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Roadkill

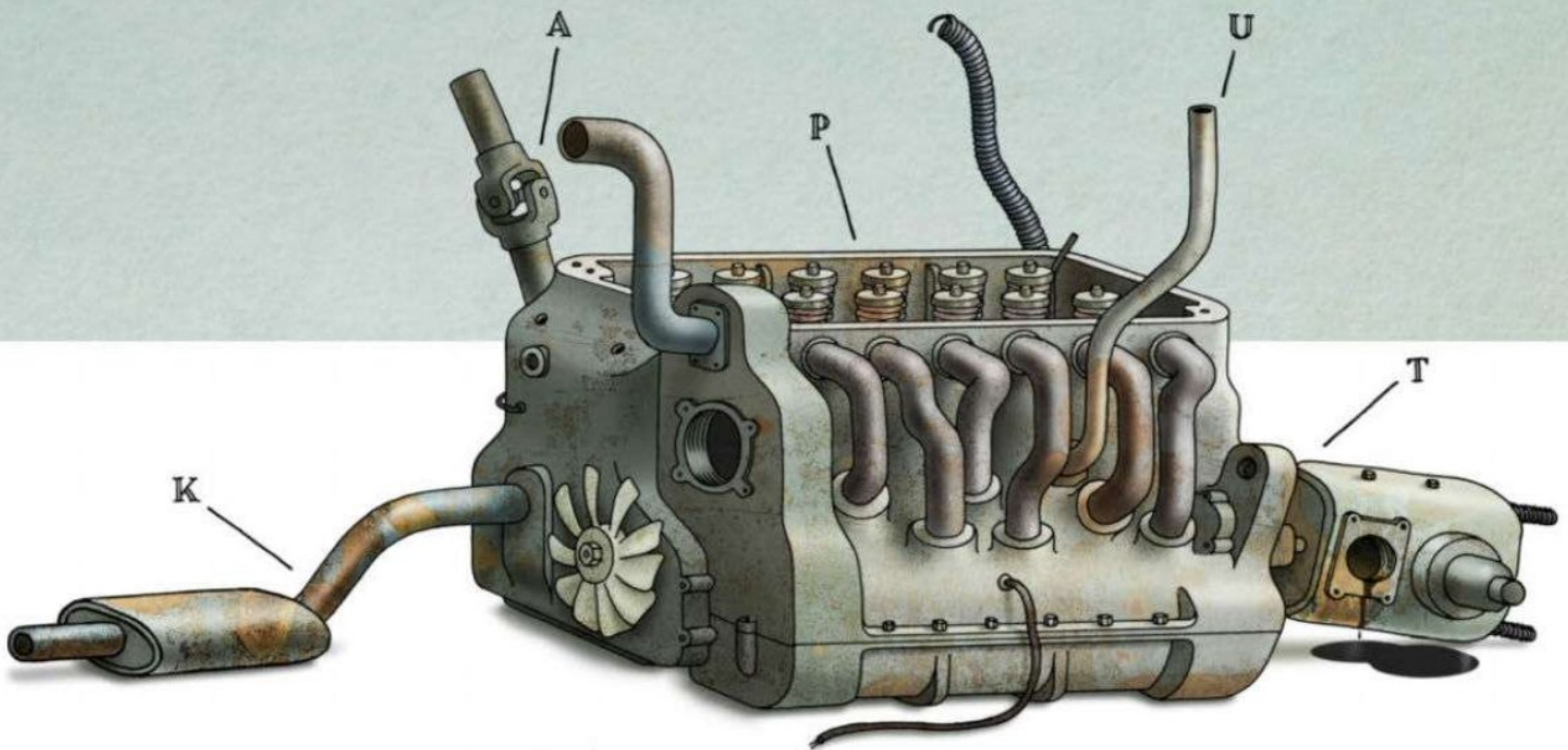


Fig.1 The Internal Combustion Engine



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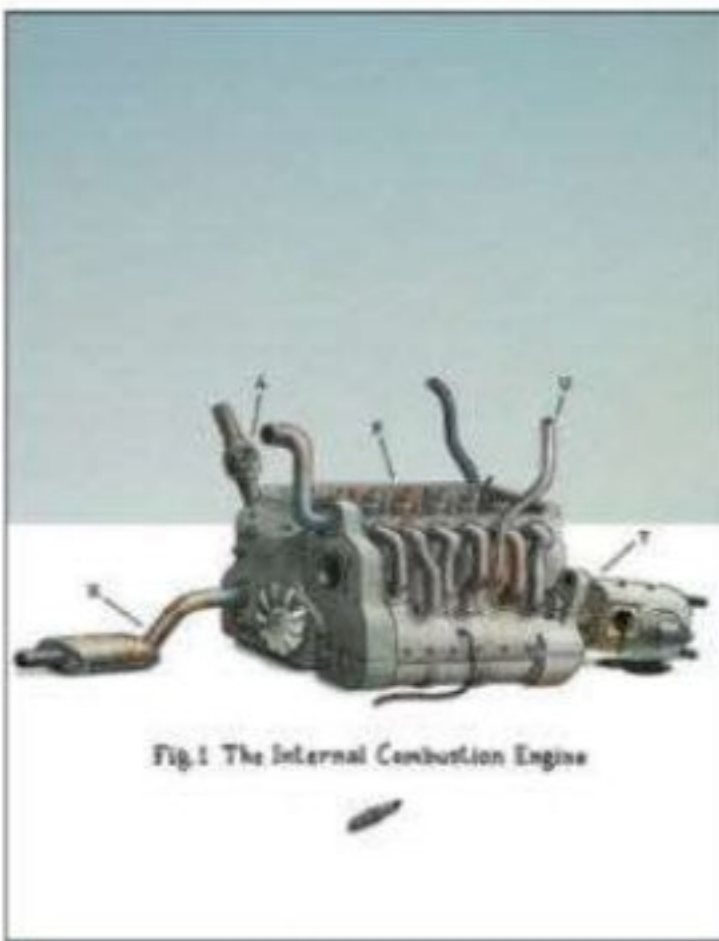


Fig. 1 The Internal Combustion Engine

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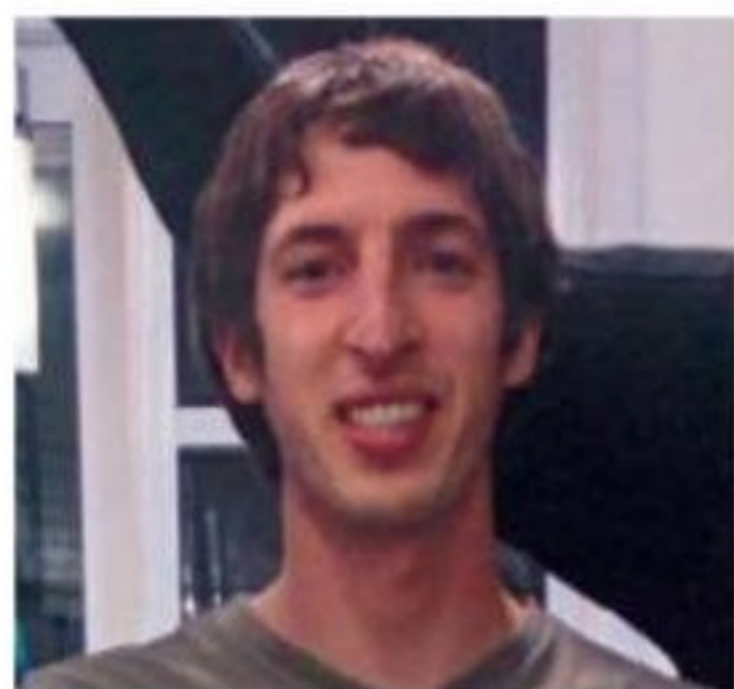
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Politics



Tensions rose between **North Korea** and America. The regime of Kim Jong Un threatened to strike at American armed forces in Guam, a response to a warning from Donald Trump to unleash “fire and fury like the world has never seen” if the regime continued to threaten America with its nuclear weapons. The heated rhetoric worried many and eclipsed an earlier decision by the UN Security Council to impose stringent new sanctions on North Korea.

Myanmar's official investigation into the human-rights abuses committed by the army in a crackdown against the Rohingya minority last October concluded that no such crimes had occurred. Earlier this year the UN reported mass killings, rapes and beatings committed against the Muslim Rohingya and called on the government to hold those responsible to account. Myanmar's response was to bar the UN from conducting its own investigation.

The **Maldives** looked set to execute murderers for the first time since the mid-1950s, when Britain was the colonial power. Amnesty International decried the island chain's restoration of the death penalty as a “transparent ploy” by the government to distract attention away from the country's political troubles.

Australia's debate on whether to legalise gay marriage got even more complicated. The government decided to hold an advisory voluntary postal vote on the issue after the

Senate killed a proposal for a referendum in which voting would be mandatory. But the strongest opposition to the mandatory vote came from supporters of same-sex marriage, who worried that it would be divisive.

An earthquake in the **Chinese** province of Sichuan killed at least 19 people and injured 250.

Clinging on

Jacob Zuma, the president of **South Africa**, kept his job after a motion of no confidence sponsored by the opposition failed to gather the 201 votes needed to remove him from office. Yet his victory was a slender one: perhaps a sixth of the MPs from the ruling African National Congress abstained or voted with the opposition.

Supporters of Raila Odinga, the main leader of the opposition in **Kenya**, took to the streets as a preliminary count of votes cast in a presidential election suggested that he had lost to the incumbent, Uhuru Kenyatta. Mr Odinga said the early results were “fake” and claimed that computers tabulating them had been hacked.



Paul Kagame, the president of **Rwanda**, won a third seven-year term in office with nearly 99% of the vote in an election. Mr Kagame has in effect ruled Rwanda since 1994 when he led a rebel force that ended a genocide against Tutsis.

Government by decree

Venezuela's newly elected constituent assembly declared itself the most powerful body in the country and sacked the attorney-general, Luisa Ortega Díaz. The assembly was elected in a vote boycotted by the

opposition to the country's authoritarian regime. Ms Ortega had called it a “mockery of the people”. Meanwhile, Mercosur, a South American trade bloc, suspended Venezuela as a member. Armed men under the command of a dissident captain attacked an army base, urging soldiers to rebel against the government.

America imposed **sanctions** on eight more Venezuelan officials, including the brother of the late Hugo Chávez, the leader of the country's “Bolivarian revolution”. In all, America has levied sanctions on nearly 40 Venezuelans.

