be improved to affect market behaviour and raise efficiency and investment.

Economic programmes face difficulties in drawing up fiscal and other structural reforms, particularly at the micro or retail level. This year's Nobel prize in economics has highlighted the use of field experiments to find out how we can engineer behaviour to sustain higher economic growth. Such research would improve policy by moving from nominal to real GDP growth targeting.

GOPAL YADAV
Alexandria, Virginia

Your suggestion that a central bank should transfer "an equal amount to the bank account of every adult citizen" when the economy slumps, and that this would not involve redistribution, sounds odd ("The world economy's strange new rules", October 12th). Aside from its other problems (such as people with more than one account, or joint accounts) the fact that many poorer people do not have a bank account means that the relatively affluent would gain. This is a redistribution by any reasonable definition.

NEIL GARSTON
Emeritus professor of economics
California State University, Los Angeles

Why Scotland should remain

Regarding the push for another vote on whether Scotland should leave the United Kingdom ("The other referendum", October 19th), the Scottish National Party has played its Brexit cards cannily, but it must not underestimate the common sense of most Scots, or the fatigue following divisive referendums in 2014 and 2016. In recent polling by Survation, commissioned by Scotland in Union, only 27% of Scottish people supported the SNP's plan for another referendum before May 2021. A majority thought another referendum would make Scottish society more divided.

When asked whether Scotland should "remain" in the UK or "leave" (rather than a yes/no formulation, which the Electoral Commission dismissed for the UK-wide Brexit referendum in 2016), 59% said Scotland should remain. This is a long way from the overwhelming majority for separation which Nicola Sturgeon, the SNP's leader and first minister of Scotland, would like before calling for another vote.

If Brexit will harm the Scottish economy, Scexit would be worse. The Scottish government's statistics show that 60% of Scottish trade goes to the rest of the UK; that Scottish public spending is boosted by £1,968 ($2,530) per person via Westminster's Barnett formula; and that Scotland's deficit is over twice as high as the 3% level which would be required if an independent Scotland were to try to join the European Union.

ALASTAIR CAMERON
Director
Scotland in Union
Glasgow

The chorus line

"Don't stop me now" (October 5th) reported on how the algorithms behind music streaming spur songwriters to get to the chorus in the first 15 seconds. That brought back some wonderful memories of how songs used to be crafted. You mentioned the two-minute opening before Bono starts singing on U2's "Where the streets have no name". A decade before that the title track on "Bat Out of Hell", Meatloaf's masterpiece, romps around for three minutes before we hear the chorus, which itself lasts 40 seconds. This is typical for a seven-track album, which has sold 43m copies and counting.

All the way back in 1972 Jethro Tull hit number one in America with "Thick As a Brick," a song that admirably arrives at the refrain within the first minute, but does not return to it until 42 minutes later at the song's close. Today's music fans are too impatient.

ALEX DEW
Salt Lake City

Letters are welcome and should be addressed to the Editor at
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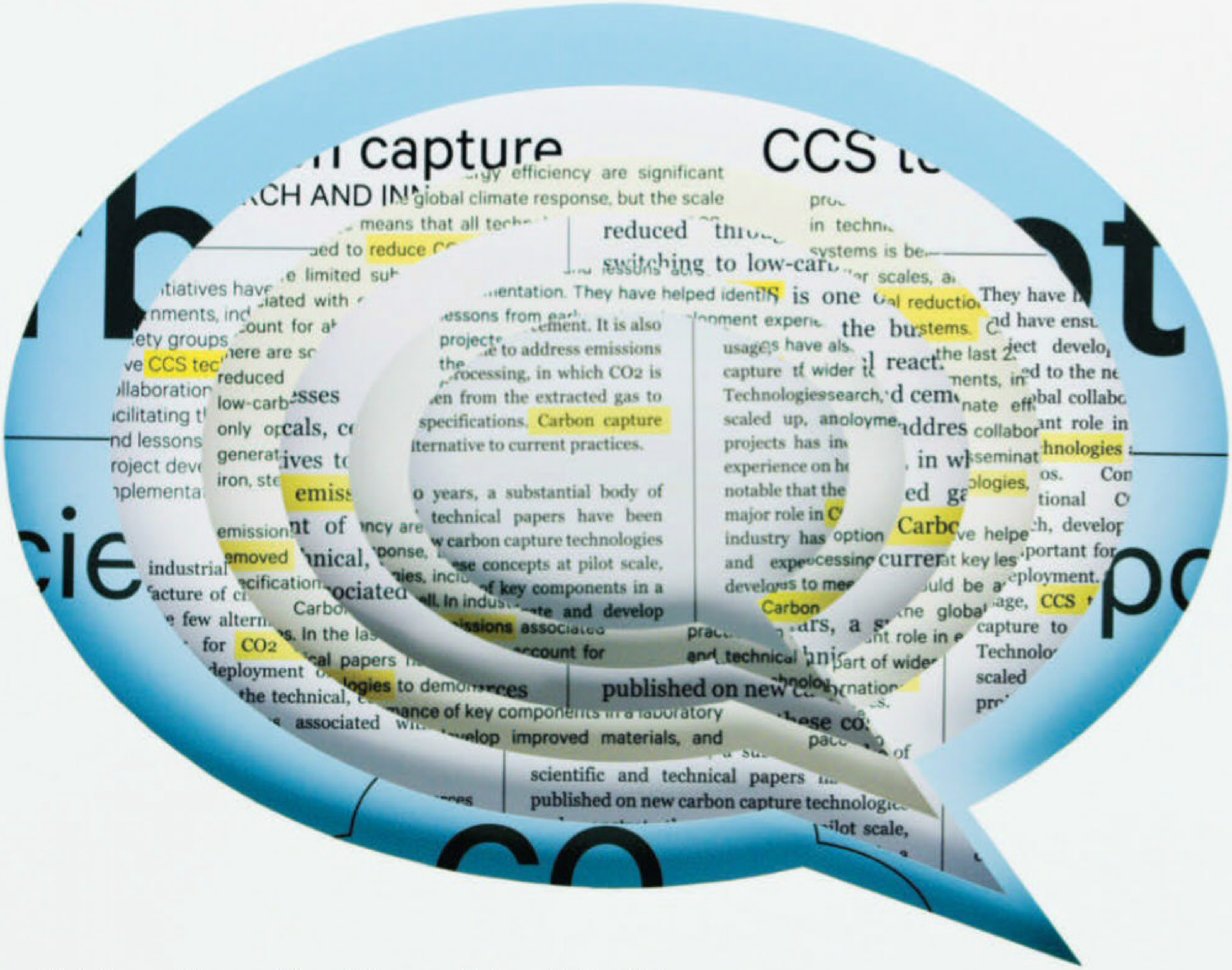
Email: letters@economist.com
More letters are available at:
Economist.com/letters

Experts say carbon capture is vital for reducing CO_2 emissions.

We do too.



To help meet the world's ambitious goals for reducing CO_2, we're working on ways to make carbon capture technology scalable and more affordable. We're also exploring new approaches, like using fuel cells that could capture up to 90% of the CO_2 from large industrial sites and capturing CO_2 directly from the air. Learn more at **EnergyFactor.eu**

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Esso Mobil 1

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- Create a culture of achievement and establish, communicate and maintain high performance standards including professionalism, rigour and transparency.
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- Maintain relationships with stakeholders including the Government, other courts, the legal profession and other agencies.
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03165

Downing Street calling

Labour is trying to woo British voters with a radical, left-wing agenda

Shortly before the financial crisis of 2008, a little-known Labour MP published a 64-page pamphlet. In "Another World is Possible: A Manifesto for 21st Century Socialism", John McDonnell laid out an economic vision which clashed with the slick, pro-business mantra of Tony Blair's New Labour. It praised participatory democracy in Venezuela and hailed co-ops in the Basque country, while calling for the sweeping nationalisation of industry.

The booklet was an attempt by Mr McDonnell, then on the backbenches, to scupper the coronation of Gordon Brown as leader of the Labour Party and prime minister in 2007. Mr McDonnell attracted the support of just 29 MPs. A little over a decade later, Mr Brown is long gone from politics. New Labour is history. Mr McDonnell is shadow chancellor and Jeremy Corbyn, his friend and socialist ally, is leader. Labour will campaign in Britain's general election, to be held on December 12th, on the most left-wing platform in a generation.

The goal, according to Mr McDonnell, is an "irreversible shift in wealth and power in favour of working people". If the party were to be elected, even as a minority government, it could fundamentally reshape the British economy, to a degree not seen since Margaret Thatcher in the 1980s.

Now war is declared

For a start, the party pledges to end the Conservatives' programme of fiscal austerity. Reversing cuts to day-to-day department spending since 2010 would cost some £50bn ($64bn, or 2.4% of GDP). At least £25bn a year would be put towards infrastructure investment, in part through the creation of a "national investment bank". Water and energy firms would be brought into public ownership. The Bank of England would be given a new mandate. The state would forcibly transfer 10% of the equity of large companies to their workers and compel pharmaceutical firms to supply drugs cheaply. Private schools would be abolished. Britain's working week could fall from five days to four.

The prospect of a majority Labour government worries most economists. It is not clear that Britain's public finances are strong enough to allow for a borrowing binge, especially in the face of an ageing population. A credible commitment from the central bank to keep inflation under control, and from the government to respect private-property rights, are the building blocks of a sustainable economy.

Britain is almost uniquely vulnerable to a radical shift in policy. The country runs a current-account deficit of 5% of GDP, large by rich-country standards, meaning that it is highly reliant on inflows of foreign capital. Foreigners own a quarter of the outstanding stock of British government bonds. Investors' trust in the British government and the country's institutions, which rose during the 1990s (see chart 1, on next page), has already been tested by the financial crisis, the Scottish independence referendum of 2014 and Brexit. A loss of faith would send the pound plunging, increase the cost of government borrowing and imperil financial stability.

In 2017 a partner at Goldman Sachs remarked, echoing the French President Emmanuel Macron's quip over his predecessor's 2012 campaign pledge to set a top income-tax rate of 75%, that Britain under Mr Corbyn would be like "Cuba without the ▸▸

sun." Mr Corbyn then had a public battle with Morgan Stanley, after the investment bank warned of the dangers of a Labour government. Yet some in the financial establishment have started to look more favourably on the prospect, for two reasons.

The first is Brexit. The Conservatives have negotiated the hardest of hard-Brexit deals, which the best estimates suggest will cut incomes by 6% in the long run. That is not much less of an impact than leaving the EU with no deal at all. Labour, by contrast, promises to hold a second referendum on Brexit, with a freshly negotiated deal put against staying in the EU altogether.

Second, the polls suggest that Labour has little chance of forming a majority government (see chart 2). Most probably it would have to rely on the Scottish National Party (SNP) or the Liberal Democrats, which are likely to become the third- and fourth-biggest parties, respectively. In the company of more moderate parties, the argument goes that Labour would have little chance of getting its most radical plans through Parliament. That parliamentary arithmetic, plus the checks and balances on any British government, would thus curb the instincts of a Corbyn government.

And battle come down

At a recent briefing from a big investment firm in London, managers insisted that British assets were now cheap, on the grounds that too many investors did not realise just how constrained Mr Corbyn would be in practice. In September Citi, a bank, suggested that a Corbyn government would be "the more market-friendly election outcome" relative to no-deal under the Conservatives, provided that Labour was in an alliance with the SNP and Liberal Democrats. Deutsche Bank has argued that while "any market-unfriendly policies instigated during a Labour government are temporary", a no-deal Brexit would be a "permanent shock".

Those analysts are making a mistake. Without a majority, Labour would be constrained, but it would still be radical. Compared with most other countries, governments in Britain have unusual powers of discretion to get things done without passing laws. No matter the makeup of Parliament after a general election, an incoming Labour government could overhaul much of the system—and do so fairly quickly.

Some of this could be for political gain; an attempt to convince the British public that it meant business. Labour could quickly launch pilot schemes on the pros and cons of adopting a "universal basic income". One Labour policy wonk impishly suggests the incoming government could follow the example of the Bolsheviks in 1917 and immediately publish highly sensitive documents relating to previous governments—perhaps those related to the Iraq war or the Troubles in Northern Ireland.

It could also pursue more substantive policies. Take government spending. A recent report from the Hansard Society, a think-tank, noted that Britain has "among the weakest systems for parliamentary control and influence over government expenditure in the developed world". Mr McDonnell could boost spending on public services at a stroke. He could go some way towards creating a national investment bank by boosting funding to the British Business Bank, an existing programme which directs investment to small firms. He would need to seek parliamentary approval for such largesse at a later date. But MPs would have limited opportunities to amend these plans, short of defunding the entire government.

Without much difficulty, a Labour government could unilaterally raise the minimum wage (currently £8.21 for people aged 25 and over) to whatever level it deemed appropriate. It could also reduce the age at which people are eligible to receive the top rate, to 18. The roll-out of "universal credit", a hugely unpopular Conservative welfare reform, could easily be halted. That would come close to Mr McDonnell's pledge to "get rid of the bloody universal credit".

Labour's plans for the Bank of England could also be implemented with little scrutiny. The wording of the Bank of England Act 1998, which enshrines the operational independence of the central bank, leaves plenty of room for change. For a period of three months the Treasury can take over the management of monetary policy "...if they are satisfied that the directions are required in the public interest and by extreme economic circumstances."

The act also leaves the door open for more permanent changes. The bank must target "price stability". Adding a target of 3% productivity growth does not appear to flatly contradict that requirement, especially as the next bit of the act states that the bank must "support the economic policy of Her Majesty's Government, including its objectives for growth and employment". An incoming Labour government could probably move the Bank of England from London to Birmingham, as it has said it would like to. Its time in government would probably coincide with the opportunity to pick the next governor. Mark Carney, the incumbent, is leaving the post early next year. The Labour leadership is thought to like Andy Haldane, the bank's chief economist, who has more left-leaning views on economic policy.

When it comes to the rest of the programme—including the sweeping nationalisations and the necessary tax increases—legislation would be required. Moderate Labour MPs and trade unions might try and block some of these plans. Mr Corbyn is a life-long critic of both NATO and nuclear weapons. However, unions would hate to see the disappearance of well-paid manufacturing jobs in the arms industry; the party at large retains a militaristic streak. He has therefore pledged to stay in the alliance and continue the renewal of Trident, Britain's nuclear deterrent. While the country's soft power could shift, focusing on the pet causes of Mr Corbyn, its hard power would remain unchanged. Britain could be left looking like an NGO with nukes.

But in the case of domestic economic policy, MPs outside Labour's inner circle

No longer the sick man of Europe 1

Difference in yields between British investment abroad and foreign investment in Britain

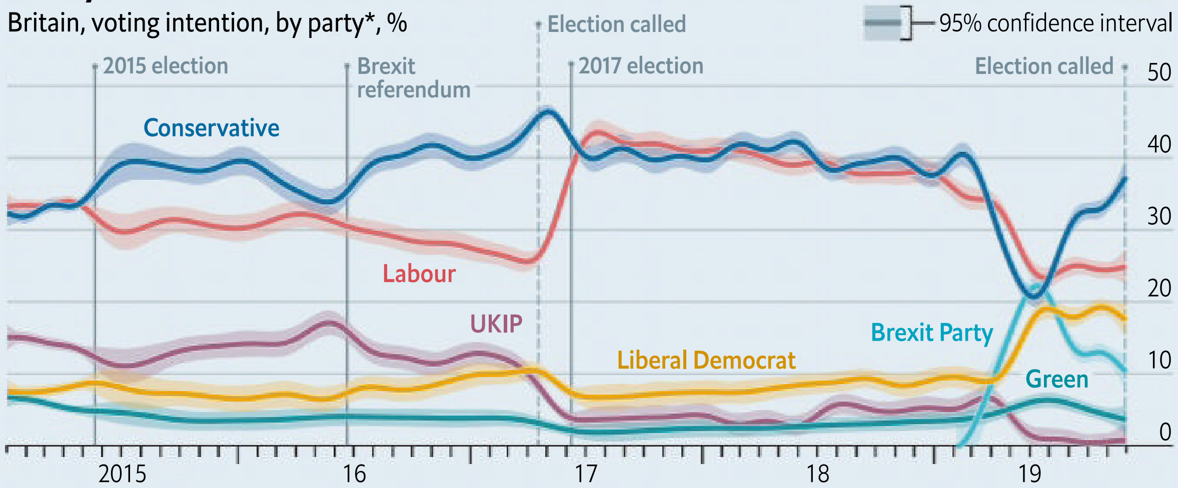
% points*

Source: ONS

*Ten-year moving average

Corb your enthusiasm 2

Britain, voting intention, by party*, %



Source: Politico *Poll of Polls*

*Excludes SNP and other parties that do not stand nationally would present less of a problem. Many worry that wealth and income inequality in Britain are too high, and are pleased that someone at last seems to have the courage to do something about it.

Relying on the MPs of other parties is more likely to gum up the process. The Liberal Democrats would be the trickier partner. Its leader, Jo Swinson, has refused any official partnership with the Labour Party. "We're going to constrain Corbyn," says Sir Ed Davey, the party's finance spokesman. Any support for a Labour government would be both grudging and on a case-by-case basis, particularly as the Liberal Democrat ranks have been bolstered by former Labour MPs such as Chuka Umunna, who partly left the party because they feared Mr Corbyn in Downing Street.

With a big financial sector in Edinburgh, and a large oil-and-gas industry in the North Sea, the SNP might blanch at any plans to curb banker bonuses or to make life more difficult for carbon-intensive firms. Yet the party has drifted left in recent years, shedding their reputation as "Tartan Tories". The SNP is hoping to start its own version of a national investment bank north of the border; it has also raised income-tax rates and its water supply is already in public hands. Its real prize is holding another referendum on Scottish independence, something for which Mr Corbyn has recently voiced support. Backing the manifesto of a Labour government is a small price to pay.

Meltdown expected

The legal system and the markets would present further obstacles. In a series of lectures earlier this year Jonathan Sumption, a former Supreme Court justice, complained that the law has come to play an overbearing role in political life. Governments may decide they want to do something, but all sorts of legal institutions, from the Supreme Court to the European Court of Human Rights, constrain what is possible. "There's always someone judicially reviewing you," huffs one former Conservative chancellor, who, needless to say, did not attempt to nationalise Britain's utilities during his time in office.

Legal questions dog Labour's plans, particularly over policies such as nationalisation. The party insists that Parliament will decide the appropriate price to pay shareholders in Royal Mail, the water companies, and electricity and gas networks. Labour also plays down the significance of forcibly transferring 10% of the value of large companies to their workers. "That's not a levy," Mr McDonnell told *The Economist*, with a grin. "That's a sharing of the rewards of that particular company."

Investors are unlikely to be so relaxed. "The employee-ownership programme proposed by Labour is nationalisation by the front door, back door and side door," argues one chief executive of a FTSE 250 firm. His company would move to Ireland, and would return only if the Conservatives got into office, he claims.

If Labour tried to nationalise a company without paying what would reasonably be considered as fair market price, a court challenge would follow. Britain has around 100 bilateral investment treaties (BITs) with other countries, designed with the express purpose of preventing expropriation. Already, firms are shifting the holding companies of their British assets to countries where a BIT exists.

But the legal system would place only so much of a constraint on Labour's plans. Though it would be expensive, and therefore win less public support, the party could ward off legal challenges by offering a market price for the companies it wanted to nationalise. Experts disagree over how much that would cost—though the state would be taking on extra debt, it would also be acquiring an asset with a yield. A Labour government could reduce its bill by talking down the companies' share prices (though this might also face legal challenges). Already, the share prices of firms that Labour has said it will acquire are underperforming the British stockmarket as a whole, according to analysis by *The Economist*.

Financial markets might present further problems. Most forecasters believe that a Corbyn government would lead to a depreciation of sterling of around 10%, as well as higher borrowing costs for the government. Though the party promises a second referendum on Brexit, there is little guarantee that it would campaign for Remain with much vigour (Mr Corbyn is a lifelong Eurosceptic). It is even less certain that, in a second referendum, the country would vote the way that the markets want.

Many in the party would welcome a depreciation of sterling, on the grounds that it would help Britain's exporters. The effect of rising gilt yields would be felt over a number of years, since the higher borrowing costs apply only to newly issued government debt. In any case, points out one adviser to the Labour leadership, after three years of the Brexit process Britons have got used to the pound gyrating all over the place. If market turmoil has not proved to be the undoing of the government's Brexit strategy, then why should it prove to be Labour's downfall?

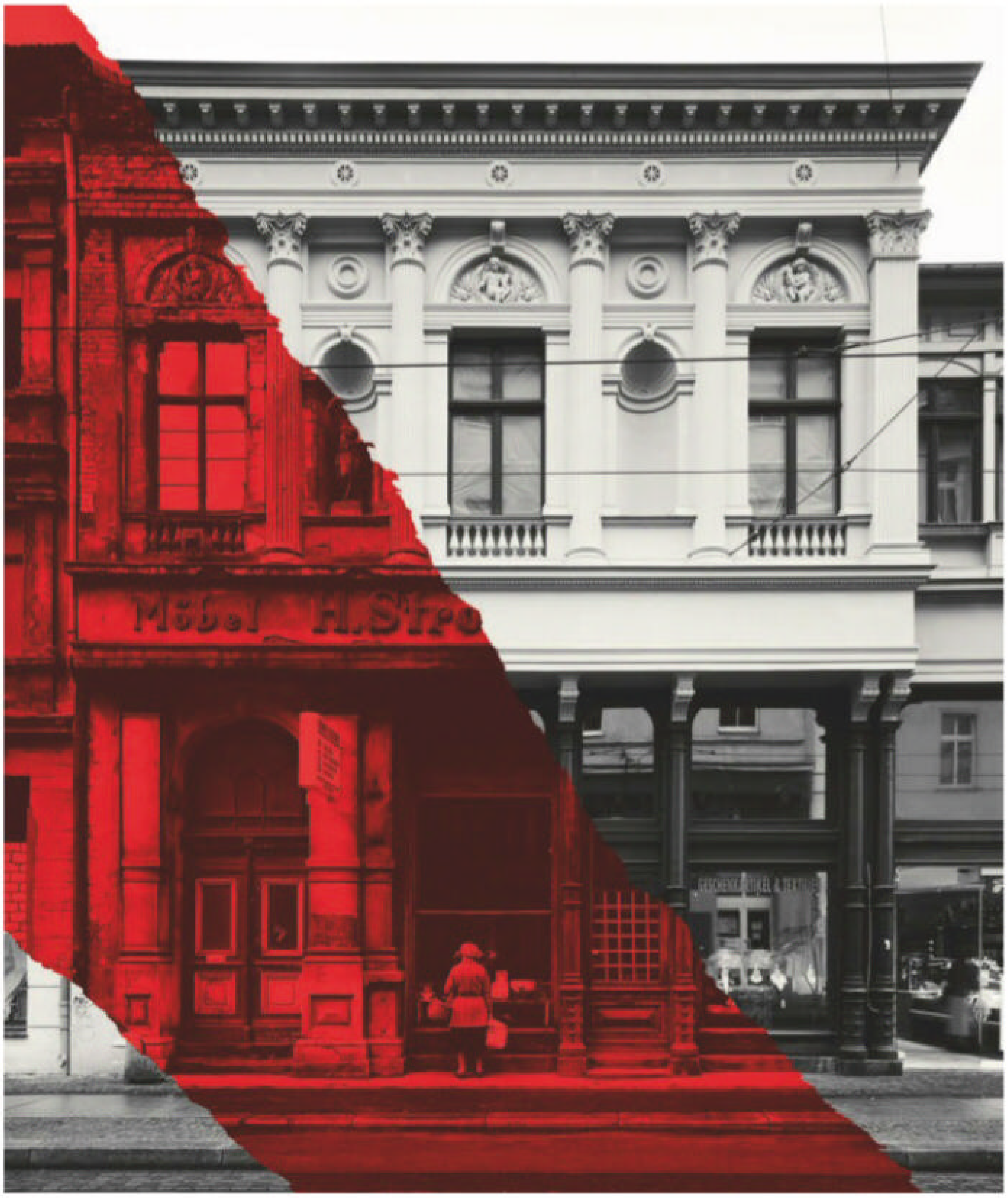
At some point, ructions in financial markets would force a change—a weak pound makes imports more expensive, trimming living standards. But that point may be further away than many assume. Older Corbynites shudder at the story of the government of François Mitterrand, France's president from 1981 to 1995. It embarked on a solidly socialist programme but embraced monetarism and budget cuts as it sought to quell the markets and keep the franc pegged to the Deutschmark. Younger ones look with alarm at Syriza, the far-left Greek party which capitulated to the EU after coming to office in 2015.

Would something similar happen with Labour? Some insiders think that policies such as the employee-ownership fund will be watered down. One Labour politician has been heard to complain that Mr McDonnell has "become like a bloody bank manager these days".

But those in the inner circle claim to be steely. Seumas Milne, an adviser to Mr Corbyn, co-wrote an academic article in 1994 which excoriated Mitterrand for selling out. In "People Get Ready: Preparing for a Corbyn Government", a book published earlier this year, Christine Berry and Joe Guinan, two researchers who are close to Labour, implore the leadership to resist the power of international financiers, even if they accept that what they call a "siege economy" is "not particularly desirable as a long-term solution".

Another possibility exists. Even as a Labour government appears to compromise, it could remain radical. It is promising so many things to its potential voters that it does not much matter if it has to bargain some of them away. At the end of five years, Britain's fiscal and monetary policy could be turned upside down. Investors may have reassessed their view of the country.

Nor is Labour's leftward turn likely to be a passing phase. At 70 years old, Mr Corbyn is likely to step down after the election should he fail to win. Those around him are already jostling to take over. Few are lurching to the right in anticipation—the party members, who elect the leader, are Corbynites through and through. Another world has already arrived for Labour. Mr Corbyn and Mr McDonnell will hope another world is still possible for Britain. ■



East Germany

Thirty years after the Wall fell

BERLIN, BISCHOFFERODE AND LEIPZIG

Germans still don't agree on what reunification meant

On November 9th 1989, as the Berlin Wall tumbled, Hans-Joachim Binder was on night shift at the potash mine in Bischofferode, a village in the communist-ruled German Democratic Republic. Mr Binder, a maintenance worker who had toiled in the mine for 17 years, had no idea of the momentous events unfolding 240km (150 miles) to the east. The first sign something was up was when most of his colleagues disappeared to investigate what was happening at the border with West Germany, just ten minutes' drive away. Only three returned to complete their shift.

Less than a year later Germany was reunited, capping one of the most extraordinary stories in modern history. Not only had a communist dictatorship collapsed, releasing 16m people from the fear of the Stasi (secret police) and the stultification of censorship. Unlike any other country ever freed from tyranny, the entire population of East Germany was given citizenship of a big, rich democracy. As a grand, if ill-fated, gesture of welcome the West German chancellor, Helmut Kohl, converted some of their worthless savings into hard currency at the preposterously generous exchange rate of one Deutschmark to one Ostmark.

→ Also in this section

29 Eastern Europe, 30 years on

30 Charlemagne: The magnetic field

More than 1m Ossies took advantage of their new freedom by moving to the West, where most thrived. Official statistics no longer counted this group—who were disproportionally young, clever, female and ambitious—as East Germans. For those who stayed behind, however, the 30 years since the fall of the wall have been a mix of impressive progress, often taken for granted, and sour disappointment.

A price to pay

The harm wrought by four decades of oppression and indoctrination could not be undone overnight. But a people brought up in a society where initiative was ruthlessly crushed had to adapt suddenly to the rigours of capitalism. Unsurprisingly, many could not. Mr Binder was laid off. So were hundreds of thousands of others who previously toiled in safe, dreary and unproductive state-backed jobs. Despite attempts to save it, including large protests and a hunger strike, the potash mine was shut down—one of 8,500 companies in the east privatised or liquidated by the Treuhand, a new government agency. Mr Binder bounced around in odd jobs for a while, eventually winding up on Hartz IV, the stingiest of Germany's unemployment benefits, where he languishes today. Like many East German women, his wife retrained and left for a job in the west. Asked how he feels about the reunification of his country, he shrugs. "My safe job was gone. For me, the GDR could have carried on."

There was no manual to guide the absorption of east into west. The policies that failed people like Mr Binder were always going to be subject to fierce dispute. The surprise, as Germany approaches the 30th anniversary of the fall of the Wall, is the speed with which these debates have roared back into the public sphere. Newspapers and magazines are full of reassessments of the *Wiedervereinigung* (reunification); westerners are lapping up memoirs and polemics by eastern authors. Never before has Germany debated its reunification with such vigour. Why?

Many observers say the debate grew louder three or four years ago. The most obvious explanation is therefore the migrant crisis of 2015-16. Petra Köpping, the integration minister in Saxony, one of the five eastern states established at reunification, says that when she tried to explain to her constituents why the state was helping refugees, some replied: "Integrate us first!" Many easterners resented the resources being devoted to help newcomers when they felt left behind. They also disliked the labelling of their complaints as racist.

But the refugee crisis merely triggered a ►►

deeper shift, says Christian Hirte, the government's special commissioner for east Germany. One idea, floated by Angela Merkel, who as chancellor is east Germany's best-known export, is that the east is undergoing something comparable to the experience of West Germany in 1968, when children forced their parents to account for their activities in the Nazi period. Now, the argument runs, young east Germans seek explanations for what happened to their parents in the early years of reunification. "The long-term wounds were concealed because people were absorbed finding a place in the new society," says Steffen Mau of Humboldt University in Berlin. "Perhaps you need 25 years to realise this."

This summer Marie-Sophie Schiller, a young Leipziger who hosts a podcast called "East—A Guide", had an "emotional" talk with her parents about their experiences after 1990. She was astonished to learn about their daily hardships and humiliations. Stefan Meyer, an activist who grew up in East Berlin, remembers watching his parents' confidence ebb as they struggled to find their feet in the new country.

After 1990 "the whole software of life changed" for east Germans, says Markus Kerber, a bigwig at the interior ministry. Short-term pain was inevitable. Average labour productivity in the east was 30% of that in the west. Kohl's decision to exchange Ostmarks at a 1:1 rate for Deutschmarks made swathes of firms uncompetitive overnight. Those that survived struggled with the western rules they had to import wholesale. By one estimate, 80% of east Germans at some point found themselves out of work.

Perhaps the Treuhand could have proceeded more gently, some argue today. Maybe the unified country should have developed a new constitution rather than simply extending the western one eastwards. The west might have learned from the more enlightened aspects of life in the GDR, such as free child care and encouraging women to work outside the home. Radical parties on left and right take such arguments to a ludicrous extreme, arguing that reunification was the "colonisation" of a bewildered people by an exploitative west.

Understanding required

Such views tap into a feeling among many easterners that they have struggled to take back control of their own destiny. Ms Köpping says east Germans hold barely 4% of elite jobs in the east. Many rent flats from westerners, who own much of the eastern housing stock. "Sometimes east Germans feel that they're ruled by others, not themselves," says Klara Geywitz, a Brandenburger running to lead Germany's Social Democrats. Nor have east Germans stormed the national citadels of power. Almost 14 years after she took office Mrs Merkel—and Joachim Gauck, president from 2012-17—remain exceptions rather than a vanguard. Rarely one to dwell on her origins, Mrs Merkel has lately begun to reflect publicly on the mixed legacy of reunification. "We must all...learn to understand why for many people in east German states, German unity is not solely a positive experience," she said on October 3rd.

One obstacle to such understanding is that Germans view reunification differently. Half of west Germans consider the east a success. Two-thirds of east Germans disagree. Many westerners were oblivious to the upheaval their new compatriots endured. "On October 4th 1990 [the day after reunification], after a night of partying I carried on my life as normal," says Mr Kerber. "Not a single east German had the same experience." In places western stereotypes of easterners have persisted, the *Jammerossi* ("complaining easterner"), ungrateful for the largesse showered on the east after unification, or *Dunkeldeutschland* ("dark Germany"), a cold-war term implying backwardness. More recent is the notion of the east as a cradle of neo-Nazism, bolstered by the strength there of the far-right Alternative for Germany (AfD). Portrayals of the east in Germany's national (for which read western) media have often read like dispatches from an exotic, troubled land, where the far right are always marching in the streets or thumping immigrants.

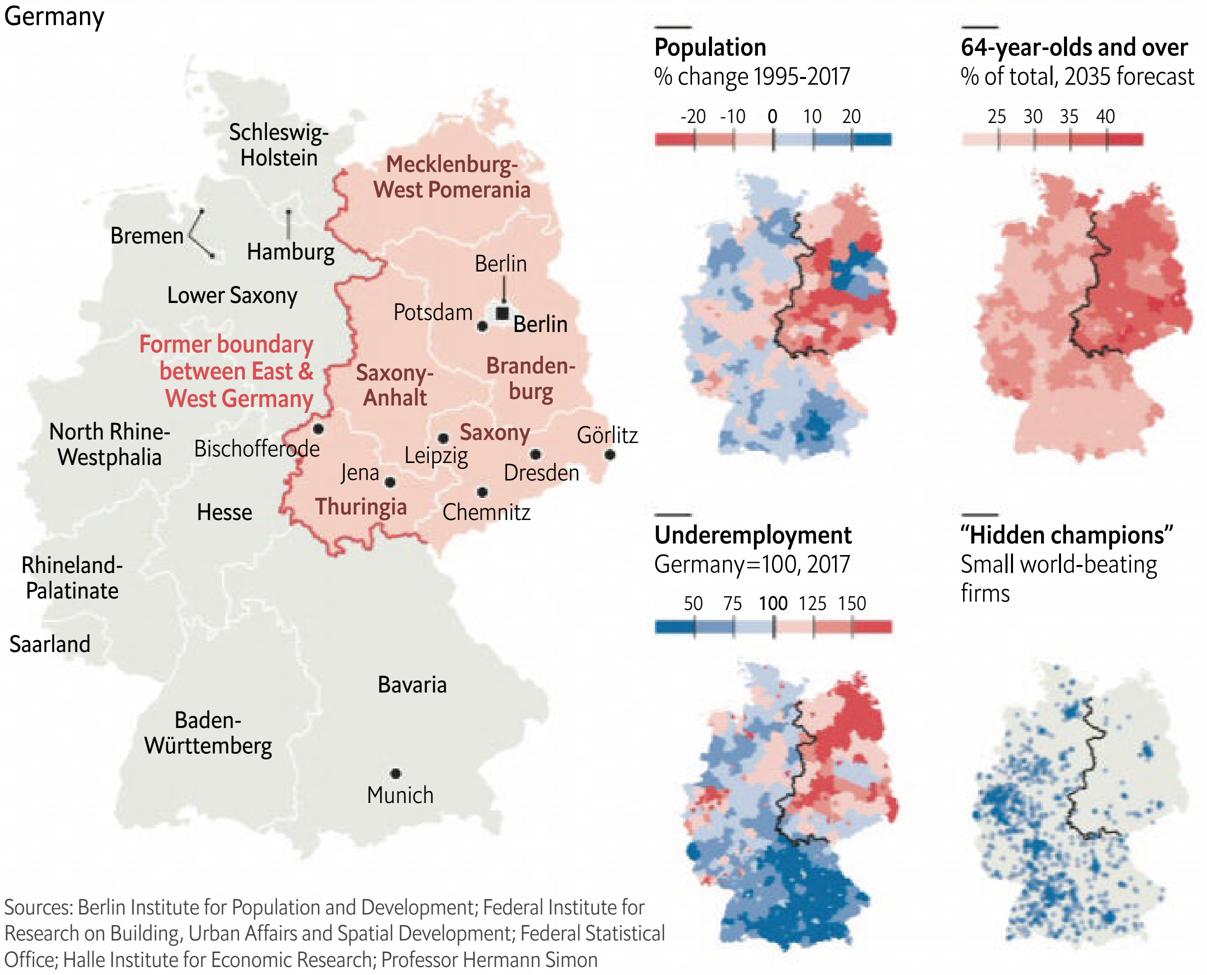
Such accounts risk ignoring the huge strides made by east Germany since reunification. Citizens were liberated from the humiliations of life in a surveillance state. They were allowed to choose their leaders, express their opinions and travel, to west Germany and beyond. Economically, despite the hardships of the early years, the east soon began to converge with the west, and life improved drastically across a range of measures. Today some east German regions have lower unemployment rates than western post-industrial regions like the Saarland or the Ruhr valley. West-east transfers of close to €2trn ($2.2trn) have reduced the infrastructure gap. (Today they run at around €30bn a year, mainly in the form of social-security payments.) Wages in the east now stand at around 85% of the level in the west, and the cost of living is lower. The life-expectancy gap has closed, the air is cleaner, the buildings smarter. According to Allensbach, a pollster, 53% of east Germans are content with their personal economic situation, the same figure as in the west. "It all worked surprisingly well, but this story doesn't fly in the east," says Werner Jann of the University of Potsdam.

One of the best

Last year Andrea Boltho, Wendy Carlin and Pasquale Scaramozzino, three economists, contrasted east Germany's post-reunification performance favourably with the Mezzogiorno in Italy, where GDP per person remains little over half that of the north. Perhaps the most apt comparison is with other parts of Europe that shook off communism. East Germany's per capita growth has outstripped most other eastern European countries (see chart on next page), despite starting from a higher base. ▸▸

Still catching up

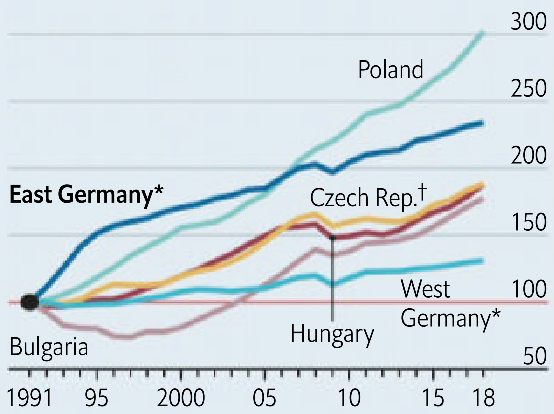
Germany



Sources: Berlin Institute for Population and Development; Federal Institute for Research on Building, Urban Affairs and Spatial Development; Federal Statistical Office; Halle Institute for Economic Research; Professor Hermann Simon

Plenty to cheer

GDP per person, 1991=100



Sources: Halle Institute for Economic Research; IMF; World Bank *Excludes Berlin †World Bank est. pre 1993

As Richard Schröder, a former East German dissident, notes, the application of western laws and practices saw off the threat of oligarchic corruption that has plagued many of Germany's eastern neighbours.

Yet if east Germans do not always appreciate their good fortune, it is because their reference points have been Hamburg and Munich, not Bratislava or Budapest. Implicit in the promise of reunification was a pledge that east Germans could finally enjoy what they had so long envied in the west. For years they were forced to witness a lifestyle that remained out of reach, in the packets of coffee and sweets sent by relatives in the west, the western goods on display in Intershop outlets accessible only to those with hard currency, or the commercials on western television beamed across the border. In 1990 Chancellor Kohl promised east Germans "blooming landscapes". Instead they got deindustrialisation and mass unemployment. "In 1990 300,000 people came to shout 'Helmut!' on Augustusplatz [in Leipzig]," recalls Kurt-Ulrich Mayer, who helped establish Kohl's Christian Democratic Union (CDU) in Saxony. "Four years later he came back, and we needed umbrellas to protect him from all the eggs and tomatoes." Unlike Poles or Hungarians, east Germans had someone else to blame when things went wrong.