Joaquín “El Chapo” Guzmán, the former leader of **Mexico's** Sinaloa drug gang awaiting trial in New York, announced his legal team. They include two lawyers who successfully defended John Gotti junior, the son of a mafia boss, who had been put on trial for racketeering and kidnapping.

Watching Mueller's back

Rod Rosenstein, the official at the **Justice Department** who appointed Robert Mueller as special counsel to investigate Russian meddling in last year's election, publicly defended the probe, which Donald Trump has criticised for giving credence to a “phoney story”. Mr Rosenstein reiterated that the investigation was subject to due legal process and was not a “fishing expedition”. Two senators recently unveiled a bipartisan measure that would protect Mr Mueller from being sacked on Mr Trump's whim.

Chicago filed a lawsuit against the Justice Department for threatening to block federal funds that the city puts towards policing, because it won't help the feds identify illegal immigrants. Chicago is the first “sanctuary city” to take such legal action. Rahm Emanuel, the mayor, described the federal threat to withhold the funds as blackmail.

The governor of **West Virginia**, Jim Justice, switched parties, abandoning the Democrats to become a Republican.

The state has drifted towards the Republicans partly because of the Democrats' green agenda, which hurts local coalmining jobs. Joe Manchin, a conservative Democratic senator, is already feeling the pressure in his bid for re-election next year.

An attacker threw a small bomb at a **mosque** in Bloomington, Minnesota. No one was injured. The governor described it as a “dastardly” act of terrorism.

A leaked draft report by scientists working in 13 federal agencies concluded that **climate change** is real and already affecting America. The report was leaked by the scientists apparently because they feared that the Trump administration would try to suppress it.

In a lower key

A car ploughed into a group of soldiers who were patrolling a suburb of **Paris**, injuring six. The driver deliberately drove into the men, who had been deployed as part of Opération Sentinelle under France's state of emergency. The police arrested a suspect in the north of the country. It is the latest of several attacks on the security forces in France.

The UN special envoy to Libya endorsed Italy's naval mission to support the Libyan coast-guard in trying to curb the flow of **migrants** in the Mediterranean. Launched earlier this month, the controversial mission has sparked criticism from human-rights groups for endangering migrants' lives as well as from Libyan factions opposed to the UN-backed government.

Business

An internal memo written by a male engineer at **Google** that claimed biological factors accounted for the gender gap in Silicon Valley sparked an uproar. James Damore said he had wanted to start an “honest discussion” about the lack of women in senior jobs, a discussion he argued was impossible in the tech industry because of an intolerance of views from outside the liberal mainstream. Google subsequently sacked Mr Damore for violating its code of conduct.

After weeks of negotiations, **Vantiv** struck a deal to buy **Worldpay**, which the companies valued at £9.3bn (\$12bn). Based in Cincinnati, Vantiv is one of America’s biggest processors of credit-card payments and electronic money-transfers. Worldpay is Britain’s biggest payment-processor. Vantiv’s shareholders will own 57% of the combined group, to be called Worldpay.

Not so intelligent
Commonwealth Bank of Australia scrapped bonuses for its chief executive and senior management, after Australia’s financial-intelligence agency charged it with breaching money-laundering and anti-terror laws. The lawsuit alleges that the bank lapsed in checking 53,500 transactions over a three-year period at its “intelligent” cash machines, where money can be deposited anonymously. The bank has blamed a software error, since rectified, for not alerting the authorities to suspicious activity.

Royal Bank of Scotland reported a net profit of £939m (\$1.2bn) for the first half of the year, its best six-month performance in three years. The bank booked some of the costs it incurred from a recent settlement with America’s housing finance agency for mis-selling risky mortgage-backed securities. The Department of Justice is expected to levy a separate fine in the case by the end of the year, which may push RBS

into an annual loss. The British government still retains a majority stake in RBS, nine years after its bail-out.

The national statistics agency in **Greece** suspended public publication of “flash” estimates of GDP. Officials from the IMF and euro zone have raised concerns that these initial calculations of Greek economic growth vary greatly from the “provisional” estimates that follow. Flash estimates will be provided again once the number-crunchers improve their data-gathering.

Altice, a French telecoms company that has splurged on debt-laden acquisitions, was reported to be interested in buying **Charter Communications**, America’s second-biggest provider of cable-TV. Other companies are circling Charter, notably SoftBank of Japan, lured by its 26m subscribers. A deal could be worth upwards of \$180bn.

Brave
Disney said it planned to launch two online streaming networks—one for its films and the other for its ESPN sports channel—and that in two years’ time its new movies would no longer be available on Netflix. It is the biggest

move yet by a Hollywood studio to take back control of the distribution of its content online. From 2019 fans will have to sign up for Disney’s online services if they want to watch the latest releases featuring Disney characters, including those from its Pixar studio subsidiary.

Meanwhile, **Netflix** made its first-ever acquisition by agreeing to buy **Millarworld**, a publisher of comic books. Netflix will produce its own programming based on Millarworld’s stable of characters, though the deal does not include the successful *Kingsman* and *Kick-Ass* series.



A jury in Manhattan convicted **Martin Shkreli** of three counts of securities fraud related to hedge funds he once ran. Mr Shkreli hit the headlines in 2015 when a drugs company he founded increased the price of

some medicines by up to 5,000%. His nonchalant response to that furore made him the *bête noire* of Wall Street. He was similarly laid back at his fraud trial, receiving a rebuke from the judge to stop talking. He will be sentenced within the next few months.

At the conclusion of his trial on bribery charges, **Lee Jae-yong**, the de facto head of the Samsung conglomerate, fought back tears as he denied any wrongdoing. Prosecutors are seeking a 12-year prison sentence. The case is connected to the scandal that led to the downfall of Park Geun-hye as South Korea’s president. The court will pronounce its verdict on Mr Lee on August 25th.

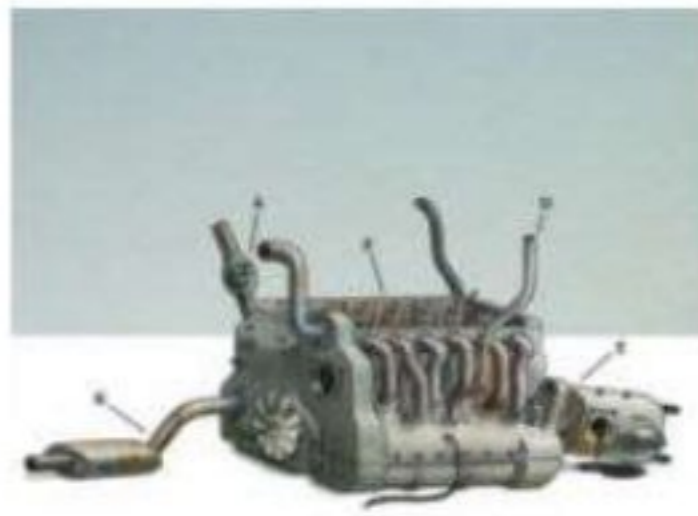
Out of the shadows
India’s government said the number of tax returns filed by this stage of the year had risen by 25% compared with the same period in 2016. It attributed this to its crackdown on tax evasion through measures such as demonetisation, which took large-denomination notes out of circulation. Still, the 28m tax returns filed so far is about the same number as in 2013.

Other economic data and news can be found on pages 72-73



Roadkill

The internal combustion engine had a good run. But the end is in sight for the machine that changed the world



“HUMAN inventiveness... has still not found a mechanical process to replace horses as the propulsion for vehicles,” lamented *Le Petit Journal*, a French newspaper, in December 1893. Its answer was to organise the Paris-Rouen race

for horseless carriages, held the following July. The 102 entrants included vehicles powered by steam, petrol, electricity, compressed air and hydraulics. Only 21 qualified for the 126km (78-mile) race, which attracted huge crowds. The clear winner was the internal combustion engine. Over the next century it would go on to power industry and change the world.

The big end

But its days are numbered. Rapid gains in battery technology favour electric motors instead (see [page 16](#)). In Paris in 1894 not a single electric car made it to the starting line, partly because they needed battery-replacement stations every 30km or so. Today’s electric cars, powered by lithium-ion batteries, can do much better. The Chevy Bolt has a range of 383km; Tesla fans recently drove a Model s more than 1,000km on a single charge. UBS, a bank, reckons the “total cost of ownership” of an electric car will reach parity with a petrol one next year—albeit at a loss to its manufacturer. It optimistically predicts electric vehicles will make up 14% of global car sales by 2025, up from 1% today. Others have more modest forecasts, but are hurriedly revising them upwards as batteries get cheaper and better—the cost per kilowatt-hour has fallen from \$1,000 in 2010 to \$130-200 today. Regulations are tightening, too. Last month Britain joined a lengthening list of electric-only countries, saying that all new cars must be zero-emission by 2050.

The shift from fuel and pistons to batteries and electric motors is unlikely to take that long. The first death rattles of the internal combustion engine are already reverberating around the world—and many of the consequences will be welcome.

To gauge what lies ahead, think how the internal combustion engine has shaped modern life. The rich world was rebuilt for motor vehicles, with huge investments in road networks and the invention of suburbia, along with shopping malls and drive-through restaurants. Roughly 85% of American workers commute by car. Carmaking was also a generator of economic development and the expansion of the middle class, in post-war America and elsewhere. There are now about 1bn cars on the road, almost all powered by fossil fuels. Though most of them sit idle, America’s car and lorry engines can produce ten times as much energy as its power stations. The internal combustion engine is the mightiest motor in history.

But electrification has thrown the car industry into turmoil. Its best brands are founded on their engineering heritage—especially in Germany. Compared with existing vehicles, electric cars are much simpler and have fewer parts; they are more like computers on wheels. That means they need fewer people to assemble them and fewer subsidiary systems from specialist suppliers. Carworkers at factories that do not make electric

cars are worried that they could be for the chop. With less to go wrong, the market for maintenance and spare parts will shrink. While today’s carmakers grapple with their costly legacy of old factories and swollen workforces, new entrants will be unencumbered. Premium brands may be able to stand out through styling and handling, but low-margin, mass-market carmakers will have to compete chiefly on cost.

Assuming, of course, that people want to own cars at all. Electric propulsion, along with ride-hailing and self-driving technology, could mean that ownership is largely replaced by “transport as a service”, in which fleets of cars offer rides on demand. On the most extreme estimates, that could shrink the industry by as much as 90%. Lots of shared, self-driving electric cars would let cities replace car parks (up to 24% of the area in some places) with new housing, and let people commute from far away as they sleep—suburbanisation in reverse.