The convergence between west and east eventually ground to a halt. Today just 7% of Germany's most-valued 500 companies (and none listed in the DAX30 index) are headquartered in the east. This starves municipalities of tax revenue and contributes to the east-west productivity gap, which has stood at around 20% for 20 years. Most assets liquidated by the Treuhand fell into western or foreign hands, hindering the development of an eastern capitalist class.

For many, the best way to get western lifestyles was to move west. Over one-quarter of east Germans aged 18-30 did so, two-thirds of them women. Rural parts of the east were especially affected. As towns and villages emptied and tax revenues slumped, schools were closed, shops shuttered and housing blocks demolished. The mass emigration of youngsters led to a plummeting number of births. Since 2017 net east-west migration has been roughly zero, but there has been no growth in the number of people moving east; the westward exodus has simply fallen to match it.

The east is also much older than the west. Since 1990 the number of over-60s there has increased by 1.3m even as the overall population has fallen by 2.2m. IWH, a research outfit in Halle, thinks the working-age population in the east will fall by more than a third by 2060. By 2035, 23 of Germany's 401 *Kreise* (administrative districts) will have shrunk by at least a fifth, says Susanne Dähner at the Berlin Institute for Population and Development; all of them are in the east. In some districts, there will be four funerals for every birth. Instead of losing people to the west, eastern Germany will lose them to the grave.

The constitutional pledge of "equivalent living conditions" across Germany thus looks unattainable. The government tries to help so-called "structurally weak" regions, in the east as well as the west. But although investment in infrastructure or technical universities may help some towns, it cannot stop the demographic decline in many east German regions.

Coming to terms

The picture is much brighter in some eastern cities. Potsdam, Jena and Dresden have clusters of industry and tourism as well as cheap housing; some, like Leipzig ("Hypezig", to irritated locals), have been booming for years. The "bacon belt" around Berlin benefits from the success of the capital, especially as older workers move out to the suburbs. Yet even as overall emigration to the west dries up, eastern cities are sucking educated people away from already struggling small towns and villages. That trend may continue, as only half of east German workers work in cities, compared with three-quarters in the west.

The changes in the east have social, cultural and political consequences which are now coming to the fore. Last February thousands of Dynamo Dresden supporters at an away game in Hamburg began an unfamiliar chant: "Ost [east], Ost, Ostdeutschland!" A video of the episode went viral, sparking a lively debate: were the fans expressing a dubious "eastern" variant of militant German nationalism? Or was this a cheerful reappropriation of an identity that for so long was taken to connote stupidity and closed-mindedness?

"Identity is key to understanding east Germany," says Franziska Schubert, a thoughtful Green who represents Görlitz in Saxony's state parliament. Fully 47% of east Germans say they identify as easterners before Germans, a far higher proportion than at the euphoric moment of reunification. (The equivalent is true for 22% of westerners.) Regional identity is hardly abnormal in Germany—ask the Bavarians—but in the east it can seem grounded in politics as much as culture or tradition.

When Jana Hensel, a writer, recently gave a talk to a school in her home town of Leipzig, she was astonished to find herself spending half an hour fielding questions from teenagers about an *Ossiquote* (a proposal to give east Germans preference in public jobs). "More than 25 years after the end of the GDR, students have become east German again," she says. "If we're not careful, we'll lose another generation."

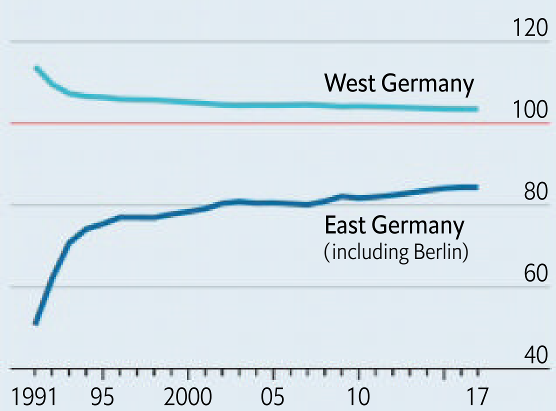
The AfD has exploited the power of eastern particularism. Under slogans like "The east rises up!" the party has scored 20%-plus in eastern state elections, most recently in Thuringia on October 27th. There, and in recent elections in Brandenburg and Saxony, it was only voters over 60 whose support for the established parties ensured that the AfD did not come first. In Saxony and Thuringia the AfD was the most popular party among under-30s. This is worrying in a part of the country where extremism has found fertile ground. More than half of Germany's hate crimes take place in the east, though it has just 20% of the population and few immigrants.

But eastern identity is not the exclusive preserve of extremes. Many young easterners simply developed an "Ossi" identity after encountering ignorance or scorn in the west. Nor need it be only negative. Matthias Platzeck, a former Brandenburg premier now in charge of a commission for the 30th anniversary of reunification, says that the recent election in his state was the worst-tempered ever. Nonetheless, he hopes for the emergence in the east of healthy self-confidence, built on the back of success stories—and a new focus on the many problems that span east and west. His commission's informal motto, he says, is "as little state celebration as necessary, as much discussion as possible." And since the Berlin Wall has gone, no amount of debate will land anyone in jail. ■

The productivity problem

GDP per employee

Germany=100



Source: Halle Institute for Economic Research, 2019

Eastern Europe

Thirty years of freedom, warts and all

Central and eastern Europeans are mostly happy with their progress since 1989

No empire in history has disintegrated as quickly or as bloodlessly as the Soviet one, in the remarkable year that saw the fall of the Berlin Wall in November 1989. A period of carnage in Romania the following month was the only grisly counter-example. Yugoslavia, never a part of that empire, followed a tragically different path; but for the rest of central and eastern Europe, though clearly imperfect, the past 30 years have been a time of marvels.

Standards of living for most of the region's peoples have vastly improved, and most of them know it. New polling by the Pew Research Centre shows that 81% of Poles, 78% of Czechs and 55% of Hungarians agree that this is the case. Only Bulgarians on balance take a gloomy view, with just 32% of them thinking that their standard of living has improved since 1989. Development has been patchy, but for every depopulating and ageing rustbelt in eastern Europe there is a booming industrial region, a tech cluster or a services centre desperate for more workers.

Majorities in every country, mostly very big ones, approve of the multiparty systems and market economies that have delivered this, as well as their integration into Western institutions—the EU (from 2004) and NATO (from 1999). Free to travel and work anywhere in the EU, millions have done just that. Many who stayed behind, though, feel left behind. Aniko Takacs, aged 25, who works at a petrol station on the Hungarian side of the border with Austria, earns €500 ($550) a month. Her sister, who does the same job for the same company in Austria, earns €1,500. Countries with low fertility rates and little immigration are facing steep population declines.

People leave not only because wages are higher in western Europe but also because public services are better and corruption rare. So many eastern European doctors and nurses have emigrated that access to good health care has deteriorated in some places, especially outside big cities.

After three decades of democracy, cynicism about politicians is as widespread as it is in western Europe. In Slovakia 63% of people think most elected officials do not care what they think, a Pew poll finds; in Hungary, 71% and in Bulgaria, 78%. By way of comparison, the figures in France and Britain are 76% and 70%, respectively.

In western Europe and America such anger at the ruling class has translated into votes for nationalists, populists, Brexit and Donald Trump. In Hungary and Poland those who feel left behind tend to blame liberalism and the West. Zsuzsanna Szelenyi, who was an anti-communist activist in Hungary in 1989, says that many of her compatriots were disappointed after the fall of communism because they expected their country "to become like Austria overnight". It did not, of course, but GDP per person, not to mention life expectancy, has risen sharply across the region.

Some people have done much better than others, and not all of them by fair means. Communist officials and securocrats who rebranded themselves as democrats had the education and connections to retain power, make money and profit from insider-dominated privatisations. The first president of post-communist Czechoslovakia in 1989 was Vaclav Havel, a dissident playwright. Today the prime minister of the Czech Republic is Andrej Babis, the second-richest man in the country and a former intelligence service collaborator.

The success of former communists has rankled. In some countries, populists have exploited this mood. Ardent supporters of Poland's ruling Law and Justice party did not celebrate the 30th anniversary this year of the country's first semi-free elections, which followed the demise of the Kremlin-backed communist dictatorship. The way they see it is that in 1989 "the pinkos struck a deal with the reds to keep the reds in power at the expense of the Polish people. Poland only became genuinely independent in 2015 when they were voted out and the true patriots [ie, Law and Justice] were voted in," sighs Konstanty Gebert, a former anti-communist activist. This is an odd way to describe Poland's rise to prosperity under a series of post-communist democratic governments.

In Hungary Viktor Orban, a revolutionary anti-communist turned populist prime minister, uses anti-Western rhetoric to win support. He talks of defending the common man, downtrodden by the arrogant liberal elite. Members of this elite imitate the West, which in turn looks down on eastern Europeans as country bumpkins, he suggests. The end of communism was a liberation, he says, but Hungary also needs a revival of nationalist and Christian values, which he says he is delivering. He rejects liberal notions of human rights, tolerance and consensus.

Different places, different values

Eastern Europe remains far less liberal than the west. Tolerance towards gay people is uneven, and has diminished since 2002 in several countries, polls suggest. The end of communism unleashed hostility to the region's large Roma minority, who remain almost completely unrepresented politically. Hungary's regime has undermined the institutions that are supposed to check it, such as the courts and the media. Poland's ruling party has tried to nobble the courts and the civil service.

Despite such setbacks, progress has been striking since communism ended. Eastern Europeans have never been as free or as rich as they are today. Some of the elderly grumble that life was more secure in the old days, but their memories may be tinged with regret that they are no longer as young as they were then. Historians will describe the communist era in Eastern Europe as four decades of servitude. ■

One of several velvet revolutions

Charlemagne | The magnetic field

Britain and the EU may remain closer than the Brexit mire suggests

LARGE, BLUE and furry, the bulging-eyed Brexit monster has been spooking Rotterdam for months. Launched ahead of Britain's scheduled exit from the EU in March, the monster is the mascot of government efforts to brace the Netherlands for the rupture. These have been especially intense at Europe's busiest port, which handles 40m tonnes of trade with Britain annually. Leaflets showing the monster blocking goods have been distributed to truckers as part of preparations that include creating giant lorry parks, hiring hundreds of staff and obliging firms to register their cargos. Thrice the Brexit monster has haunted the port. Thrice leaders in Brussels have agreed to delays as deadlock has dragged on in London. "Effective from today, the buffer parking locations for trucks will again be dismantled," announced managers, teeth almost audibly gritted, after the latest postponement on October 28th.

They are not the only ones to feel mucked around. The Dutch are traditionally among London's closest EU allies. Though distraught at the Brexit vote—many hoped that Britain would change its mind—they remained initially well-disposed. Your columnist accompanied Theresa May, then prime minister, on her inaugural trip to The Hague in 2016. "My new British colleague!" gushed Mark Rutte, the Dutch prime minister. "So happy to see you!" The goodwill and hopes for a friendly Brexit have since vanished. Earlier this year Mr Rutte compared Mrs May to the dismembered knight in a British comedy sketch who deludedly insists his injuries are "but a scratch". He seems to have little more respect for Boris Johnson. "He can hardly hide the fact he thinks the English are stupid," observes Theodor Holman, a Dutch commentator.

The EU is exasperated with Britain. The Brexit process has dragged on longer than expected and consumed time the EU needs for other things. Mr Rutte joined Emmanuel Macron last week in pushing for the next delay to be short and, ideally, final. Other leaders prevailed and Britain was given until the end of January. But patience is wearing thin across the union. On October 29th Donald Tusk, the outgoing president of the European Council, tweeted ominously: "The EU27 has formally adopted the extension. It may be the last one." A common refrain in The Hague and other capitals is that whatever the form of Brexit—soft, hard or no-deal—it would now be better to have done with it. Europeans hope that Britain's election in December will deliver this certainty and fret about another hung parliament or, later, a second Brexit referendum failing to deliver a clear majority for any one course.

"Good riddance" seems to be the prevailing continental mood. The EU is utterly fed up of the Brexit talks and has stuck to its tough and united line on Brexit; determined not to let Britain leave with a deal better than membership that could boost Eurosceptic populists elsewhere. Both of these things can give the impression that the union is resigned to a weakening of its links with Britain. But it is not. For the fundamentals go beyond the current political mire.

The Netherlands sums them up. The same Dutch officials who moan about Britain also miss its support as part of the EU's bloc of frugal, northern EU member states. The Dutch economy remains closely integrated with the British one, with big firms like Unilever and Shell spanning the North Sea and huge flows of goods and services between the coasts. Although the Netherlands benefits from the exodus of firms quitting London for cities like Amsterdam and Rotterdam, its leaders fret about the competitive threat of an offshore Britain that undercuts European regulatory standards. They also worry about a post-Brexit Britain's geopolitical divergence and the spectre of one of Europe's few serious security powers pivoting towards Donald Trump's America or China. "The Germans don't bring strategic focus, and the French are running their own show. There is no-one to fill the space left by the Brits," says Rem Korteweg of the Clingendael Institute. Similar concerns also bother European leaders elsewhere. Britain needs a friendly EU and the EU needs a friendly Britain.

Love the sinner, hate the sin

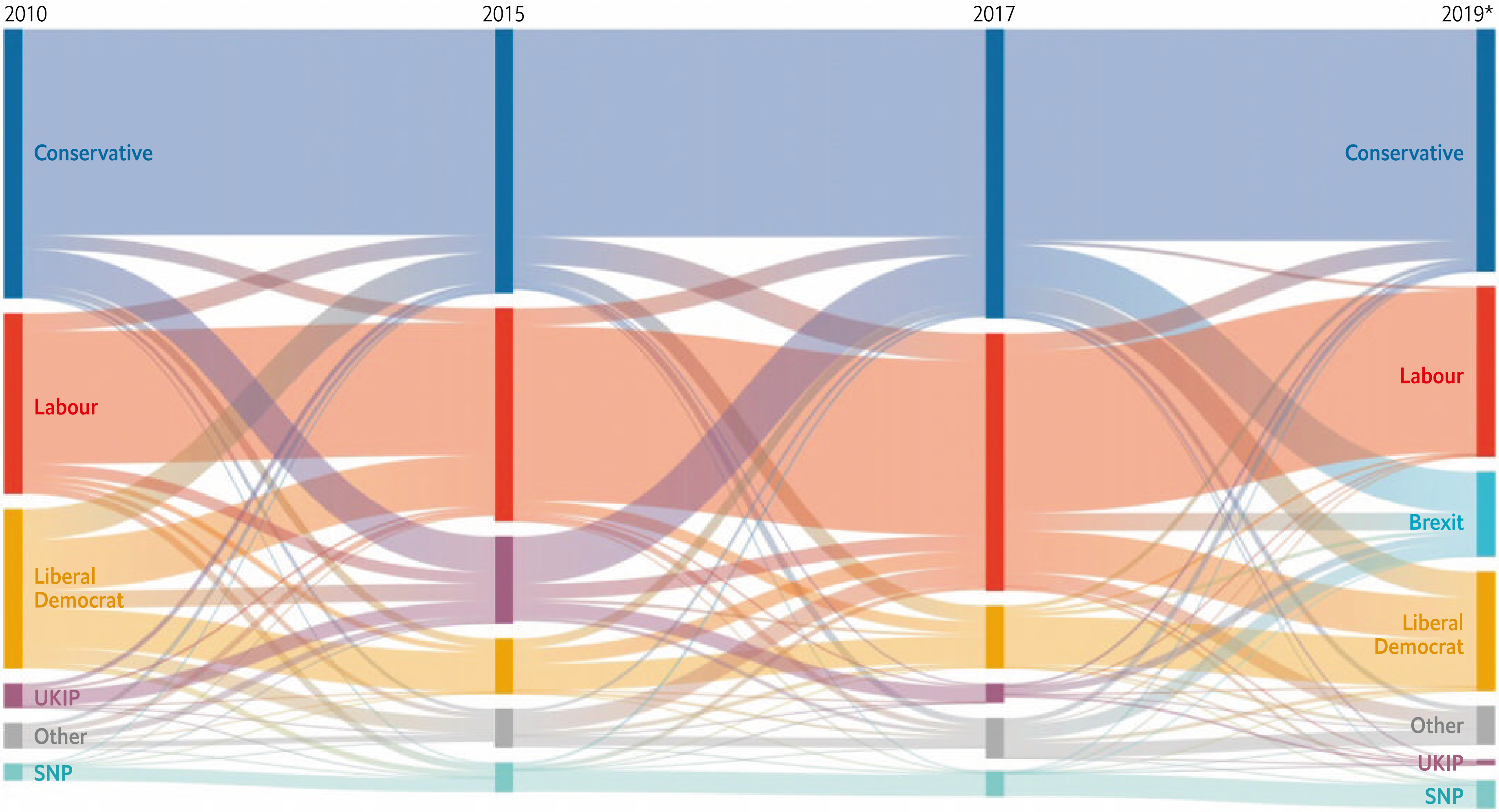
All of which points to four eventualities that are more likely than they look in the current tetchy cross-Channel political environment. First, as much fresh despair as a new British request to delay again in January would create, it is unlikely that the EU or any individual leader in it would want to be held responsible for a no-deal exit; the EU would probably approve a nerve-grinding fourth extension if the alternative were a disorderly departure. Second, the EU will do all it can in negotiations about its future relationship with Britain to keep ties close, adopting a highly conciliatory tone on security and defence co-operation in particular, and trying hard to prevent Britain from diverging far on regulation.

Third, for all the continentals' frustration and the Brexiteers' hopes of a British rapprochement with America, the two sides may be pushed back together if Mr Trump is re-elected. Finally, the EU's door will never be firmly closed to a Britain that changes its mind about Brexit—before or after its departure.

Taken together, these principles point to a conclusion as seemingly improbable as it is inexorable: the momentum does not necessarily favour divergence; perhaps quite the opposite. Britain and continental Europe may end up closer, in some form, in the future than looks likely now.

Which is not, by any means, to say that Brexit is a good idea. The forces of political, security and economic reality pushing Britain and continental Europe together are all arguments for Britain to stay in the club and pursue its interests from within. The painful and inconclusive Brexit process to date has only made those forces clearer; Brexit has been hard for a reason. Figures on both sides of the Channel—hard Brexiteers and continental Anglo-sceptics—may dream of a simple solution, of a "clean break" allowing both sides to get on and pursue their own separate paths. The reality was never that simple. It never will be. ■

Vote flows between 2010 and 2019



*Weighted average of selected October polls Sources: British Election Study; *The Economist*

The centre folds

The missing median voter

Tacking to the centre will do little good in the polarised coming election

"I MET A man polishing his Ford Sierra—self-employed electrician, dad always voted Labour," began Tony Blair when describing the type of voter Labour would be after, ahead of his 1997 general election victory. It was, Labour's thinking went, these middle-of-the-road voters—suburban carwashers in the West Midlands—who held the keys to Downing Street. Two decades later, political parties heading into the election on December 12th will find it much harder to identify the voters who will propel them to power.

For years, politicos held to the "median-voter theory" beloved by Mr Blair. The idea was that the party that focused on the concerns of the typical voter would triumph, while parties that catered to the fringe would be punished. In this world the centre did more than just hold: it ruled.

These laws of political science have since come crashing down. Since Brexit sliced through traditional political alliances, politics has become less of a simple matter of left versus right. Parties hammering out manifestos and preparing leaflets for swing seats are thus grappling with "Schrödinger's median voter", argues Marcus Roberts, a pollster at YouGov: they are unsure whether this mythical figure is alive or dead.

If Brexit dominates the coming election, the median voter will be no more. When it comes to leaving the European Union, voters have polarised. There is little sign of compromise between the Remain and Leave camps. Fishing in the gap between these two pools of votes will land few votes, points out Chris Prosser of the University of Manchester. When elections are fought on economic issues, between left and right, political parties can pick a point in the middle and not go far wrong. By contrast, "identity politics do not have give and take," says Geoffrey Evans of Oxford University. It is relatively easy to compromise on, say, the level of tax. It is harder to do so on notions such as sovereignty.

As voters are polarising, so are MPs. More than 50 are preparing to stand down in December, including many Tory former Remainers. Most of their successors will be fully paid-up Leavers.

This division of politics into two opposing camps has been dubbed Ulsterisation. In Northern Ireland, most people vote along sectarian lines. Irish nationalists will not carefully weigh up the economic policy of the Democratic Unionist Party before casting their vote. Nor will ardent unionists consider the merits of Sinn Fein's social policy. If Brexit divisions persist, British politics could start looking more Northern Irish, with Remain and Leave the new sectarian divide (Remainers have already discovered a love of marches).

Smaller parties have seized on this strategy. The Liberal Democrats are standing on a policy of revoking Article 50 and cancelling Brexit altogether. At the other end of the political see-saw sits the Brexit ▸▸

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Party, which has pledged to quit the EU without a deal.

In a Brexit-dominated election, few swing voters will switch between these two opposing groups. But plenty of switching could go on within them, says Chris Hanretty of Royal Holloway, University of London. Recent years have seen unprecedented political promiscuity, as Remainers have joined the Lib Dems and Leavers the Brexit Party (see chart on previous page). In this sense, the median voters have not disappeared, but fragmented: parties can still chase the centre ground, but only within the confines of their own sectarian group of Remainers or Leavers.

Not all are convinced that Brexit identities are here to stay. British politics has been marked by extreme volatility of late. Only half of voters backed the same party in the three elections between 2010 and 2017, according to the British Election Study. It is not inevitable, then, that Brexit will be the issue that cements hitherto floating voters into one part of the political spectrum, argues Mr Roberts of YouGov. Talk of an election has already led to a sharp drop in voters highlighting Brexit as the main issue facing Britain, with other topics, such as the health service, rising in salience.

Others think the median voter has not gone missing but is simply being misidentified. Labour has stopped triangulating on the economy, instead leaping leftward with promises of a much bigger state (see Briefing). The party's bet is that the median voter is in fact perfectly happy with its left-wing economic policy.

The Tories have taken a similar approach to social issues. A reluctance to compromise runs through their policies on law and order, which are unapologetically illiberal. The party is betting that the median voter is alive and well, and simply more socially conservative than previously thought. What looks like a failure of median-voter theory is often a failure of commentators to spot where the true median lies, argues James Morris, another pollster.

Despite their sketchy record on the topic, wonks are still on the hunt for the new Mr Median. Past elections have seen parties target archetypes such as "Mondeo Man", "Worcester Woman" and "Pebbledash People". The 2019 contest has already coughed up "Workington Man", a rugby-league-loving, Leave-voting northerner who, by coincidence, holds many of the same views as Onward, the Tory think-tank that discovered him. Perhaps Workington Man will yet hold the balance of power. But in the polarised campaign ahead, parties seem more intent on rallying their own side than on venturing into the increasingly treacherous middle ground. ■

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Brexit and the election

Of deadlines and cliff edges

Brexit is put off yet again. But the risk of no-deal has not gone away

IT WAS A target date to meet, "do or die". Yet though Boris Johnson said he would rather be dead in a ditch than extend the October 31st Brexit deadline, this week he endorsed an EU decision to push the date back to January 31st 2020. The focus on the election called for December 12th may have disguised this humiliating climbdown, but it is sure to be highlighted by opponents in the campaign.

For all the government's (now paused) £100m ($120m) publicity campaign to prepare for Brexit on October 31st, it has been clear for weeks that postponement was likely. Mr Johnson surprised many by securing a new deal on October 17th. But the chances of its being ratified in time for an orderly Brexit at the end of the month were always small. Indeed, Labour's leader, Jeremy Corbyn, refused to back an election because of the risk of no-deal if there were no extension. Only with no-deal off the table did he deem an election acceptable.

The EU's decision was motivated in part by the likelihood of such an election. Yet the new deadline is uncomfortably close. Despite winning parliamentary approval on October 22nd for the second reading of a new withdrawal agreement bill by fully 30 votes, Mr Johnson chose to pull the legislation in favour of his early election. Yet when the new parliament meets shortly before Christmas there will be barely 20 sitting days left to get the bill through before January 31st.

What happens will depend, of course, on the result. If Mr Johnson wins a majority, he will push ahead quickly with the bill. But if his majority is small, he may still run into difficulties, especially with possible substantive amendments. It is worth recalling that in October 1971, MPs voted by a majority of 112 to approve the principle of joining what became the EU. Yet less than four months later the margin for the subsequent European Communities Act had shrunk to eight votes.

If Mr Johnson does not win a majority, the withdrawal agreement presumably falls. Labour wants to renegotiate his deal and put it to the people in a new referendum, with Remain as an option on the ballot. The Liberal Democrats propose simply to revoke the Article 50 Brexit request, though they would be likely to support a referendum if they cannot achieve this. So would most other small parties.

Yet although an election that does not produce a Tory majority is now the clearest route to a second referendum, it is hardcore Remainers who seem most glum. Their expectation that Mr Johnson would find it impossible to get a new Brexit deal has been dashed. So have their hopes of getting a "People's Vote" before an election. It was fitting that the campaign for such a vote chose this week to indulge in a bout of bloodletting and sackings redolent of the splits in Monty Python's "Life of Brian" between the different factions fighting for the liberation of the people of Judea.

The bigger point about Brexit is that, contrary to Mr Corbyn's claim, no-deal is not off the table. It is not just that the January 31st deadline, which the EU will be reluctant to extend again, is close. It is also that, even if the withdrawal agreement bill becomes law, new deadlines will loom. Talks on a future trade relationship with the EU cannot realistically begin until March. Such a complex trade negotiation usually takes many years. And since it will no longer be conducted as part of the Article 50 divorce, but rather under Article 218, any deal will have to be ratified by all EU national and several regional parliaments, including Wallonia's.

It looks highly unrealistic to expect this to be done by the end of the transition period, which broadly freezes the status quo, in December 2020. That period can be extended to December 2022, but a request to do this must be made before July 1st. So within a few months, the prime minister will again face a familiar, agonising choice: does he ask for an extension of the deadline, or does he let Britain leave the EU with no deal at the end of 2020? Mr Johnson makes much of his promise to "get Brexit done" after the election. Yet for most of 2020 Brexit will remain top of the political agenda, no matter who wins. ■

People's Front of Remain

Economic growth and the election

The zombie economy

Britain's economy is holding up well—for now

IN "RESIDENT EVIL 2", a horror video-game released earlier this year, shooting a zombie does not necessarily kill it. Even after a headshot, the beast may continue to lumber forward in pursuit of the player's brains. The British economy has behaved in a similar fashion since the Brexit referendum of 2016. Many pundits had predicted that the uncertainty caused by the vote to leave would send Britain into recession, with unemployment shooting up and wages collapsing. But the economy has plodded on. That will work to the advantage of the incumbent Conservative Party at the election on December 12th.

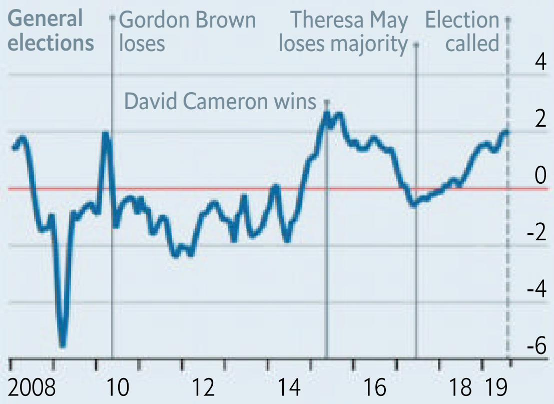
Smoothing through quarterly data, since the referendum the economy has grown at a quarterly rate of about 0.4% (1.5% on an annualised basis). That is far from impressive by historical standards. Surprisingly enough, however, it is about as fast as the average growth rate across the G7 over the period; President Donald Trump's trade war has dented global economic growth. And Britain's labour market has strengthened. The unemployment rate has continued to decline, and now sits around a four-decade low of under 4%. The share of GDP accruing to workers in the form of wages, salaries and employment-related benefits is edging up.

Two main factors are responsible for this slow but steady performance. For much of the post-referendum period consumers have been doggedly upbeat. Analysis last year from economists at the Bank of England suggested that, since the referendum, spending by Leave voters had grown more quickly than that of Remainers. The tight labour market has supported consumption spending. So has borrowing. Since the referendum, credit-card debt has grown by about 8% a year, a high rate by post-crisis standards. In early 2017 households' savings ratio (ie, the share of their disposable income which they were setting aside) fell to its lowest level since 1963.

It's the economy, stupid

Britain, real wages, whole economy

% change on a year earlier



Source: ONS

In recent months growth in consumption spending has slowed—perhaps households became nervous as Brexit day appeared to be just around the corner. Yet another source of demand has taken its place. Breaking from its deserved reputation for fiscal austerity, the Conservative government has turned on the spending taps. A spending review in September promised £13bn ($16.7bn, or 0.6% of GDP) of extra funding for public services and investment. In July doctors and dentists got an above-inflation pay rise. A four-year cash-terms freeze on most working-age benefits will end in April. The budget deficit (ie, the difference between tax receipts and government spending) is once again increasing, having been on a downward path since 2010.

The rise in living standards comes at a useful time for Boris Johnson, the prime minister. In Britain's three most recent general elections, incumbents did well when real wages were rising smartly, and badly when they were not (see chart). With hindsight, it is clear that Theresa May picked pretty much the worst possible time to go to the polls: in June 2017, the month her snap election was held, real wages fell by 0.5%, largely the result of higher consumer-price inflation caused by the depreciation of the pound. This time, by contrast, Labour's contention that the British economy needs a complete overhaul may seem less compelling.

I will feast on your Keynes

Like a wounded zombie, however, the British economy has not escaped unscathed. One paper from academics at Cambridge University suggests that uncertainty over trade policy has dented export prospects. Fearful of future tariffs on exports, many firms have pulled back from supplying foreign markets. That in part explains why, despite the fall in the value of the pound, which should make Britain's wares more competitive in foreign markets, there is little sign of an export boom. Meanwhile, recent research from Nick Bloom of Stanford University, and colleagues, suggests that Brexit-related uncertainty has held back business investment—which, in real terms, is no higher than it was at the time of the referendum.

Low levels of capital spending by firms will weigh on Britain's productivity, which already has barely grown in the past decade. That will hold back increases in real wages. And the drag from Brexit will become much more noticeable when it actually happens. Over the long run Mr Johnson's Brexit deal would reduce incomes by about 6% compared with what they would otherwise have been—only a marginally better outcome than the estimated cost of leaving the EU with no deal at all. The paradox of the forthcoming election is that the prime minister is likely to reap the rewards of an unexpectedly strong economy, even as he promises to hobble it. ■

Bagehot | The four faces of Boris Johnson

Player, gambler, Machiavelli or piglet?

Boris Johnson at last has his rendezvous with the great British public. Mr Johnson was installed in Downing Street in July by an electorate of just 160,000 Conservative Party members. Now he has to prove himself before a larger and more critical audience. This audience will be bombarded with promises and propaganda over the next six weeks. But Mr Johnson's unusual probationary period in Downing Street gives them a chance to judge him by his record. What have we learned about the prime minister's political character and leadership style so far?

One thing is certain: he has defied expectations, both positive and negative. Mr Johnson was frequently presented as a jovial figure—a clown or Bertie Wooster-style buffoon. He liked to make people laugh. He laced his language with eccentric phrases. He created an impression of affable disorganisation. But though he can still make people smile, he is much more focused and disciplined than anyone expected. The iron has entered his soul.

A more appropriate image than a clown is that of a rugby captain. A fan of the game, who played for his college at Oxford, the stockily built Mr Johnson has brought many of the techniques of the sport to the political field. He has demonstrated a single-mindedness: everything he does is about getting the ball over the line. He has shown no hesitation about altering the composition of his team according to his changing game plan, kicking 21 Tories out of the party when they defied him and then re-admitting ten of them when the general election knocked. And he has kept his eye on the clock, using timetables and deadlines to keep the game moving—though he must regret installing "Brexit clocks" in both Downing Street and Conservative Party headquarters set to hit zero on October 31st, a deadline that he has now missed.

More recently Mr Johnson has applied the same drive that he applied to Brexit to securing a general election, fixating on a particular date (December 12th) and threatening to go on strike if the opposition parties didn't bend to his will. This has produced some criticism about moving the goal posts. Philip Hammond, a former chancellor, accused Mr Johnson of "blocking Brexit" in order to pursue a wider objective of shifting the Tory party to the right. That is not quite right. Mr Johnson calculates that he can't get his Brexit deal through the current House of Commons without endless amendments and delays. He also realises that his deal is only the opening salvo in prolonged negotiations which will shape what sort of Brexit Britain ends up with.

A second image is that of a greased piglet. This comes courtesy of David Cameron, Mr Johnson's junior at Eton by two years and senior in Downing Street by nine, who recently told an audience in Yorkshire that "the thing about the greased piglet is that he manages to slip through other people's hands where mere mortals fail." Mr Johnson has broken an ever-lengthening list of pledges. He pledged to deliver Brexit "do or die" by October 31st, only to discover that he couldn't. He promised to be "dead in a ditch" rather than send a letter asking for an extension, only to send exactly such a letter. He so alienated his colleagues that he reduced his majority from plus one to minus 45. But the grease works. Mr Johnson either wriggles through loopholes (for example, by refusing to sign said letter) or else shifts the blame expertly to anyone but himself. "It's Parliament's fault, it's the opposition's fault, it's the Benn act, it's Germany, it's Ireland," proclaimed an exasperated Sir Keir Starmer, Labour's Brexit spokesman, trying to define the prime minister's slippery style.

The third image is that of Machiavelli. Mr Johnson employs all the great Florentine's tactics. He treats his opponents as enemies of the people. He throws his allies under the bus as soon as they cease to be useful (the decision to sacrifice the Tories' long-standing ally, the Democratic Unionist Party, in order to solve the problem on the Irish border will go down in the annals of realpolitik). He uses his clown's mask to great effect to conceal his Machiavellian side, saying toxic things one moment and telling a good joke the next. He breaks the rules of politics in ways that shock old hands such as Sir John Major. He persuaded the queen to prorogue Parliament on spurious grounds and was subsequently slapped down by the Supreme Court. And he employs a hatchet man in the form of Dominic Cummings, his chief adviser, who happily takes the blame for some of Downing Street's more extreme moves. Mr Cummings's enthusiasm for using privileged briefings in order to turn the press corps into an amplifier has aroused the ire of one of Fleet Street's most experienced journalists, Peter Oborne, who wrote a furious article arguing that Downing Street is filling the press with lies, smears and character assassinations. The Downing Street machine continues with business as usual while Mr Oborne has given up his political column in the *Daily Mail*.

Double or nothing

The last image is that of the gambler. Mr Johnson has spent his career making lucky bets—lucky for him, that is, not the rest of the country. He made his career as a journalist betting that the public wanted bureaucracy-bashing stories from Brussels, rather than the usual dutiful fare. He became prime minister by betting on Leave. Now he is making yet another gamble, which may free him from today's imprisonment by Parliament but could easily install Labour's socialist leader, Jeremy Corbyn, in Downing Street. The Tories go into this election facing big losses in Scotland and the Remain-voting south of England. They have to overcome powerful tribal ties to Labour in Wales, the Midlands and the north in order to make up for these losses. Moreover, Labour is a much more impressive electoral machine than most Tories seem to think. Mr Corbyn already has a new spring in his step and the party is bombarding the internet with clever ads. Even the luckiest of gamblers sometimes loses—and even the greasiest of piglets sometimes ends up in the abattoir. ■

Islamic State

Decapitated, not defeated

ISTANBUL AND RIYADH

Abu Bakr al-Baghdadi is dead, but his ultra-violent jihadist group lives on

As its so-called caliphate expanded across Syria and Iraq, Islamic State (IS) promised its followers an apocalyptic battle to come. Eager jihadist propagandists predicted that a final victory over the "crusader armies" would usher in the day of judgment and give birth to a new world. The man who was to lead that battle, the self-proclaimed caliph, Abu Bakr al-Baghdadi, instead blew himself up in a tunnel in Syria on October 26th, murdering two of his own children as he died.

His suicide, to avoid capture by American forces, marks the end of an era for IS. The group once held sway over millions of Syrians and Iraqis in an area the size of Britain. It had already lost its territory, clawed back at staggering cost by a mix of American air power, Syrian militiamen and Iraqi troops. Now it has lost its leader as well.

Yet this does not mark the end of IS. The group endures as a low-level insurgency in parts of Syria and Iraq, carrying out attacks (see map on next page) and preying on civilians to fund its operations. It has also diversified, with a string of *wilayats* (provinces) around the world. Though it may never again hold so much territory, it will remain a threat. And the conditions that allowed it to rise—a region of corrupt, sectarian and ineffective governments that lord over poor, alienated populations—have, if anything, grown worse.

Mr Baghdadi kept a low profile (see Obituary). After he ascended the pulpit of a Mosul mosque in 2014 to declare a caliphate, he would not be seen in public for five years. Charisma mattered less than ambition. Even Osama bin Laden, the former leader of al-Qaeda, thought it premature to establish a caliphate. By taking advantage of the chaos of Syria's civil war to seize territory, Mr Baghdadi made his movement influential enough to draw tens of thousands of followers from around the world (some of whom, allegedly, are pictured above in a Syrian prison).

His death will disrupt IS, but perhaps not for long. In a forthcoming book Jenna Jordan of the Georgia Institute of Technology examines over 1,000 cases involving the killing or capture of leaders of terrorist or insurgent groups. She says three factors contribute to a group's resilience afterwards: its degree of bureaucracy, ability to draw on local resources and ideological zeal. These qualities ensure that its mission does not depend on a single leader.

IS ranks highly on all three. It has kept meticulous records and exported its procedures to international franchises that can apply them independently. Though it no longer pulls in $1m a day, as it once did, it still has deep pockets, and is likely to benefit from local Sunni disaffection in Syria, as Bashar al-Assad's reviled forces fill the vacuum left by President Donald Trump's retreat. Its ideological purity resonates independently of Mr Baghdadi. As a result, IS "should ultimately choose a successor easily and recover quickly," says Ms Jordan. Indeed, it has proved its resilience before. Mr Baghdadi rose to the top because two predecessors were killed in American strikes in 2006 and 2010.

It is unclear who might succeed him. The group has yet to acknowledge his death on social-media channels used by followers. Most of his lieutenants are shrouded in secrecy. One of them, Abu al-Hassan al-Muhajir, the group's spokesman, can be ruled out as a candidate: he was killed in a separate raid the following day.

Regardless of who leads it, IS is keen to rebuild, which might explain why Mr Baghdadi died in Idlib, far from his former redoubt in north-east Syria and western Iraq. In theory this was inhospitable ground. The province is a frequent target of Syrian and Russian air strikes and is dominated by Hayat Tahrir al-Sham (HTS), a former affiliate of al-Qaeda which is opposed to IS.

But Idlib is also home to Hurras al-Din, a more radical splinter of HTS still loyal to al-Qaeda. Mr Baghdadi was found in an area controlled by the group, in the house of one of its leaders. Some reports suggest that his host was an IS agent, but several experts raise another intriguing possibility: that Mr Baghdadi was exploring a rapprochement with al-Qaeda, from which IS acrimoniously split in 2013. A detente between the two titans of global terrorism would cause a serious headache for counter-terrorism officials around the world.

IS already has a presence far beyond Syria and Iraq. Its franchises remain a threat, despite a slowing in the pace of their attacks in 2018. Islamic State Khorasan has entrenched itself in eastern Afghanistan. It conducted more suicide-bombings than the Taliban in 2018, despite losing more than 50 senior leaders in the past few years. The IS branch in northern Nigeria, which split from Boko Haram, is becoming steadily more powerful. And since 2018 there have been 11 IS suicide bombings in Indonesia and six in the Philippines, including one that killed 23 worshippers in January.

Turkey fears it may be a target for immediate retaliation. This spring the interior minister remarked that IS activity was higher than at any time in nearly three years. "The longer they fail to stage attacks, the more desperate they are to do so," says a security official. Within days of Mr Baghdadi's death, dozens of alleged IS sympathisers were detained, including three men suspected of planning a big attack in Istanbul on October 29th, a national holiday.

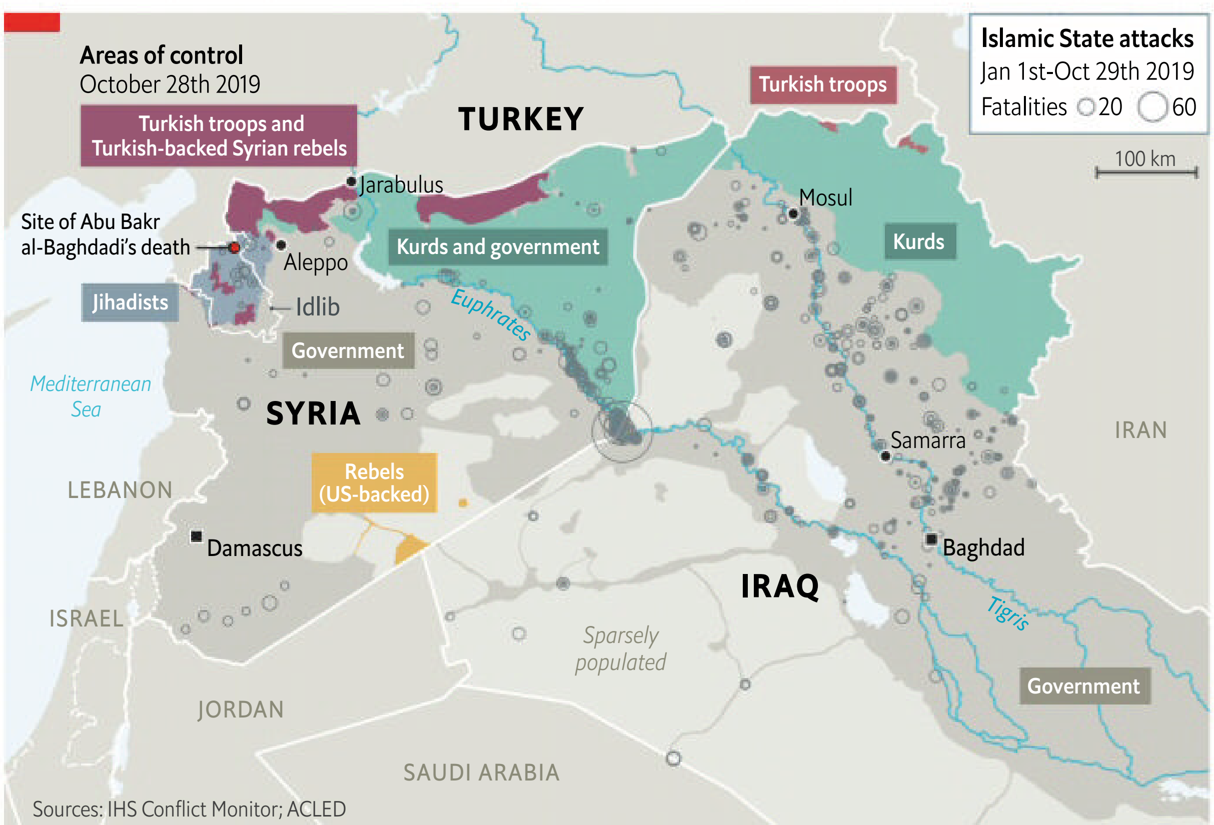
Yet the raid that killed Mr Baghdadi took place just a few kilometres from the Turkish border, in a part of Syria crawling with Turkish informers and dotted with Turkish army posts. Mr Muhajir was found in Jarabulus, within a Syrian "safe zone" that Turkey established in 2016. The presence of IS leaders on Turkey's doorstep points to an embarrassing lapse in intelligence.

Although Mr Trump thanked Turkey for its help, officials in Ankara made only a few vague statements about their role. A source close to the Turkish army says "no intelligence or military co-operation" took place between America and Turkey. The Americans gave notice only to avoid conflict with the Turkish army. That American commandos embarked from northern Iraq, 700km from their target, instead of an airbase in southern Turkey, is a sign of how frosty relations are between the two NATO allies.

The raid came just weeks after Mr Trump withdrew American troops from north-east Syria, clearing the way for Turkey to invade and rout the People's Protection Units (YPG), a Kurdish-led militia that fought IS alongside the Americans. His order left the region to be carved up by Turkey, Russia, and Mr Assad's regime. And it reportedly imperilled the Baghdadi operation, which relied on Kurdish assistance.

The withdrawal has since been partially reversed. America now says it will leave troops in eastern Syria and will even send tanks to prevent IS from seizing oilfields, once a key source of revenue. But the group is in no position to do so. More likely the Americans intend to stop Mr Assad from tapping his own oil, an objective that is both strategically and legally dubious.

It is confusion, not a successful commando raid, that will be Mr Trump's legacy in Syria. The mission relied on having American troops in the region, which he is withdrawing; working with allies, whom he disparages; and relying on intelligence agencies, which he derides. When Mr Baghdadi's successor emerges, America will be ill-placed to deal with him. ■



Sources: IHS Conflict Monitor; ACLED

Lebanon's crisis

A Saad ending

The prime minister's resignation is unlikely to satisfy protesters

AFTER NEARLY two weeks of nationwide protests, the demonstrators in Lebanon claimed their first scalp. On October 29th the prime minister, Saad Hariri, said he had reached a "dead end" trying to deal with their demands over corruption and the stagnant economy. A package of meagre reforms, announced on October 21st, satisfied no one. So Mr Hariri said he was stepping down, along with his government. "It has become necessary for us to make a great shock to fix the crisis," he said. Upon hearing the news, protesters in Beirut broke into applause.

Mr Hariri's government had struggled to perform the most basic tasks, such as providing 24-hour electricity or drinkable water. Internet connections in Lebanon are among the world's slowest. Rubbish often piles up in the streets, or is dumped in the Mediterranean. After the government in mid-October proposed to tax calls made via WhatsApp, a messaging service, public anger erupted. As many as 1m people have joined the protests, in a country with fewer than 5m citizens. Mr Hariri's departure is unlikely to persuade the demonstrators to end their campaign.

A rotten political system is at the heart of Lebanon's problems. The agreement that ended the country's 15-year civil war in 1990 created a complex power-sharing arrangement that remains in place today. Government posts and public-sector jobs are divvied up among Sunnis, Shias and Christians—regardless of merit. Former warlords still hold sway, hogging government contracts. Some people fear that the resignation of Mr Hariri, a Sunni, will merely contribute to rising sectarian tensions. Michel Aoun, a doddering Christian, remains president; Nabih Berri, a Shia, is speaker of parliament.

Both men are allied to Lebanon's strongest power-broker, Hassan Nasrallah, who leads Hizbullah, a Shia militia-cum-political-party backed by Iran. Many blame it for aggravating the crisis. The resignation of Mr Hariri leaves it more exposed. But rather than come up with solutions, Mr Nasrallah has denounced the protests as an Israeli and American plot. Shortly before Mr Hariri tendered his resignation, bully boys clad in black and answering to Mr Nasrallah stormed Beirut's Martyrs' Square, the centre of the protests. "Shia, Shia," they chanted as they beat protesters. Riot police watched. "The security forces don't want to ▸▸

deal with the protests formally, so they do it informally, with thugs," says Ali Hashem, a Lebanese commentator.

Despite such provocations, the protests so far have been remarkably peaceful and non-sectarian. On October 27th hundreds of thousands of people formed a chain stretching from Sidon in the south to Akkar in the north. Demonstrators have staged raves in city squares and made Beethoven's "Ode to Joy" their anthem. But they are also leaderless and lack clear goals. Some want a secular parliament in which MPs are individually elected, rather than through sectarian lists, as under the current system. Others fear that, given the numerical superiority of Shias, such reforms would simply entrench Hizbullah in power.

A day before Mr Hariri resigned, Riad Salameh, the veteran central-bank governor, said Lebanon needed a political solution to avert an economic collapse. Banks have been closed for over a week, leading to fears of a run when they reopen. Meanwhile the protesters are growing tired and more concerned about their safety, says an organiser. Faced with the prospect of Hizbullah taking over the government, some may prefer sticking with the old political class, even Mr Hariri (who has been asked to stay on as a caretaker prime minister). Western powers might be convinced to release long-promised loans. None of that, though, would solve Lebanon's deep structural problems. ■

Burning with rage in Baghdad

Iraq's crisis

A bloody mess

Another Arab prime minister looks set to fall, as protests continue in Iraq

If it were not for the flags being waved, it would be difficult to tell the difference between the protests in Lebanon and those in Iraq. In Baghdad, as in Beirut, masses of people have taken to the streets, angry over corruption, poor governance and a lack of jobs. Thousands have also come out in cities such as Basra and Karbala in Iraq's Shia south, the government's heartland. But unlike in Lebanon (so far), the protests in Iraq have been met with extreme violence. At least 250 people have been killed by the authorities and their allied militias since the turmoil began on October 1st.

It looks as if Adel Abdul-Mahdi, Iraq's prime minister, may suffer the same fate as his Lebanese counterpart, Saad Hariri, who stepped down on October 29th. Mr Abdul-Mahdi came to power after elections last year produced a political deadlock. He was the compromise candidate of Muqtada al-Sadr, a firebrand cleric who leads parliament's largest bloc, and Hadi al-Amiri, who heads an alliance of Iranian-backed Shia militias. But Mr Sadr has now abandoned him and Mr Amiri is wavering.

His removal is unlikely to satisfy the protesters. Most see him as a puppet of the politicians who have plundered Iraq. Even after the jihadists of Islamic State were pushed off their territory two years ago, the government dithered over rebuilding. The people have benefited little from record oil production. About a fifth of the population is poor. But instead of helping them, politicians enrich themselves and their militias.

Much of the public's anger has focused on those militias and their patron, Iran (which calls the protests an act of sedition). In the holy city of Karbala protesters tore down posters of Ayatollah Ali Khamenei, Iran's supreme leader, and burnt the Iranian consulate. A mob in Amarah lynched the local commander of Asaib Ahl al-Haq, a militia that considers Mr Khamenei its leader. And in Kut protesters torched the home of Qasim al-Araji, a prominent member of Mr Amiri's alliance.

Militia commanders vowed revenge. On October 27th Abu Mahdi al-Muhandes, the deputy head of the Hashd al-Shaabi, an umbrella group of government-funded militias, ordered his men to "stand against discord". The next day his followers opened fire on protesters in Karbala. Between 14 and 30 people were reportedly killed. The authorities say no one died.

In the past Mr Sadr championed protests. But this time his efforts to co-opt them have failed. When he drove to a rally in his hometown of Najaf, protesters would not let him out of his car. More senior clerics also seem to be losing their sway. Grand Ayatollah Ali al-Sistani has called for restraint on both sides. But some criticise him for helping bring to power the parties responsible for misgoverning Iraq.

The authorities have re-raised the concrete barriers around Baghdad's Green Zone, the seat of government. Inside, some favour an even more forceful response to the unrest and want Mr Abdul-Mahdi to take the rap until the bloodshed is over. Others have begun squabbling over who gets what once the prime minister goes.

Outside, the protesters are becoming more angry, more confident and more numerous. Some observers fear they will take down the whole political system. What they want to replace it with is unclear. ■

Breaking Bissau

Coups, drugs and party finance

BISSAU

Africa's most famous narco-state goes to the polls

Near the port of Bissau, the capital of Guinea-Bissau, one of Africa's smallest states, is a neglected monument to past rebellion. A giant fist of black steel commemorates striking dockers gunned down by Portuguese soldiers in 1959. The strike—and subsequent massacre—helped start a war for independence led by the African Party for the Independence of Guinea and Cape Verde (PAIGC), a Soviet-sponsored guerrilla movement. It took power in 1974 when Portugal's dictatorship fell.

For much of the nearly 50 years since, the main problem in Guinea-Bissau has been the PAIGC. Presidential elections are due on November 24th. On October 29th the president, José Mário Vaz, sacked his government and appointed a new prime minister, though the dismissed one, Aristides Gomes, refused to leave office. If he does, it will bring to eight the number of prime ministers since Mr Vaz won the presidential election in 2014. Despite huge amounts of support, including a sizeable UN mission, Guinea-Bissau, a country of 1.8m people dependent mostly on the export of cashew nuts for foreign exchange, cannot seem to produce even a vaguely capable government. It is a lesson in the difficulty of changing deep-rooted systems of corrupt politics in weak states.

PAIGC resembles less a political party than an extended family fighting over a shrinking inheritance. In the past coups were incredibly common—the country has had at least a dozen attempts, with the latest successful one in 2012. Another one seems less likely now, thanks to the presence of peacekeepers from other West African countries. But political strife continues nonetheless. For the past four years Mr Vaz, a member of PAIGC, has refused to accept the prime minister appointed by PAIGC members in parliament, instead preferring to rule on his own. In the presidential election Mr Vaz will face off against Domingos Simões Pereira, one of the thwarted prime ministers, as well as against another former PAIGC prime minister, Carlos Domingos Gomes Júnior, and nine other independent candidates.

The PAIGC's infighting has been compounded by a reliance on corruption to fund politics. Most prominently that has involved state complicity in cocaine trafficking from South America through to Europe. More than a decade ago Guinea-Bissau was named a "narco state" by UN officials because of how deeply drugs traffickers had penetrated its government. João Bernardo "Nino" Vieira, the longest serving president, was assassinated in 2009 in a feud seemingly linked to drugs trafficking. In September almost two tonnes of cocaine were seized by the judiciary police. That followed a seizure of around 800kg in March, just before legislative elections. It is all but certain that the shipments were being protected by a local political faction. It is also plausible that the traffickers were betrayed by a rival one.

The presidential election seems unlikely to fix the crisis. Indeed, it may be making things worse. On October 26th a protester was killed by police during a demonstration against the election roll, which non-PAIGC candidates say has been manipulated to benefit the party. What little money the state has is being looted to buy influence in the power struggle within the PAIGC. Government salaries go unpaid, says Amadu Djamanca, who runs the Observatory of Democracy and Governance, a local NGO. The cashew industry is being crushed by an export tax that is intended to fund investment in infrastructure—though the money raised has gone missing. Whatever happens, ordinary citizens seem sure to suffer. ■

Ethiopia

The clash of nationalisms

ADAMA

Ethnic violence threatens to tear Ethiopia apart

EVERY WINDOW of the factory on the outskirts of Adama is smashed. On the side of the road are the scorched remains of a bus and lorries torched by angry young men last week. This scene of mob violence, just 75km from Addis Ababa, the capital, is one that is becoming wearily familiar to many Ethiopians.

The democratic revolution kick-started by Abiy Ahmed, the prime minister, last year has long been bittersweet. The government released tens of thousands of political prisoners, welcomed back exiled opponents and promised free and fair elections in 2020. Last month Abiy won a Nobel peace prize, for helping end a decades-long conflict with neighbouring Eritrea. But his efforts to put his own country on a more liberal path have been marred by rising violence and ethnic tensions. The latest killings suggest it is the transition's darker side that is ascendant.

The violence started on October 23rd after hundreds of young men gathered outside the residence of Jawar Mohammed, a controversial activist who returned to Ethiopia last year at Abiy's invitation. Both men are Oromos, Ethiopia's largest ethnic group, and are popular in the region. But Jawar's supporters, a youth group known as the "Qeerroo", took to the streets of Addis Ababa and other towns after their leader said he faced a state-orchestrated attempt on his life. In a post shared with his 1.75m Facebook followers he said police had tried to remove his government security detail in the dead of night. They had resisted.

What followed was reminiscent of protests in Oromia that helped to propel Abiy to power. Groups of Qeerroo burned tyres and blocked roads into the capital. They

marched, carrying sticks and chanting in support of Jawar. Shops and businesses shut. Copies of Abiy's new book, which preaches national unity, were set alight.

It soon took a nastier turn. In Adama, groups of mostly Amhara men (the second largest ethnicity) confronted the Qeerroo. Clashes broke out. Vehicles, shops and businesses were burned. At least 16 people died. Most were stoned to death. Near Addis Ababa non-Oromo were killed in unprovoked attacks.

Spreading violence may now have claimed as many as 80 lives, says Ethiopia's human rights commissioner. Some died in attacks on churches and mosques, in a worrying sign that ethnic conflicts risk turning into religious ones, too.

Underlying the unrest are two trends. The first is an intra-Oromo power struggle embodied in the rivalry between Jawar and Abiy. Jawar, who says he may run in next year's election, has loudly criticised the prime minister's plan to form a national party to replace Ethiopia's ruling multi-ethnic coalition. On October 22nd Abiy implicitly threatened his younger rival, saying he would "take measures" against media owners with foreign passports (Jawar is an American citizen) if they fan instability. Many Oromos are also angry that Abiy has not met their demands, which include making Afan Oromo an official language of the federal government. "The government hasn't done anything for the Qeerroo," complains a young man in Adama.

The second cause is competition between Oromos and Amharas. Since 1995, when the current constitution established nine ethnically based regions, politics has been a battleground between rival nationalisms. For much of the past three decades the Tigrayans, who are about 6% of the population, ran the show.

Now Oromos are in charge, which has triggered a backlash among Amharic-speakers and some minorities who fear that the Oromo nationalism espoused by Jawar and his followers could lead to marginalisation. Towns in Oromia with large Amharic-speaking populations including Adama and Addis Ababa are especially volatile. Even officials there use dog-whistle terms such as *neftegna* ("gun-carrier") when talking about Amharic-speakers. In Adama both sides say that they are arming themselves in self-defence.

For several days Abiy was silent in the face of chaos. Since then he has promised to "weed out" perpetrators. Ending impunity for killers is essential. But so, too, are talks to defuse tensions, both within Oromo politics and between the ethnic regions. Jawar says he has asked Abiy to organise a "national convention" to forge a compromise. With elections fast approaching it is a request the prime minister would be wise to answer. ■

Also in this section

The economy

Easy now

WASHINGTON, DC

America's economy is resisting the pull of recession

THIS WAS not the way it was supposed to go. "Four, five and maybe even six per-cent" growth was what President Donald Trump promised in December 2017. Even within the relatively sober pages of the budget proposal released by the administration in March this year, Mr Trump's team forecast economic growth rates of 3% or more right through to 2024—which would be the last full year of a second Trump term, were one to occur. Instead, the American economy, which just missed the 3% growth target in 2018 despite the boost from the president's budget-busting tax bill, continues to lose steam. In the third quarter of this year GDP, adjusted for inflation, rose at an annualised rate of 1.9%, down from 2% in the previous three months. The question hanging over Mr Trump, and millions of American workers, is just how far the slow-down will run and how deep it will go.

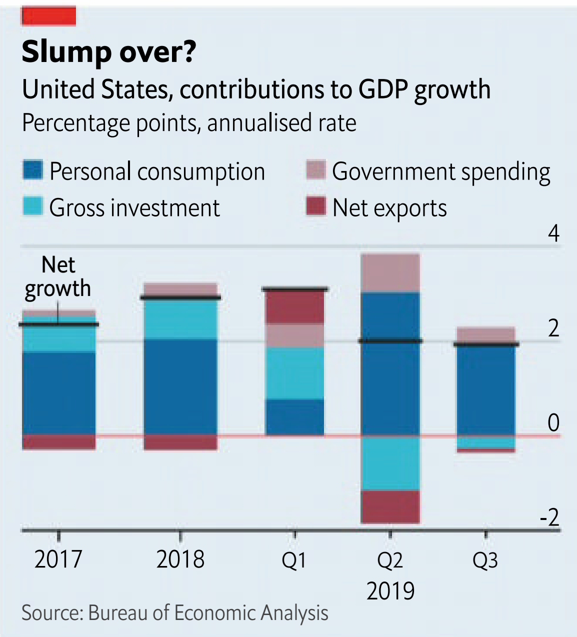
The first signs of trouble for America's economy appeared in late 2018. Housing construction slumped as higher mortgage rates (pushed upward by Federal Reserve interest-rate hikes) combined with rising home prices to drive buyers from the market. At the same time, a global slowdown in manufacturing and trade weighed on American producers. New manufacturing orders dropped fairly steadily from September 2018 until May this year, and parts of America's manufacturing heartland experienced declines in factory employment. Economy-watchers have waited anxiously in the months since to see whether weakness in industry and construction would bleed into the service sector, where most Americans work.

Mounting anxiety eventually roused the Fed to action. The central bank spent most of 2018 raising its benchmark interest rates in order to keep inflation in check, despite some withering criticism emanating from the president's Twitter account. As the world economy sputtered, the Fed slowly changed course: first halting its cycle of increasing rates, then cutting them by 0.25% in both July and September this year. Jerome Powell, the Fed's chairman, insisted that the moves represented a "mid-cycle adjustment", lest markets read the cuts as a sign that the end of America's longest expansion on record was nigh.

The cuts appear to have helped. Mortgage rates have retreated; the average rate on 30-year loans, which rose to nearly 5% a year ago, has dropped back to 3.75%. That has put a bit of wind back in the sails of the residential construction industry, which began work on about 20,000 more homes in September than in the same month last year. Residential investment contributed positively to GDP growth in the third quarter, the first time it had done so in nearly two years.

Rate cuts also seem to have switched off the bright, blinking recession-warning light which is the "yield curve". "Inversions" of the yield curve, which occur when rates on long-term government bonds fall below those on short-term government debt, frequently appear a year or so before the onset of recession. The curve inverted over the summer, fuelling recession worries, but has since flipped back. Stock prices, which looked sickly in May, have roared back to touch record highs, buoyed by better-than-expected earnings reports as well as the prospect of a trade truce between America and China.

On October 30th the Fed reduced its benchmark rate once more, by another 0.25%. But in doing so it very nearly declared victory in the battle to ward off a downturn. Markets now expect the Fed to hold its ground for at least the next six months. Mr Powell, while emphasising that the Fed will be watching the data closely, said, "We see the current stance of monetary policy as likely to remain appropri-



ate...We believe monetary policy is in a good place." A majority of members of the rate-setting committee reckon the Fed should resume rate increases in 2020.

The Fed's confidence, if understandable, may be premature. The conditions weighing on the economy earlier in the year have eased a little, but the growth scare did its damage. Consumers have been the ones driving the economy forward. They continue to spend, but with less gusto than before. Personal consumption spending grew at a 2.9% annual pace in the third quarter: not bad, but down from 4.6% in the second. Retail sales in September dropped by 0.3%, suggesting that the quarter ended on a weak note. Measures of consumer confidence—a guide to how spending may evolve in future—have slipped.

Firms, too, are behaving cautiously. Measures of business confidence have been softening. Anxiety among bosses is affecting investment: the boost to third-quarter GDP from investment in housing was more than offset by a hefty drop in investment in non-residential building and equipment. Weak investment figures are particularly irksome to economists in the Trump administration, who argued that the president's tax reform would encourage a boom in business spending. Business enthusiasm could recover a bit in the months to come, if indeed a trade-war ceasefire is declared. But the trade war is only partly responsible for firms' woes. More important is the worldwide slowdown. Both Europe and Japan have slipped close to the brink of recession, and the deceleration in Chinese growth shows few signs of abating. A turnaround in American economic fortunes, if it occurs, will begin with homegrown optimism.

Hopes for that hinge in turn on the health of the labour market. The jobs picture has been the most enduring source of encouragement to those looking on the bright side. The pace of hiring has slowed; payrolls have risen by 1.4% over the past 12 months, down from 1.8% over the year before that. But that is not an unexpected development this deep into an economic expansion, when fewer jobless workers remain to be hired. The unemployment rate, at 3.5%, remains extraordinarily low. So long as firms continue to hire and wages to grow, consumers are likely to keep spending at rates sufficient to steer the economy clear of a downturn.

Given the uncertainty surrounding the path of the economy, the Fed might have been expected to signal its readiness to keep cutting rates, if necessary, more clearly. Confidence is easier to maintain than to restore, and the risks of a surge in inflation have fallen in recent months. The price index for personal consumption expenditures, the Fed's preferred inflation measure, rose at a 1.5% annual pace in the third quarter, below the Fed's 2% target and down from 2.4% in the second. Instead, the central bank seems content to wait and see how conditions develop—and to allow a president facing threats from all sides to twist in the wind. ■

Louisiana and Mississippi

Democrats in Dixie

BATON ROUGE AND JACKSON

Governors' races in two deep-southern states have national implications

THE TWIN RACES for the governorships of Mississippi (on November 5th) and Louisiana (on the 16th) will show whether, as a former House Speaker once said, "all politics is local", or whether, in the days of Donald Trump, national partisanship supersedes everything and even local politics are not local any more. At stake is whether conservative Democrats can win statewide office in the Deep South.

Traditionally, southern voters have regarded governors differently from the officers they send to Washington. Senators or congressional representatives are judged on their party, and Republicans have swept the South. But governors have been seen as local problem-solvers. They were judged on their personalities, and sometimes on links to powerful local families. In both states, Democrats this year are putting up the kind of person who has usually held his own in the South.

John Bel Edwards is a Catholic who has signed one of the country's toughest anti-abortion laws, has a military background and is a defender of gun rights. As the incumbent in Louisiana, he is the only governor from his party in the South. For a Democrat in a Republican state, he is remarkably popular, with a net favourability rating of 18 (50% approve, 32% disapprove). He has stabilised the state's shaky finances and introduced criminal-justice reforms which mean Louisiana is no longer the state with the highest incarceration rate.

In Mississippi, Jim Hood is the only Democrat holding statewide office, having been elected attorney-general four times. The incumbent (Republican) governor is term-limited, so this race is open. Mr Hood has proposed an expansion of Medicaid and increased funding for the state's roads. But he also looks like a much-loved Mississippi-born country-music singer, Conway Twitty. He and Mr Edwards are the inverse of "Republicans in name only". They are Republicans in all but name.

Yet even in Louisiana—with its French-influenced legal system, 2m alligators and unique Caribbean-French-Creole-Catholic-Cajun culture—the nationalisation of politics is changing the political rules. On October 12th the state held its "jungle primary", in which all candidates for office regardless of party were on the ballot and those who got 50% were elected without having to go through a second round. Mr Edwards's vote soared in areas around cities (New Orleans, Baton Rouge) and crashed in the rural rest of the state. As a result, he narrowly missed the magic 50%. Kyle Kondik, a political analyst at the University of Virginia, argues that this reflects a national trend: "White, rural areas with little college education are shifting to Republicans. Suburban areas with more college graduates are shifting to Democrats."

Mr Trump is doing his best to consolidate this national trend. On the eve of the primary he held a big rally in Louisiana to turn out the white working-class vote, to great effect. In Louisiana the Republican candidate is a construction magnate and self-styled "conservative outsider" called Eddie Rispone who models himself on the president. He won the nomination by criti- ▸▸

Decision time in the Deep South

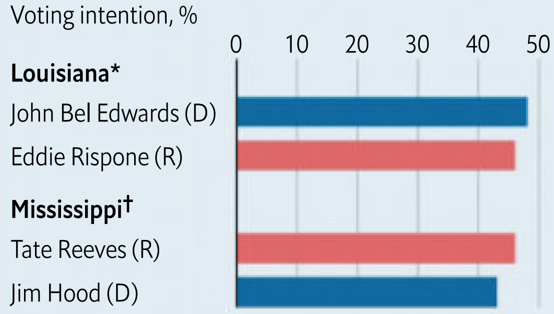
cising his rival as inadequately Trumpist and says he will "do to Louisiana what Trump has done to America".

If Mississippi and Louisiana are politically distinctive it may be because they exaggerate national trends, rather than contradict them. They are the two states with the highest proportion of African-American voters; these are solidly Democratic. They have an unusually high proportion of white working-class and rural voters; these are reliably Republican. As a result, say Nate Silver and Nathaniel Rakich of FiveThirtyEight, a statistical website, the two states have among the least "elastic" electorates in the country: their voters are among the least likely to change their minds. Moreover, thanks to the second group, Mr Trump is even more popular in the two states than might be expected. Messrs Silver and Rakich calculate states' "Republican lean" based on polls and the party's performance over previous cycles. Compared with this baseline, Mr Trump is more popular in Mississippi and Louisiana

Y'all ready for this?

United States, governor elections

Voting intention, %



Sources: JMC Analytics; Mason-Dixon

*Oct 24th-26th 2019 †Oct 17th-19th 2019

than in any other Republican states.

If they are indeed characteristic of the nation, that may not bode well for Democrats in Republican states. In Louisiana's jungle primary, Republicans enjoyed a landslide. Five of seven statewide officers from the party won in the first round. Republicans won a supermajority in the state Senate. Republicans in Mississippi also think they can increase their share in the state House to two-thirds.

Such majorities could enable ruling Republicans to overturn a governor's veto. That matters because 2020 is a census year, and after each census the state legislature must draw new redistricting (voting-area) maps to reflect population shifts. In practice, Republican-controlled houses with supermajorities could redraw voting maps to hurt Democrats, without fear of a Democratic governor's veto.

None of this means a Democrat cannot win in the Deep South. Mr Edwards fell short in the primary mainly because of low turnout among African-American voters. Their numbers usually rise in the second round. That, plus votes from some disaffected anti-Rispone Republicans, would be enough for him. Mr Hood's climb is steeper because the Republican is ahead in the polls and because of Mississippi's constitution (see box). The two men's difficulties show how hard it is for centrists to win in states where politics is less and less local, even at a local level. ■

Mississippi

Loser take all

JACKSON

Jim Crow still haunts the Magnolia State's politics

THE GOVERNOR'S race in Mississippi is a reminder that America has strange, little-known election rules which can profoundly affect results. This one could mean the candidate with fewer votes gets chosen for the state's highest office under a system that could be rejected by the Supreme Court.

Under Mississippi's constitution, statewide officers must win a majority of the popular vote and a majority of the 122 districts comprising the state's House of Representatives. If no one wins a double-majority, the House may choose the governor. This provision's aim was overtly racist. According to a record of the state's constitutional convention, which was held in 1890 at the start of the Jim Crow era, the framers declared: "It is the manifest intention of this convention to secure to the state of Mississippi 'white supremacy'." By crowding blacks into a few districts (and denying them the vote), the framers ensured that whites could never be outvoted.

The law now discriminates against Democrats, the political party for whom African-Americans overwhelmingly vote. In practice, Democrats need to win at least 55% of the popular vote to win a majority of districts.

Other states once had similar provisions. In Georgia candidates had to win a weighted majority of counties. That was struck down by the Supreme Court in 1963, ruling that it offended against the principle of one person-one vote. The surprise is that Mississippi's law has survived so long.

In May the National Redistricting Foundation, headed by Eric Holder, President Obama's attorney-general, and the Mississippi Centre for Justice, a legal group, filed suit in district court, claiming the constitution discriminates against African-Americans. In hearings in October the judge was sympathetic to the argument but wary of changing election law on the eve of a vote. However he rules, the provision is likely to continue in force, since the losing side will appeal and the case could make its way to the Supreme Court.

That could have immediate consequences. The race for governor is tight. The Republican is ahead but Jim Hood, the Democratic candidate, could win the popular vote though not a majority of districts. In other races when this happened, either the losing candidate conceded before the House got involved or the leading candidate was from its majority party, which selected him. This time, the Republican candidate, Tate Reeves, has refused to rule out letting the House decide. The candidate with the most votes could lose the election. Hardly a popular mandate.

The Russia inquiry

In search of lost crime

WASHINGTON, DC

The Justice Department opens a criminal investigation into itself

TESTIFYING EARLIER this year before the Senate Appropriations Committee, William Barr, Donald Trump's attorney-general, said, "I think spying did occur" against Mr Trump's campaign in 2016. That is an odd way to characterise the FBI-led investigation into Russian interference, which began not with surveillance, but with a tip from Australia's government—that Russia had offered "dirt" on Hillary Clinton's campaign. But it delighted Mr Trump, who has long blamed his woes on a "deep state" conspiracy. Mr Barr recently gave the president another reason to smile, as news leaked that the Justice Department (DOJ) had opened a criminal inquiry into the origins of the Russia investigation.

That has left many in Washington confused. On one hand, the attorney whom Mr Barr has put in charge of the investigation—John Durham, the chief federal prosecutor in Connecticut—is respected across the political spectrum for his apolitical thoroughness as well as his probity. A criminal inquiry gives him the power to subpoena witnesses, empanel grand juries and bring indictments.

On the other, investigations into possible malfeasance within an agency are usually carried out by the agency's inspector general (IG). Indeed, the DOJ IG's office was ▸▸

Who wants an investigation?

already looking into roughly the same thing (possible surveillance abuses by the DOJ and FBI against the Trump campaign) and is expected to issue a full report soon. How that inquiry fits with Mr Durham's is unclear. Michael Horowitz, the IG, has admitted to "hav[ing] had communications" with Mr Durham, which is unusual, because IG's offices tend to operate independently from their agencies.

Mr Barr has taken an active role in this investigation. He accompanied Mr Durham to Rome in late September, where they reportedly received a taped deposition from Joseph Mifsud, a Maltese professor who in April 2016 told George Papadopoulos, a low-level foreign-policy aide to the Trump campaign, that Russia had Mrs Clinton's stolen emails. (Mr Mifsud has since gone to ground.) Attorneys-general do not do that sort of thing. As one former federal prosecutor put it, "that's what agents are for."

What Mr Durham is investigating remains unclear. After saying he thought the Trump campaign was spied on, Mr Barr said he wanted to "explore" whether the surveillance was justified. But criminal inquiries tend to require better grounding than this. Perhaps Mr Durham or Mr Horowitz has found evidence of illegal activity; if so, they have said nothing.

Opening a criminal investigation into people Mr Trump has cast as his political enemies—but who appear to have followed genuine leads and uncovered evidence of Russian electoral interference that has led to dozens of indictments and several convictions—could signal a worrying erosion of the DOJ's independence. Mr Barr, who has been a longtime proponent of executive power, may believe that independence only extends as far as the president allows. But such a position, as Jerry Nadler and Adam Schiff, Democratic congressmen leading the impeachment inquiry, agreed in a joint statement, risks making the DOJ into "a vehicle for President Trump's political revenge" and doing "irreparable damage" to the rule of law.

The impeachment inquiry, of course, is still in early days. And the DOJ investigation may yield indictments. Even if it does not, it gives Republicans something other than impeachment to talk about. It blunts charges of corruption and self-dealing hurled at Mr Trump, and validates to him and his supporters his feelings of persecution. In 2016 Hillary Clinton's polling lead plummeted following an announcement, 11 days before the election, that the FBI had reopened an investigation into her emails. Mr Trump wanted Ukraine's president, Volodymyr Zelensky, "in a public box," announcing an investigation of Joe Biden, a potential rival for the presidency.

And it may last a while. A former federal prosecutor praised Mr Durham for being "very methodical, [meaning] slow." His inquiry could drag on well into next year, letting Mr Trump contend from the hustings that he is investigating the "deep state" and needs one more term to defeat it. ■

US-Turkish relations

A long march

The House votes to recognise the persecution of Armenians as genocide

FOR ARMENIAN-AMERICANS, it was a moment of vindication. After decades of campaigning for their country to acknowledge their forebears' agonies, news came that the House of Representatives had voted by 405 to 11 to recognise as genocide the persecution of the Armenians launched by the Ottoman empire in 1915. "I'm so happy, I can't get over it," said Aram Garabedian, an 84-year-old activist from Rhode island.

Since at least the 1970s, Congressional battles over how to characterise the Armenians' suffering have been a perennial feature of American politics. The House passed a similar resolution in 1984 but successive administrations have laboured to dissuade legislators from using the g-word for fear of alienating Turkey, an American strategic partner.

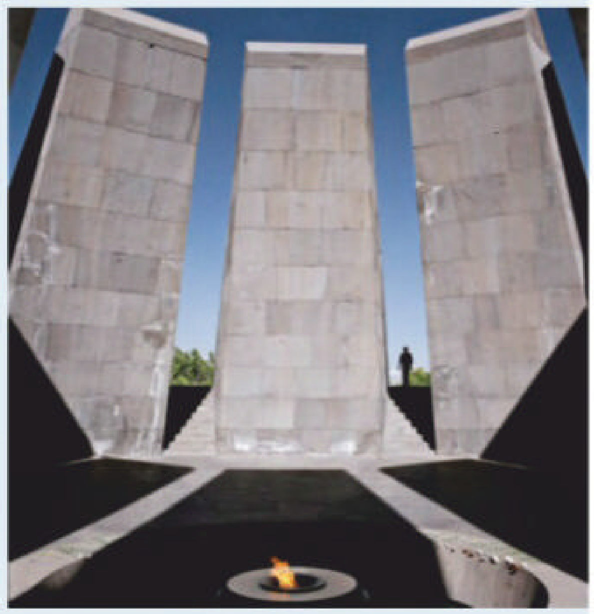
Yet when relations with Turkey are at a low ebb because of its incursion into Syria, the energy needed to push back seems to have sapped. House Resolution 296 asserted that America had already, through a series of officially supported gestures and initiatives over the past century, recognised the genocidal nature of the Ottoman Turkish actions.

What is not in doubt is that in spring 1915, as they were locked in war with Britain, France and Russia, the Ottoman authorities ordered the relocation of hundreds of thousands of Armenians in conditions that many were doomed not to survive. Some victims were killed by Turkish and Kurdish armed bands while some perished as they were marched in horrific conditions.

Most historians of mass killing, including the International Association of Genocide Scholars, agreed that this episode amply meets the criterion laid down by the UN convention on genocide of 1948. This defines the ultimate crime as "acts committed with intent to destroy, in whole or in part, a national, ethnical, racial or religious group" whether through outright killing of "inflicting…conditions of life" designed to bring about their destruction.

Some Western governments share the official Turkish view that the intention to bring about death on a huge scale remains unproven, or that the context of terrible suffering on all sides should be factored in. Turkish President Recep Tayyip Erdogan denounced the vote as the "biggest insult" to his people.

In the short term, the vote looks very likely to play into Mr Erdogan's hands, as he drums up defensive feelings among his compatriots and stokes their suspicion of a Western world whose intentions, he says, have always been malign. "This is a resolution which is doomed to be misused," predicted Brady Kiesling, a former American diplomat who has served in Armenia.


Painful memories in Yerevan

Lexington | Take me out of this ball game

Donald Trump's embarrassing reception at the World Series was a defining moment of his presidency

As a rule of thumb, the more an American president is loved, the more baseball stories there are about him. Many are even true. George Washington was recorded playing wicket—a rival game—at Valley Forge. Dwight Eisenhower claimed to have played semi-pro under a fake name. When commentating on the Chicago Cubs for a radio station in Iowa, Ronald Reagan invented foul balls to fill the gaps when his live feed failed. But Abraham Lincoln did not, as alleged, whisper on his deathbed to Abner Doubleday, "Keep baseball going; the country needs it." Lincoln never regained consciousness after being shot. And Doubleday—who was not baseball's inventor, contrary to another myth—was not with him.

The profusion of such stories illustrates the national pastime's place in the culture. Baseball is an institution as American as the presidency itself. It also reflects politicians' inability to keep away from a popular game. Even Theodore Roosevelt, who despised baseball, felt unable to say so publicly. And every subsequent president bar one has marked the start of the baseball season or its epic denouement, the World Series, by throwing a ceremonial "first pitch"—starting with William Howard Taft, a huge fan in every sense. (Though he did not, as many claim, invent the "seventh-inning stretch" by unfurling his cramped limbs while watching the Washington Senators.) The sole exception is Donald Trump.