Even without a shift to safe, self-driving vehicles, electric propulsion will offer enormous environmental and health benefits. Charging car batteries from central power stations is more efficient than burning fuel in separate engines. Existing electric cars reduce carbon emissions by 54% compared with petrol-powered ones, according to America’s National Resources Defence Council. That figure will rise as electric cars become more efficient and grid-generation becomes greener. Local air pollution will fall, too. The World Health Organisation says that it is the single largest environmental health risk, with outdoor air pollution contributing to 3.7m deaths a year. One study found that car emissions kill 53,000 Americans each year, against 34,000 who die in traffic accidents.

Autos and autocracies

And then there is oil. Roughly two-thirds of oil consumption in America is on the roads, and a fair amount of the rest uses up the by-products of refining crude oil to make petrol and diesel. The oil industry is divided about when to expect peak demand; Royal Dutch Shell says that it could be little more than a decade away. The prospect will weigh on prices long before then. Because nobody wants to be left with useless oil in the ground, there will be a dearth of new investment, especially in new, high-cost areas such as the Arctic. By contrast, producers such as Saudi Arabia, with vast reserves that can be tapped cheaply, will be under pressure to get pumping before it is too late: the Middle East will still matter, but a lot less than it did. Although there will still be a market for natural gas, which will help generate power for all those electric cars, volatile oil prices will strain countries that depend on hydrocarbon revenues to fill the national coffers. When volumes fall, the adjustment will be fraught, particularly where the struggle for power has long been about controlling oil wealth. In countries such as Angola and Nigeria where oil has often been a curse, the diffusion of economic clout may bring immense benefits.

Meanwhile, a scramble for lithium is under way. The price of lithium carbonate has risen from \$4,000 a tonne in 2011 to more than \$14,000. Demand for cobalt and rare-earth elements for electric motors is also soaring. Lithium is used not just to power cars: utilities want giant batteries to store energy ▶▶

▶ when demand is slack and release it as it peaks. Will all this make lithium-rich Chile the new Saudi Arabia? Not exactly, because electric cars do not consume it; old lithium-ion batteries from cars can be reused in power grids, and then recycled.

The internal combustion engine has had a good run—and could still dominate shipping and aviation for decades to come. But on land electric motors will soon offer freedom and convenience more cheaply and cleanly. As the switch to electric cars reverses the trend in the rich world towards falling electricity consumption, policymakers will need to help, by

ensuring that there is enough generating capacity—in spite of many countries' broken system of regulation. They may need to be the midwives to new rules and standards for public recharging stations, and the recycling of batteries, rare-earth motors and other components in “urban mines”. And they will have to cope with the turmoil as old factory jobs disappear.

Driverless electric cars in the 21st century are likely to improve the world in profound and unexpected ways, just as vehicles powered by internal combustion engines did in the 20th. But it will be a bumpy road. Buckle up. ■

South Africa

Long walk to cronyism

The ANC's failure to dump Jacob Zuma reveals its lamentable moral decline



THE most striking thing about the vote over whether to sack Jacob Zuma was the claims his supporters did not make. During the debate, in South Africa's parliament on August 8th, no one said: “Let's keep Mr Zuma as our president because

he has done such a splendid job of running the country.” Some MPs from the ruling African National Congress (ANC) did not mention him by name at all, so embarrassing has his record become. Instead, they accused the opposition of all manner of skulduggery and, of course, racism. The defence minister likened the motion of no confidence in Mr Zuma to a coup. The arts minister called the opposition parties that supported the motion “Mickey Mouse organisations”. Shortly after Mr Zuma narrowly survived the vote, his police minister described those who failed to back his boss as “suicide-bombers”.

Mmusi Maimane, leader of the Democratic Alliance, the largest (and most liberal) opposition group, spoke with more conviction. He called Mr Zuma a “corrupt and broken president” and quoted ANC grandees, including two former presidents of South Africa, who had called either explicitly or implicitly for parliament to throw him out. He even suggested that Nelson Mandela, were he still alive, would have voted to ditch the president. Julius Malema, the leader of the other big opposition party, the far-left Economic Freedom Fighters, was even more forthright in his contempt for Mr Zuma.

Yet when the votes were tallied, the great survivor clung to power: the opposition fell 24 votes short of the 201 needed to remove him. His supporters celebrated by dancing and singing songs from the struggle against apartheid, South Africa's old racist regime, which ended in 1994. There have been several previous attempts in parliament to oust Mr Zuma, but this was the most significant yet because it was the first in which MPs were allowed to vote in secret. The Constitutional Court had argued, in effect, that this was the only way ANC MPs could oppose the president without fear of reprisals. But in the end, party loyalty and Mr Zuma's considerable powers of patronage kept him in the job.

Nonetheless, the vote was a stark warning for the ANC. Mr Zuma mustered only 198 MPs in his defence, a woeful result for the head of a party with 249 out of 400 seats in parliament. After accounting for absentees, it seems that a fifth of ANC MPs

either abstained or voted against their president.

It is not hard to see why. Mr Zuma faces 783 charges of corruption, which he denies; his next court hearing is next month. A report from the public protector, an ombudsman, has accused Mr Zuma and the Guptas, a family of Indian businesspeople, of orchestrating “state capture”. And the president's son, Duduzane, may be called to answer questions before a parliamentary committee that is investigating allegations of graft at state-owned companies involving some of Mr Zuma's key allies. Before the vote Mr Zuma's former minister of tourism, Derek Hanekom, spoke for many disgruntled ANC members, not to mention the country as a whole, when he complained of “massive looting and corruption”. Such is the cronyism and mismanagement of the Zuma administration that South Africa has dipped into recession, its debt has been downgraded to junk and unemployment is a whopping 28% (or 36% if one includes those who have given up looking for work). The economy contracted at an annualised rate of 0.7% in the first quarter, even as the population swells by 1.6% a year. Meanwhile, Mr Zuma's cronies have grown staggeringly and ostentatiously rich.

A better life for some

Although they lost, the opposition parties hope that the vote will bind the ANC ever more closely in the eyes of voters to an unpopular president. This, they predict, will give them a better chance in national elections in 2019, especially if Mr Zuma manages to anoint his ex-wife, Nkosazana Dlamini-Zuma, as the next leader of the ANC (and thus in all likelihood its presidential candidate). That decision will be made at an ANC conference in December. Mr Zuma is thought to favour his former spouse in the hope that she will shield him from prosecution. The Democratic Alliance, which did well in local elections last year, thinks she would be easier to beat than someone with a different surname.

If the opposition feels any private glee that the ANC is destroying itself, it is surely tempered by sadness. Few can be happy that Africa's oldest liberation movement and a once-proud torchbearer of democracy has fallen so low. Even fewer relish the prospect of South Africa enduring another two years under Mr Zuma. The president has ignored court orders, fired his most competent ministers, mismanaged public funds and somehow got away with it. As for the people who believed the ANC's promise of “a better life for all”, they will have to wait. ■

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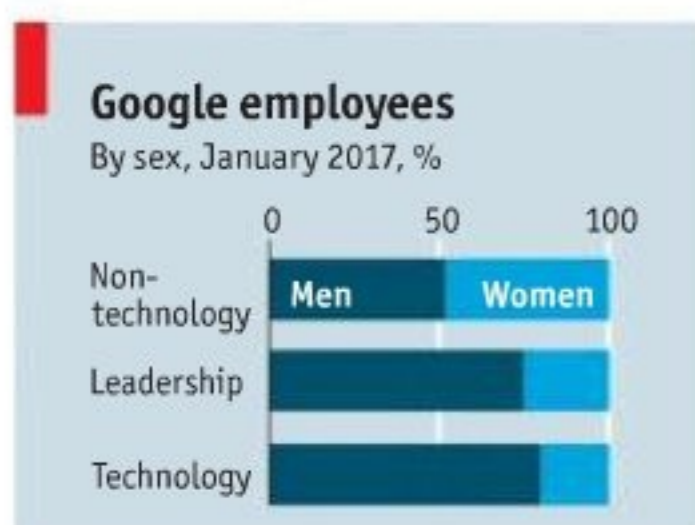
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Gender diversity and free speech

Not evil, just wrong

Google had better ways of dealing with an outspoken engineer than immediately sacking him



THE talk in Silicon Valley just now is as likely to be about sex as software. Women in tech firms feel badly treated. And they are right: they rarely get the top jobs, they are sometimes paid less than men and many suffer unwanted sexual advances.

Most of their male colleagues sympathise; at the same time some feel they cannot express unorthodox opinions on gender. And they are right, too: they can easily fall foul of written and unwritten rules, and face drastic consequences.

The charged atmosphere helps explain why “Google’s Ideological Echo Chamber”, a memo by a young software engineer, James Damore, has caused such a stir (see [page 48](#)). It says that the firm’s efforts to hire more women are biased. After circulating internally, it went viral. On August 7th Mr Damore was fired. To quote Sundar Pichai, Google’s boss, he advanced “harmful gender stereotypes in our workplace”.

Mr Pichai had good reasons to sack Mr Damore. One is the content of the memo. It says many reasonable-sounding things: that “we all have biases” and that “honest discussion with those who disagree can highlight our blind spots”. But these are just camouflage before a stonking rhetorical “but”: the argument that innate differences, rather than sexism and discrimination, explain why women fare worse in the technology industry than men. “Neuroticism (higher anxiety, lower stress tolerance)”, Mr Damore writes, “may contribute...to the lower number of women in high-stress jobs.”

Research has indeed shown some smallish group-level differences in personality and interests between the sexes. But drawing a line from this to women’s suitability for tech jobs is puerile. An unbiased eye would light on social factors rather than innate differences as the reason why only a fifth of com-

puter engineers are women. Mr Damore claims women are “more interested in people than things” but, if this were true, they would in fact be better than men at the senior software-engineering jobs that involve managing teams. As for blind spots, although he repeatedly uses the words “discriminate” and “discrimination”, Mr Damore does so only to describe the unfairness to men of trying to hire more women.

Mr Pichai also has legal arguments on his side. The American constitution protects free speech in public, but within a company’s walls that right is limited by what bosses deem acceptable. After Mr Damore had suggested they are less qualified because of their sex, women at Google could have refused to work with him and taken legal action. Moreover, he may have known that his memo would be seized on in Alt-Right circles (it got top billing on Breitbart and far-right websites).

Still, there was a better response to Mr Damore than immediately giving him the sack. Other firms may limit their workers’ speech, but the largest search engine, with a mission to “organise the world’s information and make it universally accessible”, should hold itself to a higher standard. It should not be suspected of limiting the debate of thorny subjects.

Speak up

It would have been better for Larry Page, Google’s co-founder and the boss of Alphabet, its holding company, to write a ringing, detailed rebuttal of Mr Damore’s argument. Google could have stood up for its female employees while demonstrating the value of free speech. That might have led to the “honest discussion” Mr Damore claimed to want—and avoided the ersatz one about his firing. It would have shown that his arguments are not taboo, but mostly foolish and ill-informed. And it would have countered his more defensible claim: that Google, and the Valley, so welcoming of gender diversity, are narrower-minded about unorthodox opinions. ■

Russia and NATO

Dangerous games

By refusing to allow observers at its Zapad 2017 military exercise, Russia is stoking fear and suspicion




NEXT month Russia will hold what is expected to be the biggest military exercise in Europe since the end of the cold war. According to NATO estimates, it will involve at least 100,000 troops (see [page 39](#)). Revived from Soviet times by Vladimir Putin, Russia’s president, the Zapad (West) drills, as they are known, take place every four years. Although the Kremlin insists that the scenarios it is playing out are purely defensive, that is not always how they have looked to its neighbours. Countries that have borders with Russia or Belarus, the opera-

tional focus of Zapad 2017, are especially worried.

The climax of Zapad 2009 was a dummy nuclear strike on Warsaw, which rather stretches the meaning of “defensive”. Zapad 2013 was less overtly aggressive, but much of the new equipment Russia tested and the tactical techniques it practised were put to use barely six months later when it annexed Crimea and launched a covert invasion of eastern Ukraine. The attack on Ukraine itself started out as a “snap” military drill which gave cover for Russia’s real intentions. Mr Putin had used the same ruse in the invasion of Georgia in 2008.

The secrecy that cloaks Russian military exercises only makes them more threatening. Mr Putin is ignoring calls for greater transparency from the Organisation for Security and

A photograph of an offshore wind farm in the ocean. Several white wind turbines with yellow bases are visible against a blue sky with light clouds. The water is a deep blue.

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▶ Co-operation in Europe (OSCE), a body with 57 member countries whose functions include trying to reduce the risk of accidental conflict. Under the terms of its Vienna Document, to which Russia is a signatory, countries carrying out drills with more than 9,000 troops must provide advance notice. If they hold an exercise deploying more than 13,000 troops, they must also invite other OSCE countries to send observers.

The reason for these rules is simple. Observers from the other side make it harder for countries to use military exercises as the springboard for a surprise attack. They also lower the chances that anyone will mistake a harmless exercise for the real thing. Russia flouts the rules by pretending that its exercises are much smaller than they are, while insisting on its right to observe NATO war games.

This behaviour is part of a pattern. There has been a recent increase in the activity of Russian aircraft along NATO's border. In both 2014 and 2015, NATO fighters were scrambled more than 400 times to meet Russian aircraft—70% more than in 2013. Last year the figure jumped to 800 (although part of the increase was on Turkey's border with Syria). This year it could

be higher still. Far too often, Russian pilots fly without their transponders on, meaning that they cannot easily be identified. They also buzz NATO aircraft and ships, risking collisions.

Russia's behaviour has consequences. Since Mr Putin's aggression against Ukraine, NATO has felt the need to protect itself by sending multinational battalions to defend the Baltic States and Poland; creating a "spearhead" force that is kept ready for battle; and resuming large-scale exercises of its own, though they are much smaller than the Russian ones and conducted under OSCE guidelines.

Behaving badly

Russia says that it does not deserve to be treated with such suspicion. Yet it is largely to blame. It could invite Western observers to Zapad 2017. It could also seek better military-to-military contacts with NATO. These relationships, which NATO is eager to forge, can lower the risk of miscalculation when normal diplomacy is strained. If, on the other hand, Russia's intention is indeed to intimidate and bully, NATO will have no choice but to prepare for the worst. ■

University finances

An English solution

The best way to pay for higher education is to charge fees financed by loans on easy terms



UNIVERSITY used to be for a privileged few. In some countries it is now almost a rite of passage. Although that is excellent news, few countries have worked out how to pay for it. In some of continental Europe, where the state often foots the

bill, the result has usually been underinvestment. In America, where students themselves pay, many have little choice but to take on huge debts.

English policymakers thought they had struck the right balance, with a mix of student fees and generous state loans that has found admirers abroad. But, nearly two decades after youngsters were first required to contribute to tuition costs, the system has dwindling support at home. Jeremy Corbyn, Labour's leader and many students' favourite political philosopher, speaks as though it were designed to keep the poor from tainting the ivory towers. He has called for an end to the "debt burden" on students, and has claimed that "fewer working-class young people are applying to university." Labour's showing at the recent election suggests many young voters agree.

Mr Corbyn's argument betrays a disregard for the facts, a poor understanding of student finance, or both. Twenty years ago English students could go to university free, with the state covering the cost. The result was many struggling institutions and strict limits on the numbers of students universities were allowed to take. Annual tuition fees allowed an expansion of higher education, from around 30% of 18-year-olds to more than 40%—and the proportion of youngsters going to university from poor parts of the country has grown from one-in-ten to three-in-ten. Even after the most that universities were allowed to charge was nearly trebled in 2012, to £9,000 (\$14,000), the number of poor students has continued to grow.

That is because loans for tuition are combined with gentle repayment terms. Graduates only pay back based on their income above £21,000 a year, meaning that their debts never become unmanageable. Outstanding loans are written off after 30 years. So those who do not do well financially from their education do not have to pay. Critics argue that tuition fees exacerbate inequality between generations (rich oldsters attended university free, after all), but the alternative would be greater inequality within generations—as poorer students were once again frozen out when capacity fell, and relatively wealthy graduates were subsidised from general taxation.

Competition cure

The real problem with the English system is not fairness, but that fees have not driven up standards, as many officials had hoped. Almost all universities charge the maximum, whatever the course—not because they are a "cartel", as some say, but because no university wants to suggest that it offers a cut-price, second-rate degree. Nevertheless, surveys indicate that students have seen little improvement in teaching. Many universities spend the extra money on fancy buildings and big salaries for senior managers instead.

One answer would be to promote competition by giving students better information—such as which universities benefit their students most (see our calculations, [page 43](#)). The government has relaxed the rules for new institutions in the hope that they will develop new teaching methods and drive down prices. It could also encourage students to hold universities to account, with devices such as learning contracts specifying what undergraduates should expect, and by helping them switch courses if they are dissatisfied. If students think they are not getting value for money, support for a scheme that is fair and progressive will dwindle. And that could lead to the most regressive step of all: scrapping tuition fees. ■



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Closing date for applications: August 15th 2017

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Closing date: 12 noon 11th September 2017.

Committed to equality and valuing diversity

Brexit's new frontier

You described vividly the hurdles that the traffic of people and goods would face if a hard border were to be established between the Irish Republic and Northern Ireland as a consequence of the United Kingdom leaving the European Union ("The border that isn't—yet", July 15th). Yet this does not need to be so.

Article 24 of the General Agreement on Tariffs and Trade, which lays down the rules to be respected by member countries when they establish customs unions or free-trade areas in order that other countries are not discriminated against, contains a little-used provision on "frontier traffic". It allows members of the World Trade Organisation to deviate from these constraints in respect of "advantages accorded to adjacent countries in order to facilitate frontier traffic". There is no definition of frontier traffic, so an exemption from customs regulations and duties for the intra-Ireland movement of goods could be covered. This would be a good basis for avoiding a hard border, although checks would be necessary at the harbours in order to stop goods from the other part of the island being further exported to the rest of the UK or the EU respectively.

One can look to a broader precedent. Goods originating from northern Cyprus can enter and freely circulate in the entire EU as Cypriot goods.

PROFESSOR GIORGIO SACERDOTI
Former member of the appellate body of the WTO
Milan

When I gaze out from the steps of Derry's Guildhall, the euro zone is not more than five miles away (Belfast is 60 miles away, London almost 400). In the aftermath of the Brexit shock the Derry and Strabane Council and Donegal County Council commissioned a study that produced two main proposals: a cross-border free-trade zone joining Derry in Northern Ireland with Letterkenny in the Irish Republic and bespoke travel arrange-

ments equivalent to the Nordic Passport Union or local border traffic zones, similar to the Poland-Russia border. Both are excellent proposals which could easily be approved if governments so wish.

COLM CAVANAGH
Derry

Your analysis of the EU's Common Fisheries Policy was surprisingly superficial ("Have your fishcake and eat it", July 8th). Britain's issue is not a "silly spat about seafood". The central problem with the CFP is that 60% of the seafood resource in our waters, some of the best fishing grounds in the world, is permanently allocated to others.

Almost laughably, we are competing in the single market with what should be our own fish. We actually have a dangerous over-dependence on the European market. In the globalised world of seafood there is a potential market of 7.5bn people and more than 160 other countries. Moreover, the EU countries will still want to export to us, making punitive tariffs applied by Europe self-defeating.

The lights have gone out in so many coastal communities. At last, on Brexit we can recover what the world regards as normal beneficial management of our renewable natural resource. Norway does it, Iceland does it, so does New Zealand, and so on. Why would we opt to continue giving away this resource rather than try to expand and develop the industry and bring in jobs and income?

BERTIE ARMSTRONG
Chief executive
Scottish Fishermen's Federation
Aberdeen

What's sauce for the goose...

Let me see if I understand your position correctly. You say that an attempt by a junior Democratic worker to get dirt on Paul Manafort, a Republican operative, from the Ukrainians "does not compare" with Donald Trump junior trying to get the dirt on Hillary Clinton from the Russians, because "Ukraine is not a hostile

power" ("He loves it", July 15th). So basically, it is perfectly fine for a campaign to co-ordinate on defeating its opponents with a foreign country as long as the country is an ally of America and does not repress its people.

I can't wait to be bombarded by fake news and hacked e-mails from the French and German governments in 2020.