He had not been to watch the Washington Nationals (the Senators' successors) before this week. And though he was persuaded to go because the "Nats" were appearing in their first World Series, he was not invited to throw the first pitch. On what he might have expected to be his best day as commander-in-chief (he revealed the killing of Abu Bakr al-Baghdadi hours earlier), he was hidden away in an executive suite. The Lerner family that owns the Nats did not want him sitting with them. And the one time he flashed up on the big screen the jeering of the crowd was thunderous. A chant of "Lock him up!" rippled round the stadium long after Mr Trump's image was replaced by footage of smiling servicemen. "Veterans for impeachment" read a banner behind home plate.

Mr Trump's Republican defenders dismissed this indignity as mere swamp gurgling. "You can either be loved in DC and hated in America. Or you can be loved in America and hated in DC," tweeted Congressman Jody Hice. But it signified much worse for the president and his party than a few thousand hostile bureaucrats.

Mr Trump might face a similar reception in any of the 30 major-league stadiums. All are in big cities, with well-educated, go-getting, diverse populations, where he is loathed. Even Houston, home of the Nationals' opponents and the biggest city in a state synonymous with conservatism, is now largely Democratic. And Washington is a more typical metropolis than Mr Hice (who also considers abortion "much worse than Hitler's 6m Jews") would care to recognise. Its victorious baseball team illustrates this.

"First in war, first in peace, and last in the American League," went the old joke about baseball in the capital. Washington's black population was long considered too poor and its white one, dominated by federal-government workers, too transient to support a major-league team. Before the Nationals arrived in 2005 the city had not had one for 33 years. But a booming, increasingly diversified economy has since transformed the capital. Its population, in decline for half a century, has grown rapidly. Its row houses have been taken over by yuppies; its cultural and nightlife scenes are thriving. And the Nats, who draw over 2m spectators a year, illustrated that change even before their stunning triumph in the World Series this week made them emblematic of it.

"I'd lived in DC for 20 years before the Nationals arrived, but only then did it become my city," said Paul Rosenzweig, a conservative lawyer and native New Yorker, from his perch behind rightfield. Baseball's deep history, above all its association with a capacious national identity encompassing racial and political divisions, make it a powerful force for civic attachment. This was apparent in the way Washingtonians went gaga for the game as soon as their team began inching to its World Series victory a month ago. Nats shirts and flags have been everywhere; Dominican food, their bilingual team's favourite, is all the rage. America's capital has found in baseball a way to celebrate and advertise its re-emergence. Mr Trump was not jeered by a bunch of federal pen-pushers so much as by representatives of the confident metropolitan America—which produces most of its wealth and will increasingly define its future—he has turned his party against.

The wisdom of the crowd

He is not the first president to be booed at a sporting event. Bill Clinton was jeered by a NASCAR crowd, George W. Bush and Barack Obama at baseball games. But veterans of those occasions (and there were several watching the Nats that night) considered the hatefulness of the response to Mr Trump qualitatively different. This should make conservatives even more worried. For years they have exaggerated the vindictiveness and radicalism of the left to mask the contradictions in their own camp. Yet Mr Trump's divisiveness has turned this into a self-fulfilling prophecy. Charged with partisan grievance, many on the left want to scrap the electoral college, pack the courts—do whatever it takes to never again be tyrannised by an antediluvian minority. Conservatives may soon have more than the odd gay wedding cake to contend with.

And it already seems certain that the one baseball event Mr Trump will be associated with occurred at Nationals Park this week. Sport lifts people with a feeling of vicarious striving for perfection even when their team loses. And when it wins, as the Nationals ultimately did, bringing Washington its first World Series in almost a century, the memory never fades. This is why sport is so much more loved than politics. Immortalised in baseball history, Mr Trump's humiliation this week will be remembered long after most of his administration's scandals have faded into oblivion. ■

Argentina

Rolling back the years

BUENOS AIRES

Alberto Fernández, the newly elected president, will struggle to clean up the mess his Peronist movement made

"WE WILL DEVOTE all our efforts to ending the suffering of all Argentines," declared Alberto Fernández, Argentina's president-elect, before a crowd in Chacarita, a working-class area of Buenos Aires. Mr Fernández was celebrating his victory over the incumbent, Mauricio Macri, in a presidential election on October 27th. But Mr Macri raised similar hopes after his election four years ago, which ended 14 years of rule by the Peronist movement to which Mr Fernández belongs.

The victory by the Peronists—who secured 48% of the vote against Mr Macri's 40% with most of the votes counted—was narrower than expected but large enough to avoid a run-off vote in December. The question is whether they can do a better job of resolving the country's chronic economic troubles than Mr Macri did.

The election offered voters a choice between two failed models. Mr Macri's supposedly business-friendly presidency is ending with a shrinking economy, a falling currency and rising prices. But the years of populist rule by the Peronists that preceded it were at least as bad. The author of the previous Peronist disaster, Cristina Fernández de Kirchner (no relation to Mr Fernández), will now be vice-president. When it became clear after a primary vote in August that the Fernández duo would win, the peso plunged by 25% and inflation surged. Even as the winners were chalking up the votes on October 27th, shopkeepers were marking up prices, anticipating further devaluation and higher inflation.

Nerves have since settled. The peso strengthened a bit against the dollar in the black market in the days following the election. Mr Macri, conceding defeat, invited the president-elect immediately to the Casa Rosada, the presidential palace. The hope is that the two can agree a "transition package" to keep the markets steady until Mr Fernández takes office in December.

They have already signed off on tighter currency controls, limiting dollar purchases to just $200 a month, to prevent a possible run on the peso. That is much lower than the $10,000 limit imposed in September.

The election did not resolve the question of which Fernández would truly succeed Mr Macri: Alberto, the president-elect, or Cristina, the charismatic former president who elevated Alberto from backstage operative to presidential frontman.

The early signs are mixed. In the closing days of the campaign, Mr Fernández insisted he and his running-mate were inseparable. "But that was the candidate speaking," said one of his inner circle, as the president-elect celebrated his victory. "He knows he has to cut the cord if he is to stabilise this economy, and win time for recovery from this economic mess." Mr Fernández has already signalled that he will seek a pact with businesses and unions to contain inflation. Entrepreneurs sound receptive. "Count on me, especially when it comes to a social pact," said one of Argentina's biggest soya farmers, Gustavo Grobocopatel, who had backed Mr Macri.

One clue to Mr Fernández's intentions will be his choice of treasury minister. The two leading candidates, Matías Kulfas and Guillermo Nielsen, are veterans of the Kirchners' rule (and members of Mr Fernández's transition team). But their reputations differ. Mr Nielsen has encouraged bondholders and the IMF to show patience with the new government. He cites the ex- ▸▸

ample of Uruguay, which repaid its creditors after a crisis in 2002 slowly, but without subjecting them to a "haircut". That may not work in Argentina given the size of its debts (near 90% of GDP, according to JPMorgan Chase) and its weak currency. But investors welcome the sentiment.

Mr Nielsen, who led Argentina's negotiations with the IMF from 2003 to 2005, may reprise that role as Argentina seeks to revise the terms of its existing $57bn loan from the fund. That may make Mr Kulfas, a general manager of the central bank during Ms Fernández's presidency, the favourite for the top economic job. He is viewed as a traditional Peronist in his economic thinking. "So expect protectionism, interventionism, strict currency controls to limit capital flight," said a former senior official. A big job for Cecilia Todesca, a moderate who served alongside Mr Kulfas at the central bank, would be a reassuring signal.

Other election results will have a bearing on the struggle for power within the Peronist government. The province of Buenos Aires, home to almost 40% of Argentina's population, elected Axel Kicillof as governor. A former economy minister under Ms Fernández, he will have an influential voice. And it is not an entirely reassuring one. "The economic situation we inherit today represents scorched earth, the ultimate failure of neoliberalism," Mr Kicillof declared at the Peronists' victory celebration.

Even so, other results suggest those scorching "neoliberals" may have a say in how Argentina is governed. A member of Mr Macri's party won re-election as mayor of the city of Buenos Aires by a huge margin. Mr Macri's coalition looks likely to form the largest group in the lower house of congress (although Mr Fernández's alliance will control the senate).

"The good news is we have two broadly based coalitions coming out of this," concluded Sergio Berensztein, a political analyst. The Peronists will have to seek allies rather than berate their enemies. With luck, Mr Macri will have left a political legacy of "conversation, not conflict".

Mr Fernández's foreign policy may be more ideological than his economic policy. His first foreign trip as president-elect will be to visit Mexico's populist president, Andrés Manuel López Obrador. Relations with Brazil, Argentina's biggest neighbour, are off to a frosty start. Jair Bolsonaro, Brazil's right-wing president, refused to congratulate him on his election victory.

"All I care about is that the Peronists and Cristina will look after us once again," said Marta Moreno, a housewife at Mr Fernández's victory rally. The poster in her hand recalled an election victory of 73 years ago. It bore the image of Eva Perón, General Juan Perón's wife, who is still popular with those who want leaders to look after them. ■

Chile

Piñera's pickle

SANTIAGO

The president tries to set a new direction. The country may not follow

THE PROTESTS that have convulsed Chile have taken every conceivable form. They began when students in Santiago, the capital, started dodging metro fares, which had been raised by 30 pesos (four cents) at peak times to 830 pesos. Anger then began to express itself in arson and looting and spread to other cities. The government imposed its first curfew in Santiago since the end of dictatorship in 1990. At least 20 people died in the unrest and more than 1,000 have been injured.

On October 25th 1.2m people, a fifth of the city's population, converged on central Santiago to express (peacefully) their disgust with inequality and with the way the country is run. "I would like to retire but can't," said Carolina, a 62-year-old teacher, who has saved enough for a pension of just $275 a month after 30 years on the job. Placards demanded everything from a lower VAT on books to a new constitution.

Sebastián Piñera, Chile's centre-right president, at first took a tough line with the malcontents. "We are at war," he declared during the rioting. The state's response was heavy-handed. Although most of the deaths occurred because of arson, Chile's Human Rights Institute is compiling evidence of 120 cases of abuse by security forces, including five killings.

As protests grew, Mr Piñera's tone changed. On October 19th he rolled back the fare increase. On October 22nd he announced further concessions. These included higher public spending on pensions and health care, a boost to the minimum wage and a reversal of recent rises in electricity prices. These measures will cost the government $1.2bn, 0.4% of GDP. To help pay for this the government is to raise taxes on top earners.

Marching for more

Mr Piñera followed that up on October 28th by replacing eight members of his cabinet. The new cabinet has a younger, friendlier face. The president, who promised "better times" when he took office in 2018, says these changes herald the start of "new times". But it is unclear how much novelty he is planning, and whether it will satisfy Chile's restive people.

Violence has lessened, but continues. Some protesters are demanding Mr Piñera's resignation. On October 30th he announced that two high-profile international meetings, a UN climate conference and a summit of Asian and Pacific countries, will not be held in Santiago. He wants to focus on restoring order and talking to Chileans.

If Mr Piñera is to deal with the roots of discontent, he will have to reform Chile's way of providing health care, education and pensions, believes Eugenio Tironi, a sociologist. Under a model developed by free-market economists during the dictatorship of Augusto Pinochet, who ruled from 1973 to 1990, citizens are expected to save for their own retirement.

In many other countries, public pensions are financed by taxing current workers and giving the money to current pensioners—a system that comes under strain when the population ages. Chileans, by contrast, invest the money they save in privately managed funds. This system has helped Chile manage its public finances and encouraged the development of long-term capital markets, which in turn has boosted economic growth. But Chileans like Carolina are furious to discover that they have not contributed enough money to pay for adequate pensions. Many are equally angry about long waiting times to see doctors in the public health system and about the lousy education available in public schools.

Post-dictatorship governments have tried to boost public spending on the hard-up. In 2008, for example, the Socialist government of Michelle Bachelet increased the value of payments to schools attended by the children of poor families. But even after such changes the government spends less than 11% of GDP on education, health and pensions, well below the average of the OECD, a club of mainly rich countries, to which Chile belongs.

The conservative Mr Piñera is unlikely to scrap a system which in many ways has served Chile well. It is the second-richest country in Latin America, thanks in part to its healthy public finances and robust private sector. Mr Piñera is likely to resist demands for a constituent assembly to rewrite the constitution. This might push reform in the direction of populism and discourage investment.

One problem for the government is that the protesters' demands are unclear. Their movement grew largely through social media, without identifiable leaders. Another problem is that Chile's political class has lost credibility. A survey conducted in May this year by CERC-Mori, a pollster, found that the senate, the chamber of deputies and political parties were among the country's four least-trusted institutions. (The fourth was the pension-fund managers.)

Mr Piñera's own approval rating dropped last week from 29% to 14%, an all-time low for a president in the democratic era, according to Cadem, another pollster. A rich businessman, he is seen as an exemplar of what is wrong with Chile. His coalition, Chile Vamos, has a minority of seats in congress, which has made it hard for him to govern. Anger over human-rights abuses may further complicate his efforts to introduce reforms.

Mr Piñera wants to overcome such obstacles by convening town-hall meetings similar to those held by France's president, Emmanuel Macron, in response to the *gilets jaunes* (yellow jackets) protests this year. These could help, says Juan Pablo Luna, a political scientist at the Catholic University in Santiago, provided they bring together people from different backgrounds. Mr Piñera is betting that dialogue and a revamped government will break deadlocks over how to reform the country. The result could be a new Chilean model. ■

Bello Living beside the volcano

Colombia faces an external threat. It needs more internal political unity

UNDER A PITILESS sun, the river of humanity crosses the Simón Bolívar bridge without cease, its flow more powerful than the muddy stream beneath. Each day at least 40,000 people cross from Venezuela to Villa del Rosario in Colombia. Most cross back again, laden with bulging sacks and suitcases containing fresh food, clothing and medicines. Each day, some 1,500 do not return, joining the 4.6m Venezuelans who have left their country in search of work, safety and a better life.

This is a humanitarian crisis, but one that Colombia is coping with admirably. In Villa del Rosario hundreds of people line up for lunch at a communal kitchen operated by the local bishop. Many still live in Venezuela, but are malnourished. Others are heading on. Nearby, there is a health post for migrants. More than 1.5m have been vaccinated. A shelter provides temporary accommodation for those who are ill, who have come to give birth or who need to rest. Although the UN and NGOs are helping, foreign aid covers less than a fifth of the additional costs Colombia is incurring, mainly in health care and education.

That is not the only price of living next to Nicolás Maduro's dictatorship in Venezuela. At police headquarters outside the nearby city of Cúcuta, Colonel José Palomino has a colour-coded map of the 143km (89 miles) of border in his charge. Each colour corresponds to a criminal outfit, ranging from the ELN, a Colombian guerrilla group, to several Colombian and Venezuelan drug, extortion and smuggling gangs. "Each group has a slice of the border," he says.

Until now, they have stayed there. The murder rate in Cúcuta, a city of 800,000 people, is similar to the national average. But for how much longer? The first wave of Venezuelan migrants consisted largely of businessmen, professionals and workers. Now, says Colonel Palomino, "bandits and delinquents" are starting to come "because there's nothing left to rob there".

The government of President Iván Duque bet on Mr Maduro's downfall. In February Venezuela broke diplomatic ties after Colombia tried to send humanitarian aid across the border in partnership with Juan Guaidó, the opposition leader whom it recognises as interim president. Mr Maduro shelters the ELN, which runs illegal mining in southern Venezuela. He welcomed dissidents from the FARC, a much larger guerrilla army which signed a peace agreement in 2016. In September Venezuela carried out a military exercise near the border. "Misunderstandings or deliberate provocations by...armed groups could easily drag the two countries" into a fight, worries Crisis Group, an NGO.

Mr Duque says he has undertaken no aggressive actions. "We've placed no troops on the border, or flights close to it," he told Bello. The problem is that there is no sign that sanctions by the United States will dislodge Mr Maduro. Political change in Latin America, including the election of Alberto Fernández, a left-of-centre Peronist, as Argentina's president, is weakening the diplomatic front against the Maduro regime. "The only way to change the migratory flow is to end the dictatorship," insists Carlos Trujillo, Colombia's foreign minister. The flow may even increase as conditions deteriorate.

This comes when the internal situation in Colombia is delicate. Álvaro Uribe, the leader of Mr Duque's party, campaigned against the FARC peace agreement. In office, Mr Duque has implemented it. It is working, albeit imperfectly. More than 11,000 former guerrillas have entered civilian life. The government is moving ahead with development plans in the areas where they operated. But its critics claim that under the influence of Mr Uribe it is dragging its feet on promised land reform.

Colombia is failing to collect a full peace dividend. The murder rate has remained broadly stable since 2016, despite the end of the war. The security forces are "strategically confused on priorities", says a retired general. Mr Duque's defence minister, who is close to Mr Uribe, is criticised for having politicised the army. In an unprecedented move in August, a group of retired officers published a letter complaining that corruption and poor leadership were damaging the army's public standing.

Even the government's critics admit that the situation is not disastrous. But it is worrying. Colombia has made huge strides in this century. Because of the threat posed by Venezuela, the consolidation of internal peace has become even more urgent. Mr Duque, once a sceptic of the peace deal, must now achieve that.

Indonesia's armed forces

About turn!

SUKAWANGI

After spending decades trying to rein in the army, politicians are again giving it a big role in government

A LONG A DIRT track bordered by rice paddies and studded with potholes, soldiers and villagers labour side by side. They are levelling the rutted surface so that it can be paved over with concrete. The road they are building will make it much easier for farmers to transport their crops to market. But this is not what really brings the soldiers to Sukawangi, a sprawling village in western Java. Their primary purpose is to forge friendships with the locals or, as Lieutenant-Colonel Yogi Nugroho puts it, to "build the chemistry between the military and the people". Such efforts are paying off. A poll conducted in 2015 showed that 90% of Indonesians trust Tentara Nasional Indonesia (TNI), the armed forces, making it the most respected institution in the country. Mission accomplished.

For most of Indonesia's history, the army has been deeply involved in civilian life. Since its founding in 1945 as a guerrilla force to overthrow Dutch colonial rule, it has seen itself as the breastplate of the people. This narrative bolstered an ideology known as *dwifungsi*, or "dual function", which held that the armed forces should be responsible for maintaining Indonesia's political and social order as well as its territorial cohesion. Suharto, a strongman who held power from 1966 to 1998, reserved a fifth of the seats in parliament for the armed forces and appointed officers to important positions in government. Over his three-decade regime, he made use of the "territorial system", under which soldiers were stationed in almost every village across the archipelago, to control and repress the population. So when Suharto resigned in 1998, ushering in an age of democracy, lawmakers abolished military representation in parliament and dramatically narrowed the armed forces' responsibilities, obliging them to end all business activity, for example, and hiving off the police as a separate force. TNI was permitted to conduct "military operations other than war", but only in cases such as disaster relief and humanitarian assistance.

Twenty years later these reforms not only remain incomplete, but are being eroded. Under Joko Widodo, popularly known as Jokowi, who has been president since 2014, the political influence of TNI has grown. Jokowi has installed retired generals in powerful civilian posts such as presidential chief of staff and head of the state intelligence agency, and in April agreed to assign several hundred active-duty generals and colonels to civilian agencies and ministries. With Jokowi's blessing, TNI has also regained a role in internal security, to help fight terrorism, and has set up a special counter-terrorism unit. On October 23rd Jokowi appointed as his minister of defence Prabowo Subianto, a retired general whose party would like to erase the distinction between external defence and internal security.

TNI is also expanding the definition of military operations other than war. Between 2014 and 2017, it or the defence ministry signed 133 deals with dozens of ministries, civil-society organisations and universities, promising, among other things, to help the national population agency provide family planning, the National Logistics Agency to monitor food prices, prisons to educate inmates, the ▸▸

ministry of agriculture to identify suitable land for farming and farmers to organise the harvest. Activists and scholars worry that, taken together, these developments constitute a resurrection of *dwifungsi*. TNI's persistent belief that it is at one with the people—the outgoing minister of defence, also a retired general, describes his philosophy of warfare as "total people's defence"—only stokes their fears.

TNI has successfully agitated to roll back the reform that prevented serving officers from taking civilian jobs. But Evan Laksmana of the Centre for Strategic and International Studies, a think-tank in Jakarta, argues that this is motivated not so much by a lust for power as by TNI's poor personnel-management, which has produced more officers than there are suitable positions. In fact it is the politicians who are luring soldiers back out of the barracks, argues a recent paper by Leonard Sebastian, Emirza Syailendra and Keoni Marzuki of the S. Rajaratnam School of International Studies in Singapore. When Jokowi was first elected president in 2014, he was new to national politics and lacked allies. To counter the hostile forces arrayed against him, he turned to TNI.

Politicians need TNI's help to implement their policies. Both the central and local bureaucracies are hobbled by corruption, inertia and conflicting regulations. TNI, by contrast, is a disciplined organisation that can mobilise personnel across the country at short notice. Mr Sebastian and his colleagues examined a number of deals struck by civilian institutions and TNI between 2013 and 2018. They found that these arrangements were initiated at the behest of civilian leaders, "often due to a lack of confidence in their own abilities".

Though politicians are usually pleased with the work TNI does on their behalf, overseeing it is difficult. An incident in a village on the island of Sumatra in 2015 illustrates how badly wrong non-military missions can go. When the local army command, charged with implementing the government's programme of "food self-sufficiency", attempted to acquire land for cultivation, villagers protested. Soldiers proceeded to intimidate them. The conflict escalated, with soldiers beating up disgruntled farmers on several occasions. Members of the armed forces cannot be tried in civilian courts, however, so no one was ever punished.

In the years following Suharto's downfall, politicians vowed to subordinate the armed forces to civilian authority. Today they seem to regard TNI as a partner in government. As Mr Sebastian and his colleagues write: "The ongoing reliance on military solutions for civilian problems is symptomatic of a weak democracy." Tell that to the villagers of Sukawangi, who cannot wait to use their TNI-built road. ■

Politics in Bangladesh

Learning the hard way

DHAKA

The ruling party's youth wing controls university campuses with an iron fist

EARLY IN OCTOBER Abrar Fahad, a student at Bangladesh University of Engineering and Technology (BUET) was beaten to death in his dormitory. Police have detained 21 people in connection with the murder, many of them members of the Chhatra League, the student wing of the ruling Awami League party. He appears to have offended them by making critical comments on Facebook about a water-sharing deal the government recently struck with India.

The death of Mr Fahad, who was 21, has prompted protests at the university and a public outcry across the country. Yet such killings are quite common in Bangladesh, where violent party politics is mirrored—and often amplified—on university campuses. "This is part of the university culture," says Mubashar Hasan of the University of Oslo. "Dormitory rooms are turned into torture rooms to quell opposition."

The Chhatra League "basically controls universities on behalf of the government", explains a 21-year-old student from Dhaka, the capital. That is important to the authorities, since universities have long been hotbeds of political dissent. No male student can get a room in the halls of residence without co-operating with the League or having a political connection, says a fellow student. "They show their tyranny very publicly in these universities."

Instead of allocating the individual rooms, the Chhatra League puts all the first-year students—sometimes up to 100—in one enormous dormitory, the "public room". Here, first-years are subjected to "ragging", meaning bullying by older students, who report back to the League's leadership. The whole process is designed to scare students into toeing the line.


Candles for Fahad

"Abrar didn't do that," notes the student from Dhaka. League members accused Mr Fahad of being involved with Chhatra Shibir, the student wing of Jamaat-e-Islami, an Islamist opposition party. "Anyone who opposes the government can be called Shibir nowadays," the Dhaka-ite continues. "It's an easy excuse for [the League] to beat someone up and no one will say anything."

The Chhatra League's clout extends far beyond dormitories. Earlier this year, when the government gave funds to Jahangirnagar University for a development project, the local branch of the League demanded a share. The vice-chancellor paid up, and later gave yet more money to the League's central committee. Companies are often forced to pay off the local branch of the League in order to start a project or operate in their area. A crackdown on opposition parties before last year's election, which saw the Awami League re-elected in a landslide, has made it even harder to stand up to the Chhatra League.

Bureaucrats, MPs and the police connive in this system, says Mr Hasan. But none of this is new, he points out. Before Chhatra League, he says, there was Chhatra Dal—the student wing of the Bangladesh Nationalist Party, in government from 2001 to 2006. Chhatra Dal, like the Chhatra League, operated with impunity. So did the student front that backed Hussain Muhammad Ershad, the military dictator from 1983 to 1990. The *Daily Star*, a newspaper, looked at all campus killings since independence in 1971 and found 151 murders for which no charges had been brought.

Mr Fahad's murder was perhaps a step too far, however. His Facebook post echoed widespread anti-Indian sentiment. Obaidul Quader, the general secretary of the Awami League, said the government would take action against the perpetrators "regardless of [their] affiliation", although he did remind people of the Chhatra League's "good accomplishments". Sheikh Hasina Wajed, the prime minister, had already seemed inclined to rein in the Chhattra League. Before Mr Fahad's death she had dismissed its president and general secretary and reshuffled its central committee.

BUET's vice-chancellor, meanwhile, has promised not only to ban ragging, but also to bar political organisations from campus. Students doubt they have seen the last of their tormentors. "Maybe Chhatra League will stop what they're doing," says the student from Dhaka, "or at least take a break. That would be nice." ■

Fighting groping in Japan

Pervert alert

TOKYO

Commuters are taking the law into their own hands

THROUGHOUT HER 20s, Yayoi Matsunaga was groped, almost daily, on packed rush-hour trains going to and from work. Three decades later, she discovered that her friend's daughter was being molested on her commute to high school. The teenager, after fruitless talks with the police and railway companies, decided to hang a sign from her bag that read: "Groping is a crime. I will not cry myself to sleep." The groping stopped immediately. Inspired, Ms Matsunaga launched a crowdfunding campaign in 2015 to create badges with the same message. They proved as effective as the sign: nearly 95% of users stopped experiencing groping on public transport, according to a survey.

Recent years have seen a flurry of innovations in the fight against groping—*chikan* in Japanese—in addition to the many train services that offer carriages which only women can use, or have installed ceiling cameras in the hope of catching molesters on film. Nari Woo and Remon Katayama of QCCCA, a startup, have launched "Chikan Radar", an app that enables users to report groping and thus see where it is common. Since its launch in August, 981 cases have been reported across Japan. The Tokyo Metropolitan Police have also created an app, "Digi Police", that, when activated, screams "Stop it!" and produces a full-screen message that says: "There is a molester. Please help." Shachihata, a company that sells personal seals, has developed a stamp that allows victims to mark their attackers with invisible ink, which can be detected under ultraviolet light. A trial run of 500 anti-groping stamps, priced at ¥2,500 ($23), sold out within 30 minutes.

There were 2,943 reported cases of groping in Japan in 2017, mostly in Tokyo. The true number of victims is undoubtedly far higher. Surveys suggest that half or more of female commuters have experienced it, although only 10% of victims report the crime to police. Some hold back out of fear and embarrassment; others because they do not want to be late for school or work. "We are socialised to think that groping is not a big deal," says Ms Woo.

Groping has long been trivialised as a nuisance rather than a form of sexual assault, says Masako Makino of Ryukoku University. Offenders face up to six months in prison or fines of up to ¥500,000. (The potential sentence rises to ten years if violence is involved.)

Invisible ink at the ready

It does not help that the media tend to focus on stories about men who have been falsely accused of groping. A book and film about a man unjustly accused of molesting a schoolgirl became a hit in 2007. Insurance firms provide policies that defray the cost to commuters of fighting accusations of groping. But Ms Matsunaga, who now runs an organisation called the Groping Prevention Activities Centre, remains hopeful: "I believe that we will be able to eliminate groping." ■

Central Asia's borders

Stalin's splatter

RISHTON

Convoluted and disputed boundaries are hampering regional integration

THERE WAS jubilation in August in Rishton, a town in the bit of the Fergana Valley that lies in Uzbekistan, when the gates of a nearby border checkpoint with Kyrgyzstan were unlocked for the first time in almost seven years. The opening reduced the length of the journey to Sokh, an island of Uzbek-governed territory surrounded by Kyrgyzstan, from 150km to 50km. As the crossing was reopened, officials from both countries waxed lyrical about a renewed spirit of fraternity. Kyrgyz and Uzbeks—both Turkic-speaking, Muslim peoples—are "like a bird with two wings", mused Akram Madumarov, the governor of the province on the Kyrgyz side of the border. "If one wing is missing, the bird cannot fly."

The next day, the bird's wings were clipped as the border gates were slammed shut again. In early September the road leading out of Rishton towards Sokh ended in a tangle of barbed wire, the Uzbek flag fluttering forlornly rather than festively. "The Kyrgyz are our friends and brothers," said a cheery Uzbek border guard patrolling the closed frontier, who could not explain why it was sealed. Officials have unconvincingly blamed divergent food-safety standards.

Indeed, for all the talk of brotherly love, perhaps a more revealing moment came two weeks later, when a shoot-out at another border post in the Fergana Valley, between Kyrgyzstan and Tajikistan, left four border guards dead. That was the third fatal incident on the Kyrgyz-Tajik border this year. Three villagers have been killed in two clashes near another Fergana Valley exclave, Vorukh, a Tajik-governed territory encircled by Kyrgyzstan. This is one of nine pockets of land in the valley that are ruled by one country but surrounded by another (see map).

For most of the 20th century the borders that divide the Fergana Valley today were merely internal administrative boundaries within the Soviet Union. Ordinary people could travel more or less freely between Soviet republics, to visit relatives, say, so it mattered little that the lines sliced up the region haphazardly. Although Soviet mythology holds that Stalin designed the cartographical crazy quilt to undermine Central Asian solidarity, in practice the divisions were the result of horse-trading by local power-brokers keen to keep particular locations in their fiefs. In addition, every Soviet republic was supposed to have a population of at least 1m. The result was meandering frontiers that do not even follow the region's already muddled ethnic divisions. Sokh, for instance, although part of Uzbekistan and encircled by Kyrgyzstan, is peopled mostly by Tajiks.

After the Soviet Union collapsed in 1991, the notional boundaries became firm borders. Herdsmen were suddenly cut off from their pastures and farmers from their wells. Border conflicts became, and remain, fairly common. They erupt over seemingly petty matters—the placing of electricity poles, say—the cause of the dust-up that led to the closure of the border crossing near Rishton in 2013. It does not ▸▸

help that the Fergana Valley is Central Asia's most densely populated region, and that ethnic violence can quickly intensify. In the city of Osh in southern Kyrgyzstan, clashes between the Kyrgyz and Uzbek communities in 2010 left 470 people dead.

Kyrgyzstan and Tajikistan dispute half of their 1,000-kilometre frontier, using different historical maps to support conflicting claims. Until recently Uzbekistan, too, was quick to bicker about borders, threatening to go to war over water-sharing and even mining its frontier with Tajikistan. As Central Asia's most populous country and the only one that borders all the others, Uzbekistan was ideally placed to impede regional integration.

But after Uzbekistan's dictator of almost 30 years died in 2016, his successor, Shavkat Mirziyoyev, abandoned prickly isolationism in favour of engagement. He has ordered the opening of more frontier posts and pledged co-operation over hydropower. He has also signed border agreements with both Tajikistan and Kyrgyzstan. A separate treaty with Kyrgyzstan will soon wipe one of the region's exclaves, Barak, off the map, as part of a land swap. The results of Uzbekistan's overtures are tangible: trade with its neighbours shot up by 54% last year.

But the re-sealed border between Rishton and Sokh shows that travel around the Fergana Valley remains far from frictionless. "What can we do?" shrugged one Sokh resident. He was boarding a bus in Fergana, the provincial capital in Uzbekistan proper that oversees exclaves like Sokh. His journey home entails a long detour because of the closed crossing-point at Rishton. "We haven't been able to travel freely since Soviet times," he says philosophically. ■

Banyan A boost for believers

Australia's government wants to allow religious people to discriminate

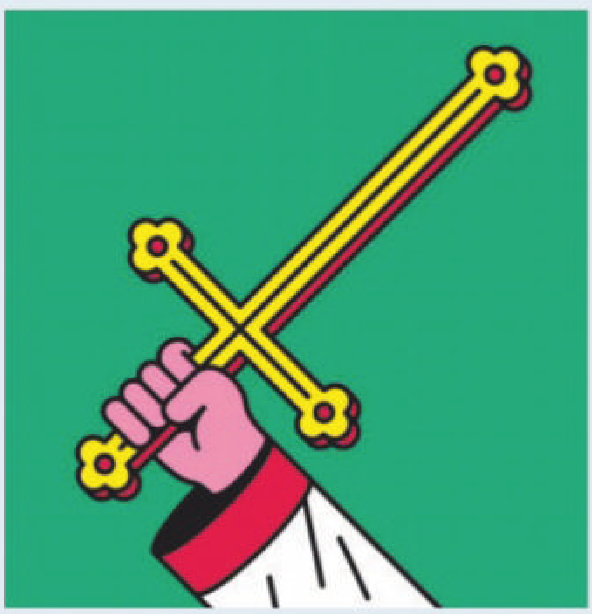
THE LORD works in mysterious ways. For Christian leaders of a conservative bent, recent decades in Australia have seen what the Anglican Archbishop of Sydney, Glenn Davies, calls a "militant secularism" deal repeated blows to the devout. The most notable is the legalisation two years ago of same-sex marriage, after a postal survey showed Australians to be overwhelmingly in favour. The passage of a bill on October 2nd making it easier to get an abortion in New South Wales is another. A *cause célèbre* for religious conservatives is Israel Folau, a rugby star and staunch Christian who was sacked from his club for saying that God's plan for homosexuals was "hell". Mr Folau's case against unfair dismissal is making its way through the courts. But his treatment, the archbishop says, "smacks of a new and ugly Australia" in which believers are unable to express their faith.

There are more general instances of discrimination, Christian leaders say. In the name of tolerance, diversity and inclusion, many companies expect their employees to leave their faith at home. But, says Michael Stead, Anglican bishop of South Sydney, faith is integral to a Christian's identity: "It's not just something you can switch off."

Yet just when all around is darkness comes a ray of light. The right-wing government of Scott Morrison, the prime minister, has thrown its weight behind a package of bills designed to provide enforceable anti-discrimination protections for people with religious beliefs. The legislation is expected to come to parliament before the end of the year.

Many of the provisions work in just the same way as laws against discrimination on the grounds of sex, race, disability and so on. But as well as serving as a shield, the proposed legislation also acts, as Luke Beck of Monash University puts it, as a "sword". People could take actions on the basis of their beliefs that would clearly fall foul of other anti-discrimination legislation, without consequences. An upper-caste Hindu doctor, Mr Beck suggests, could turn away a lower-caste patient he considered untouchable. A devout pharmacist could refuse to provide contraception to an unmarried teenager. And although it would still be illegal to deny women promotions, say, on the basis of their sex, the sort of evidence used to prove such abuses—sexist statements by a boss, for example—would be protected by the proposed legislation if they had a religious underpinning.

Cases like Mr Folau's are tackled in the bills, too. Large firms (ie, with a turnover of A$50m ($34m) or more) may restrict employees from making statements of belief only if that is to avoid "unjustifiable financial hardship" to the firm. In other words, firms could not sack an employee like Mr Folau for denouncing the conduct of their colleagues if he did so based on religious convictions—unless a lucrative deal hinged on it. Not only are the rights of individuals protected, but also those of religious entities, including schools and charities. They are exempt from rules against discrimination if the discrimination is done "in good faith". That could be a licence to expel gay pupils, for instance. And on top of such distasteful scenarios, it seems odd to give certain people legal privileges—the right to act in a way that would otherwise be unlawful—simply because they identify themselves as religious.



The Australian Human Rights Commission, while approving of the protective provisions in the legislation, is concerned about the assertive ones. Others have joined it. Such provisions may well be watered down. But the fact that the bill has made it this far is striking, given Australia's growing godlessness. In the most recent census, in 2016, 30% said they had no religion, compared with 22% five years earlier.

Yet no previous prime minister has been so "out and proud" as a Christian, as John Warhurst of the Australian National University puts it. Mr Morrison described his surprise election victory in May as "a miracle", which Archbishop Davies says is "about right". Mr Morrison holds a weekly prayer session in his office in Canberra.

Marion Maddox of Macquarie University points out that most Australian Christians hold moderate beliefs, including accepting abortion, at least in some circumstances. For the most part, the anti-discrimination bill is a useful bit of virtue-signalling by the political right. Secularists are hardly on the back foot. It is more a consolation prize to religious leaders than the harbinger of a new God-fearing era.

Penal reform

A bigger cage

BEIJING

Justice in China is harsh. But courts are sending some convicts home

A FEW WEEKS ago, people across China were summoned to government offices. There they were given a piece of paper to sign. It contained several pledges, including not to take part in political protests, not to leave their districts and to keep their mobile phones switched on day and night with GPS enabled. For good measure they were asked to affix their thumbprints. Those breaking their promises could be sure of the risk: imprisonment.

The "commitments to self-discipline", as the documents were titled, were part of a nationwide ratcheting-up of security in preparation for official celebrations of 70 years of Communist rule on October 1st. Yet those who agreed to the stipulations had reason to feel relieved. At least they were not in prison already. They were convicts, but serving their sentences at home.

Justice in China is often harsh. Last year 99% of criminal defendants were found guilty. Only about 800 people were acquitted. China has been reducing the number of capital offences, but it is still believed to execute thousands of people every year, more than the rest of the world combined. In the past two or three years the far western province of Xinjiang has built a vast new gulag where it has interned without trial 1m or more people, mostly ethnic Uighurs, often simply for being devout Muslims. The region is home to less than 2% of China's people, but last year hosted one-fifth of its criminal prosecutions.

For some, however, the chance of avoiding jail time has been growing. It used to be that almost all convicted criminals were sent to prison. Minor offenders, such as prostitutes and their clients, were sent to "re-education through labour" camps without even seeing a judge. But in recent years the camps have been abolished and courts have begun experimenting with "correction in the community" sentences instead of locking up people.

Since these pilots began in 2003, more than 4.3m offenders have served their time outside a cell. Today, about 700,000 are doing so. In some big cities, around 60% of criminal sentences do not involve jail. Instead, convicts usually live at home and, for at least eight hours a month, perform unpaid labour such as cleaning streets or clearing streams. Often they also have to attend at least eight hours monthly of instruction on how to be good citizens.

For many of those who receive such sentences, the relief must be immense. Torture and other forms of abuse are common in prisons. There is little sign that conditions are improving. Early this century, however, officials began to wonder whether, for less serious crimes, incarceration was effective. Some noted that, despite the large numbers being locked up, crime rates were still increasing. So community service was tried out in a few regions. In 2005 the government adopted a new policy called "balancing leniency and severity". This meant continuing to impose long jail sentences on people such as violent criminals, corrupt officials and those the Communist Party views as politically dangerous, while punishing petty offenders more lightly. In 2009 the community-corrections system was rolled out nationwide.

Participants are mainly serving suspended prison sentences of three years or less. They need permission to leave their home districts and are banned from travel abroad. Some are electronically tagged. In addition to their labour duty and study sessions, they have to make contact at least weekly by telephone with a local commu- ▸▸

→ Also in this section

nity-corrections bureau, of which nearly 3,000 have been set up. They are supposed to be offered practical assistance such as help finding work and housing.