COLTON WALWORTH
Madison, Wisconsin

Speaking in edtech



The most important factor to bear in mind about the new stream of education technology ("Brain gains", July 22nd) is to provide it in languages that pupils understand. For example, Vanuatu and the Solomon Islands have 200 languages between them, many of them fragmented further into dialects. The native language of children can differ from school to school. For everyday communication, countries like this use a lingua franca, often derived from pidgin English, but prejudice against non-traditional languages, and the fear that they will undermine traditional ones, inhibits their use in the classroom.

Education systems therefore fall back upon the rote-learning of foreign languages such as English. Teachers themselves are often only barely proficient in these, so it is hardly surprising that pupils emerge from primary school unable to read in them. Education technologies with multilingual capabilities could provide the resources needed to get away from this miserable method of schooling.

ANDREW GRAY
Pentecost Island, Vanuatu

We must remove carbon

Renewable energy is a crucial step towards fighting climate change ("A green red herring", July 15th). However, as you point out, it must not distract from balancing the world's carbon budget. Renewable energy is growing rapidly, but eliminating the first 20% of fossil fuels will be a lot easier than the last. Nearly all the scenarios provided by the Intergovernmental Panel on Climate Change that would stop climate change are based on removing carbon from the atmosphere, which cannot come from renewable energy alone. Focusing too much on renewables prevents the development of environmentally acceptable and affordable negative emissions.

KLAUS LACKNER
Director
Centre for Negative Carbon Emissions
Arizona State University
Tempe, Arizona

A virtual success

"Get real" (July 8th) discussed the lethargic uptake of virtual-reality headsets, but overlooked the one area of the entertainment industry that has employed it with effect so far: pornography. In fact, the pornographic industry has often been a technological harbinger. It was one of the first to put more advanced features on a DVD and is a pioneer in streaming videos online. Perhaps there is staying power in VR technology yet.

JACK HODGE
Henley-on-Thames, Oxfordshire

Side order

I enjoyed the "meaty logic" to your Big Mac index ("Meat reversion", July 15th). I read it with relish.

H. DEAN BROWN
West Lebanon, New Hampshire ■

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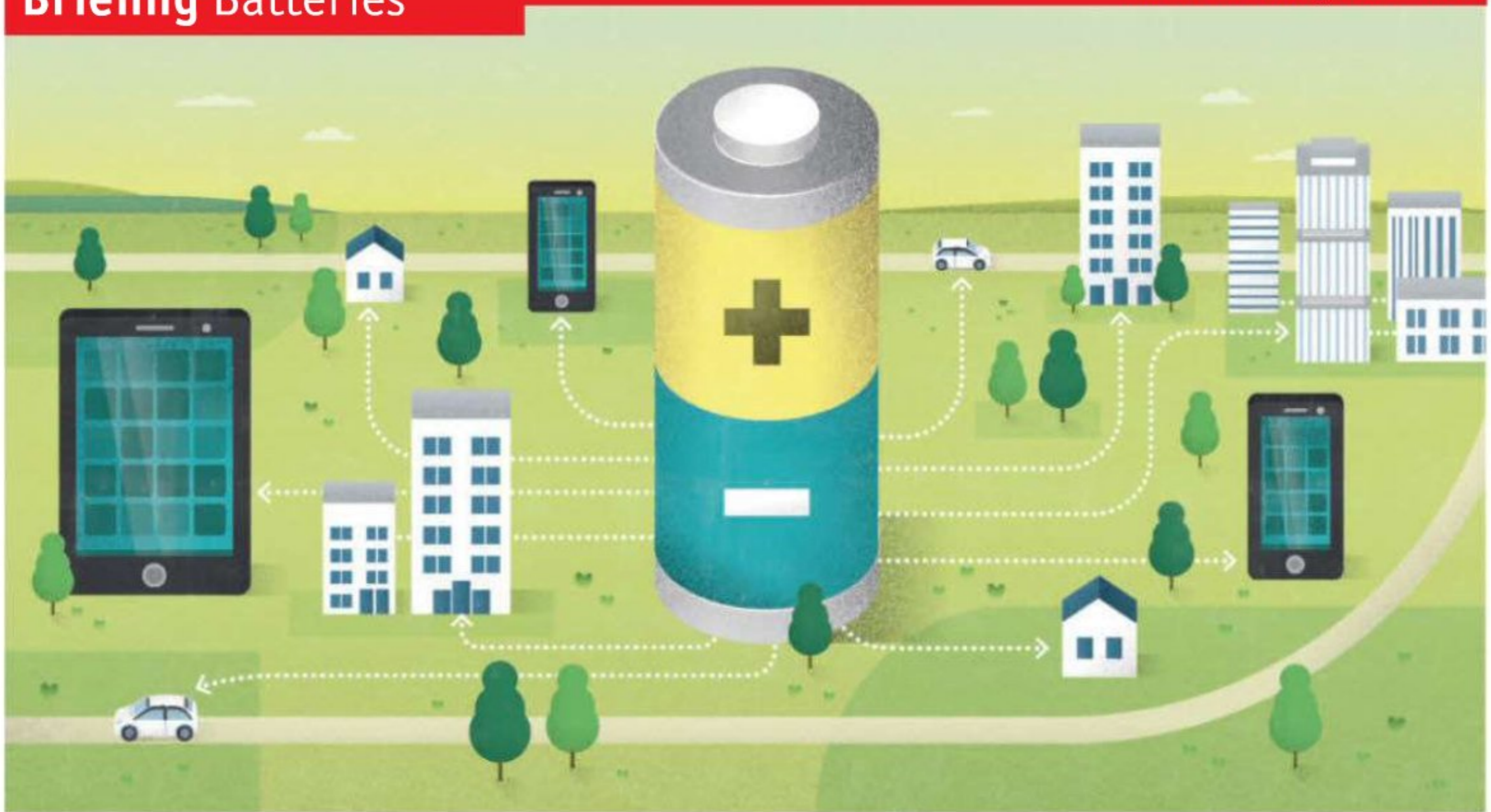
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Electrifying everything

SAN DIEGO AND SUNDERLAND

The battery industry has world-changing ambitions. Can it achieve them?

ABOUT three-quarters of the way along one of the snaking production lines in Nissan's Sunderland plant, a worker bolts fuel tanks into the chassis of countless Qashqais—the “urban crossover” SUVs which are the bulk of the factory's output. But every so often something else passes along the line: an electric vehicle called a Leaf. The fuel-tank bolter changes his rhythm to add a set of lithium-ion battery packs to the floor of the Leaf. His movements are so well choreographed with the swishing robotic arms around him that he makes the shift from the internal combustion engine to the battery-charged electric vehicle look almost seamless.

Until recently, it was a transition that many found unthinkable. The internal combustion engine has been the main way of powering vehicles on land and at sea for most of the past century. That is quite the head start. Though Leafs are the world's biggest-selling electric vehicle, the Sunderland plant, Britain's biggest car factory, only made 17,500 of them last year. It made 310,000 Qashqais. And the Qashqais, unlike the Leafs, were profitable. Nissan has so far lost money on every Leaf it has made.

There were 750,000 electric vehicles sold worldwide last year, less than 1% of the new-car market. In 2011 Carlos Ghosn,

boss of the Renault-Nissan alliance, suggested that his two companies alone would be selling twice that number by 2016, one of many boosterish predictions that have proved well wide of the mark. But if the timing of their take-off has proved uncertain, the belief that electric vehicles are going to be a big business very soon is ever more widely held. Mass-market vehicles with driving ranges close to that offered by a full tank of petrol, such as Tesla's Model 3 and GM's Chevrolet Bolt, have recently hit the market; a revamped Leaf will be unveiled in September. The ability to make such cars on the same production lines as fossil-fuel burners, as in Sunderland, means that they can spread more easily through the industry as production ramps up.

All we need to live today

Many forecasters reckon that the lifetime costs of owning and driving an electric car will be comparable to those for a fuel burner within a few years, leading sales of the electric cars to soar in the 2020s and to claim the majority sometime during the 2030s. China, which accounted for roughly half the electric vehicles sold last year, wants to see 2m electric and plug-in hybrid cars on its roads by 2020, and 7m within a decade. Bloomberg New Energy Finance

(BNEF), a consultancy, notes that forecasts from oil companies have a lot more electric vehicles in them than they did a few years ago; OPEC now expects 266m such vehicles to be on the street by 2040 (see chart 1 on next page). Britain and France have both said that, by that time, new cars completely reliant on internal combustion engines will be illegal.

That this is even conceivable is a tribute to the remarkable expansion of the lithium-ion battery business—and to the belief that it is set to get much bigger. The first such batteries went on sale just 26 years ago, in Sony's CCD-TR1 camcorder. The product was a hit: the batteries even more so, spreading to computers, phones, cordless power tools, e-cigarettes and beyond. The more gadgets the world has become hooked on, the more lithium-ion batteries it has needed. Last year consumer products accounted for the production of lithium-ion batteries with a total storage capacity of about 45 gigawatt-hours (GWh). To put that in context, if all those batteries were charged up they could provide Britain, which uses on average about 34GW of electricity, with about an hour and 20 minutes of juice.

In the same year production of lithium-ion batteries for electric vehicles reached just over half that capacity: 25GWh. But Sam Jaffe of Cairn ERA, a battery consultancy, expects demand for vehicle batteries to overtake that from consumer electronics as early as next year, marking a pivotal moment for the industry. Huge expansion is under way. The top five manufacturers—Japan's Panasonic, South Korea's LG Chem and Samsung SDI, and China's BYD and CATL—are ramping up capital expenditure ►►

with a view to almost tripling capacity by 2020 (see chart 2). The vast \$5bn gigafactory Tesla is building with Panasonic in Nevada is thought to already be producing about 4GWh a year. Tesla says it will produce 35GWh in 2018. Just four years ago, that would have been enough for all applications across the whole world.

The gigafactory is not just for cars. Hearing of electricity blackouts in South Australia, Elon Musk, Tesla's founder, tweeted to the state's premier in March that by the end of the year Tesla could provide enough battery storage to make sure that the grid never fell over again. At the gigafactory they are now hard at work cramming 129 megawatt-hours (MWh) of capacity into a facility designed to keep their boss's word. When installed on the other side of the Pacific, it will be the biggest such grid-based system in the world; but many more are on the way. Industrial-scale lithium-ion battery packs—essentially lots of the battery packs used in cars wired together, their chemistry and electronics tweaked to support quicker charging and discharging—are increasingly popular with grid operators looking for ways to smooth out the effects of intermittent power supplies such as solar and wind. Smaller battery packs are being bought by consumers who want independence from the grid—or, indeed, to store the electricity they produce for themselves so that it can be sold into the grid at the most lucrative time of day or night. Batteries are becoming an integral part of the low-emissions future.

The chance to change

The fundamental operating principles of the lithium-ion battery are easily understood. When the battery is charging an electric potential pulls lithium ions into the recesses of a graphite-based electrode; when it is in use these ions migrate back through a liquid electrolyte to a much more complex electrode made of compounds containing lithium and other metals—the cathode. The fundamental operating principles of the battery business, on



the other hand, are considerably more opaque, thanks to an almost paranoid taste for secrecy among suppliers and the baffling economics of the Asian conglomerates that lead the market.

All the big producers are adding capacity in part because it drives down unit costs, as the past few years have shown (see chart 3 on next page). Lithium-ion cells (the basic components of batteries) cost over \$1,000 a kilowatt-hour (kWh) in 2010; last year they were in the \$130-200 range. GM says it is paying \$145 per kWh to LG Chem for the cells that make up the 60kWh battery for the Bolt (the pack, thanks to labour, materials and electronics, costs more than the sum of its cells). Tesla says that cells for the Model 3 are cheaper. Lower costs are not the only improvements; large amounts of R&D investment have led to better power density (more storage per kilogram) and better durability (more discharge-then-recharge cycles). The Bolt comes with a battery warranty of eight years.

But getting prices down this way has not just produced cheaper, better batteries. It has also resulted in significant overcapacity. Cairn ERA estimates that last year the manufacturing capacity for lithium-ion batteries exceeded demand by about a third. Both it and BNEF say that the battery manufacturers are either losing money or making only wafer-thin profits on every electric-vehicle battery they produce. Despite the seeming glut, though, they all have plans to expand, in part to drive prices even lower. Mr Jaffe explains their thinking as that of the “traditional Asian conglomerate model”: sacrificing margins for market share. This may be a sound strategy given the ever-greater hopes for electric vehicles in the near future. But at the moment it is also one that looks rather unnerving. Although Mr Jaffe believes that increased demand for both electric vehicles and stationary storage will justify the rush to expand, he accepts that, for now, “It feels like a gold rush—but there’s no gold.”

There are, though, other valuable metals in the picture. Making more batteries means acquiring more lithium, as well as various other metals, including cobalt, for

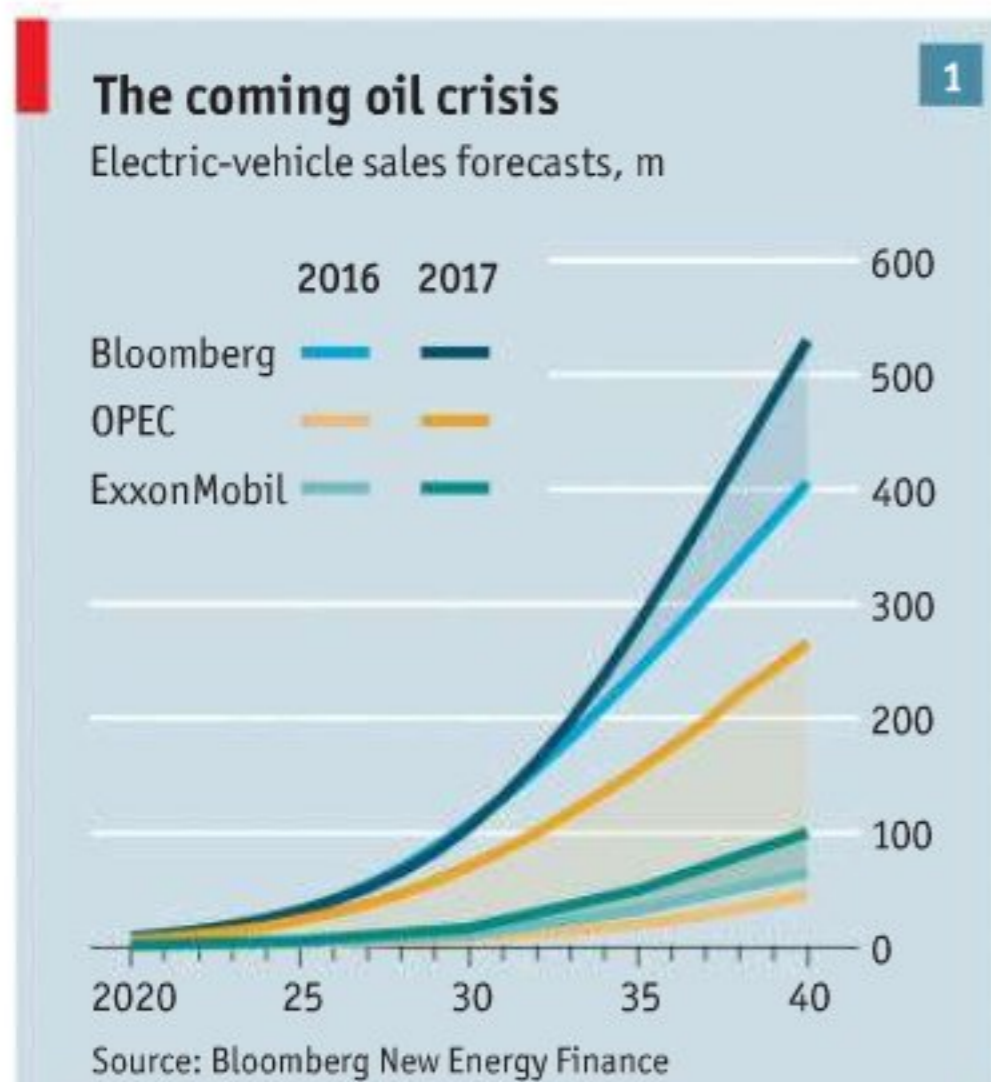
the cathodes. These make up about 60% of the cost of a cell. Being assured of a constant supply of them is as much a strategic consideration for battery-makers as mastering electrochemistry. Since 2015 lithium prices have quadrupled, says Simon Moores of Benchmark Mineral Intelligence, a consultancy. Cobalt's price has more than doubled over the same period; prices of chemicals containing nickel, also used in cathodes, are rising too.

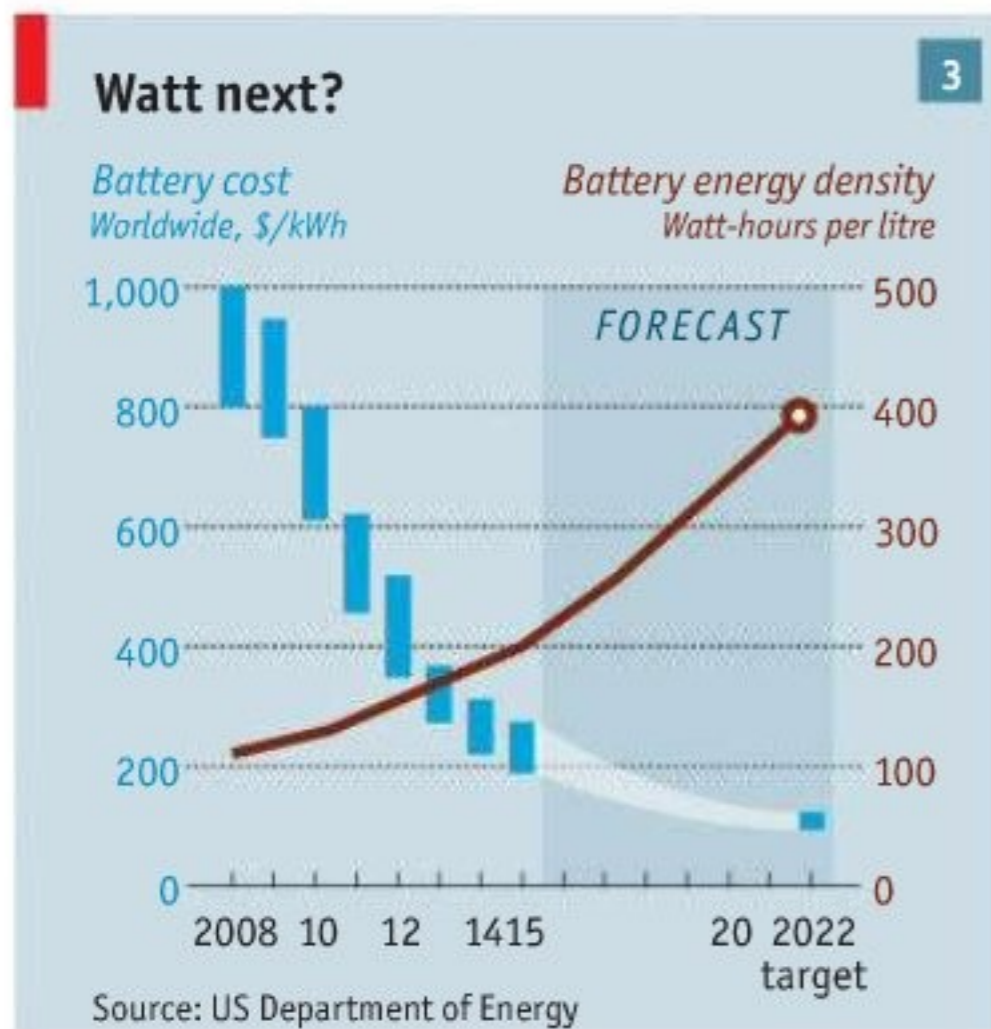
New supplies of lithium should not be too hard to find; there are thought to be at least 210m tonnes of the stuff, says Mr Moores, compared with current annual production of 180,000 tonnes. New fields are being opened up. In July SQM of Chile, the world's biggest lithium producer, said it would invest \$110m in a lithium joint venture in Western Australia. Cobalt is more tricky. Not only are supplies scarcer, but a lot comes from the Democratic Republic of Congo. This raises both ethical problems (production can rely on child labour) and business ones (no one wants to depend on warlords for a vital resource). LG Chem has said it is trying to reduce the cobalt component of its battery cells, while continuing to improve their performance. Further down the road, recycling the metals from old batteries could make the industry much more sustainable.

One of the reasons manufacturers are confidently piling on capacity despite costlier raw materials is that, at the moment, little else can compete with their wares. Other battery technologies that sound as if, in principle, they might have advantages are often touted—but none of them enjoys the decades of development that have turned lithium-ion devices from an intriguing idea into a dominant technology. This work has generated a huge amount of knowledge about the fine details of manufacturability, the choice of electrolytes and the ever more sophisticated nanotechnology of the metallic cathodes.