So far the system has been managed with a hodgepodge of regulations that some officials find confusing and lacking in legal weight. To remedy this, the government is preparing a national law on community corrections. On October 21st a second draft of this was presented to senior legislators. As state media pointed out, it included a notable addition. It said that community-corrections work must "respect and guarantee human rights". The new draft requires that participants' privacy be protected and their "personal freedom" not be restricted (though they would need permission to leave their hometowns). It says their whereabouts will not be tracked digitally unless they break rules.

The government has a monetary incentive to encourage community sentences. The cost per convict is about one-tenth of that for prisoners, reckons Wu Zongxian of Beijing Normal University. Benjamin Liebman of Columbia Law School thinks that judges dangle suspended sentences as a reward for defendants who compensate victims. He speculates that judges also sometimes use the community-service approach when they think defendants are innocent. Courts do not want to offend state prosecutors by acquitting people.

Officials think the system is working. At least while they are enrolled in the scheme, only 0.2% of people re-offend, they say. About 10% of ex-prisoners do. But there is a shortage of well-trained staff. Many of them are former guards at labour camps. They are often more concerned with tracking participants' movements than with rehabilitating them. The shortage is most acute in rural areas, says Enshen Li of Queensland University. This results in huge unfairness for defendants who have migrated to cities from the countryside. Judges prefer to jail them rather than give them suspended sentences because urban probation officers often refuse to handle them and there is no one in their place of birth to oversee community service.

Nationwide, the percentage of criminal trials that resulted in community sentences reached around 35% five years ago, according to data collated by Yang Xue of Nanjing Normal University. But since then it has fallen to about 30%. One possibility is that judges are growing more conscious of the system's flaws. The new law may help allay their concerns. But courts will remain subject to the Communist Party's whims. In recent months police forces have been vying to outdo each other in their efforts to implement the party's campaign against "black and evil forces", a term covering everyone from thugs to labour activists. Those caught can expect no mercy. ■

Academic exchange

Building bridges and selling them

SHANGHAI

A giant Nobel forum helps Chinese science and property developers

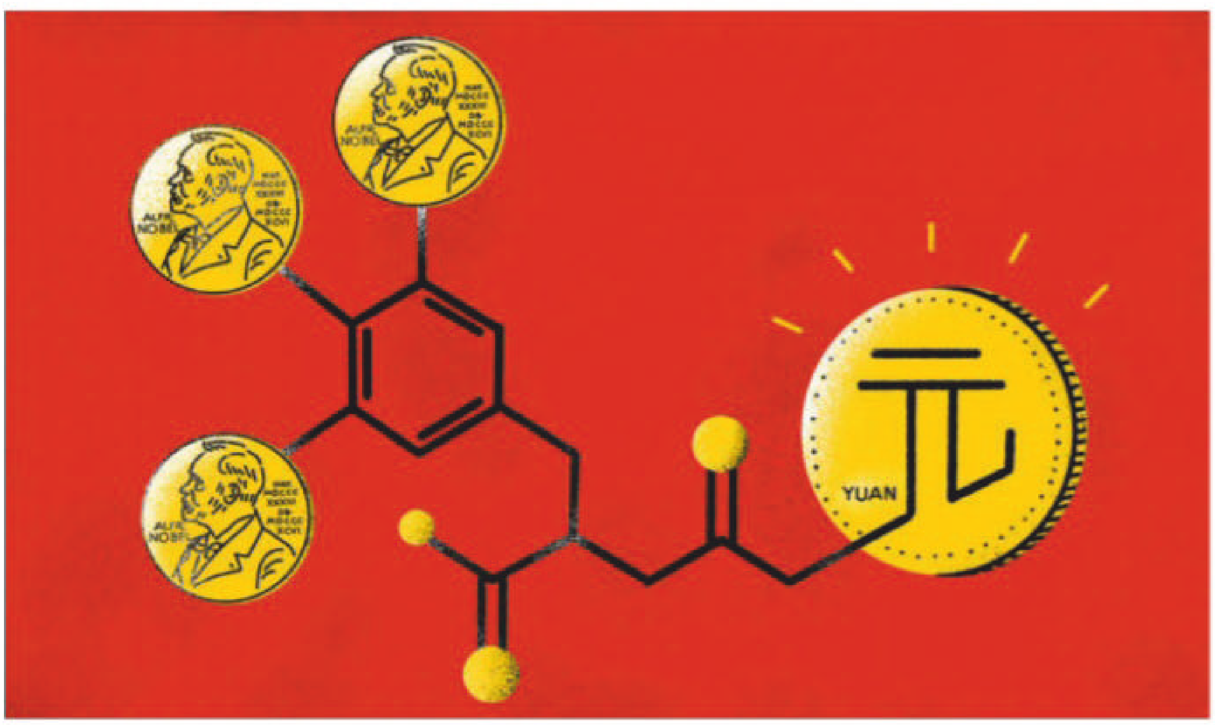
CHINA REVERES Nobel prizes and it loves things that are big. A four-day forum in Shanghai, under way as *The Economist* went to press, has been a perfect union of these. It is one of the world's largest-ever gatherings of Nobel laureates outside the award ceremonies themselves, with 44 attending—mostly scientists, plus a few economists. Winners of prizes such as the Turing award are also taking part. China staged the inaugural World Laureates Forum last year, billing it as a platform for global scientific collaboration. But there is no question that its main goal is the advancement of science in China. At this year's convention an opening video, set to stirring music, dispensed with subtlety. One segment started with Americans planting their flag on the Moon and culminated in Chinese astronauts holding theirs in space.

In a letter to the guests, President Xi Jinping said China was willing to work with all countries to cope with the challenges of our age. Yet the concern hanging over Chinese science is whether the West is willing to work with it (see Chaguan). America has been most active in stepping up scrutiny of Chinese researchers, worried that they may be pilfering technology. Others, including Canada and Australia, have also started taking a closer look.

That is one reason why China is keen to gather foreign laureates. It generates the kind of approbation that it feels it does not get enough of abroad (the Communist-ruled country has produced only one Nobel prize-winner of its own in science). The forum's participants speak enthusiastically about China's scientific work. "What the Chinese government understands and is doing well is broad support for basic science," Roger Kornberg, an American who won the Nobel for chemistry, told state television. It may be that some elderly laureates doddering around the hall are well past their most productive years. But plenty of others are still at the cutting edge. At least 40 have received their various awards in the past decade. One held high office: Steven Chu, America's secretary of energy under Barack Obama.

The topics discussed are widely varied, covering fields ranging from dark matter and the atomic analysis of water to preterm births. "It's a little too remote from my field to be efficient," says one European attendee during a break, asking for anonymity to avoid offending his hosts. But China may benefit. The head of a laboratory at a leading American university says he has tentatively offered two postdoctoral fellowships to Chinese he has just met. A biologist from another American university says the forum could draw talent to China. "Back home it's endless grant applications. Here, they're promising us stable funding and a pipeline of researchers," he says.

The organisers also appear to have a narrower goal in mind. The forum is held on a man-made island on a perfectly circular artificial lake about 70km from downtown Shanghai. The area, known as Lingang New City, feels desolate now, with broad, empty streets and few businesses. Local officials want to make it a technology hub, home to research by the world's best scientists. They claim already to have signed collaboration agreements with 40 of them. Whether or not these promises come to fruition, the buzz may help Lingang's marketing as it tries to entice investors. Planners seem to believe that an important commercial application of science is developing valuable property. ■



Chaguan | Facing a contradiction

China needs global help to grow, so its rulers may have to rethink their obsession with control

On past form, boasts of China's openness to the world will come thick and fast when President Xi Jinping addresses the Second China International Import Expo in Shanghai on November 5th. Speaking at the inaugural edition of that trade fair last year, Mr Xi cast China as a champion of free trade and mutually beneficial co-operation. Openness brings progress while seclusion leads to backwardness, he declared. Slipping into fluent Globalese, the blandly uplifting argot used at gatherings of world leaders, billionaires and CEOs, Mr Xi beamed that it was natural to share the fruits of innovation "in our interconnected global village".

China's leader has every reason to offer warm words at the upcoming event. Even as his country grows richer and more powerful, it is dependent on the world in ways that it cannot control. China has ambitions to become a standard-setting technology superpower. For all its talk of self-reliance, it needs foreign know-how to get there. In the short term, China is anxious for a truce in its trade war with America. It wants to show other countries that it is a team player, unlike that rule-breaking bully in Washington. Further ahead its economy will need growing room. China is running out of useful places to build shiny airports and high-speed railway lines at home, and wants its own global brands to vie with Boeing or Apple. That will require new markets overseas.

Yet before he steps to his lectern in Shanghai, Mr Xi must preside over a different meeting, a four-day session of the Central Committee of the Communist Party ending on October 31st. Such conclaves of nearly 400 top officials are typically held every year or so at a high-security hotel run by the People's Liberation Army in western Beijing. The working language is not Globalese. Communiqués that emerge from these secret meetings are written in unlovely party jargon. State media announced that the plenum would consider "important issues concerning how to uphold and improve the socialist system with Chinese characteristics and make progress in modernising the country's governance system and capacity". That sounds dull, but the meaning is serious. Even tighter controls are coming. Clues were dropped this month by an influential party journal, *Qiushi*, in extracts it published of a previously secret speech in which Mr Xi pondered lessons from history. "Whenever great powers have collapsed or decayed, a common cause has been the loss of central authority," he concluded.

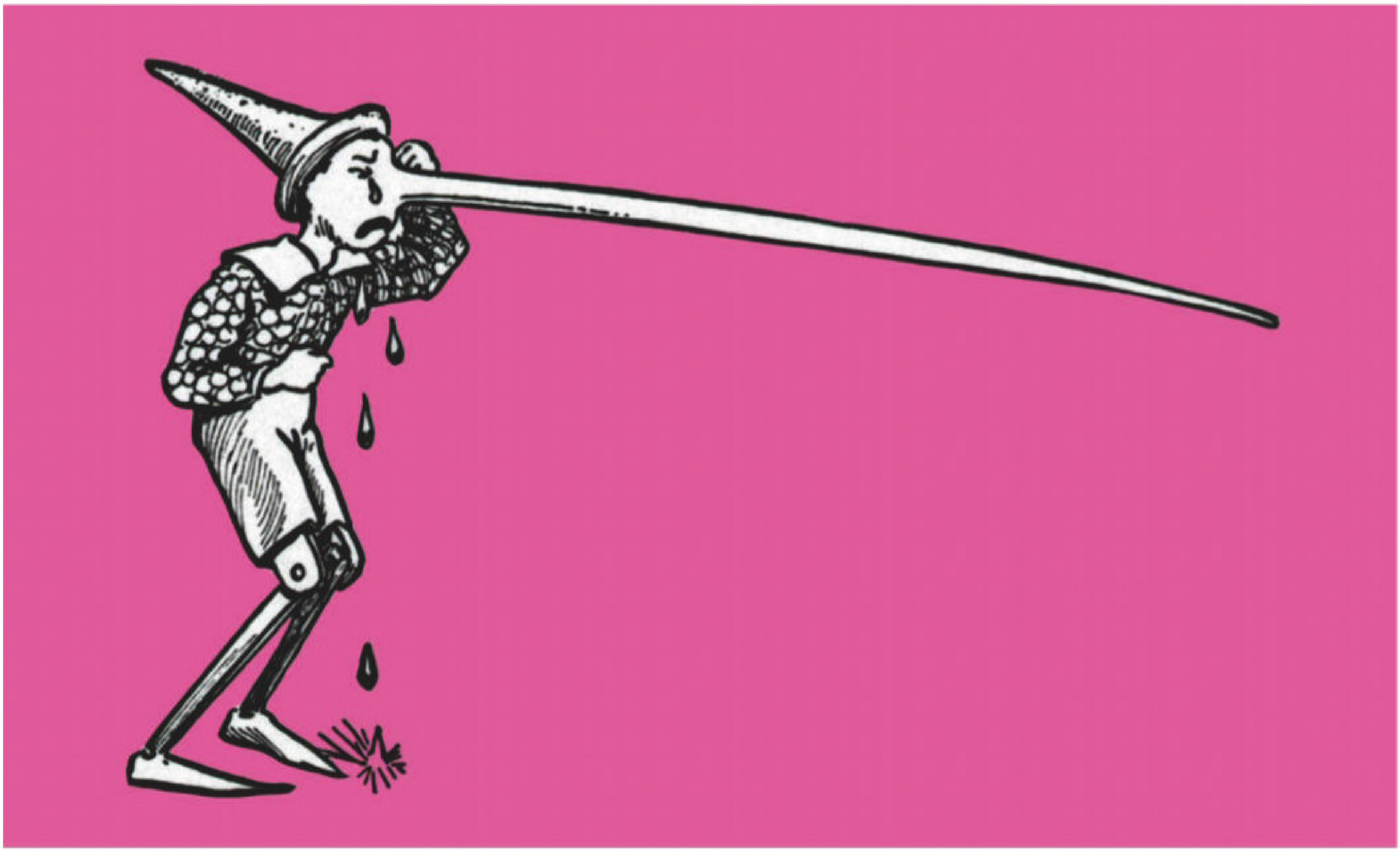
Propaganda organs pretend there is no contradiction between these two personas—a smiling President Xi talking to foreigners about global villages, and Xi the general secretary grimly demanding party discipline and vigilance in the face of hostile external forces and internal threats. On the plenum's opening day, Xinhua, a state news agency, asserted that the world had never seen a governing system with such advantages, combining an "economic development miracle" with a "miracle of political stability".

At home, it is fair to concede, many Chinese accept the social contract implicit in that Xinhua commentary, that personal freedoms should be traded for prosperity and order. To outsiders, however, China's two self-declared miracles are increasingly in tension. For a long time, many foreign admirers of China treated party rule as a bit of a joke. This place has only one ideology, they chuckled: making money. Unfortunately for such people, even as China loosens some rules on market access or foreign investment, the party not only refuses to fade away but is becoming ever more visible and intrusive. Very possibly the guiding ideology is a desire for absolute power, rather than Marxist idealism. In a secretive autocracy, it is impossible to know Mr Xi's real beliefs. Similarly, outsiders can only guess at the meaning of fawning adulation heaped on him before the plenum, such as by a regional party committee which said officials should, deep in their hearts, "strengthen their trust and love in General Secretary Xi Jinping as the core of the party, the people's leader and commander-in-chief of the army". This may reflect Mr Xi's mightiness, or his weakness and insecurity. But to judge by his actions, Mr Xi has asserted the party's total authority over China's system of state capitalism, from law courts to private firms and lumbering state enterprises. And one power-grab often prompts another. When modestly paid bureaucrats have sway over billion-dollar assets at the same time that feistier newspapers are silenced and independent lawyers locked up, it is no surprise that the party has to launch anti-corruption campaigns so fierce that some officials fear taking decisions at all.

Running a 21st-century economy with ideas from the 1950s

The very complexity of modern Chinese society, with its growing mobility and personal freedoms for those who stay within party-defined boundaries, seems to convince China's leaders that they must tighten and retighten their grip. Increasingly that involves high-technology systems of control, from algorithms that censor social media, to facial-recognition systems that stop errant citizens from catching high-speed trains. To officials at home, techno-authoritarianism is a saviour. With big data to crunch and nowhere for miscreants to hide, perhaps top-down rule can at last be made to work. Abroad, the trade-offs look different. Not long ago, Silicon Valley investors might have swooned over a mobile-payment system built around Chinese facial-recognition technology, for instance. Now, shrewd fund managers—and young potential consumers in the West—might ask whether the same cameras are used to repress Muslims in the western region of Xinjiang.

The authoritarian turn that China is taking, in the name of saving one-party rule from itself, is hard to square with a quest for globally driven growth. Already foreign bosses privately admit to wondering, as never before, what it means when a Chinese business partner is a party member. Mr Xi seems to want a China that is open to foreign investors and inventions but closed to dangerously foreign (meaning liberal, Western) ideas. Communists are fascinated by contradictions. This one may prove hard to resolve. ■



Credulity and politics

This article is full of lies

You really can fool some of the people, all of the time

IN 2001 JONATHAN HAIDT, a psychologist at New York University, published a paper in *Psychological Review* delightfully entitled "The Emotional Dog and its Rational Tail". He argued that when people make moral decisions, they are influenced by emotion, or what might also be termed intuition. They may think they are weighing evidence but in fact their decisions are made in the blink of an eye. The reasons they give afterwards merely reflect these emotions, like a dog wagging its tail.

Others have taken similar views. "Reason is, and ought only to be, the slave of the passions," wrote David Hume, a philosopher of the Scottish Enlightenment, in 1739. But the lessons of Mr Haidt's essay are particularly apt at a time when lying has come to define politics more than usual.

Dictatorships have always been built on lies: that Kim Jong Un is a demigod, that nothing much happened on June 4th 1989 in Tiananmen Square. The Soviet Union called its main newspaper *Pravda* ("Truth"). That was a lie, of course.

Politicians in democracies have always mangled the truth: denying affairs and downplaying the ill effects of their policies. What is new is the degree to which voters are prepared to back leaders who seem to revel in their mendacity.

Misleaders of the free world

Boris Johnson's first notable act was to be fired from a newspaper for making up a quote. Yet he is Britain's prime minister. India said that it had downed a Pakistani F-16 fighter jet over Kashmir in February. Facing an election, Narendra Modi, India's prime minister, said his country had taught Pakistan a lesson. A subsequent inspection of Pakistan's aircraft by American officials showed that none was missing (India maintained its position).

As for President Donald Trump, whole websites are devoted to his truthlessness. On one, Glenn Kessler of the *Washington Post* fact-checks presidential statements and awards scores: three Pinocchios for "significant factual errors" and four for "whoppers" (Mr Trump's claims about Ukraine and Hunter Biden fit into the whopper category). As of October 9th, the president had made 13,435 false or misleading statements while in office. Rather than grapple with what is true and what is false, Twitter said on October 30th it would ban political ads (Facebook has so far declined to the same).

Yet their duplicity seems to cost politicians little, if anything, in electoral support. Surveys by YouGov, a pollster, put Mr Johnson's Conservative Party in the lead in the election due in December. Mr Trump's job-approval rating, at 43%, is low but only one point below what it was when he took office. No one takes for granted that he will lose next year's presidential election.

Why isn't lying more damaging? One possibility is that lying on a Trumpian scale is so unusual—so frequent, shameless and easily falsified—that people do not know how to react. In tests, between two-thirds and three-quarters of people say they never lie; most of the rest claim to lie fewer than five times a day. It is hard to comprehend someone who goes so far beyond normal, occasional deceitfulness.

Another explanation is that people trust leaders for whom they have voted, whatever those people say. A recent study by two researchers at Brigham Young University, Michael Barber and Jeremy Pope, examined whether voters are loyal to an individual leader or whether they support leaders who ▸▸

represent the policies and outlook they themselves espouse. Because Mr Trump has abandoned so many traditional Republican policies, such as support for free trade and suspicion of Russia, the researchers concluded that it is personal: those who still call themselves Republicans support Mr Trump because of who he is, not what he stands for. And if personal loyalty trumps ideology, then voters may back a politician even if he does not tell the truth.

Indeed, Mr Trump's supporters may even relish his deceits. If you believe that all politicians are liars, those outraged by Mr Trump's falsehoods are hypocrites. The ire of his opponents and members of the press, such as Mr Kessler, at his lies is taken chiefly as evidence of his cocking a snook at the swampy establishment.

But even in daily life, without the particular pressures of politics, people find it hard to spot liars. Tim Levine of the University of Alabama, Birmingham, has spent decades running tests that allow participants (apparently unobserved) to cheat. He then asks them on camera if they have played fair. He asks others to look at the recordings and decide who is being forthright about cheating and who is covering it up. In 300 such tests people got it wrong about half of the time, no better than a random coin toss. Few people can detect a liar. Even those whose job is to conduct interviews to dig out hidden truths, such as police officers or intelligence agents, are no better than ordinary folk.

Evolution may explain credulity. In a forthcoming book, "Duped", Mr Levine argues that evolutionary pressures have adapted people to assume that others are telling the truth. Most communication by most people is truthful most of the time, so a presumption of honesty is usually justified and is necessary to keep communication efficient. If you checked everything you were told from first principles, it would become impossible to talk. Humans are hard-wired to assume that what they hear is true—and therefore, says Mr Levine, "hard-wired to be duped".

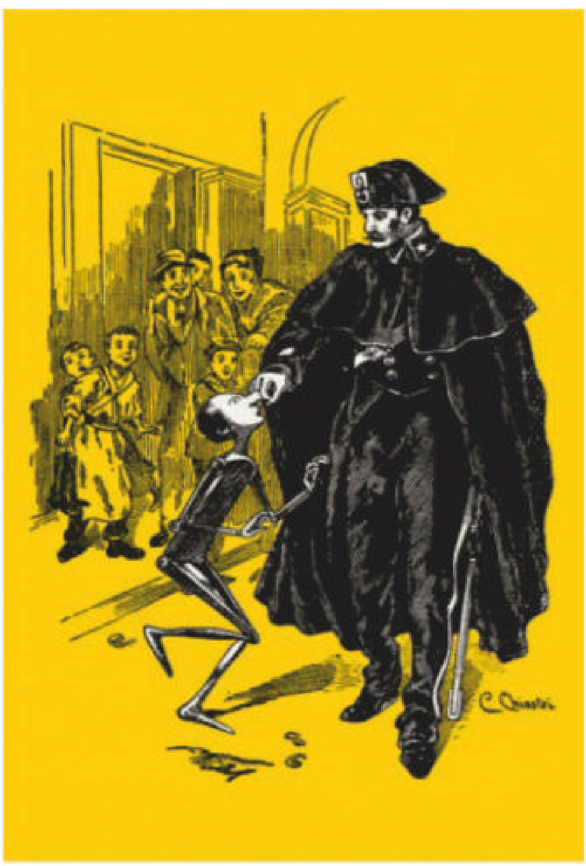
So strong is that instinct that people suspend their critical faculties when given orders by a superior. The point was made by one of the most famous experiments in psychology, the "obedience to authority" test conducted by Stanley Milgram in 1961. Subjects were (falsely) told that they were taking part in a test that required them to administer electric shocks to another participant (who was an actor). As the test proceeded, they were willing to give shocks so large that the impact would have been fatal had they been real. The normal interpretation is that people are willing to behave unconscionably if they can tell themselves they were merely "following orders". But Mr Levine raises another possibility: they may well have had doubts that the experiment was real, but not sufficient to override what he calls the "truth default".

Fake news may be exacerbating people's inbuilt gullibility. A study published last year in *Science*, a journal, concluded that "falsehood diffused significantly farther, faster, deeper and more broadly than the truth" and that this effect was especially strong for fake political news. Fake news provides voters with a smorgasbord of facts and lies from which to pick and choose.

In politics, however, these explanations cannot be the whole story. At the heart of the lying-politician paradox is an uncomfortable fact: voters appear to support liars more than they believe them. Mr Trump's approval rating is 11 points higher than the share of people who trust him to tell the truth. A third of British voters view Mr Johnson favourably but only a fifth think he is honest. Voters believe in their leaders even if they do not believe them. Why?

The answer starts with the primacy of intuitive decision-making. In 2004 Drew Westen of Emory University in Atlanta put partisan Republicans and Democrats into a magnetic-resonance-imaging scanner and found that lying or hypocrisy by the other side lit up areas of the brain associated with rewards; lies by their own side lit up areas associated with dislike and negative emotions. At no point did the parts of the brain associated with reason show any response at all. If voters' judgments are rooted in emotion and intuition, facts and evidence are likely to be secondary.

The most important consequence of the domination of intuition is the pervasiveness of confirmation bias—the tendency to seek out and interpret information that confirms what you already think. It is a feature of reasoning, not a bug. There are few better illustrations than Americans' news-gathering habits. To oversimplify, Democrats read the *New York Times*; Republicans watch Fox News. A Pew poll in 2018 found that 82% of Democrats thought the media perform a useful "watchdog" role of keeping politicians from doing things they shouldn't. Only 38% of Republicans agreed. By contrast, five years earlier, when Barack Obama was president, the figures were 67% and 69% respectively.



A new version of confirmation bias is "identity-protective cognition", argues Dan Kahan of Yale Law School. This says that people process information in a way that protects their self-image and the image they think others have of them. For example, those who live surrounded by climate-change sceptics may avoid saying anything that suggests humankind is altering the climate, simply to avoid becoming an outcast. A climate sceptic encircled by members of Extinction Rebellion might do the same thing in reverse. As people become more partisan, more issues are being taken as markers of the kind of person you are: in Britain, the country's membership of the European Union; in America, guns, trade, even American football. All give rise to the acceptance of bias.

Deceit of power

Thomas Gilovich of Cornell shows how fake news, cognition bias and assuming that people are telling the truth interact to make it easier to believe lies. If you want to believe a thing, he argues (that is, a lie that supports your preconceived ideas), you ask yourself: "*Can* I believe it?" A single study or comment online is usually enough to give you permission to hold this belief, even if it is bogus. But if you do not want to believe something (because it contradicts your settled opinions) you are more likely to ask: "*Must* I believe it?" Then, one apparently reputable statement on the other side will satisfy you. That may be why so many climate sceptics manage to cling to their beliefs in the teeth of overwhelming evidence to the contrary. Activists point out that 99% of scientists believe the Earth is warming up because of human actions. But people who doubt the reality of climate change listen to the other 1%.

You might expect (or hope) that thoughtful people would be more amenable to the force of fact-based evidence than most. Alas, no. According to David Perkins of Harvard University, the brighter people are, the more deftly they can conjure up post-hoc justifications for arguments that back their own side. Brainboxes are as likely as anyone else to ignore facts which support their foes. John Maynard Keynes, a (famously intelligent) British economist, is said to have asked someone: "When the facts change, I change my mind. What do you do, sir?" If they were honest, most would reply: "I stick to my guns." ■

→ Also in this section

Management education

The next business revolution

BOSTON AND PALO ALTO

American business schools are reinventing the MBA. About time

ON A VISIT to New York in October Marc Benioff, boss of Salesforce, compared Facebook to cigarettes and backed a corporate tax hike to deal with homelessness in San Francisco. If badmouthing a fellow technology giant and cheering the taxman were not heterodox enough for a billionaire entrepreneur, Mr Benioff laid into American management education. It "programmes" students to favour profit over the public good. This, he noted, is out of step with "the new capitalism".

Many deans concur. "We need our students to be thoughtful about the role of business in society, particularly at a moment in time when capitalism is coming under attack," says William Boulding of Duke's Fuqua School of Business. Nitin Nohria of Harvard Business School (HBS) reports how younger alumni and incoming classes want "the place of work to reflect purpose and values". Jonathan Levin of Stanford's Graduate School of Business (GSB) talks of business schools' responsibility to recognise the societal consequences of corporate actions. "Corporations, their leaders and owners need to act to restore trust," he intones.

America's business schools still dominate our annual ranking of the world's top MBAS (see table on next page). But the industry is being shaken up. According to the Graduate Management Admission Council (GMAC), an industry association, American MBA programmes received 7% fewer applicants this year than last. Nearly three-quarters of full-time, two-year MBA programmes reported declines from coast to coast. Not even the most illustrious ones were spared: HBS (located in Boston) and Stanford's GSB (in Palo Alto) both saw applications dip by 6% or so. Schools face growing competition from overseas and online programmes—and, as Mr Benioff's critique implies, questions over hidebound curriculums. "We're being disrupted left, right and centre," confesses Susan Fournier, dean of Boston University's Questrom School of Business.

When management education boomed in the 1960s, American schools taught mostly American students. As the world economy globalised in the 1980s and 1990s, so too did American curriculums and student bodies. Sangeet Chowfla, who heads GMAC, now discerns a "third wave": improved schools outside America are letting foreign students study closer to home (and future employers). Many offer cheaper one-year MBAS, popular in Europe but uncommon across the pond. Whereas three in four two-year MBA programmes in America saw declines in overseas applicants in the latest application cycle, numbers applying to Asian business schools rose by 9% from 2017 to 2018. A recent uptick in America's anti-immigrant sentiment is accelerating the trend.

Americans, too, are cooling on MBAS. More than half of American schools report fewer domestic applicants. Soaring tuition costs, which have far outpaced inflation, put them off as much as they do foreigners. A top-notch MBA will set you back more than \$200,000 (including living costs). Even with financial aid, many students are saddled with \$100,000 debts at graduation. The opportunity cost of forgoing two years' worth of paycheques is higher when the ▸▸

economy is booming and labour markets are tight. Weak demand has caused the number of full-time MBA programmes in America to fall by nearly a tenth between 2014 and 2018, according to the Association to Advance Collegiate Schools of Business, another industry body.

Geoffrey Garrett, dean of the Wharton School, at the University of Pennsylvania, believes that a flight to quality is benefiting top institutions like his—and their graduates. Add non-wage compensation and alumni often recoup their investments in a few years. Not counting signing bonuses, the average base salary for graduates of the five American schools with the highest earning potential was $139,000.

Consultancies and investment banks, historically the keenest MBA recruiters, claim their appetite for holders of elite degrees has not diminished. A prestigious MBA "puts a floor on your career", explains Kostya Simonenko, a 28-year-old consultant on leave from Oliver Wyman (which is paying for his course at Columbia Business School). Silicon Valley, which used to dismiss MBAs as overpaid know-nothings, has become less hostile. As startups grow into large corporations, they need managers to help run things, not just software engineers to run code. A survey of recruiters by GMAC this year found that 80% of technology companies planned to hire MBAs, on a par with consultancies (82%) and financial firms (77%).

Even the finest schools, though, are not sheltered from the forces buffeting business education. Global competition and new technology platforms enable a lower cost structure for the delivery of high-quality courses. This forces "a reckoning of the MBA value proposition", says Ms Fournier.

As part of that reckoning, Questrom has teamed up with edx, a big online-education firm, to offer a full MBA degree online for just $24,000, less than a third of the cost of its on-campus equivalent. Better to cannibalise yourself than let others do it, as Ms Fournier puts it. MIT's Sloan School of Management provides similarly affordable bundles of online courses, dubbed MicroMasters, in areas like supply-chain management and finance. These grant certificates but the credits will be honoured if a student one day decides to pursue a full degree. 2U, an online-education platform, is introducing deferred-tuition schemes for some hybrid MBA degrees. It will share the upfront costs with its business-school partners; students will pay only when they get a job.

It is not just how MBA courses are taught that is changing. So, too, is what they teach. Many budding woke capitalists agree with Mr Benioff—and demand to be taught business beyond the primacy of shareholder value. At Stanford Luisa Gerstner, a millennial MBA student from Germany, notes that sustainable capitalism plays a more central role in European schools. Julia Osterman, her American classmate, laments how, despite some social, environmental and ethical topics in its curriculum, core classes are still "too Finance 101".

Some of their professors are not so sure. One greybeard at HBS estimates that a third of its faculty (and many older alumni) view the embrace of cuddly "stakeholder capitalism" as an unrigorous sop to political correctness. It certainly introduces lots of grey areas, Mr Boulding concedes. But, he says, schools can at least provide students with "frameworks for making choices". A new course at Duke is entitled "Capitalism and Common Purpose in a World of Differences". HBS has made "Leadership and Corporate Accountability" (which delves into "the responsibilities of business to the broader system in which it is embedded") a required first-year course, with case studies weighing up things like the morality of looking beyond financial metrics at Japan's Government Pension Investment Fund.

Recoding academies

Curriculums are being transformed in less lofty ways, too. Employers, who partly or wholly bankroll half of all executive education, which earns elite schools between $100m and $150m a year, want it to impart technical skills. In response, deans such as Costis Maglaras, the newish head of Columbia Business School (and an engineer by training), are bolting courses on data, analytics and programming onto the timetable. As their popularity rises, they may displace stodgier subjects. Columbia used to offer several courses on debt markets but now offers perhaps one each academic year. Meanwhile, students have flocked to coding classes. The idea is not to turn business types into boffins but to prepare them to work with and manage technical staff, says Mr Maglaras. A recruiter for a big consultancy affirms that tech-savvy MBAs are "very attractive".

Richard Lyons, former dean of the Haas Business School at the University of California, Berkeley, sees the future in providing lifelong professional education as a service: "Give alumni know-how on demand, searchable online." Scott DeRue, dean of the University of Michigan's Ross School of Business, is giving alumni tuition-free access to executive education. "The new stuff will come from insurgents, not the big MBA schools," thinks John Kao, a management guru who formerly taught at HBS. He wants training benchmarks and standardised transcripts to make skills portable and universally recognised.

At HBS, home to perhaps the most hallowed MBA, Mr Nohria accepts that the market for its traditional offering is shrinking. In a sign of the times, his school has frozen tuition fees. He sees a dramatic expansion for "unbundlers" of online education, who "separate knowing, doing and being". In time, he says, they will converge with "bundlers" like HBS. Far from collapsing, he reckons, management education will the richer for it. ■

Which MBA? *The Economist*'s ranking of full-time MBA programmes
2019

	Change on 2018			Graduates: Average new salary, $	Graduates: Increase on pre-MBA salary, %	Graduates: In a job within 3 mths, %	Course: Annual tuition fee, $	Course: Duration, months	Students: Average work experience, years	Students: Average GMAT* score
1	–	**Chicago** (Booth)	US	131,893	84	96	72,000	21	5	731
2	+1	**Harvard**	US	139,339	59	95	73,440	21	5	731
3	+10	**HEC Paris**	France	127,410	153	93	66,690†	16	6	691
4	-2	**Northwestern** (Kellogg)	US	128,415	72	94	73,404	21	5	732
5	-1	**Pennsylvania** (Wharton)	US	142,701	22	98	81,378	20	5	732
6	+2	**UCLA Anderson**	US	121,843	94	90	64,292	22	5	716
7	+4	**California at Berkeley**	US	127,632	72	94	61,422	19	5	726
8	-3	**Stanford**	US	145,559	68	95	73,062	21	4	732
9	-2	**Michigan** (Ross)	US	126,500	104	94	68,646	20	5	720
10	-4	**IESE**	Spain	122,284	124	96	107,295†	19	6	686
11	+4	**Duke** (Fuqua)	US	127,874	99	96	70,000	22	6	704
12	–	**Dartmouth** (Tuck)	US	130,022	101	92	75,108	21	5	722
13	+11	**SDA Bocconi**	Italy	136,366	124	90	67,991†	12	6	665
14	+6	**Cornell** (Johnson)	US	126,353	103	94	69,440	21	5	699
15	-5	**Columbia**	US	130,924	68	94	74,400	20	5	730
16	-7	**Virginia** (Darden)	US	127,767	83	94	70,700	21	5	717
17	–	**New York** (Stern)	US	129,059	102	95	71,676	21	5	716
18	+10	**S. California** (Marshall)	US	122,634	125	96	63,096	22	5	705
19	-3	**MIT** (Sloan)	US	135,105	69	97	79,368	21	5	728
20	+2	**Washington** (Foster)	US	118,355	101	99	48,333	21	6	696

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Tech recruitment

Egghead-hunting

How Silicon Valley woos clever Stanford students

Inflating expectations

CONGRATULATIONS, YOU got into Stanford University. You beat 22 other candidates vying for each coveted place. For you, competition doesn't quite stop there: being best in class boosts your prospects. But the real fighting now will be over 7,100 undergraduates and 9,400 graduate students, not between them. Technology giants and sexy startups all want this brainpower. So do venture capital (VC) funds. All go to sometimes absurd lengths to get it.

Accelerator programmes, such as Startx or Alchemist Accelerator, court budding entrepreneurs with burritos, desk space and thousands of dollars in earliest-stage funding. They hope to ferret out the next HP, Cisco, Google, PalPal, Netflix or other tech success story that can trace its roots to Stanford's campus in sleepy Palo Alto, Silicon Valley's spiritual epicentre.

To beat others to top talent, some deep-pocketed investors take on teaching appointments. Venture capitalists from Floodgate teach a course in how to evaluate startups. Many wannabe founders attend—and are evaluated in turn. Those who sparkle in final exams, which look a lot like startup pitch days, are invited to meet investors. Many such meetings turn into funding rounds (see Buttonwood). One student recounts how a Silicon Valley luminary who sometimes teaches at Stanford's Graduate School of Business has funded students on the spot.

Partners from VC firms like Accel, Threshold Ventures and Mayfield sponsor fellowships for entrepreneurial students—and host regular soirées and annual weekend getaways to Lake Tahoe. With such opportunities about, gushes Patty Sakunkoo, a PhD-student-turned-entrepreneur who has created multiple photo and video apps, "you can't help but catch the startup bug while at Stanford."

Some VCs hope at least some students can resist—and come to work for them instead. They hang out with other company recruiters—from technology giants and small startups alike—at one of Palo Alto's half-dozen Coupa Cafés, a local coffee-shop chain. They treat prospective hires to lattes—and promises of a rich career.

Now that stock options are falling out of favour as one tech initial public offering after another fizzles, for smaller startups the richness relies more on the emotional appeal of founders' mission. Either that, or they offer dibs on their product: Josh Wolff, a computer-science and bioengineering undergraduate, recalls being repeatedly approached by someone on LinkedIn who wanted to contract him as a consultant—and pay with his own cryptocurrency (Mr Wolff wisely declined). In the end, though, "it is so hard to compete with Big Tech," sighs one founder.

The giants, many with headquarters nearby, rule the roost at Stanford. They, too, play up their mission and the importance of each job. But mostly, they shower students with goodies. The annual job fair in October is an "insane arms race of free corporate swag", says Ashwin Siripurapu, a computer-science graduate. Students exchange résumés for trinkets (USB sticks, Rubik's cubes) or, occasionally, heftier gifts (bluetooth speakers, tablets). Within days offers start flooding in, including from firms that students never approached.

Once they identify a keeper, cash-rich firms—be they listed behemoths or multi-billion-dollar unicorns—spare no expense. They wine and dine students at glitzy Palo Alto restaurants like Reposado or Il Fornaio and put them up in five-star hotels on visits to offices in places like New York. One Stanford graduate recalls a big unicorn paying for an Uber Copter to fly him from Manhattan to JFK airport.

When all is said and done, it is hard to resist a starting salary of $150,000-200,000, great health insurance, wellness reimbursements and unlimited vacation time (including at company retreats)—and a signing bonus of $10,000-20,000, for good measure. A job at today's conglomerates—Alphabet, Apple, Amazon or Facebook—increasingly resembles one at General Electric in the 1980s: making up in perks what it lacks in sizzle. ■

Advanced Micro Devices

The Zen masters

A chipmaking underdog is having its day—and nipping at Intel's heels

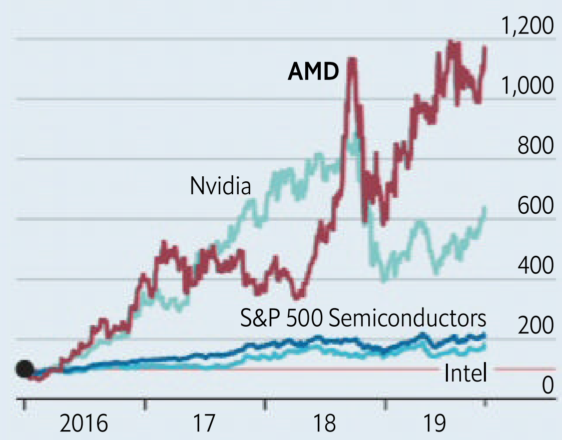
DAVID, HE OF the spat with Goliath, is an overused corporate analogy. But it is hard to think of a more appropriate one for Advanced Micro Devices (AMD). On October 29th the American chipmaking tiddler reported its third-quarter results. Lisa Su, its boss, declared herself "extremely pleased". No wonder. At $1.8bn, revenue was the highest since 2005. AMD predicted that next quarter's figures would be equally perky, up 48% on the previous year to $2.1bn. Its share price has risen 15-fold since 2015 (see chart).