Kenan Sahin, who heads CAMX Power, an American company that supplies materials for cathodes, says the lithium-ion battery's cost and weight, its ability to charge and discharge repeatedly, its durability and its safety have all been achieved through an endless process of fine-tuning, rather than eureka moments. He likens battery chemistry to drug discovery in the pharmaceutical industry. “It's really difficult. Whatever you have needs to work at large scale and the side-effects have to be acceptable,” he says. This is all hard for a would-be usurper to emulate. For the foreseeable future, ever-improving lithium-ion technology—perhaps with new solid electrolytes—will make the running, benefiting from yet more refinements the more applications it supports.

Until now, the mainstay has been a cylindrical cell called the 18650, which looks like a rifle shell. It is 65 millimetres long, ▶▶





▶ 18mm in diameter and has an energy density of perhaps 250 watt-hours per kilogram. (The energy density of petrol, for comparison, is about 50 times greater; but the cell can store that much energy hundreds or thousands of times.) Tesla and Panasonic have now developed the 2170, a bit longer and wider; Mr Musk says it will be the most energy-dense battery on the market. The company says that the cost of driving a Model 3, released in late July to rave reviews, will be half that of any of its previous vehicles. At the car's launch Mr Musk seemed a bit overawed at the prospect of producing 500,000 such vehicles next year: "Welcome to production hell," he told the assembled workers.

On August 7th Tesla announced plans to sell bonds worth \$1.5bn to support its expansion, giving a badly needed breather to the equity market, where it usually raises cash (and where its value has risen by two-thirds over the past year). The company has said that it has 455,000 pre-orders for the Model 3, which, if taken up, would generate enough cashflow by year-end to start shoring up the company's finances. If it all goes to plan, Mr Musk hopes to see the gigafactory become the largest building in the world, cranking out 100GWh a year—and to be joined by further gigafactories elsewhere; the next would probably be in China.

All this presupposes that electric vehicles really are poised for take-off. There is no doubt that they are getting better and cheaper. But there are other constraints on their use, most notably charging. In Britain 43% of car owners do not have access to off-street parking and thus would not be able to charge cars at home. Nor are domestic supplies always up to the strains of, say, an 11kW charger; using the kettle or immersion heater during the six hours it would take to charge up a 90kWh battery could blow the fuses. The answer will be fast-charging stations, possibly like petrol stations; some car companies are beginning to build them as a way to assuage the "range anxiety" that turns some drivers off electric vehicles. Whether such facilities

can expand fast enough to allow the industry's expansive ambitions to be fulfilled remains an open question.

This uncertainty about the speed at which electric-vehicle usage will grow is one of the things that makes stationary storage an attractive alternative market for the battery-makers. Installations such as the one recently built in a nondescript lot on the outskirts of San Diego, California, by San Diego Gas & Electric (SDGE) have none of the glamour of glistening new models hitting showrooms. It is a 384,000-cell car battery impersonating a trailer park: the dullest Transformer ever. But its ordinariness is part of its beauty, says Caroline Winn, chief operating officer of SDGE; the utility uses it to offer power at times of peak demand. Modular construction meant the 120MWh facility—just a touch smaller than the one Tesla has promised South Australia—was ready to go only eight months after the start of the project. It runs so quietly it is hardly audible. Building a gas turbine to do the same job would have been cheaper but would have taken years, in the unlikely event that local residents had given it the go-ahead in the first place. The battery facility "is a lot prettier than a gas turbine," Ms Winn says.

The final source of energy

For Tesla and other big battery-makers grid-storage projects are the most attractive part of the electricity market; they offer contracts that use up otherwise surplus capacity in satisfyingly large job lots. But there is also demand for batteries to go "behind the meter". Tesla serves this market with its Powerwall domestic battery pack, designed to complement the solar panels and solar tiles it offers. Nissan, too, is looking at behind-the-meter applications. It is working with Eaton, an American power-



management company, to put "second-life", or partially used, Leaf batteries into packs that can provide businesses and factories with back-up power, thus replacing polluting diesel generators. The first big customer is the Amsterdam Arena, home to AFC Ajax, a football club.

Such systems do not necessarily compete on price; but governments are providing various incentives for them. In May the New York State regulator gave Con Edison, a utility, the right to allow business customers to install batteries in Brooklyn and Queens to export electricity to the grid. New York, with a rickety grid that dates back over a century to the days of George Westinghouse and Nikola Tesla, is struggling to integrate more renewable energy into its supplies, and storage offers it a new way to manage peak power demand. Jason Doling, a state energy official, says the programme should be ideal for high-rise blocks; powering lifts from the battery in mornings and evenings when electricity prices are highest would be a boon.

The New York fire department remains concerned that lithium-ion batteries in buildings pose a fire hazard, however. When they are being installed, it keeps its engines on standby. As the externally combusting fiasco of Samsung's Galaxy Note 7 smartphones reminded the world last year, lithium-ion batteries can, if badly or over-ambitiously designed, short circuit in incendiary ways. In general, however, new materials and ceramic coatings for electrodes have made the batteries for cars very safe.

Setting aside concerns about combustion, companies that install batteries for behind-the-meter storage, and indeed for grid storage, say they are hampered by outdated regulation and by insurance problems. This limits the funding available to them, according to Anil Srivastava, who runs Leclanché, a Swiss battery-producer. They also need to find ways to make stationary storage pay. Sometimes, as in San Diego, it is pretty much the only solution to the demands of a regulator: the California Public Utilities Commission was worried about blackouts in Los Angeles in the wake of a leak at the Aliso Canyon gas-storage facility in 2015. When price is more of an object, the batteries need to find more than one service to provide, a procedure known as "revenue stacking". For example, a system might be designed to offer power to the grid for short-term frequency regulation as well as providing a way of dealing with peak demand.

It sounds complicated. But finding more than one way to sell the same thing is second nature in the battery business, as it fine-tunes its wares for every market and every scale. And though today's exuberance may look a little scary, in the long run that ability looks likely to see the industry do very nicely indeed. ■



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Attitudes to immigration
Still yearning

NEW YORK

Donald Trump is pushing the Republican Party away from its long-standing enthusiasm for legal migration

THOSE keen to avoid hearing any more about the 45th president can download a filter that, for a fee, will scrub any mention of him from electronic devices. But for anyone interested in the long-term effects this president will have on America, the problem is the opposite. Donald Trump is so ubiquitous that it is hard to distinguish what really matters from what merely infuriates, and quieter changes can go unnoticed. One such was the unveiling on August 2nd of an immigration bill proposed by two Republican senators, Tom Cotton of Arkansas and David Perdue of Georgia, and praised by the president. Even if the bill never becomes law, it could achieve something profound. Republicans have long denounced illegal immigration while sounding more upbeat about the legal sort. Under Mr Trump, the party is on the point of abandoning its optimism about legal migration, too.

America's system for allowing people into the country to live and work functions fairly well despite, rather than because of, its messy design. About 1m people were granted green cards, which confer permanent residency, last year. Although a detailed breakdown for 2016 is not yet available, in 2015 two-thirds of green cards were handed out to family members of migrants, a share that is unlikely to have changed much. This makes America unusual. Other wealthy English-speaking de-

mocracies, including Britain, Australia and Canada, have already moved away from a system granting family members preferential treatment. Then there are the 140,000 green cards issued each year to people sponsored by their employers. Add in the 50,000 green cards issued by lottery to people from countries under-represented in the immigration numbers for the five previous years, sprinkle on refugee admissions, which fluctuate according to how much tumult there is abroad in any given year, and you reach the annual total.

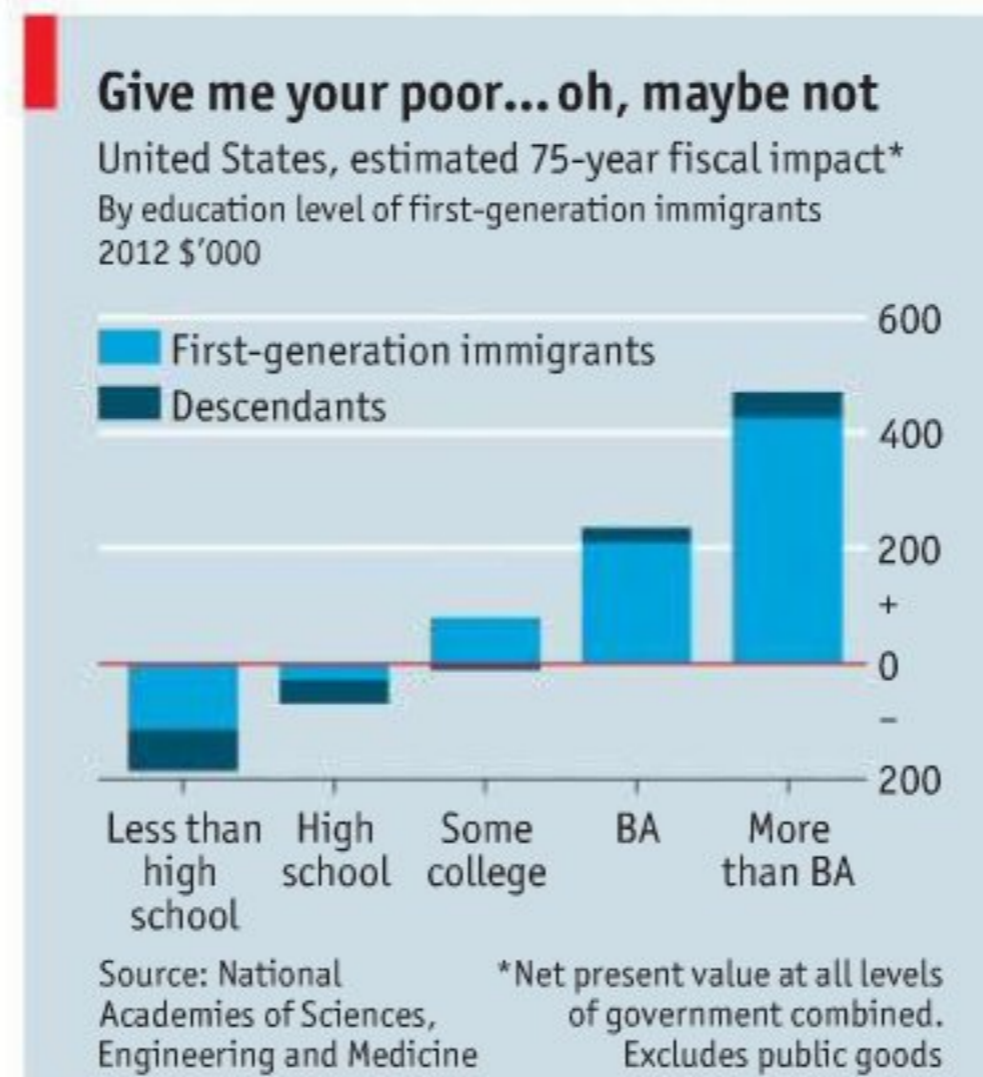
This might sound like a recipe for recruiting low-skilled immigrants, a point of-

ten made by the system's critics. In fact, nearly half of immigrants who arrived between 2011 and 2015 had college degrees. How educated immigrants are matters because, although the economic gains for low-skilled migrants of moving to America are great, the benefits to the American economy are not clear (see chart). Highly skilled immigrants, by contrast, offer a lot to their adopted country. Education seems to matter much more than where people come from. Two-thirds of Nigerian immigrants have college degrees, for example, and Nigerian-Americans consequently have household incomes that are well above the average.