AMD is more important to the chip business than its diminutive stature suggests. It provides the only meaningful competition to not one but two Goliaths in two important parts of the semiconductor industry. Its CPUs—the general-purpose chips at the heart of modern laptops, desktops and data centres—compete with those from Intel, whose $71bn of revenue in 2018 made it the world's second-biggest chipmaker. Its GPUs—which provide 3D graphics for video games and, increasingly, the computational grunt for trendy machine-learning algorithms—go up against those from Nvidia, whose revenues last year of $11.7bn were nearly twice those of AMD.

AMD's purple patch comes mostly from its battles with Intel. Until recently, Intel virtually monopolised the CPU market. Analysts at Mercury Research reckon that in 2015 its chips accounted for 92.4% of desktop and laptop computers, and 99.2% of the more lucrative market in server chips. Mercury's most recent numbers put AMD's share at 14.7% for desktops and laptops. For servers it is a more modest 3.1%—but still five times what it was two years ago. ▸▸

Overclocking

Total returns, January 1st 2016=100



Source: Datastream from Refinitiv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Two things explain the firm's resurgence. One is a better product. In 2012 AMD rehired Jim Keller, a well-regarded chip designer who had been at Apple. AMD had long been competing on price—its chips were slower than Intel's but much cheaper. Mr Keller's "Zen" chips, unveiled in 2017, are still cheap. But they are now as zippy as Intel's, or even zippier: AMD's top-end server chip, for instance, is faster than its Intel counterpart in many tasks, and costs half as much. Zen chips have won a string of contracts with Microsoft and Sony (for new games consoles), Google (data centres) and Cray (supercomputers), among others.

The second reason is that, while AMD has improved, Intel has stumbled. The firm makes its own chips. Its latest and greatest manufacturing process, which should have delivered a big performance boost, is years late, leaving the firm to rehash existing designs. AMD contracts most of its manufacturing to the Taiwan Semiconductor Manufacturing Company, which has now caught up with Intel's technology.

Can AMD's good fortune last? Intel eventually put paid to similarly competitive spells at the turn of the century and in the mid-2000s. It is trying again. In 2018 it hired Mr Keller, this time from Tesla (he had left AMD in 2015). It plans to launch an advanced new manufacturing process in 2021. A planned move into GPUs could squeeze AMD from another direction.

For now, AMD's resurgence is good news for consumers, IT departments, cloud-computing firms and anybody who uses software. Like any good monopolist, Intel charges a steep price for its products—unless AMD is doing well. Sure enough, Intel's newest set of desktop chips, due in November, are some of its thriftiest in years. ■

Bartleby Whistle while you work

Research suggests happy employees are good for firms and investors

THERE IS AN old joke about a new arrival in Hell, who is given the choice by Satan of two different working environments. In the first, frazzled workers shovel huge piles of coal into a fiery furnace. In the second, a group of workers stand, waist-deep in sewage, sipping cups of tea. The condemned man opts, on balance, for the second room. As soon as the door closes, the foreman shouts "Right lads, tea break over. Time to stand on your heads again."

Terrible working conditions have a long tradition. Early industry was marked by its dirty, dangerous factories (dark, satanic mills). In the early 20th century workers were forced into dull, repetitive tasks by the needs of the production line. However, in a service-based economy, it makes sense that focusing on worker morale might be a much more fruitful approach.

Proving the thesis is more difficult. But that is the aim of a new study* which examines the relationship between happiness and productivity of workers at British Telecom. Three academics—Clement Bellet of Erasmus University, Rotterdam, Jan-Emmanuel de Neve of the Saïd Business School, Oxford, and George Ward of the Massachusetts Institute of Technology—surveyed 1,800 sales workers at 11 British call centres. All each employee had to do was click on a simple emoji each week to indicate their level of happiness. Those workers were charged with selling customers broadband, telephone and television deals. In total the authors collected adequate responses from 1,161 people over a six-month period.

The results were striking. Workers made 13% more sales in weeks when they were happy than when they were unhappy. This was not because they were working longer hours; in happy weeks, they made more calls per hour and were more efficient at converting those calls into sales. The tricky part, however, is determining the direction of causation. Workers may be happier when they are selling more because they anticipate a bigger bonus, or because successful sales pitches are less stressful to make than unsuccessful ones.

The academics tried an ingenious way to get round this causation problem by examining a very British issue—the weather. Workers turned out to be less happy on days when the weather in their local area was bad and this unhappiness converted into lower sales. Since they were making national calls, not local ones, it is unlikely that customer unhappiness with the weather was driving the sales numbers. So it was worker mood driving sales, not the other way round.

Even if this reasoning proves to be correct, businesses may not find it of comfort. Short of siting all their call centres in Hawaii, companies cannot control the weather conditions their workers face.

The academics point out that "what we are not able to do, given our data and setting, is adjudicate as to whether investing in schemes to enhance employee happiness makes good business sense". It is possible that the costs of such schemes might outweigh any gains in productivity.

More research is clearly needed. But there is evidence that happier workers are good news for shareholders, as well as productivity. Analysts at BOA Merrill Lynch Global Research studied the stocks of firms rated on Glassdoor, a website that allows employees to rate the companies they work for. Those with the highest ratings outperformed those with the lowest by nearly five percentage points a year between 2013 and 2019. The analysts also used software that picked over the text of employee reviews and found that incorporating this approach improved the risk-reward trade-off (as measured by the Sharpe ratio) of the strategy.

The analysts have now applied the same approach to picking stocks based on particular industries. Again, the sectors where workers gave the best reviews on Glassdoor between 2013 and 2019 easily outperformed those where employees gave a thumbs down.

None of this is unequivocal proof. The history of equity investing is littered with strategies that worked well when back-tested only to disintegrate when applied in the real world. But at the very least, it suggests that firms should consider the merits of a contented workforce. And that might mean giving them harps and ambrosia, rather than Hell.

* "Does Employee Happiness Have an Impact on Productivity?", Saïd Business School Working Paper 2019-13

Economist.com/blogs/bartleby

Schumpeter | The spirit of Carlos

What a great European car boss can teach a troubled industry

In 2013 two Carloses sat atop the Renault-Nissan alliance. One was Carlos Ghosn, the Brazilian-born architect of the Franco-Japanese carmaking colossus. His protégé was Carlos Tavares, the Portuguese chief operating officer of Renault, who made sure that good cars rolled off the production line. But Mr Tavares, an engineer and racing driver, was not content trailing the fast-living Mr Ghosn. As he revealed in an interview that year, his ambition was to lead a big car company, such as General Motors. Mr Ghosn was horrified. Shortly afterwards, Mr Tavares quit Renault. A few months later he was boss of PSA Group, maker of Peugeot and Citroën, Renault's domestic rival. It was the start of a series of manoeuvres that have now made him the talk of the car industry, much like Mr Ghosn before and after his arrest in Japan last year on charges of financial misconduct (which Mr Ghosn denies).

On October 30th the boards of PSA and Fiat Chrysler Automobiles (FCA), an Italian-American company, said the two firms planned to merge. Mr Tavares would become chief executive of the combined group and John Elkann, FCA's chairman (who sits on the board of *The Economist*'s parent company), would chair its board. It would create the world's fourth-biggest carmaker by vehicle sales, with a market value of around $50bn. On-off discussions between the two firms were ruptured in early summer when FCA attempted to merge with Renault, a deal that was thwarted by Renault's biggest shareholder, the French government. The merged group would probably find most of the €3.7bn ($4.1bn) of annual cost-savings they hope to achieve in Europe, a stagnant market where stringent environmental regulations are about to make carmakers' lives tougher still. Competition issues in parts of Europe, feisty unions and messy politics could yet scupper any deal. Furthermore, it is not clear whether Peugeot is Fiat's preferred partner.

But the planned mega-merger puts the spotlight squarely on Mr Tavares. As Max Warburton of Bernstein, a broker, puts it: "Those of us who subscribe to the Great Man Theory will be fascinated to see what Tavares could achieve at FCA, were he given the chance."

The "Great Man Theory" Mr Warburton is referring to states that big car-industry mergers are a murderous task that only a true leader can hope to pull off. Fiat's revered late boss, Sergio Marchionne, managed this feat with Chrysler. Mr Ghosn succeeded in holding the Renault-Nissan alliance together for many years.

A corollary to the Great Man Theory is what could be called the "Big Firm Hypothesis". Typically attributed to Marchionne, it posits that huge challenges facing the industry, such as electric vehicles and self-driving cars, necessitate global consolidation. To an extent Mr Tavares embodies both doctrines, having swiftly turned around first Peugeot, after it was battered by the financial crisis of 2008-09, then Opel and Vauxhall, which he bought from GM in 2017. But what truly sets him apart is his ability to turn carmakers into, as he has put it, "psychopaths of performance". That tireless devotion to profits, even if it comes at the expense of personal greatness or corporate bigness, is a lesson most of the industry could learn.

The fraught Renault-Nissan tie-up is a case in point. In the wake of Mr Ghosn's fall from grace last November it has been an example of how not to run a car empire. Well before his arrest, the arrangement had serious flaws. Rather than being a global network built around strong brands and factory-wide economies of scale, it was more of a global car park. It filled different parts of the world with as many of each firm's cars as possible (and those of Mitsubishi, the alliance's other Japanese partner), whatever their price and quality. It was riven with jealousies. Nissan had long chafed at a shareholding structure that gave it less sway than Renault. Worse, the Japanese firm resented the control that the French government, which owns barely 15% of Renault, exercised over the partnership. It also feared French ambitions to take it over.

Since Mr Ghosn's arrest things have gone from bad to worse. Renault's abortive merger with FCA showed what an irksome meddler the French state has become. It has obstinately refused to make any concessions to the wary Japanese, for instance by selling down Renault's stake in Nissan to rebalance the shareholding or by reducing its own stake in Renault. In the meantime the feud has distracted all three alliance members from the business of selling cars. Nissan's sales have shrunk. Profits are plunging. Renault's volumes are dropping, too. Its balance-sheet is coming under strain, especially since it will get less cash from its 43% stake in Nissan, which recently slashed its dividend.

In the eyes of the French government, the best answer is to double down on the alliance. Renault's chairman, Jean-Dominique Senard, has vowed to do just that, hoping that a recent change of leadership at the top of both Renault and Nissan will help. Investors would prefer a clearer break with the past. Some want Renault to sell some of its Nissan shares and use the money to strengthen its balance-sheet, as a prelude to a more equitable alliance. Others want a full merger of the two. The boldest had hoped for a grand bargain, in which a stronger Renault once again courts FCA, with Nissan in tow.

Back to nuts and bolts

The talks between Peugeot and FCA have, for the time being at least, sent the grand-bargain idea careening off the road. It has left Renault and Nissan looking stranded. That makes it imperative for them to do what Mr Tavares has done with Peugeot, Opel and Vauxhall: put profitability front and centre. As Mr Tavares has said, "there's going to be chaos between now and 2030. Not all manufacturers will survive the Darwinism, not all will master the electric-vehicle track." Some regard consolidation as the best way to navigate the disruption. Others see the need for a great leader, who can build and maintain alliances. One thing is certain—none will succeed without a Tavaresque focus on the bottom line. ■

The Goliath

DHAHRAN, SAUDI ARABIA

On the eve of its public listing, Aramco is an unrivalled giant in an industry vexed by challenges

IN THE HEADQUARTERS of the world's most profitable company, past its heavily guarded perimeter, down a road, through another security gate, out of the blazing sun and into a cool office building sit box after box of rocks. They are samples of anhydrite, shale, dolomite and grainstone, retrieved from kilometres below ground. A block of grainstone looks perfectly ordinary, its dark surface dotted with pores. But nestled in this rock were the remains of the tiny marine animals and plants which blanketed the Arabian peninsula before there was such a thing, over 100m years ago, and which still give the rock a faint, familiar scent: oil. "Smells like money," says one executive—$111bn, to be precise.

That was the net income earned last year by Saudi Aramco, the kingdom's state-owned oil company. It is nearly twice that of Apple, the world's most profitable listed firm, and more than the combined earnings of the five biggest international oil companies—ExxonMobil, Royal Dutch Shell, BP, Chevron and Total. For decades, the riches from Saudi Arabia's vast reserves have been the exclusive property of Saudi Arabia. Muhammad bin Salman, the kingdom's crown prince, wants that to change.

In 2016 Prince Muhammad told this newspaper he was keen to list a portion of Aramco's shares, in an effort to raise money to diversify the kingdom's economy. After much delay, those plans seem to be proceeding. In September the government appointed Yasir al-Rumayyan, the head of the kingdom's sovereign-wealth fund, to be the new chairman of Aramco and charged him with taking the listing forward. Eleven banks and financial advisers have been working feverishly to that end. If all goes according to schedule, in early November the kingdom will announce its intention to list 2-3% of Aramco's shares on the Tadawul, the Saudi stock exchange. It would probably be the biggest initial public offering (IPO) in history, raising $30bn or more and eclipsing Alibaba's $25bn listing in 2014. A second listing may follow on a foreign exchange sometime in 2020.

Yet almost four years after Prince Muhammad announced the desire for an IPO, there remains a chance it is postponed. Disagreement over the company's value has already delayed the listing—Aramco was expected to announce its intention to float in late October. It is unclear what price will satisfy the crown prince, who said in 2016 he hoped for a valuation of $2trn. Independent analysts think he would be lucky to get $1.5trn.

The uncertainty points to a contradiction at the heart of Aramco, at once the oil industry's undisputed titan and a company plagued by problems. In September drones struck two Aramco facilities in eastern Saudi Arabia, knocking out more than half of its production. Further attacks are possible—America says Iran was responsible. In October Fitch downgraded Aramco's credit rating, owing to risks posed by geopolitics and its economically shaky sovereign. Saudi Arabia's ability to use its heft to support global oil prices is in doubt. The oil price has sunk to about $60 a barrel, from $75 in April, amid fears of a recession.

What is more, investors have soured on the oil industry. Energy's weighting in the S&P 500 index dipped below 5% in June, less than a third of its level in 2008. Oil markets are notoriously volatile; they may become more so as efforts to mitigate climate change hit oil consumption. "If this IPO was 15 years ago, it would be a compelling investment opportunity," says Oswald Clint of Bernstein, a financial firm. "But the outlook for oil demand and the energy sector is opaque."

Aramco maintains that, regardless of the oil market's broader troubles, it will outcompete its rivals. Recently the company has used deals and new business units to secure customers, diversify its revenue and maximise the value of its oil. Its boosters like to say that the world's last barrel of oil will come from Saudi Arabia. But it is unclear what value investors will ascribe to such a distant possibility. As international energy giants and petrostates jostle to find their footing in an uncertain era, no company will loom larger than Aramco.

The company's history is in some ways similar to that of other national oil giants. Americans drilled their first successful well in Saudi Arabia in 1938; the Arabian American Oil Company once had its headquarters in New York. The nationalisation of Aramco from 1973 to 1981 was part of a wave of requisitions that swept oilfields from Venezuela to Malaysia.

However Aramco is no ordinary national oil company. It is widely regarded by those within the industry as being well run, with professional managers and a distinct culture. The Aramco compound in Dhahran, in Saudi Arabia's Eastern Province, is a world unto itself, home to 15,000 people. It has schools, gyms, food shops and streets lined with quaint houses—the campus resembles an Arizona suburb, with more mosques. About 90% of Aramco's employees are Saudi, but women are as likely to wear trousers as an *abaya*.

Nor is Saudi Arabia an ordinary petrostate. Much of its treasure resides in the Eastern Province, including oilfields such as the celebrated 48.3m-barrel Ghawar, shaped like a dancer's leg *en pointe*. Oil is also tucked beneath the rolling dunes of the Empty Quarter and the seabed of the Gulf. In all Aramco has nearly 500 reservoirs, with 260m barrels of proved reserves. That is more than triple the combined proved reserves of the five supermajors. Last year Aramco pumped one in eight of the world's barrels of crude.

Such astonishing scale has ensured that Saudi Arabia remains the de facto leader of the Organisation of the Petroleum Exporting Countries (OPEC). American frackers may collectively produce more oil, but they operate independently. Saudi Arabia alone can ramp production up and down quickly in the attempt to tame volatile oil markets.

Oil has brought the kingdom prosperity. Saudi Arabia sustains its absolute monarchy by offering citizens a safety-net, including free education and health care, as well as a guaranteed-income programme. The kingdom's natural resources benefit some Saudis more than others. In posh parts of Riyadh and Dammam, lush greenery peeks above the concrete walls separating residential compounds from the dusty streets beyond. As a whole, however, Saudi Arabia is dangerously dependent on crude.

Even bigger oil
2018

Energy companies	Daily oil and gas production, mboe*	EBITDA $bn	EBITDA % margin
Saudi Aramco	13.6	224	63
Gazprom	10.5	41	31
Rosneft	5.7	31	23
ExxonMobil	3.8	50	18
BP	3.7	35	12
Royal Dutch Shell	3.6	61	16
Chevron	2.9	41	26
Total	2.7	34	18
Eni SpA	1.8	22	25

Source: Bank of America Merrill Lynch

*Million barrels of oil equivalent

Oil accounts for nearly 70% of the government's revenue and almost 80% of exports. Non-oil activity is often the result of government spending, which is itself dependent on oil. It is hard to find a person or service in the kingdom that does not somehow rely on oil or gas. The arid climate requires the use of energy-intensive desalination plants—in Saudi Arabia, even water depends on fossil fuel.

Swing consumer

The country has long been vulnerable to shifts in the oil price. However the kingdom faces three new, big problems. First, shale has transformed America into the world's largest oil producer, vexing OPEC's efforts to maintain high, stable prices. Second, Saudi Arabia has a burgeoning, youthful population. The oil industry, which requires capital but not much labour, cannot employ enough of them. The IMF reckons that up to 1m jobs could be needed in Saudi Arabia in the next five years.

Petropolis

The third risk is the largest and most uncertain: global oil demand may subside. Economic growth and demand, which have risen in sync, could be decoupled as the threat of climate change grows. However no one knows whether this might happen, or when. America's Energy Information Administration, within President Donald Trump's energy department, expects the world to remain thirsty for oil, with demand rising up until 2050. ExxonMobil also takes a bullish view. Mohammed al-Qahtani, Aramco's head of upstream, expects that "demand will be robust for the next two decades plus"—the company models its reservoirs to 2200. Some oil companies tactfully present a variety of scenarios, as does the International Energy Agency (IEA), a forecaster. Any tidy prediction belies a tangle of assumptions and debate, according to an independent expert who has reviewed the IEA's drafts.

Little wonder, then, that Prince Muhammad wants to diversify. His Vision 2030 aspires to transform the economy through strategic investment—for instance in manufacturing and "special economic zones", such as a planned robotic city called NEOM near the Red Sea. Raising cash for that depends on the Aramco IPO.

There have been many reasons to delay, including concern over legal exposure that might come from listing in New York, the desire to acquire Sabic, the kingdom's giant petrochemical company, as well as the valuation question. This time last year, plans for an offering seemed postponed indefinitely amid uproar over the murder of Jamal Khashoggi, a dissident journalist, at the Saudi consulate in Istanbul.

Since then, however, Aramco has announced a $69bn deal to buy Sabic. To raise money for the transaction, in April Aramco issued $12bn in bonds, which investors lapped up. The publication of a 469-page bond prospectus eased anxiety about letting the world pore over Aramco's books. Meanwhile, the rationale for pursuing a listing—to raise money to diversify the economy—remains as urgent as ever.

Preparations for an IPO accelerated after the bond offering. Aramco held its first earnings call with investors in August (analysts, perhaps eager to establish good will, have rarely been so polite). To co-ordinate the listing the government has hired six global banks, JPMorgan, Goldman Sachs, Credit Suisse, Citi, HSBC, and Bank of America Merrill Lynch, as well as Saudi Arabia's Samba and National Commercial Bank. Michael Klein, Moelis and Lazard are serving as advisers, say insiders. Investors, at last, are on the threshold of owning a sliver of Aramco's shares.

The trouble with letting the market loose on Aramco, however, is that it tends to make up its own mind about valuations. This seems to make the crown prince uneasy. Bloomberg has reported that the government is exploring ways to limit volatility in trading after the Tadawul listing. The government expects local business leaders to buy shares enthusiastically to support Aramco's valuation. "It is seen as part of being loyal," says one seasoned businessman in Riyadh. "It's not an explicit *quid pro quo*," says another. "However you cannot do business in Saudi without being seen favourably by the power corridors." Saudi banks have asked local investors if they would increase their stakes if offered new lines of credit.

If an IPO does proceed, however, Aramco's valuation will eventually reflect the business itself: a company of staggering scale, aggressive strategy and unique complications. In recent years Aramco has moved to strengthen its traditional business and expand to new areas—Mr Qahtani describes this as "opportunistic", not defensive. Changes include establishing a trading operation and investing more in natural-gas projects.

Its most important strategic shift is to move downstream, into petrochemicals. Its purchase of a 70% stake in Sabic, announced in March, serves the twin goals of raising cash for Saudi Arabia's sovereign-wealth fund and diversifying Aramco's revenue. The IEA expects petrochemicals to account for almost half of the growth in oil demand up to 2050. Sabic is already the world's fourth-largest chemical company, generating $14bn of gross operating profit last year. Its businesses span fertilisers in India to plastics used in Range Rovers.

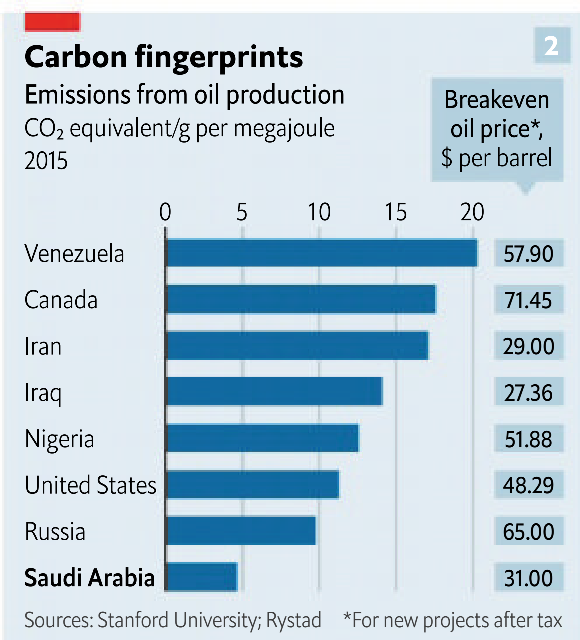
Aramco has also used its deep pockets to bolster its standing in Asia. In August Reliance, an Indian conglomerate, said that Aramco had taken a 20% stake in its refining unit, for roughly $15bn. Aramco has announced other investments in Asia, including projects in South Korea, Malaysia and China. Joint ventures in refineries and petrochemical plants help Aramco hedge against low oil prices. They also include agreements to be the projects' long-term supplier of crude. Deal by deal, Aramco is securing customers for its oil in Asia, where demand is most likely to rise. Asia buys 71% of the company's crude exports.

Some national oil companies are trying to pursue a similar strategy. ADNOC, of the United Arab Emirates, is joining up with Aramco on a big refining complex in India. What makes Aramco most distinct, however, is how cheaply it can pump oil. Its centralised resources, slick infrastructure and decades spent honing its drilling mean that extracting oil costs just $2.80 a barrel, one-third the average level of international oil companies. That helps Aramco achieve margins more than twice that of Rosneft, a Russian giant, and nearly four times that of Shell (see chart 1 on previous page).

Cheaper and cleaner

The Economist worked with Rystad Energy, a research firm, to examine how the value of Saudi Arabia's reserves might stack up if demand wanes—because of, say, the strengthening of American climate regulations after an election. The oil price at which a company could make a 10% return, the breakeven price, is one way of showing which countries' reserves are most vulnerable. Another way is to look at how much energy is used to extract oil, thereby increasing emissions, which would add a further layer of costs if carbon were to be taxed. On both measures, Saudi Arabia stands out.

Aramco's breakeven costs for new projects, even after tax, are $31, according to Rystad Energy's data, slightly higher than Iran, Iraq or Kuwait but less than half the level of Russia and two-thirds the level in America. Its carbon-dioxide emissions from extraction and flaring are less than half the global average. A separate analysis, published last year by researchers at Stanford University and Aramco, found similar results (see chart 2). Indeed, Aramco exposes its peers' weakness. Canada and Venezuela are particularly vulnerable, owing to production that is both dear and dirty. Compared with those of many rivals, Aramco's reserves therefore seem well situated, no matter what happens to demand.



Yet even with its relative bounty it faces several big risks. The trove of oil assets under Saudi soil remain vulnerable to attack. Aramco executives, who usually refer to the September strikes as "the incident", point out that repairs were done quickly. However it was no one-off. The attacks in September followed strikes on a large pipeline, airports and an oilfield. Further incidents could complicate Aramco's efforts to secure more long-term customers.

The kingdom's claim on Aramco also makes investors nervous. Saudi Arabia has tried to ease their concern. Reforms announced in 2017 included reducing Aramco's tax rate from 85% to 50%. In September Aramco unveiled a new dividend policy, which envisions a total payout of $75bn in 2020 and beyond. Non-state shareholders will receive a proportionate share of this, and their absolute payout will be protected, even if the total value of Aramco's dividend drops. Further, it said that dividend would probably rise.

However Aramco's dividend yield, at a valuation of $1.5trn, remains lower than those of the European supermajors. Some investors remain squeamish about what might happen if oil prices were depressed for a long period. Aramco could still be profitable, but its profits might not be high enough to sustain the kingdom's budget. Prince Muhammad's Vision 2030 might not go as planned—one of the Saudi sovereign-wealth fund's big early investments was in SoftBank's Vision Fund, which made a disastrous bet on WeWork. "If oil prices are lower, you could expect that the state would potentially increase taxes," says Dmitry Marinchenko of Fitch. The promise to maintain high dividends to non-state shareholders, he points out, would not be legally sacrosanct.

There remains the question of what a listed Aramco would mean for OPEC, and therefore for oil markets. Historically Saudi Arabia has curbed its own output, often beyond the levels required by OPEC, in the effort to support oil prices. Khalid al-Falih long served as both oil minister and Aramco's chairman. In September the government sacked him from both posts, ensuring that one person now oversees Aramco and another the oil ministry. Yet the rational goals of a listed Aramco—boosting production to lower prices and squeeze rivals, for instance—may diverge wildly from the historic goals of OPEC.

Such uncertainties will weigh on Aramco, before and after any listing. Rivals are watching with interest. Saudi Arabia's transition to oil's new era is tortured. For the many countries with higher costs and less cash, it may be even more so. ■

Chinese demography

Old, not yet rich

SHANGHAI

Forget bad debts, the trade war, cronyism and autocracy. Demography may be the Chinese economy's biggest challenge

SHORTLY AFTER 9am the neighbourhood care centre for the elderly shuffles to life. One man belts out a folk song. A centenarian sits by his Chinese chessboard, awaiting an opponent. A virtual-reality machine, which lets users experience such exotic adventures as grocery shopping and taking the subway, sits unused in the corner. A bigger attraction is the morning exercise routine—a couple of dozen people limbering up their creaky joints. They are the leading edge of China's rapid ageing, a trend that is already starting to constrain its economic potential.

Since the care centre opened half a year ago in Changning, in central Shanghai, more than 12,000 elderly people from the area have passed through its doors. The city launched these centres in 2014, combining health clinics, drop-in facilities and old-people's homes. It plans to have 400 by 2022. "We can't wait. We've got to do everything in our ability to build these now," says Peng Yanli, a community organiser.

The pressure on China is mounting. The coming year will see an inauspicious milestone. The median age of Chinese citizens will overtake that of Americans in 2020, according to UN projections (see chart). Yet China is still far poorer, its median income barely a quarter of America's. A much-discussed fear—that China will get old before it gets rich—is no longer a theoretical possibility but fast becoming reality.

According to UN projections, during the next 25 years the percentage of China's population over the age of 65 will more than double, from 12% to 25%. By contrast America is on track to take nearly a century, and Europe to take more than 60 years, to make the same shift. China's pace is similar to Japan's and a touch slower than South Korea's, but both those countries began ageing rapidly when they were roughly three times as wealthy per person.

Seen in one light, the greying of China is successful development. A Chinese person born in 1960 could expect to live 44 years, a shorter span than a Ghanaian born the same year. Life expectancy for Chinese babies born today is 76 years, just short of that in America. But it is also a consequence of China's notorious population-control strategy. In 1973, when the government started limiting births, Chinese women averaged 4.6 children each. Today they have only 1.6, and some scholars say even that estimate is too high.

Fertility was bound to decline as China got wealthier, but the one-child policy made the fall steeper. Even though the country shifted to a two-child policy in 2016 and may soon scrap limits altogether, the relaxation came too late. The working-age population, which began to shrink in 2012, will decline for decades to come. By the middle of the century it will be nearly a fifth smaller than it is now. China will have gone from nine working-age adults per retired person in 2000 to just two by 2050.

The economic impact is being felt in two main ways. The most obvious is the need to look after all the old people. Pen- ▸▸

Also in this section

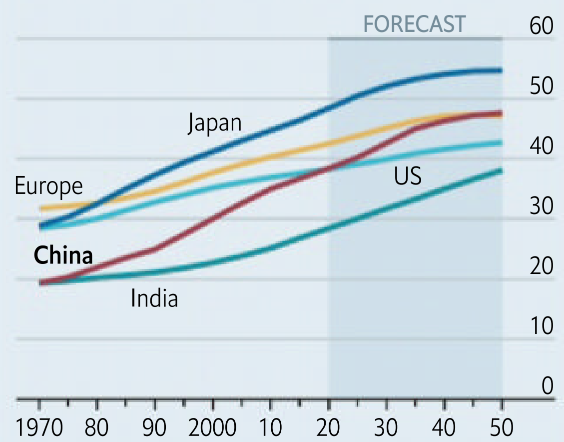
sion payouts to retired people overtook contributions by workers in 2014. According to the Chinese Academy of Social Sciences, the national pension fund could run out of money by 2035. The finance ministry is taking small steps to shore the system up: in September it transferred 10% of its stakes in four giant state-owned financial firms to the fund. But far more is needed. Government spending on pensions and health care is about a tenth of GDP, just over half the level usual in older, wealthier countries, which themselves will have to spend more as they get even older.

The second impact is on growth. Some Chinese economists—notably Justin Lin of Peking University—maintain that ageing need not slow the country down, in part thanks to technological advances. But another camp, led by Cai Fang of the Chinese Academy of Social Sciences, has been winning the argument so far. A shrinking labour pool is pushing up wages and, as firms spend more on technology to replace workers, pushing down returns on capital investment. The upshot, Mr Cai calculates, is that China's potential growth rate has fallen to about 6.2%—almost exactly where it is today. The labour shortage is hitting not just companies but entire cities. From Xi'an in the north to Shenzhen in the south, municipalities have made it easier for university graduates to move in, hoping thereby to attract skilled young workers.

China could, in theory, mitigate the downside from its ageing by boosting both labour-force participation and productivity—that is, getting more people into work and more out of them. Neither is easy. Retirement ages are very low in China (in many jobs, 60 for men and 50 for women), but the government has resisted raising them for fear of a backlash. And a return to state-led growth under Xi Jinping appears to be hurting productivity. As George Magnus, an economist, writes in "Red Flags: Why Xi's China is in Jeopardy", demography is not destiny, and China has time to change course. "The bad news, though, is that the time that is available is passing by rapidly," he says.

One piece of good news is that China is thinking creatively about how to look after the swelling ranks of pensioners. Traditionally, children have been expected to care for their elderly parents, which helps explain why public investment in old-age homes has been minimal. But most families now have just one child, and that child is working. Suzhou, a wealthy city near Shanghai, shows how China can take advantage of its scale. In 2007 Lu Zhong, an entrepreneur, founded Jujiale as a "virtual retirement home", dispatching helpers to private homes on demand. It now has 1,800 employees serving 130,000 retired people. Mr Lu says that it needs to grow by about 15% a year to keep up with demand.

The Middle-Aged Kingdom
Median age of total population, years



Source: UN World Population Prospects

Yet that is a silver lining in a grey-haired cloud. On October 1st China celebrated the 70th anniversary of the People's Republic. By the centenary in 2049, Mr Xi has vowed, China will have developed to the point that its strength is plain for the world to see. But as Ren Zeping, a prominent economist, tartly noted in a recent report, the median age in China in 2050 will be nearly 50, compared with 42 in America and just 38 in India. That, he wrote, raised a question: "Can we rely on this kind of demographic structure to achieve national rejuvenation?" ■

HSBC's latest plan

Failure to thrive

A banking giant in Asia and Britain is still struggling to fire on all cylinders

When Noel Quinn took over as interim chief executive of HSBC from John Flint, ousted by the board in August, analysts expected a change in style. Whereas Mr Flint was seen as a cerebral introvert, Mr Quinn is forthcoming, verging on blunt.

On that front, at least, HSBC's first quarterly-results announcement on his watch did not disappoint. Although its Asian business "held up well in a challenging environment", performance in other areas was "not acceptable", Mr Quinn said on October 28th. Third-quarter net profits, down by 24% on the same period last year, to $3bn, undershot pundits' forecasts by 14%. Revenues fell by 3.2%, to $13.4bn, missing expectations by 3%. Return on tangible equity (ROTE), its chief measure of profitability, reached 6.4%, compared with analysts' forecast of 9.5%. Investors agreed with Mr Quinn: the bank's shares dropped by 4.3% on the news in London. They have fallen by about 11% in the past six months.

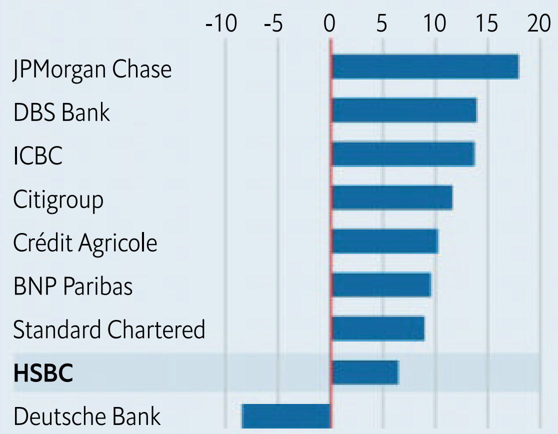
HSBC's woes can be blamed in part on broader conditions: low interest rates, a slowing global economy, business uncertainty in Brexit-hit Britain and trade tensions (HSBC is the world's largest provider of trade finance). Yet that is hardly likely to reassure investors. Tom Rayner of Numis Securities, a broker, points out that although some of these trends may be reversed, others, such as Brexit and the trade wars, may linger. Interest rates may well fall further. Investors are not yet pricing in any impact from protests in Hong Kong, where HSBC is the largest lender. That is too optimistic, says Fahed Kunwar, at Redburn, another broker.

Mr Quinn does not deny the scale of the challenge. HSBC is ditching its ROTE target of 11% for 2020, and there are hints of a radical overhaul. Mr Quinn spoke of accelerating plans to "remodel" poorly performing businesses. In August the bank announced a plan to complete 4,700 redundancies by the end of this year. Reports suggest HSBC could seek to cut an additional 8,000-10,000 jobs from its headcount of 238,000 (a spokesperson declined to confirm the number of jobs to go).

Yet after years of cost-cutting, analysts are divided as to whether much more fat can be trimmed. Daniel Tabbush of Tabbush Report, an Asia-based research firm, says HSBC "is not particularly bloated". The bank may also partially exit some share-trading activities in Western markets, and wants to sell its French retail operations. But a hasty disposal of badly performing units, which also include its American wholesale arm, may force it to write down part of their value.

So hopes must be placed in the second prong of HSBC's grand reform—to move capital away from the dreariest businesses and towards "higher growth and return opportunities". HSBC's cost-to-income ratio is 104% in Europe, compared with 43% in Asia, where it generates nearly 90% of its profits. It makes only a quarter of its lending in Britain, yet the country generates 35% of its non-performing loans, says Mr Tabbush. Its $98bn of risk-weighted assets ▸▸

Truth hurts
Return on tangible equity
Q3 2019 or latest available, %



Sources: Bloomberg; company reports

allocated to America produce only $527m in annual profit.

The bank's management has so far declined to provide any guidance as to where newly released capital might be sent. HSBC is already the largest corporate lender in Asia by market penetration, according to Greenwich Associates, a research firm. And getting more deeply into China may prove tricky. In August HSBC was omitted from a list of banks helping Beijing set a new interest-rate benchmark. That suggests the Chinese regulator may be shunning the bank over its role in assisting an American investigation into a key executive at Huawei, a Chinese telecoms firm. Other dynamic markets, like Vietnam and Indonesia, are tiny by comparison.

There are also limits to how much HSBC can rejig its various lines of business. Its strength in trade finance has so far failed to translate into clout in investment banking. Global capital markets are more lucrative, but volatile. In 2018 HSBC launched a new motto, "Together We Thrive". Its difficulties may have more to do with this grand ambition than with external forces. By trying to do too much for too many people in too many places, it has seen its returns diluted. Yet even for its candid interim boss, that conclusion may be rather too blunt. ■

Another trade fight

Spilling over

WASHINGTON, DC

Despite talk of a trade ceasefire, America and China spar at the WTO

Going nowhere

AS TRADE TALKS continue between America and China, old fights are rumbling on. On October 28th China asked the World Trade Organisation (WTO) to allow it to retaliate against $2.4bn of imports from America, as part of a long-running dispute over American treatment of Chinese exports. The final sum will be set by an arbitrator, and will be small in the broader context of the two countries' escalating trade war. But the symbolism will make it sting.

The dispute concerns two of America's biggest gripes: China's economic model and the WTO's inability to constrain it. America accuses China's government of bloating its private sector with subsidies, which spill over to affect businesses abroad. If state-owned banks make cut-price loans, or state-owned electricity companies sell cheap energy, Chinese exporters have an unfair advantage, it says. By last year America had imposed tariffs on almost 7% of Chinese imports, citing such subsidies and the need to defend itself.

Americans argue that if Chinese state institutions hold a majority stake in a company, this strongly suggests it is a "public body" and therefore capable of giving subsidies. But the WTO's appellate body has generally disagreed. It has also often backed China's stance that America's defensive duties are too harsh.

The United States Trade Representative, America's main trade negotiator, attacked the most recent such judgment, in July. Such decisions, it said, illustrated its concerns with the way that the WTO resolves disputes. In an attempt to force a change of approach, it is blocking appointments to the WTO's appellate body. But bringing the body to a standstill would do nothing to solve the rows that have brought America and China before it again and again. That would require them to agree on what counts as a public body, and when defensive tariffs are allowable. Even better would be a deal to limit subsidies, which might be added to the WTO's rules.

Unfortunately American and Chinese negotiators, who are currently trying to strike a "phase one" deal that could bring a ceasefire in the broader trade war, are not even discussing these thorny issues. Meanwhile American sanctions against Huawei, a Chinese telecoms firm, have amplified those voices within China that are calling for even more subsidies.

In the long run subsidies are hard to tackle bilaterally, since any benefits can be undone if an unconstrained third country boosts its handouts in response. American officials have been discussing what new multilateral rules could look like with European and Japanese officials, but without much visible progress. And even if the trio agreed on something, China might not play along. On October 26th a forum that was supposed to address steel subsidies collapsed, in part because the Chinese withdrew. Tariffs it is, then. ■

Turkey's tottering economy

By a thousand cuts

ISTANBUL

Inflation has come down, but the economy remains vulnerable

TURKEY'S PRESIDENT, Recep Tayyip Erdogan, once called high interest rates "the mother of all evil". Murat Uysal, its new central-bank governor, must then be close to angelic. Since Mr Erdogan sacked Mr Uysal's predecessor four months ago for refusing to slash interest rates, he has cut three times, by a cumulative ten percentage points (see chart). The latest cut, of 2.5 percentage points on October 24th, was more than double market expectations.

After last year's aggressive tightening, easing now makes some sense. Inflation is back in single digits, after passing 25% last autumn. The lira has partially recovered from a battering that had pushed domestic prices up. In early October America threatened sanctions in response to Turkey's offensive in Syria. The lira slumped, but after America brokered a ceasefire deal on October 17th, it steadied again. It strengthened further when Turkey's and Russia's presidents signed a similar agreement. That gave the bank room for the most recent cut.

Turkey crawled out of recession at the start of the year, but credit growth is still weak. Companies with hard-currency debt have been unable to borrow, and banks sitting on $20bn-worth of non-performing loans (NPLs) have been reluctant to lend. Monetary policy alone will not fix the economy, says Selva Demiralp of Koc University: "Turkey needs to find a solution to the NPL problem first." In September the government ordered banks to reclassify debt of 46bn lira ($8bn) as bad loans. But doubts remain as to how banks will clear these loans from their balance-sheets.

The economy remains vulnerable to outside shocks. On October 29th America's ▸▸

Sorry decline

Turkey

Sources: Haver Analytics; Central Bank of the Republic of Turkey

House of Representatives voted to restrict arms sales to Turkey, sanction the country over its purchase of a missile-defence system from Russia, and investigate Mr Erdogan's wealth. Lawmakers also passed a motion recognising the Ottoman slaughter of Armenians in 1915 as genocide. Though the sanctions package is unlikely to become law, relations with America are at their worst in decades.

Another source of anxiety is an investigation in New York into whether Halkbank, a Turkish state lender, circumvented American sanctions against Iran. In an indictment unsealed on October 15th, prosecutors allege that senior Turkish officials took millions of dollars in bribes to keep the scheme running. A former Halkbank executive who was convicted for playing a role in the operation returned to Turkey this summer after two years in prison. On October 21st he was appointed head of the Istanbul stock exchange.

Turkey expects growth of 0.5% this year, and 5% in 2020. If interest rates are cut further in pursuit of that goal, the country risks another currency crisis. The central bank has already burned through billions of dollars in reserves to prop up the lira. It may no longer have the means to defend the currency in the face of sanctions, or if global interest rates rise. Turks have run to the dollar for safety. Foreign-currency deposits at Turkish banks have surged.

And lack of independence makes monetary policymakers' job harder. "They have a credibility issue," says Kerim Rota, a former banker. Interest rates will need to be higher to control inflation than if the market believed the central bank was in charge, he says. But no one now thinks it can raise rates without Mr Erdogan's say-so. ■

Buttonwood VC after SoftBank

What happens when the wellspring of the best business ideas meets too much money

Dealmakers are smooth talkers. They need to be. But which branch of finance has the slickest ones? Consider the polished, public-school manner of the City investment banker—or the high-velocity spiel of the Wall Street bank boss. Both have a strong claim. But the venture capitalists, or VCs, of Silicon Valley have a stronger one. They spend their time either being pitched to by, or pitching on behalf of, entrepreneurs who hope to be the next Zuck or Larry-and-Sergey. Peddlers of such extravagant dreams have to have silver tongues.

They certainly have some catchy phrases. They speak of "vanity metrics" (misleading measures of a startup's progress); of the importance of "product-market fit" (how well a piece of software meets the customer's needs); and "deal heat", the fever that causes investors to overpay. After a while even a normally buttoned-up Buttonwood is asking to "double-click" on a topic when he wants more detail from a voluble VC.

A subject guaranteed to get them talking is the flood of capital into Silicon Valley. In the popular metaphor, the VC business used to consist of a flotilla of small boats fishing in a well-stocked lake. It was all very collegial. Now the lake is an ocean. Trawlers are out there—big institutions, such as sovereign-wealth funds and pension-fund managers, that increasingly invest directly in technology firms before they reach public markets. The abundance of capital has made the VC game more competitive. It has also distorted the market for privately held firms.

That new firms are staying private for longer is both a cause and a consequence of this change. The deeper reasons for the shift are debated. Some VC types put it all down to regulations that made it costlier to become a public company and easier to remain a private one. Others place more weight on the changing nature of new firms, which need less capital than they once did, both to start and to grow. The building blocks for business software or smartphone apps are freely available as open-source code. Computing power can be leased. The result is a shift in the balance of power from suppliers of capital towards entrepreneurs, who want to be spared the scrutiny of public markets.

Perhaps a more important shift than the fall in demand for capital has been a steady rise in its supply. The secular slump in long-term interest rates, caused in part by abundant savings, was given an extra shove after the financial crisis by central banks' easy-money policies. Yields on listed stocks have fallen, too. The venturesome, noting the boom in the share prices of tech stocks, moved into pre-IPO financing in search of higher returns. Sums that not so long ago could only be raised through a stock-exchange listing are now routinely raised privately.

One consequence has been a fall in the number of listed companies. By the time a tech startup goes public, its days of supercharged revenue growth may be over. This fear only fuels desperation to get in on the act sooner. There is much shaking of VC heads about the participation of institutions based back East in even the early funding rounds for new tech firms. VCs pride themselves on pastoral care: the support, expertise and contacts they provide to fledgling firms. What do "tourists" from Boston and New York bring, apart from their big cheques?

As more and more money crams into Silicon Valley, valuations inevitably become inflated. Last month WeWork, an office-sharing firm, was forced to pull its IPO when public investors balked at the price tag. A bail-out by SoftBank, WeWork's main backer and a writer of big cheques more generally, valued the firm at $8bn. Yet a funding round in January put the firm's value at $47bn. "The damage done by SoftBank is incalculable," says one Silicon Valley bigwig. "If you make a firm go faster, it does unnatural things." There is a growing sense that capital is being wasted. "Businesses that shouldn't be funded are getting funded," says another VC. Sales and marketing budgets are swollen. Firms lose track of whether their product is any good.

Nevertheless a general view is that it will take something dramatic—a meltdown in tech stocks or a sharp rise in interest rates—to scare the money from Silicon Valley. Big dreams are part of venture capitalism. Everyone fishing in these crowded waters still hopes to land a whale. Look at it another way, says a VC. In 2012 Facebook paid $1bn for Instagram, a firm that had 13 employees and was not yet two years old. That seemed profligate, he says. But with the benefit of hindsight, Facebook underpaid.

Money markets

Making the world go round

NEW YORK

What caused September's turmoil in the vast and essential repo market?

On September 17th, for the first time in a decade, the Federal Reserve intervened in the overnight repurchase, or "repo" market, where banks and hedge funds get short-term funding by swapping $1trn-2trn of Treasuries for cash each day. After the repo rate rose to 10%, the federal-funds rate, at which banks can borrow from each other, climbed above the Fed's target (see chart). The Fed swooped in, offering $75bn-worth of overnight funding, and both rates came back down. But it has had to keep lending to stop them rising again. During October it said it would lend for longer periods, increased its limit on overnight repo operations to at least $120bn and started buying short-dated Treasuries directly, at a pace of $60bn per month.

The turmoil indicated an unexpected shortage of liquidity in the financial system. Before the financial crisis the Fed had controlled the federal-funds rate using a "corridor", with a ceiling and floor. Banks could borrow at the ceiling rate, but the floor rate was zero, meaning cash held at the Fed earned nothing. To keep interest rates on-target the Fed used "open-market" operations, swapping Treasuries and cash.

The crisis changed everything. The Fed added investment funds and securities dealers to the list of approved borrowers in the repo market and, using quantitative easing (QE), bought vast quantities of long-dated Treasury bonds. Its balance-sheet ballooned to $4.5trn. Holders of Treasuries, mostly banks, ended up with cash mountains. To keep market interest rates on target, the Fed raised the floor rate. The ceiling became redundant, as did repo-market operations. Regulations intended to avoid another bail-out forced banks to hold more cash and safe liquid assets, such as Treasuries.

Under the old system, if commercial banks were short of cash the quantity they sought on the repo market would rise. When cash became superabundant the Fed lost any insight into banks' thinking about how much cash they needed to hold. Now the repo-market turmoil has given an answer—and it is far higher than the Fed expected. Collectively, America's commercial banks now hold $1.3trn of cash.

Even that does not seem to be enough. Demand for cash grows with the economy. And demand from the government is growing particularly fast because of the fiscal deficit, which will reach $1trn next year, 4.7% of GDP. The Treasury is therefore issuing lots more bills and bonds, which financial firms and investors purchase with cash. But buyers are becoming scarcer, especially foreign ones. High policy rates in America have pushed up hedging costs, deterring European and Japanese pension funds from buying Treasuries. Since 2017 the share of Treasuries held by foreigners has fallen from 40% to 35%.

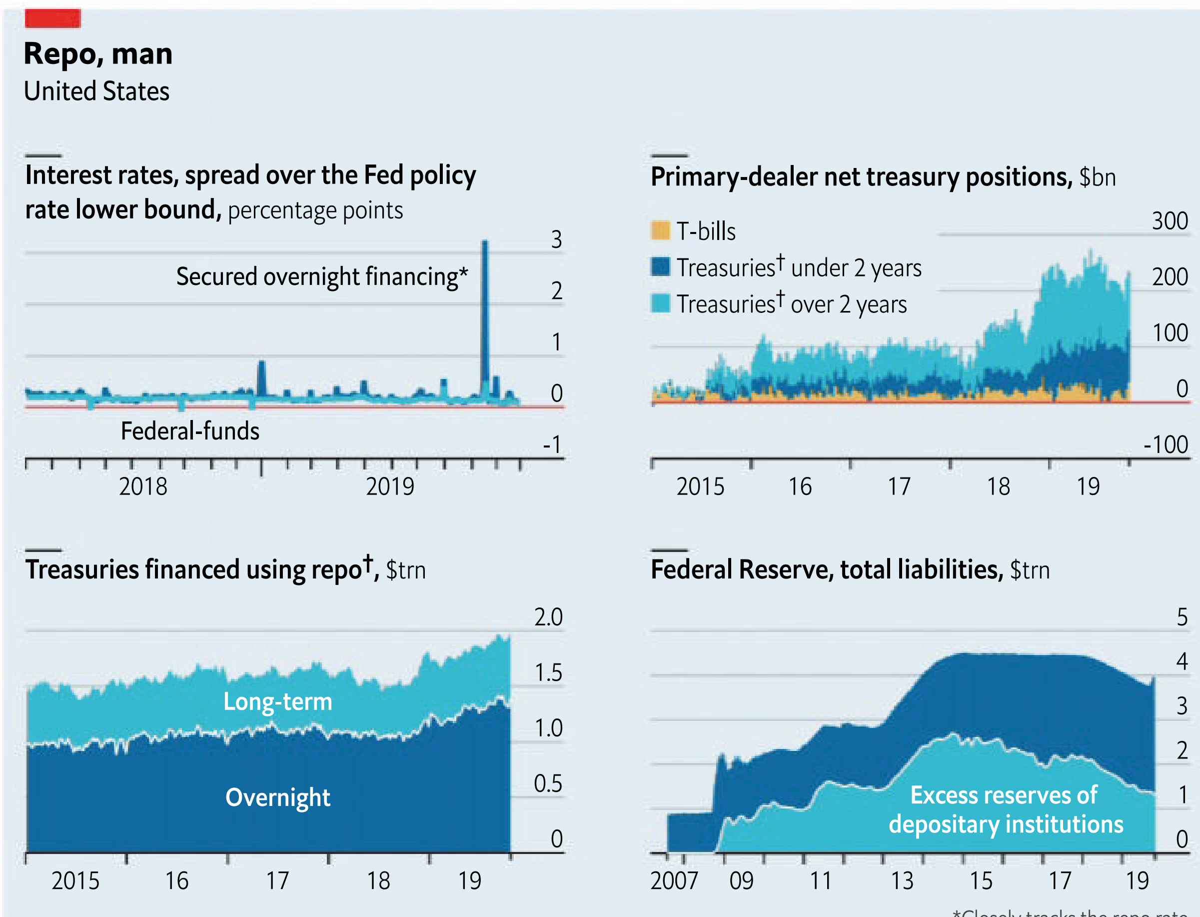
That has left more for American buyers to mop up. "Primary dealers"—banks authorised to deal Treasuries directly with the government—bear the brunt of these market forces. Their holdings of Treasuries have ballooned. In 2017 they held $200bn-worth of Treasuries outright, and financed positions worth an additional $1.5trn in the repo market. By September this year these figures had risen to $250bn and $2trn respectively. When repo rates spiked in September it was because primary dealers could not borrow enough cash to cover their positions. Commercial banks will usually lend as much cash as primary dealers need, but as their cash piles dwindled they grew more reluctant to do so.

Three ways to avert another repo-market meltdown are being discussed. Post-crisis regulations concerning banks' cash holdings could be tweaked. The Fed could commit to continuing repo operations. Or it could buy short-dated Treasuries outright. All are politically contentious.

Some bankers say they hold more cash than legally required because they fear that miscalculating and having to borrow from the Fed would damage their reputations. Steven Mnuchin, the treasury secretary, has said it might be possible to change the rules in such a way as to increase liquidity without increasing risk. But any change would draw heavy political crossfire. On October 18th Elizabeth Warren, a leading contender for the 2020 Democratic presidential nomination, wrote to Mr Mnuchin urging him not to relax the rules.

Before the crisis, large-scale lending by the Fed in the repo market caused little concern. But now that more lightly regulated institutions, such as investment funds, can borrow too, repo-market operations are bound to attract more scrutiny. For this reason, among others, the Fed wants them to be the exception, not the rule. It has already accepted that it will have to start increasing its balance-sheet again, by buying $60bn-worth of short-dated Treasuries per month. Critics (wrongly) claim this is QE by stealth. But the Fed had hoped to see the balance-sheet shrink further, to give it room for manoeuvre in any future crisis.

The repo market's wobbles have revealed not only banks' huge appetite for cash, but the unforeseen consequences of post-crisis prudential regulation. Those wobbles, and the Fed's reaction, do not necessarily indicate that America's financial system is imperilled. That the Fed was blindsided is far more worrying. ■



Sources: Bloomberg; Federal Reserve Bank of New York; Federal Reserve

*Closely tracks the repo rate
†Including inflation-protected securities

Free exchange | It ain't over till it's over

A scholar of inequality ponders the future of capitalism

When communism fell, that was supposed to be that. History would continue, but arguments about how to organise society seemed to have been settled. Yet even as capitalism has strengthened its hold on the global economy, history's verdict has come to seem less final. In a new book, "Capitalism, Alone", Branko Milanovic of the Stone Centre on Socioeconomic Inequality at the City University of New York argues that this unification of humankind under a single social system lends support to the view of history as a march towards progress. But the belief that liberal capitalism will prove to be the destination has been weakened by financial and political dysfunction in the rich world, and by the rise of China. Its triumph cannot be taken for granted.

Mr Milanovic outlines a taxonomy of capitalisms and traces their evolution from classical capitalism before 1914, through the social-democratic capitalism of the mid-20th century, to "liberal meritocratic capitalism" in much of the rich world, in particular America. He contrasts this with the "political capitalism" found in many emerging countries, with China as the exemplar. These two capitalistic forms now dominate the global landscape. Their co-evolution will shape world history for decades to come.

Liberal meritocratic capitalism is generally associated with liberal political systems and, though redder in tooth and claw than its social-democratic forebear, is more egalitarian than classical capitalism, thanks to welfare states inherited from social democrats. Its distinguishing feature is a tolerance for inequality that derives from the way in which riches, in a meritocratic system, are earned by people of extraordinary talent. Political capitalism, in contrast, is illiberal. It emerges when authoritarian governments rely for legitimacy on their ability to foster economic growth, which in turn provides the motive for free-market reforms.

It is wrong to suppose, though, that systems of political capitalism will inevitably become more politically liberal, as Western leaders once hoped would happen in China. They rely on a "zone of lawlessness" that allows the state to suppress uppity private-sector interest groups. The rule of law, as it holds in most advanced economies, would enable a merchant class to become a new centre of power that could press for political reforms, thus limiting the actions of the ruling elite. The zone of lawlessness also allows the state to suppress corruption—endemic under political capitalism—whenever it threatens to undercut economic growth. Whether political capitalism does better than liberal capitalism at fostering growth remains unclear (Mr Milanovic implies at times that it may). China and Vietnam have grown much faster than America in recent decades, but as their incomes rise and opportunities to learn from others dissipate, they will probably slow.

Whether or not political capitalism is better for growth, it appears to be sustainable—at least for a while. The global status quo may not be, however. Slower growth in China may eventually erode the legitimacy of the ruling party. And liberal systems may converge toward authoritarian ones, rather than the other way round. As Mr Milanovic writes, structural forces within liberal meritocratic capitalism work towards greater inequality. Older vintages of capitalism tended to separate those rich in capital and those with high incomes from labour into separate classes. But in liberal meritocratic capitalism the two groups are coterminous, because the wealthy invest heavily in their children's education and the talented earn huge sums. The elite uses its economic power to cultivate political power, pushing societies toward the establishment of a permanent ruling class that cannot be dislodged.

Intergenerational economic mobility in America has indeed fallen. Political spending has soared and is dominated by the very rich. In 2016 the top 1% of the top 1% accounted for 40% of campaign donations. These financially astute people surely expect a return on their money, and indeed research suggests that elected leaders are more attuned to the interests of the rich than those of people further down the income scale. Other aspects of political capitalism are creeping in, too. One is corruption, from the pay-to-play proclivities of the Trump administration to the tendency of both Democrats and Republicans to leap from government service straight into lucrative private-sector jobs.

Behind this, Mr Milanovic suggests, is an erosion of liberal values. Within capitalist systems, money is the ultimate measure of worth. The pursuit of narrow self-interest is held to lead to the greatest good. People who forgo profit for ethical reasons could thus be seen as harming society, because they are preventing resources from being used at maximum efficiency. Moreover, their restraint creates an opening for less ethical rivals. The elite in such a system increasingly consists of individuals who are willing to do anything not outright illegal that increases their wealth.

Value at risk

There is something to be said for an amoral approach to business. As Mr Milanovic points out, people all over the world understand the pursuit of self-interest. Amoral commerce can be engaged in by people from many cultures and backgrounds; recent hyperglobalisation would not have been possible without it. But the costs are becoming apparent—when firms bow to Chinese censorship in order to retain access to lucrative markets, for example, or when governments accept flagrant tax avoidance as the price of unimpeded capital flows.

The ugly aspects of today's capitalism, like those of the 19th-century version, may be merely an awkward bump on the road to a better world. But it is also possible that the apparent march of progress, from coarser versions of capitalism to better ones, was not a historical inevitability. It may instead reflect the painstaking cultivation of liberal values, such as honesty and the duty to treat others fairly. If so, capitalism alone, without the moderating influence of those values, could reach its own historical dead end. ■

Human origins

Eden?

An intriguing piece of human history seems to be emerging

NORTHERN BOTSWANA is a land of strange contrast. Drive west from Francistown, the country's second city, and you skirt Makgadikgadi, a white, salt-encrusted plain that is bone dry for most of the year, but which blossoms into sudden, abundant life during the wet season. Follow the road farther and you arrive at Maun, on the edge of the lush inland delta of the Okavango river, the fourth-longest in southern Africa. Two hundred thousand years ago, though, Makgadikgadi was also lush. Both it and the delta were part of a lake, then the largest in Africa, surrounded by wetlands. For wildlife, the result was a veritable paradise—and also for people, for, if the latest research is correct in its claims, an intriguing episode in humanity's origins was played out there.

That *Homo sapiens* began as an African species was pretty-much proved in the 1980s by Allan Wilson of the University of California, Berkeley. He developed what has come to be known as the Mitochondrial Eve hypothesis by looking at a special type of DNA which is passed, unmixed by sexual reproduction, from a mother to her children. This so-called mitogenome is independent of a cell's nucleus, where the rest of the genes are found. It resides in structures called mitochondria that are the descendants of once-free-living bacteria and which now act symbiotically as a cell's power packs.

Wilson's research showed that the family trees of present-day human mitogenomes, their branches caused by mutations over the millennia, converge in a way which makes clear that their common ancestor lived in Africa. Hence the nickname Mitochondrial Eve. This woman was by no means the first human being. But everyone now alive can claim descent from her.

What is true for Eve is also true for Adam. Part of the DNA on the Y-chromosome, which is passed unmixed from father to son, can be used to draw up a similar tree that is also rooted in Africa. Where, exactly, Y-chromosomal Adam resided has not yet been established. But as they describe this week in *Nature*, a group of researchers led by Vanessa Hayes of the Garvan Institute in Sydney, Australia, think they have found that Mitochondrial Eve—or, at least, people closely related to her—lived for tens of thousands of years in splendid isolation in northern Botswana.

That northern Botswana was a habitat of early humans has been known for years. Makgadikgadi is littered with stone tools dropped there aeons ago by Palaeolithic hominids. Which particular hominids, however, is not clear. Unlike later artefacts, Palaeolithic tools are not species-specific. Though they were invented about 1.8m years ago by *Homo erectus*, an early human that spread over Africa and Asia, they were also used by *erectus*'s numerous daughter species, one line of which leads eventually to *Homo sapiens*.

People of the lake

The story that Dr Hayes and her colleagues are proposing is that, whoever might have been living there beforehand, by 200,000 years ago the land around Lake Makgadikgadi was indeed occupied by *Homo sapiens*. For the following 70,000 years these people evolved in isolation, penned into their homeland by desertlike surroundings. Then, in two bursts—one 130,000 years ago and the other 110,000 years ago—they were ▸▸

unleashed on the wider world.

Mitogenomic ancestral trees are made by looking for typos in the sequences of genetic "letters" in mitogenomes—places in the DNA where a single chemical base differs from one individual to another. Because mitogenomes do not recombine during sex, these changes are all the results of random mutations. By comparing mitogenomes, it is possible to work out in what order the mutations happened. And because even random processes have measurable averages, it is also possible to estimate when a particular mutation arose.

Follow the branches of the human mitogenomic tree back through time and they converge on a group of mitogenomes known as LO. This group is largely confined to southern Africa. It is the characteristic mitogenome of the Khoesan people, who long predate the arrival in the area of both Bantu from farther north in Africa and Europeans from overseas. Dr Hayes and her colleagues therefore gathered all of the existing versions of LO that they could find, and also collected 198 new ones, to bring together a total of 1,217 variants from which they sought to refine the ancestral tree.

With that information, and data about where the samples were collected, maps of how people who share LO spread can be constructed. And that is what Dr Hayes and her colleagues did. The branches of their new tree converge in time about 200,000 years ago. In space, they converge on northern Botswana.

The tree also suggests that the LO population lived in one place for perhaps 70,000 years before part of it moved south-west, and a further period of about 20,000 years before another part moved north-east. This suggestion of an isolated population that underwent two outward migrations is supported by work by Dr Hayes's collaborator, Axel Timmermann of the Institute for Basic Science in Busan, South Korea. He is a climatologist and has pieced together, from paleogeographic and astronomical evidence, a history of Makgadikgadi and its surroundings. In particular, he has looked at the effects on the climate there of the shifts in Earth's orbit and axial spin that cause ice ages.

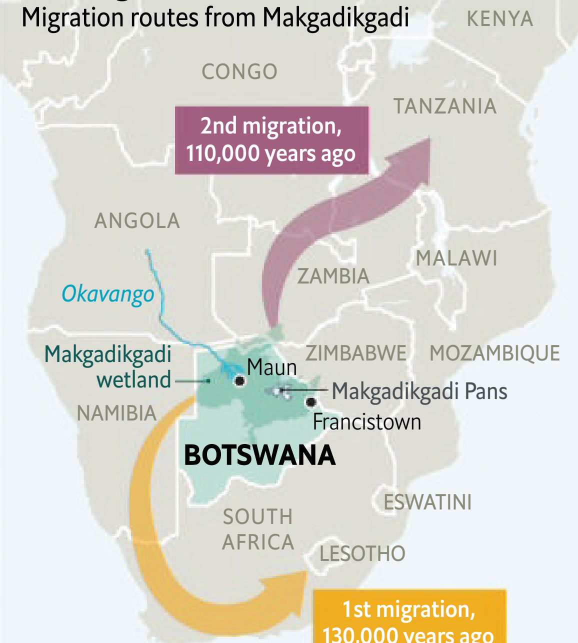
His conclusion is that for most of this time Lake Makgadikgadi was surrounded by desert, but that this encircling wall was twice penetrated by green corridors along which animals, people included, would have been able to migrate. The first corridor opened 130,000 years ago to the south-west. The second, 110,000 years ago to the north-east.

The mitogenomic and climatic data thus seem to match. The south-western dispersal would have carried the ancestors of today's LO individuals into other parts of southern Africa. In particular, it would explain the traces of habitation along South Africa's coast that date from shortly after.

It was the north-eastern dispersal, though, that unleashed the children of Makgadikgadi on the wider world. Their descendants spread through what is now Zambia and into the rest of Africa, interbreeding with people already living there, including the descendants of Y-chromosomal Adam, as they merged into the wider gene-pool of humanity. Indeed, the history of human nuclear genes resembles a web more than it does a tree, which is one reason Wilson sought the clarity of the mitogenome in the first place.

Leaving home

Migration routes from Makgadikgadi



Source: *Nature*

Quantum computing

Not so fast

A challenge to a big result in quantum computing

IT WAS HAILED by many, including *The Economist*, as a landmark result in quantum computing. In September a scientific paper appeared accidentally on a NASA webpage. In it a team of researchers at Google described how they had used a quantum computer to complete, in three minutes, a calculation that would have taken a classical machine 10,000 years to crunch through. This feat, they claimed, marked the first demonstration of "quantum supremacy"—using a quantum computer to tackle a task unfeasible for a classical one.

On October 23rd the paper reappeared, intentionally this time, in *Nature*. But a few days before that some researchers at IBM—which, like Google and several other information-technology firms, including Intel and Microsoft, is also conducting quantum-computing research—posted their own paper to arXiv, an online repository. In it, they cast doubt on Google's claim.

The task that Google's engineers tested their machine with is called circuit sampling. It involves measuring the outputs of randomly wired circuits made of qubits, the quantum-mechanical analogues of the classical bits that lie at the heart of conventional computing.

In truth, circuit sampling is a toy problem with little practical use. Google picked it as a demonstration because it is mightily difficult for a classical machine to do at all, whereas a well-behaved quantum computer finds it trivial. Moreover, the contest becomes exponentially more unequal as the number of qubits in the quantum machine goes up.

Google used a 53-qubit machine. The classical-computing yardstick against which its performance was putatively measured was Summit, a machine at Oak Ridge National Laboratory that is, at the moment, the fastest in the world. Google's engineers did not, however, actually do the experiment. Rather, they arrived at the figure of 10,000 years by extrapolating from easier versions of the task.

Not so fast, said IBM—or, rather, not so slow. The chief problem Summit faced is that when simulating 53-qubit circuits it would run out of memory. This means that, were anyone actually trying to run the simulation, they would have to use a less memory-hungry but much slower algorithm to do so. IBM pointed out that Summit also has plenty of hard-disk space. Although not usually counted as memory, this could nonetheless be pressed into service. Doing so, combined with a few tweaks to the algorithm, would, IBM's engineers reckon, allow Summit to breeze through the job in a mere 2½ days. Therefore, according to IBM, Google had not shown quantum supremacy after all.

Technically, IBM is right. How much it matters is another question. Two and a half days is, after all, still about 1,200 times longer than 3 minutes. Second, each extra qubit doubles the memory required by a classical machine put up against it. Adding just three qubits to Google's challenger machine would have exhausted Summit's hard disks. Quantum computers do not face such explosively growing demands. Google's machine may not quite have crossed the finishing line. But it has got pretty close to doing so.

Eventually, about 50 millennia after these events, some intrepid adventurers crossed to Asia, took up residence there, and thence spread to Australia, Europe and the Americas. The DNA of these travellers was further changed by interbreeding with at least two other species of human: Neanderthals in Europe and Denisovans in Asia.

Not everyone believes Dr Hayes's version of history. The further back the human mitogenomic tree is traced, they point out, the more uncertainty creeps into it, so further investigation would be desirable. But the mix of evidence, genetic and climatic, that she and her colleagues present does paint quite a plausible picture of the experiences of one particular branch of modern people's ancient ancestors. ■

Curbing greenhouse-gas emissions

Pardon!

HAMILTON, NEW ZEALAND

The answer to livestock that burp methane may be seaweed

Ancient Greek writings describe livestock eating seaweed, as do Icelandic sagas. And, as the picture shows, sheep on North Ronaldsay, in the Orkney Islands of Scotland, still graze on the stuff. But that is now seen as unusual. It may not be in the future, however, as research conducted in Australia and New Zealand suggests algavory of this sort may reduce greenhouse-gas emissions from stock animals.

The research in question is being co-ordinated by CSIRO, Australia's main science agency. The project is looking into microbes that inhabit the stomachs of ruminants such as cattle and sheep. These bugs transform those animals' fibrous fare into energy-rich molecules, some of which the host animal is able to absorb and utilise.

One energy-rich molecule that is not absorbed, though, is methane. Instead, the animals belch it into the atmosphere. Which is a problem, because methane is a greenhouse gas that has a warming effect 28 times as powerful as carbon dioxide's. Since this loss of methane also deprives the host of the energy therein, thus probably reducing its growth rate, controlling methanogenic bacterial activity in ruminants looks like a beneficial twofer.

The antimethanogenic powers of *Asparagopsis*, the seaweed in question, were discovered in 2016 and experiments involving it have been going on since then. One of the latest, published in October in the *Journal of Cleaner Production*, showed that dairy cows eating a diet containing 1% *Asparagopsis* produce only a third of the methane belched by cows on seaweedless diets. Since a cow has about the same greenhouse effect as a car, cutting the emissions of even a portion of the world's 1.5bn cattle would bring great benefit. Furthermore, according to Michael Battaglia, who directs CSIRO's agriculture and global change programme, soon-to-be-published work shows that seaweed-fed beef cattle grew, as predicted, faster than their seaweedless confrères.

The methane-diminishing effect of *Asparagopsis* is caused by a compound called bromoform, in which the algae are rich. Bromoform blocks one of the enzymes that methanogens use to create the gas. The obvious solution to the problem might therefore seem to be to add this chemical directly to animal feed. That might work in principle (no one has yet tried), but in practice would require a lot of safety trials and, if those came back positive, a change in the regulations. It would also risk a backlash by consumers, who might perceive adding bromoform as adulteration of some sort.

The alternative is to cultivate seaweed, rather than gathering it from the wild, in order to provide the quantities that will be needed if the idea of adding *Asparagopsis* to feed becomes popular. And New Zealand's government is proposing to do precisely that. It has just made money available for people who hope to develop ways to farm *Asparagopsis*. Exactly how this will work remains to be seen. But the idea of adding a new crop to the world's agriculture, and a marine one to boot, is intriguing. ■

Ovine seafood

Civil engineering

Curing concrete cancer

Two Australian bridges try to stand the test of time

Modern civilisation is built on concrete and steel. Put the two together, though, and you can generate a problem. Reinforcing concrete with steel rods called rebars is the basis of modern construction. But because water gets in through tiny cracks, the rebars rust. This causes them to expand, widening the cracks and weakening the concrete. Hence such structures require constant attention and often have design lives of only 60-100 years. That is pitiful compared with, say, the concrete dome of the Pantheon in Rome—which was completed in 125AD and still stands.

Various ways of delaying or preventing concrete cancer, as this corrosion is known colloquially, have been tried. These include recipes for concrete that is less permeable to water, and rebars made from rust-resistant materials such as stainless-steel or composites. Such approaches work, but they can be expensive.

This may be about to change. Next year, if all goes well, a pair of footbridges intended to be cancer-proof will open in Geelong, a town 75km south-west of Melbourne, Australia. These bridges, which will act as prototypes for more than 150 others planned for the expanding city, will be constructed using a novel approach that combines glass-fibre and carbon-fibre rebars. They will, though, cost about the same as equivalent conventional bridges.

The new design is the brainchild of a joint team of researchers from Deakin, a local university, and Austeng, the firm contracted to build the bridges. This team began with commercially available rebars made from carbon-fibre composite. Although these are as strong as steel ones, they are expensive. They are, therefore, most often used in specialist structures such as buildings to house MRI hospital scanners, where electromagnetic interference from metal can cause problems.

To get around this the team have worked out how to minimise cost by using carbon-fibre rebars only where strictly necessary. In other places they use glass fibre, which is cheaper. The result is a frame that acts as a skeleton for precast concrete sections which can then be assembled into a bridge.

According to Mahbube Subhani, one of the researchers at Deakin, a three-metre-long version of such a section has just been tested and has passed local building codes. The group is now pressing ahead with the first of the ten-metre sections needed to construct the bridges themselves.

The new castings are, as was hoped, both stronger and lighter than steel-reinforced concrete. Tests showed that the prototype's load-carrying capacity was 20% better, even though its cross-section was 15% smaller. Production costs are "a little bit higher", Dr Subhani admits. But in the long run, he says, the bridges will work out cheaper because they should last for at least 100 years without any maintenance being required.

They will also be more environmentally friendly, for the concrete surrounding the skeleton is unconventional, too. Normal concrete is bound with Portland cement, which is made by roasting a mixture that includes limestone (calcium carbonate). This process drives off carbon dioxide, a greenhouse gas, and cement-making is a big source of such emissions.

Geelong's bridges, by contrast, will be made with geopolymer concrete. This uses cement made from a different mixture of ingredients, including furnace fly-ash, which do not release carbon dioxide when being processed.

Further down the line Deakin's researchers are looking into making rebars out of basalt, an abundant volcanic rock, by melting it and extruding it into fibres. That could provide a cheaper and greener alternative to carbon fibres, which are usually made from oil-based polymers. Some commercial basalt-fibre composites are already available, but the team think they can improve the performance of such fibres further, by adding other materials.

Coincidentally, one of the ingredients of the Pantheon's concrete dome is pumice, another volcanic rock. Whether basalt-fibre concrete will similarly stand the test of time only future architects will know. ■

What have the Romans done for us?

How science works

Slow. But sure

The scientific method has come under scrutiny. But it works. Eventually

In November 2015 a team of psychologists led by Jean Decety of the University of Chicago published an unexpected finding. Based on an experiment involving coloured stickers (trinkets valued by the children who took part) they concluded that youngsters living in religious households are less generous than those who dwell in non-religious households. Many news outlets, including *The Economist*, reported this result—precisely because it was so surprising. It turns out, though, that it was wrong. In August *Current Biology*, the journal which published the original paper, published a retraction, saying:

> An error in this article, our incorrect inclusion of country of origin as a covariate in many analyses, was pointed out in a correspondence from Shariff, Willard, Muthukrishna, Kramer and Henrich. When we reanalysed these data to correct this error, we found that country of origin, rather than religious affiliation, is the primary predictor of several of the outcomes.

Still an interesting result, then. But not what had originally been claimed. Translating the retraction's jargon, Dr Decety and his colleagues were confessing to the fact that the numerical codes they had assigned to the various countries involved in the study (1=USA, 2=Canada and so on) had been incorporated by accident into the calculation, and had thus thrown the result out of whack.

The road to this retraction shows both what is good and what is bad about the way the modern scientific method works. The good is that the error was exposed, and has been acknowledged by the paper's authors. The bad is that it took four years for the retraction to happen.

The error was originally spotted by Azim Shariff, a psychologist at the University of British Columbia, in Canada. Dr Shariff read Dr Decety's paper and noted that its findings clashed with many of his own observations. These suggested that a religious upbringing increased kindness towards others, rather than decreasing it. That led Dr Shariff to ask Dr Decety for his data so that he, Dr Shariff, could analyse them in detail to try and work out why their conclusions clashed. Dr Decety obliged. Dr Shariff discovered the coding error. And, based on that discovery, he reported his results in *Current Biology* in August 2016.

Current Biology's publishers, Cell Press, felt that was enough. The original mistake was in the public domain and everyone could now get on with life. It did, though, mean that Dr Decety's paper remained in the literature, possibly confusing those who had not read Dr Shariff's. And that was the case until a new, unrelated paper, published by *Nature* in March, drew attention to Dr Decety's work and created an outcry on social media for the matter to be addressed. A few months later, after discussion with Dr Decety, *Current Biology* retracted the paper.

It is often observed that news media are keen to publicise extraordinary-sounding results, but lose interest in subsequent work—and actually ignore retractions. There is truth in that, though it is also true that journals often fail to draw attention to such matters. Whatever the reason, according to a report that came out in *Psychology Today* in September, though more than 80 publications reported on the original findings, Dr Shariff's follow-up was covered at the time by a mere four outlets.

The happy ending is that Dr Decety has spent the intervening period collecting yet more data on the matter, and that he and Dr Shariff are now collaborating to analyse those data. When they publish, we will endeavour to cover it. ■

East German art

Wire in the blood

COTTBUS

Thirty years after the fall of the Berlin Wall, East German art is causing a stir

A NEW TREND swept through East Germany's underground art scene in the 1980s: window blinds. Called "Rollos" in German, these foldable, commercial blinds were an instant hit as an alternative to traditional canvases. They were cheap and widely available, an important consideration in a pinched socialist economy. They were visually interesting, and fun to paint on. And, crucially, they were perfect for evading censors.

Artists painted on Rollos, then unfolded them in spontaneous group shows in churches or homes. Then they stashed them away again before the authorities could intervene. After the Berlin Wall fell in November 1989, the flimsy material remained popular, capturing, as it seemed to, the mood of upheaval and transience. Some artists hoarded blank Rollos, utilising them long after the German Democratic Republic (GDR) expired.

Rollo art is one of many bold creative experiments that undercut the GDR's reputation as a desert of dour Socialist Realism. Long derided as the obsolete propaganda of a collapsed state, GDR-era art is now experiencing a revival. Several major shows have introduced it to a wider audience; prices for some artists are rising. Alongside names that were already celebrated in the socialist era, less well-known aspects of East Germany's creative legacy are belatedly winning attention. It helps that the GDR's rebels, especially its female artists, tackled issues that continue to be relevant: surveillance, gender inequality, self-discovery and sexual liberation. Their subversive and often humorous paintings, performances, prints, collages and texts have lost none of their provocative power.

→ Also in this section

"Making art ourselves, that was a lifeline," says Gabriele Stötzer, one of the GDR's most radical writers and artists, from her home in the East German city of Erfurt. "Art needs a public, and we were at least our own public." As a young woman, Ms Stötzer was imprisoned for signing a petition in support of Wolf Biermann, a dissident singer. After her release, she says, she was no longer afraid of anything. She ran an underground gallery, which was shut down by the Stasi. All around her, she saw her fellow artists being silenced, exiled, driven to depression or suicide. Through art, she reminded herself that she existed. She made her own clothes, and her own plates and cups. She covered herself with ketchup and pressed herself against a wall, "just to leave a trace, just to see that I am here."

Together with other women, she experimented with film, photography, performance, concertina books and Rollos. In 1989 she helped storm the Stasi's local headquarters in Erfurt, preventing its goons from destroying their surveillance files. She knew the building, having been held in solitary confinement and interrogated there. "These days I've been rehabilitated a bit," Ms Stötzer says wryly. "As an artist, I now have one show after another."

For many, such recognition was a long time coming. After Germany reunified in 1990, it was not just state-supported artists from the GDR who found themselves adrift. Many alternative spirits also struggled to adjust to the West's competitive, individualistic art market. "They thought, 'Now our time has come.' But no one was interested in these artists," says Hilke Wagner, director of the Albertinum museum in Dresden. The Albertinum hosted the GDR's official art exhibitions and collected established artists. One museum consistently bought East German avant-garde art before and after the Wall fell: the Brandenburg State Museum of Modern Art (BLMK), which has sites in Cottbus and Frankfurt an der Oder. Here, in provincial cities close to the Polish border, on the political and cultural margins, curators were freer.

Now Brandenburg is reaping the rewards of saving treasures that others neglected. "I don't even want to put this GDR label on everything. We look at it as art," says Ulrike Kremeier, the BLMK's director. On a recent tour of one of its buildings, the Dieselkraftwerk in Cottbus, she proudly gestured at rooms filled with big, vibrant Rollos. Four by Angela Hampel show a sequence of falling women. Another, by Sabine Herrmann, depicts a woman kneeling and bowing her head as if to shake out her hair. The museum owns a unique collection of GDR-era photography, as well as its trove of Rollos. It bought early paintings by A.R. Penck and Neo Rauch, now known around the world, and works by women such as Ms Stötzer, Cornelia Schleime, Doris Ziegler and Sigrid Noack.

Walls have eyes

These days, glitzier institutions borrow from this hoard. Works by Ms Stötzer are on loan at the Galerie für Zeitgenössische Kunst in Leipzig. Other pieces are due to be shown in an exhibition at the Albertinum next year. Word has spread farther afield, too. In 2018 a team from the Museum of Modern Art in New York visited Cottbus to study the collection. Female artists from countries behind the Iron Curtain, including the GDR, are at the heart of a show at the Wende Museum in Culver City, California, which opens on November 10th (the day after the Wall fell). Susanne Altmann, the curator, says these women took aesthetic as well as political risks: "To paint on film, to paint on photos, to paint on Rollos, these are all aesthetic transgressions that required a lot of courage."

The resulting work reflects the repressive circumstances of its creation. When Ms Schleime was banned from exhibiting her paintings and drawings, she turned to performance art, using her own body as material. She stripped naked and painted eyes on herself. She wrapped herself in wire. "You can't tear the body off a wall", she commented, "the way officials once tore down a drawing of mine." A certain pragmatism is also characteristic of the era. Christine Schlegel, whose colourful Rollos feature at the Wende Museum, initially started painting on window blinds to enliven her child's bedroom, says Ms Altmann. When she left for the West, she took her Rollos with her.

Yet despite this bygone historical context, many of these works feel surprisingly timely. A photo of Ms Schleime covered with painted-on eyes could be a comment on privacy and exposure in the internet age. Annemirl Bauer's "Untitled (Woman and Child behind Bars and Barbed Wire)", painted on a discarded wardrobe door in 1985 (see previous page), is reminiscent of latter-day images of migrant families detained at the American border. In Cottbus experimental photography from the 1980s was recently juxtaposed with a new series of photos of former neo-Nazis having their tattoos removed.

The GDR's rebel artists show no signs of quietening down. A Rollo that Ms Hampel painted in 2010 presents a defiant, red-haired woman reaching out as if to warn the viewer. Decades after reunification, she continued painting on the blinds. She no longer needed to outfox censors; she had simply grown fond of the Rollos, everyday objects that could be turned into art. ■

Painting and life

Art therapy

A writer seeks solace—and answers—in frescoes

A Month in Siena. By Hisham Matar. *Random House; 126 pages; $27. Viking; £12.99*

JABALLA MATAR was a businessman and dissident in Muammar Qadaffi's Libya. In 1979 he fled to Cairo with his family. One afternoon in 1990, when his son Hisham was 19 and studying in London, Jaballa was "kidnapped, bundled into an unmarked airplane and flown back to Libya. He was imprisoned and gradually, like salt dissolving in water, was made to vanish."

Jaballa has been missing ever since, an absence that has been the central preoccupation of Hisham Matar's work. He wrote about it in "The Return" (2017), which chronicles a journey to the country of his birth and his attempt to trace his father (who may yet be alive), or to find out what happened to him (more likely, he was one of the estimated 1,270 victims of the massacre at Abu Salim prison in 1996).

"The Return" won a Pulitzer prize, but in terms of Mr Matar's questions, it comes up empty-handed, the answers remaining elusive. "A Month in Siena", a slim bewitching meditation on art, history and the relationship between them, offers some of the resolution that its author is still seeking, if not in the form he originally hoped for.

Mr Matar's pilgrimage to Siena and his quest to unravel the disappearance are not as unrelated as they may at first seem. Around the same time that he "lost" his father, and "for reasons that still remain unclear to me now", he writes, "I began to visit the National Gallery in London every day during my lunch break." He became fascinated by the work of Duccio di Buoninsegna, a Sienese painter, whose "Annunciation" and "Jesus Opens the Eyes of a Man Born Blind" are in the gallery's collection. For Mr Matar, Duccio was a gateway to the rest of the Sienese School, which emerged in the 13th century and lasted into the 15th, and which stands apart from other contemporary movements, "neither Byzantine nor of the Renaissance, an anomaly between chapters, like the orchestra tuning its strings in the interval".

The Tuscan city of Siena itself appeals to Mr Matar for having favoured civic rule at a time when many other Italian city-states

From Tripoli to Tuscany

were controlled by the Catholic church or the aristocracy. The paintings that he travels to Siena to see, during the sojourn of his title, reflect this context. They are the three frescoes by Ambrogio Lorenzetti that were commissioned for the Palazzo Pubblico (town hall) in 1338: "Allegory of Good Government", "The Effects of Good Government" (see previous page) and "The Effects of Bad Government". Mr Matar goes repeatedly to the Palazzo Pubblico to look at the frescoes, admiring their celebration of civil society. Besides their political import, visiting them is an opportunity "to grieve alone, to consider the new terrain and to work out how I might continue from here".

He takes Italian lessons, cooks himself baby artichokes, befriends a Jordanian who has lived in the city for 30 years; he observes the "sex on the surface of everything" that is particular to Italy but reminiscent of Libya. He considers his wife, who will probably never meet his father, overlaying the history of art onto the present in the manner of John Berger or Teju Cole, two similarly associative writers.

There are ambulatory musings on the fabric of cities and the rips in it, as when Mr Matar uses the anti-Semitism and Islamophobia unleashed by the Black Death to hint at today's politics. The result is an intensely moving book, at once an affirmation of life's quiet dignities in the face of loss, and a portrait of a city that comes to stand for all cities—which exist, Mr Matar postulates, to "render us more intelligent and more intelligible to each other". ■

Literary posterity

War of the words

Inventing Tomorrow: H.G. Wells and the Twentieth Century. By Sarah Cole. *Columbia University Press; 392 pages; $35 and £27*

In an episode of "Downton Abbey", Maggie Smith's character, Violet Crawley, expresses horror at the brisk march of innovation. "First electricity," she complains, "now telephones; sometimes I feel as if I were living in an H.G. Wells novel." It is an apt line, for Wells (1866-1946) believed that modernity presented a "bristling multitude" of problems—and that fiction was the best medium through which to examine them. Combining a gift for shrewd social commentary with far-reaching prophecy, he foresaw inventions such as television and air-conditioning, as well as coining the terms "war of the worlds", "atomic bomb" and "time machine".

Yet despite his blazing intuitions and his sense of the darker repercussions of technological progress, Wells is now an unfashionable figure. Virginia Woolf lumped him together with Arnold Bennett and John Galsworthy as drab "materialists"— writers prosaically interested in the fabric of the world, rather than the inner life. That judgment caught on. Today only a few of Wells's books are much read, and they are studied more often than enjoyed. His style, shaped by a mission to educate, can seem pedantic. Readers balk at his passion for eugenics, attitude to what he called "the inferior races" and tendency to trivialise women. A glut of biographical material has suggested that he was a petulant egomaniac who treated personal relationships like experiments.

In "Inventing Tomorrow", Sarah Cole of Columbia University sets out to reclaim Wells as a visionary and a radical. Without denying his flaws, she characterises him as a "global thinker", and her dense, ultimately rewarding book shows the grand sweep of his interests and erudition. Ms Cole does not dwell on the details of his biography—the suburban childhood in a bug-infested house in Kent, or his being judged, at 13, too unrefined to be an apprentice to a draper. Instead she concentrates on his ideas: on the importance of scientific education, the hazards of genetic engineering, the violent wastefulness of Western culture, nuclear proliferation, and the need to eradicate national identity and launch a socialist world-state, in which everyone would speak a single language.

Wells was sure that imaginative literature had a crucial role to play in public conversations about these subjects. Yet for a book that seeks to present him as a writer deserving a mass audience, "Inventing Tomorrow" is sometimes hard going. Ms Cole's own phrasing can be opaque. She applauds Wells's novel "Ann Veronica" for the "jouissance it purveys" and "The Island of Doctor Moreau" for the "hybridity it literalises", and refers to his work being "washed by waves of violence and decimation".

Still, she succeeds in calling attention to the expansiveness of Wells's thinking. And she investigates neglected areas of his writing, among them the pacifist pamphlets he produced during the first world war; she is especially enthusiastic about lesser-known novels such as "Mr Britling Sees It Through" (1916), which pictures the impact of conflict on non-combatants, and the heftily philosophical "The World of William Clissold" (1926). Some of Wells's ideas and personal traits were certainly rebarbative, but he emerges from this wide-ranging account as a passionate and persistent advocate of social change, and of literature's capacity to shape it—driven as he was by the belief that modern life is a "race between education and catastrophe". ■

American history

Dual destiny

Lakota America. By Pekka Hamalainen. *Yale University Press; 544 pages; $35 and £25*

The Lakota, a division of the Sioux nation, were long dismissed as "a foil of the American condition". Like other Native Americans, writes Pekka Hamalainen of the University of Oxford (also the author of "The Comanche Empire"), they were seen as the helpless "victims" of Manifest Destiny—foes of the Lewis and Clark expedition, General Custer's nemesis, the martyrs of the Wounded Knee massacre.

In "Lakota America", a comprehensive history of the tribe, Mr Hamalainen portrays them as trailblazers of empire, and forceful actors in the power games of North America. Far from fleeing the onslaught of civilisation, the Lakota's hot pursuit of beaver and buffalo drew colonial traders into the West in their wake. Over 200 years they morphed from trappers wielding stone axes along the Mississippi to "the pirates of the Missouri", exacting tolls on commercial river traffic, and then to nomad warlords of the Great Plains.

The Lakota and American empires were similar. The Lakota had their own version of Manifest Destiny through their hold on the Black Hills (in what became South Dakota and Wyoming), which they believed to be the birthplace of humanity. "The Mysterious One has given us this place," says a chieftain in an origin myth, "and now it is up to us to try to expand ourselves." In fact, the Black Hills had been seized from other tribes through conquest. "In this we did what the white men do when they want the lands of the Indians," said a Lakota representative in 1851. They frequently drove occupiers from their homes and forced others into quasi-serfdom.

Unlike European settlers, however, the Lakota did not segregate other peoples, absorbing native and European allies into their kinship system through adoption or marriage. And unlike the United States, when they conquered they did not claim the land itself but its resources, imposing control over buffalo, water, food and people. By 1876 their territory stretched from Kansas to the Canadian border, and from the Mississippi to the Rocky Mountains.

Time and again, outside powers were forced to accommodate them. The Lakota were adept at playing the *wasicus* [white men] against each other. In the 18th century's swirl of colonial rivalries, they and their allies parlayed loyalties into guns and used them to fight opposing tribes. Coveting their hold on the Missouri trade in beaver pelts, and "because of their immense power", President Thomas Jefferson wanted Lewis and Clark to win their allegiance. Even with the advent of the reservation system, the Lakota were not boxed in. They flouted reservation borders, believing they had sovereignty wherever the buffalo roamed. They used a treaty conference to claim lands that did not belong to them.

But Lakota power was brittle. Their empire was built on unsustainable resources such as the declining buffalo population. After the United States decimated that species in the late 19th century, the Lakota fell rapidly. They had to rely on food handouts; the army confiscated their horses and guns. Still, while there was no escaping the flood of American "progress", Mr Hamalainen shows that, for a time, some indigenous tribes surfed the crest of the wave. ■

Johnson Don't fear the Writernator

Computer-generated writing will never replace the human kind

MANY PEOPLE will be familiar with automated writing through two features of Gmail. Smart Reply proffers brief answers to routine emails. If someone asks "Do you want to meet at 3pm?", Gmail offers one-click responses such as "Sure!" More strikingly, Smart Compose kicks in as you write, suggesting endings to your sentences. Both are not only rendered in flawless English; they often eerily seem to have guessed what you want to say. If someone sends bad news, Smart Reply might offer "Ugh."

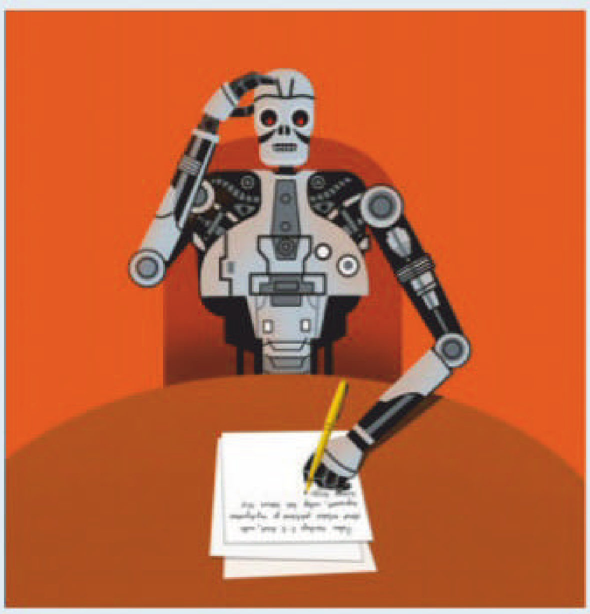
The *New Yorker*'s John Seabrook recently described a more powerful version of this technology, called GPT-2, which can ably mimic his magazine's style. Such systems use a digital network of billions of artificial "neurons" with virtual "synapses"—the connections between neurons—that strengthen as the network "learns", in this case from 40 gigabytes-worth of online writing. The version Mr Seabrook tested was refined with back-issues of the *New Yorker*.

The metaphor of the brain is tempting, but "neurons" and "synapses" deserve those scare-quotes. The system is merely making some—admittedly very sophisticated—statistical guesses about which words follow which in a *New Yorker*-style sentence. At a simple level, imagine beginning an email with "Happy..." Having looked at millions of other emails, Gmail can plausibly guess that the next word will be "birthday". GPT-2 makes predictions of the same sort.

What eludes computers is creativity. By virtue of having been trained on past compositions, they can only be derivative. Furthermore, they cannot conceive a topic or goal on their own, much less plan how to get there with logic and style. At various points in the online version of his article, readers can see how GPT-2 would have carried on writing Mr Seabrook's piece for him. The prose gives the impression of being human. But on closer inspection it is empty, even incoherent.

Meaningless prose is not only the preserve of artificial intelligence. There is already a large quantity of writing that seems to make sense, but ultimately doesn't, at least to a majority of readers. In 1996 Alan Sokal famously submitted a bogus article to a humanities journal, with ideas that were complete nonsense but with language that expertly simulated fashionable post-modernist academic prose. It was accepted. Three scholars repeated the ruse in 2017, getting four of 20 fake papers published. Humans already produce language that is devoid of meaning, intentionally and otherwise.

But to truly write, you must first have something to say. Computers do not. They await instructions. Given input, they provide output. Such systems can be seeded with a topic, or the first few paragraphs, and be told to "write". While the result may be grammatical English, this should not be confused with the purposeful kind.



To compose meaningful essays, the likes of GPT-2 will first have to be integrated with databases of real-world knowledge. This is possible at the moment only on a very limited scale. Ask Apple's Siri or Amazon's Alexa for a single fact—say, what year "Top Gun" came out—and you will get the answer. But ask them to assemble the facts to prove a case, even at a straightforward level—"Do gun laws reduce gun crime?"—and they will flounder.

An advance in integrating knowledge would then have to be married to another breakthrough: teaching text-generation systems to go beyond sentences to structures. Mr Seabrook found that the longer the text he solicited from GPT-2, the more obvious it was that the work it produced was gibberish. Each sentence was fine on its own; remarkably, three or four back to back could stay on topic, apparently cohering. But machines are aeons away from being able to recreate rhetorical and argumentative flow across paragraphs and pages. Not only can today's journalists expect to finish their careers without competition from the Writernator—today's parents can tell their children that they still need to learn to write, too.

Aside from making scribblers redundant, a common worry is that such systems will be able to flood social media and online comment sections with semi-coherent but angry ramblings that are designed to divide and enrage. In reality, that may not be much of a departure from the tenor of such websites now, nor much of a disaster. Perhaps a flood of furious auto-babble will force future readers to distinguish between the illusion of coherence and the genuine article. If so, the Writernator, much like the Terminator, would even come to do the world some good.

Fellowships

Economic & financial indicators

Economic data

	Gross domestic product % change on year ago latest		quarter*	2019†	Consumer prices % change on year ago latest		2019†	Unemployment rate %		Current-account balance % of GDP, 2019†	Budget balance % of GDP, 2019†	Interest rates 10-yr gov't bonds latest,%	change on year ago, bp	Currency units per $ Oct 30th	% change on year ago
United States	2.0	Q3	1.9	2.2	1.7	Sep	1.8	3.5	Sep	-2.4	-4.8	1.8	-114	-	-
China	6.0	Q3	6.1	6.2	3.0	Sep	2.7	3.6	Q3§	1.4	-4.5	3.1 §§	-27.0	7.06	-1.4
Japan	1.0	Q2	1.3	1.0	0.2	Sep	1.0	2.2	Aug	3.2	-2.9	-0.2	-26.0	109	3.6
Britain	1.3	Q2	-0.9	1.2	1.7	Sep	1.9	3.9	Jul††	-4.0	-1.8	0.8	-61.0	0.78	1.3
Canada	1.6	Q2	3.7	1.6	1.9	Sep	2.0	5.5	Sep	-2.3	-0.8	1.5	-100	1.32	-0.8
Euro area	1.2	Q2	0.8	1.2	0.8	Sep	1.2	7.4	Aug	2.9	-1.1	-0.4	-74.0	0.90	-2.2
Austria	1.5	Q2	-1.4	1.4	1.2	Sep	1.6	4.5	Aug	1.7	0.1	-0.1	-71.0	0.90	-2.2
Belgium	1.6	Q3	1.6	1.2	0.5	Oct	1.8	5.5	Aug	0.1	-1.0	-0.1	-87.0	0.90	-2.2
France	1.3	Q3	1.0	1.3	0.9	Sep	1.3	8.5	Aug	-0.7	-3.2	nil	-77.0	0.90	-2.2
Germany	0.4	Q2	-0.3	0.5	1.1	Oct	1.3	3.1	Aug	6.6	0.5	-0.4	-74.0	0.90	-2.2
Greece	1.9	Q2	3.4	1.9	-0.1	Sep	0.6	16.9	Jul	-2.9	0.4	1.2	-302	0.90	-2.2
Italy	0.1	Q2	0.3	0.1	0.3	Sep	0.7	9.5	Aug	2.0	-2.4	1.1	-239	0.90	-2.2
Netherlands	1.8	Q2	1.6	1.7	2.6	Sep	2.7	4.4	Sep	9.7	0.6	-0.2	-73.0	0.90	-2.2
Spain	2.3	Q2	1.6	2.1	0.2	Oct	0.9	13.8	Aug	0.8	-2.3	0.3	-120	0.90	-2.2
Czech Republic	2.5	Q2	3.0	2.6	2.7	Sep	2.7	2.1	Aug‡	0.5	0.2	1.4	-73.0	22.9	-0.7
Denmark	2.2	Q2	3.6	1.9	0.5	Sep	0.8	3.8	Aug	6.8	1.0	-0.3	-66.0	6.72	-2.2
Norway	-0.7	Q2	1.0	1.4	1.5	Sep	2.3	3.7	Aug‡‡	5.4	6.5	1.4	-54.0	9.21	-8.8
Poland	4.2	Q2	3.2	4.0	2.6	Sep	2.0	5.1	Sep§	-0.6	-2.0	2.0	-115	3.83	-0.5
Russia	0.9	Q2	na	1.1	4.0	Sep	4.6	4.5	Sep§	6.6	2.4	6.6	-214	64.0	2.4
Sweden	1.0	Q2	0.5	1.3	1.5	Sep	1.8	7.1	Sep§	3.5	0.4	-0.1	-67.0	9.69	-5.5
Switzerland	0.2	Q2	1.1	0.8	0.1	Sep	0.5	2.3	Sep	9.3	0.5	-0.5	-53.0	0.99	1.0
Turkey	-1.5	Q2	na	-0.3	9.3	Sep	15.6	13.9	Jul§	-0.2	-2.9	12.9	-504	5.71	-3.7
Australia	1.4	Q2	1.9	1.7	1.7	Q3	1.5	5.2	Sep	0.1	0.1	1.1	-144	1.46	-3.4
Hong Kong	0.5	Q2	-1.7	0.2	3.3	Sep	3.0	2.9	Sep‡‡	4.8	0.1	1.5	-86.0	7.84	nil
India	5.0	Q2	2.9	5.2	4.0	Sep	3.4	7.2	Sep	-1.7	-3.8	6.7	-117	70.9	3.9
Indonesia	5.0	Q2	na	5.1	3.4	Sep	3.1	5.0	Q1§	-2.4	-2.0	7.0	-159	14,027	8.5
Malaysia	4.9	Q2	na	4.4	1.1	Sep	0.8	3.3	Aug§	4.5	-3.5	3.5	-72.0	4.18	nil
Pakistan	3.3	2019**	na	3.3	11.4	Sep	9.2	5.8	2018	-3.5	-8.9	11.6 †††	-41.0	156	-14.8
Philippines	5.5	Q2	5.7	5.7	0.9	Sep	2.3	5.4	Q3§	-1.1	-3.1	4.5	-345	50.9	5.3
Singapore	0.1	Q3	0.6	0.7	0.5	Sep	0.5	2.3	Q3	14.4	-0.3	1.8	-72.0	1.36	1.5
South Korea	2.0	Q3	1.6	1.8	-0.4	Sep	0.4	3.1	Sep§	3.0	0.6	1.8	-46.0	1,168	-2.5
Taiwan	2.4	Q2	2.7	2.4	0.4	Sep	0.5	3.7	Sep	12.0	-1.0	0.7	-20.0	30.5	1.6
Thailand	2.3	Q2	2.4	2.4	0.3	Sep	0.9	1.0	Aug§	6.0	-2.8	1.6	-100	30.2	10.1
Argentina	0.6	Q2	-1.3	-3.3	53.5	Sep‡	53.7	10.6	Q2§	-1.4	-4.3	11.3	562	59.6	-38.2
Brazil	1.0	Q2	1.8	0.8	2.9	Sep	3.8	11.8	Aug§	-1.7	-5.7	4.4	-375	4.02	-7.7
Chile	1.9	Q2	3.4	2.6	2.1	Sep	2.3	7.0	Sep§‡‡	-2.6	-1.3	3.1	-140	739	-6.0
Colombia	3.4	Q2	5.6	3.1	3.8	Sep	3.5	10.8	Aug§	-4.4	-2.5	5.9	-129	3,388	-5.6
Mexico	-0.4	Q3	0.4	0.3	3.0	Sep	3.6	3.5	Sep	-1.1	-2.7	6.8	-192	19.2	4.3
Peru	1.2	Q2	4.1	2.6	1.9	Sep	2.2	6.1	Sep§	-2.1	-2.0	5.6	64.0	3.35	0.3
Egypt	5.7	Q2	na	5.5	4.8	Sep	8.8	7.5	Q2§	-0.9	-6.7	na	nil	16.1	11.0
Israel	2.0	Q2	0.6	3.2	0.3	Sep	1.0	3.8	Aug	2.3	-3.9	0.9	-145	3.53	5.1
Saudi Arabia	2.4	2018	na	1.0	-0.7	Sep	-1.2	5.6	Q2	1.4	-6.7	na	nil	3.75	nil
South Africa	0.9	Q2	3.1	0.7	4.1	Sep	4.5	29.1	Q3§	-3.9	-4.8	8.4	-83.0	15.0	-2.3

Source: Haver Analytics. *% change on previous quarter, annual rate. †The Economist Intelligence Unit estimate/forecast. §Not seasonally adjusted. ‡New series. **Year ending June. ††Latest 3 months. ‡‡3-month moving average. §§5-year yield. †††Dollar-denominated bonds.

Markets

In local currency	Index Oct 30th	% change on: one week	Dec 31st 2018
United States S&P 500	3,046.8	1.4	21.5
United States NAScomp	8,304.0	2.3	25.1
China Shanghai Comp	2,939.3	-0.1	17.9
China Shenzhen Comp	1,628.6	0.6	28.5
Japan Nikkei 225	22,843.1	1.0	14.1
Japan Topix	1,665.9	1.7	11.5
Britain FTSE 100	7,330.8	1.0	9.0
Canada S&P TSX	16,501.4	1.0	15.2
Euro area EURO STOXX 50	3,620.3	0.4	20.6
France CAC 40	5,765.9	2.0	21.9
Germany DAX*	12,910.2	0.9	22.3
Italy FTSE/MIB	22,646.1	1.3	23.6
Netherlands AEX	581.6	1.0	19.2
Spain IBEX 35	9,284.5	-1.1	8.7
Poland WIG	58,430.5	0.8	1.3
Russia RTS, $ terms	1,431.9	2.8	34.3
Switzerland SMI	10,255.0	2.3	21.7
Turkey BIST	98,692.0	-1.1	8.1
Australia All Ord.	6,794.7	0.2	19.0
Hong Kong Hang Seng	26,667.7	0.4	3.2
India BSE	40,051.9	2.5	11.0
Indonesia IDX	6,295.8	0.6	1.6
Malaysia KLSE	1,580.0	0.7	-6.5

	index Oct 30th	% change on: one week	Dec 31st 2018
Pakistan KSE	33,761.4	1.0	-8.9
Singapore STI	3,207.9	2.0	4.5
South Korea KOSPI	2,080.3	nil	1.9
Taiwan TWI	11,380.3	1.3	17.0
Thailand SET	1,601.8	-1.8	2.4
Argentina MERV	33,889.0	3.4	11.9
Brazil BVSP	108,407.5	0.8	23.3
Mexico IPC	43,741.6	0.4	5.0
Egypt EGX 30	14,477.8	2.5	11.1
Israel TA-125	1,577.2	0.4	18.3
Saudi Arabia Tadawul	7,792.8	-1.2	-0.4
South Africa JSE AS	55,872.6	0.5	5.9
World, dev'd MSCI	2,237.3	1.3	18.8
Emerging markets MSCI	1,041.5	1.0	7.8

US corporate bonds, spread over Treasuries

Basis points	latest	Dec 31st 2018
Investment grade	156	190
High-yield	493	571

Sources: Datastream from Refinitiv; Standard & Poor's Global Fixed Income Research. *Total return index.

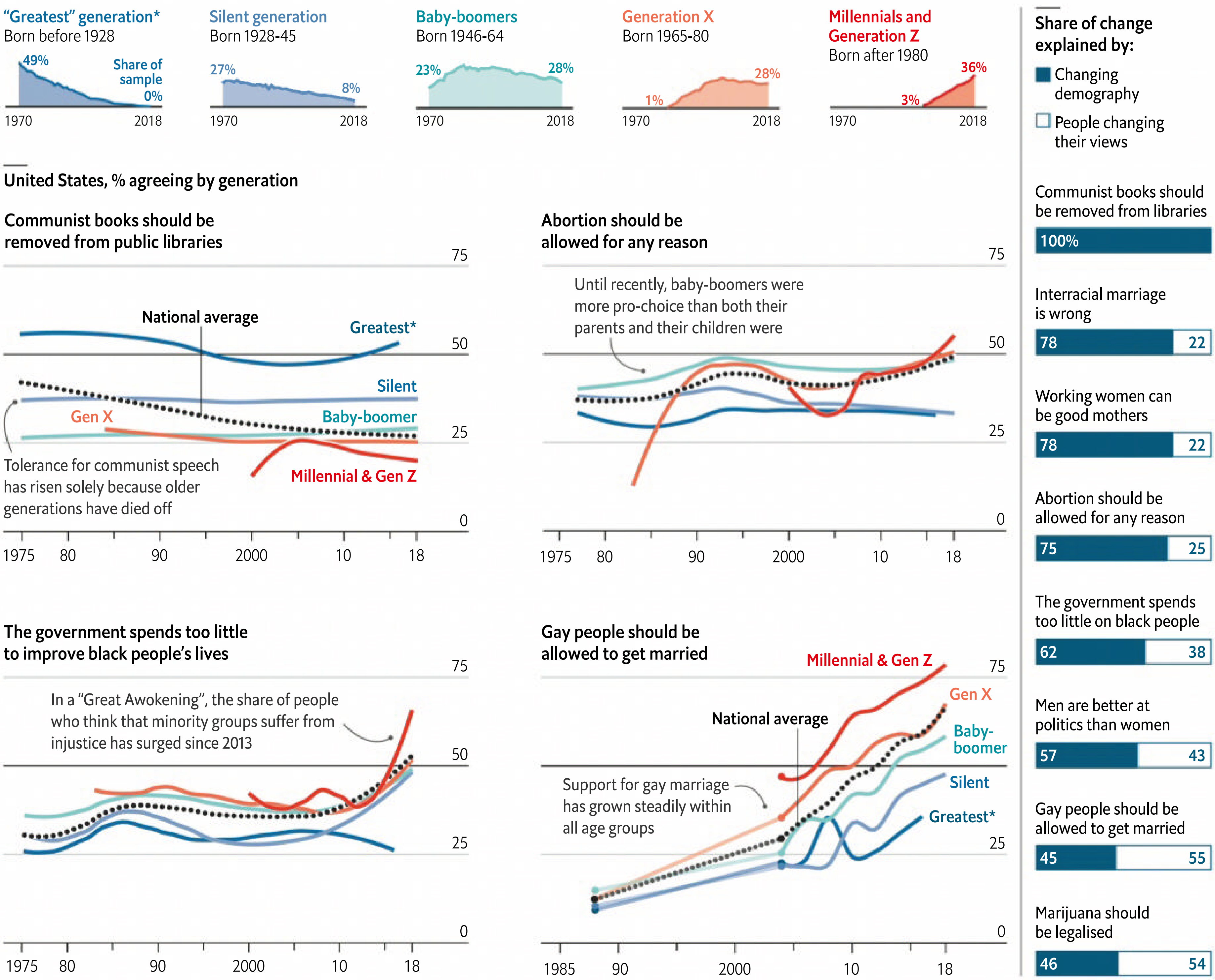
Commodities

***The Economist* commodity-price index** 2015=100	Oct 22nd	Oct 29th*	% change on month	year
Dollar Index				
All Items	109.0	109.9	-0.2	3.3
Food	95.2	95.7	1.4	4.8
Industrials				
All	121.9	123.2	-1.3	2.3
Non-food agriculturals	95.2	96.5	4.2	-12.7
Metals	129.8	131.1	-2.4	6.3
Sterling Index				
All items	128.9	130.0	-5.4	2.0
Euro Index				
All items	108.6	109.7	-2.0	5.6
Gold				
$ per oz	1,484.7	1,490.3	0.5	21.7
Brent				
$ per barrel	60.2	61.9	4.2	-18.8

Sources: Bloomberg; CME Group; Cotlook; Datastream from Refinitiv; Fastmarkets; FT; ICCO; ICO; ISO; Live Rice Index; LME; NZ Wool Services; Thompson Lloyd & Ewart; Urner Barry; WSJ. *Provisional.

For more countries and additional data, visit
Economist.com/indicators

On most issues, public opinion changes mainly as younger generations replace older ones



*And earlier Sources: General Social Survey; *The Economist*

Talkin' 'bout my generation

Societies change their minds faster than people do

As recently as the late 1980s, most Americans thought gay sex was not only immoral but also something that ought to be illegal. Yet by 2015, when the Supreme Court legalised same-sex marriage, there were only faint murmurs of protest. Today two-thirds of Americans support it, and even those who frown on it make no serious effort to criminalise it.

This surge in tolerance illustrates how fast public opinion can shift. The change occurred because two trends reinforced each other. First, many socially conservative old people have died, and their places in the polling samples have been taken by liberal millennials. In addition, people have changed their minds. Support for gay marriage has risen by some 30 percentage points within each generation since 2004, from 20% to 49% among those born in 1928-45 and from 45% to 78% among those born after 1980.

However, this shift in opinion makes gay marriage an exception among political issues. Since 1972 the University of Chicago has run a General Social Survey every year or two, which asks Americans their views on a wide range of topics. Over time, public opinion has grown more liberal. But this is mostly the result of generational replacement, not of changes of heart.

For example, in 1972, 42% of Americans said communist books should be banned from public libraries. Views varied widely by age: 55% of people born before 1928 (who were 45 or older at the time) supported a ban, compared with 37% of people aged 27-44 and just 25% of those 26 or younger. Today, only a quarter of Americans favour this policy. However, within each of these birth cohorts, views today are almost identical to those from 47 years ago. The change was caused entirely by the share of respondents born before 1928 falling from 49% to nil, and that of millennials—who were not born until at least 1981, and staunchly oppose such a ban—rising from zero to 36%.

Not every issue is as extreme as these two. But on six of the eight questions we examined—all save gay marriage and marijuana legalisation—demographic shifts accounted for a bigger share of overall movement in public opinion than changes in beliefs within cohorts. On average, their impact was about twice as large.

Social activists devote themselves to changing people's views, and sometimes succeed. In general, however, battles for hearts and minds are won by grinding attrition more often than by rapid conquest. ■

The blood-soaked scholar

Abu Bakr al-Baghdadi (born Ibrahim Awad), leader of Islamic State, blew himself up on October 26th, aged 48

No one paid particular attention to the boy who haunted his local mosque in Samarra, 60 miles north of Baghdad, and Ibrahim Awad never said much to them. When he did, he mumbled, being shy. His father taught Koranic chant there, so in his spare time Ibrahim would do the same, unobserved in some corner, muttering over the holy book. When it came to singing out, though, he would suddenly find his voice, making the words ring through the building. They noticed him then.

In much the same way, over the years, he worked unobtrusively towards leadership of the world's most feared terrorist group, Islamic State: towards control of an area covering 34,000 square miles, and command over bloody and random attacks as far afield as Paris, Sri Lanka, Florida and Manchester. He moved from one jihadist outfit to another invisibly and with discipline. Although his head was full of lions, unsheathed swords and infidels dying in their own blood, he did not fight. He behaved like a secretary, serving the tea at meetings and fading into the background. One of his aliases was "the Ghost". When he was not driving by night to meet jihadists, he was finishing his doctoral thesis on medieval Koranic recitation. But in June 2014, in the pulpit of the Grand Mosque in Mosul, the city his forces had easily overrun only days before, he once more found his voice. Now that IS had territory—the city of Raqqa, too, had fallen to him—he declared a Sunni caliphate and himself Caliph Ibrahim, the most pious, the warrior, the reviver, who would take Baghdad and lead his *mujahideen* as far as Rome. He not only spoke, but posted his sermon on YouTube. The world noticed him then.

He also surprised those who thought they knew him, the family man and keen footballer, living for years in a garret by the Tobchi mosque and teaching children there. Obviously he had been galvanised by the American invasion and his imprisonment in 2004 at Camp Bucca, where he taught the other yellow-clad inmates so serenely that his crusader-captors thought him no threat, and let him out. But his interest in the strict imposition of Islamic law came earlier. At university, prompted by an uncle, he had joined a jihadist-Salafist wing of the Muslim Brotherhood. Long before that in the Samarra mosque he would devoutly clean and sweep, aware that his ancestors had won respect for doing that task. He would chastise his neighbours for their un-Islamic smoking, tattoos, or dancing with women. Friends called him "The Believer", and he could unsettle them with his stare long before he had power enough to order the killing of anyone who defied him.

Time and again his Mosul sermon nodded to history and to the Prophet. That was the difference he, a scholar, made to the jihadist movement. He was not an engineer like Osama bin Laden or a doctor like Ayman al-Zawahiri, both leaders of al-Qaeda. He brought intellectual weight, as well as the membership he claimed in the Qurayshi tribe, descendants of the Prophet. When he spoke at Mosul he wore black robes to evoke the Abbasids, the most powerful caliphs of early Islam. His *nom de guerre*, coined earlier, anticipated this day: Abu Bakr, the first caliph after Muhammad's death; al-Baghdadi, the Abbasids' capital. The caliphate itself was ordained by Allah, the ultimate means for the ever-bickering Arabs to unite as a holy nation. They had forgotten it. He would build it.

From the moment he had joined al-Qaeda in Iraq in 2005, he had global aims. When, the next year, it re-formed into Islamic State of Iraq, he became its propagandist: at first in Nineveh province, then as far as he could get. In 2010 he became its leader; by 2013, he relaunched it as plain Islamic State; by 2014 he had broken from al-Qaeda, rejecting Mr Zawahiri's orders to stay in Iraq. There was too much to do in Syria as it collapsed: coalitions to pursue, fighters to recruit, oilfields and hostages to seize to provide a revenue stream. Assiduously he drew up dossiers of local police and potential donors, looking out for anyone useful, as he had made use of Baathists and Saddam's former officers in Iraq. Meanwhile he targeted flaunters of Islamic law, in beach resorts or nightclubs, no matter. Each strike seemed to draw young men and some young women too, from all corners, to follow the black "I testify" flag. By bold leaps and bounds his potential caliphate grew.

In the cities he conquered he set up offices to take in taxes and traffic fines, register babies and licence marriages, as in a proper state. He imposed the sharia in which he was expert: hands hacked off for stealing, whippings for drunkenness, adulterous women stoned. He also expanded it, justifying everything smoothly with holy writ. Unbelievers were expelled or killed if they did not pay their taxes. Yazidis were driven from their homes and their women abducted to be sold and raped with organised efficiency. Enemies were crucified, burned alive, drowned in cages, beheaded with slow saws, while everything was filmed and posted online for the world to observe and dread. He sometimes shared the videos first with the *kufr* women he kept chained in a nearby room for his own pleasure. Raping an infidel woman was a spiritual exercise that brought a believer close to God.

While all this went on he was still hidden, still constantly on the move. Visitors who wished to see him were stripped of all devices, blindfolded and driven for hours to a blank room, where he would softly sermonise. Many intelligence agencies declared him dead, but they were wrong. He made audio exhortations, and in 2019 showed himself again, congratulating his fighters for the Easter church bombings in Sri Lanka that had killed 290 people. Now, like bin Laden, he had a Kalashnikov as a prop. His caliphate had crumbled away, but he fortified his followers by invoking the Battle of the Trench in 627, when Muhammad with 3,000 men had prevailed against a force of 10,000, and had pulled his Ahzab rivals over to his side. He appealed to the soldiers of the caliphate to fight like that, to the last drop of blood.

Muhammad had dug a trench to frustrate his enemies. Caliph Ibrahim had dug a tunnel, but it was dead-ended, and he had to deploy his suicide-vest to make himself disappear. ■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