Under the Cotton-Perdue bill the green card lottery would end and the family preference system would be limited to spouses or dependent children. This makes sense. But the bill also aims to cut by half the number of green cards issued each year, in an effort to restore immigration to "historic norms", which does not.

What counts as a historic norm depends on the figures you choose. Adjusted for population, current levels of immigration are abnormally low. In the 196 years for which data exist, America has issued green cards at an average rate of 4,500 per 1m Americans. Over the past 50 years the rate has been 2,900 per 1m. The proposed bill would reduce immigration as a proportion of the population to levels last seen in 1964, the year before a new federal law led to a rapid, largely unforeseen, increase in the absolute number of immigrants.

Some conservatives see liberal soft-headedness in today's policy, with its bias towards admitting family groups. But at the time, the law of 1965 was defended as a way to let in more migrants from places like Italy or Greece (who had been kept out by discriminatory national quotas im- ▶▶



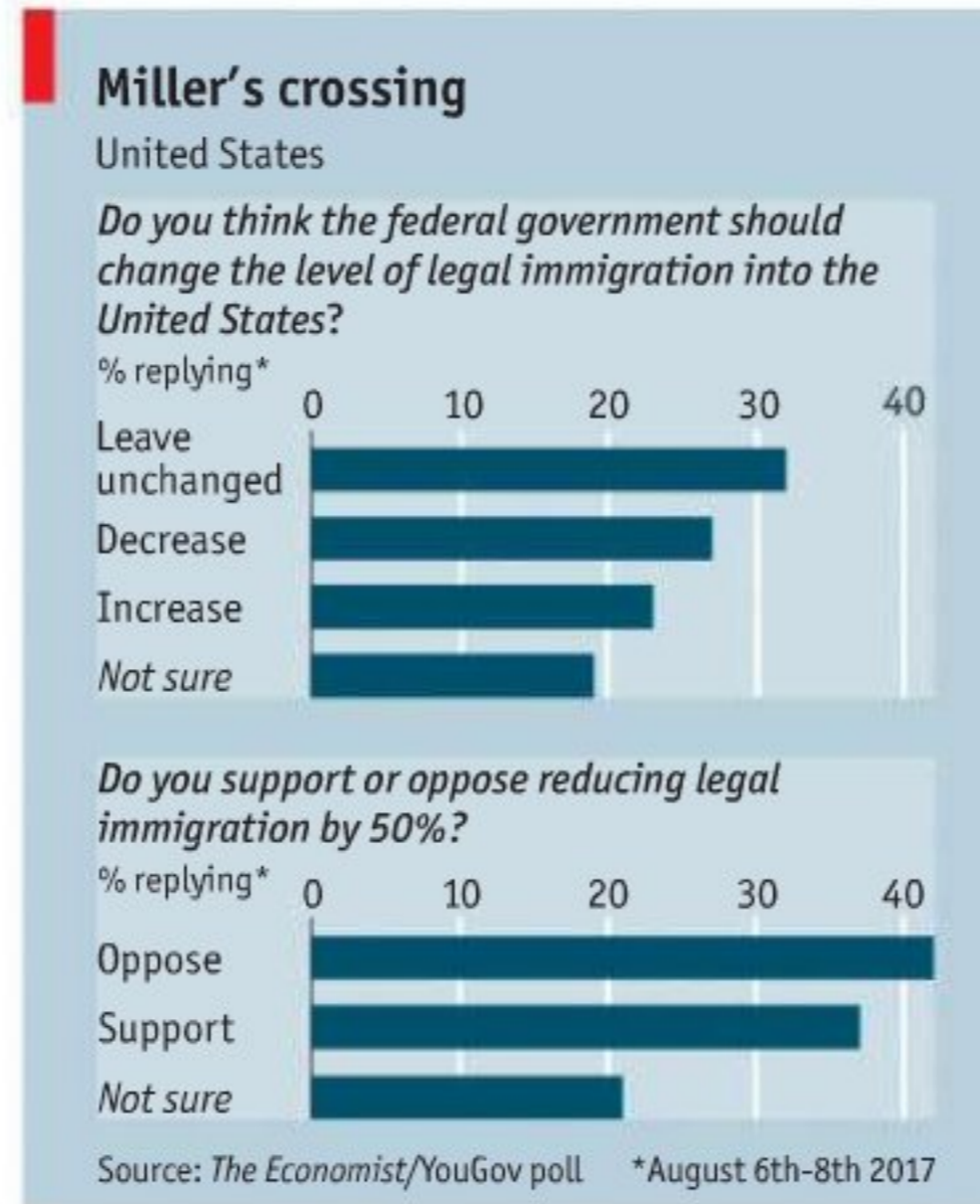
posed in 1924), without risking an influx from much poorer nations. As a co-sponsor of the bill, the New York congressman Emanuel Celler, told colleagues: "Since the people of Africa and Asia have very few relatives here, comparatively few could immigrate from those countries."

Jump forward 52 years, and in addition to reducing the number of green cards, the new bill seeks to reduce the number of refugees America admits each year. The intention is to cut admissions to 50,000 a year, "in line with a 13-year average". If that sounds like a period cherry-picked to give a number that is politically desirable, then that is because it is. Refugee admissions have been below 50,000 in only four of the past 30 years. If the bill's authors had taken a 30-year average, the annual level would have come out at 75,000.

To replace this system, the bill proposes that green cards should be awarded on a points-based system, like those in Australia and Canada, with extra credit according to youth, wealth, ability to speak English, educational attainment, possession of an extraordinary talent and whether the applicant has a high-paying job offer. Evidence from Australia and Canada suggests that government-run points systems do not necessarily do a better job of connecting immigrants with jobs (the optimal system for that is one that gives employers more say). But they are popular with voters, who seem to like the flattering notion that their countries resemble a country club with stringent admission criteria.

When presenting the White House's case, Stephen Miller, an adviser to the president, challenged news outlets to do polling on the proposals, implying that they reflect the public's wishes. Ever keen to help, *The Economist* asked YouGov to do so. The results were not what Mr Miller may have expected. Only 27% of respondents favoured decreasing the level of legal immigration. When asked the question in a less stark way, a slightly higher share either strongly or somewhat supported halving legal immigration, but the combined total of support was still only 37%.

Other details in the proposed bill jarred.



A plurality of respondents liked the idea of giving higher priority to potential migrants who already speak English. But they preferred the idea of giving priority to those with a close family member living in the country, suggesting continued support for family preference. Giving shelter to those trying to escape from war was more popular still. For good measure, we also polled the inscription at the base of the Statue of Liberty ("Give me your tired, your poor, your huddled masses yearning

to breathe free..."), which is perhaps the antithesis of the White House's approach to immigration. A case can be made that the poem unhelpfully conflates immigration with asylum, and casts the admission of hard-working newcomers as an act of charity, rather than a source of growth over the centuries. Still, it resonates. The vast majority (72%) thought the poem's sentiment applied in the past, a plurality (43%) thought it applied now and a majority (55%) thought it should apply in the future.

When he was elected, there was a faint hope that Mr Trump might be the one politician with both a sufficient command of his base to fix America's broken immigration system. A popular touch would help because the hardest puzzle in immigration policy is not, in fact, picking new arrivals but deciding what to do about the 11m illegal immigrants already in the country, many of whom have children who are citizens. That is far too large a group to deport, even if it were sensible to do so. Perhaps a candidate who promised to build a wall along the Mexican border could be the one to regularise some of the 11m, many of whom have been in America for decades? There is no sign of this Nixon-to-China turn on Mr Trump's part and, given his inclination to conflate illegal immigration and violent crime, it seems highly unlikely. But so did a Trump presidency, once. ■

College admissions

After affirmative action

WASHINGTON, DC

What happened when eight states outlawed race-conscious admissions

IT IS no mystery why university entrance policies generate so much angst in America. Space at elite colleges is limited, and the degrees they confer can transform lives. Well-meaning people are divided on whether universities should simply teach the best-performing students, or try to craft a more diverse ruling class. It is also no secret that Jeff Sessions, the attorney-general, is more sceptical of race-based affirmative-action policies than some predecessors.

A fuss was thus inevitable when news broke of an internal memo at the Department of Justice (DOJ) seeking staff lawyers to examine a lawsuit filed by Asian-American groups for racial discrimination against Harvard University. To date, the DOJ probe seems modest in scope. But the scare has led defenders of affirmative action to wonder what would happen if the current order fell. Affirmative action has already been banned in eight states, representing more than a quarter of America's high-school students. Their example

shows that the end of formal race-based affirmative action might not be as apocalyptic as its defenders fear.

Little changed for the typical student. Research conducted by Peter Hinrichs, an economist at the Federal Reserve Bank of Cleveland, shows that overall enrolment of black and Hispanic students appeared to hold steady, despite the affirmative-action bans. But those bans did make a striking difference for highly selective universities. The average effect on such institutions was to decrease black enrolment by 1.7 percentage points and Hispanic enrolment by 2 points. One of the most extreme examples came after a ban on affirmative action approved by California's voters came into effect in 1998. Black and Hispanic enrolment at the University of California, Berkeley—one of the nation's best schools—plunged from 22% to 13%. That should be not surprising, given the vast gulf in measurable academic achievement along racial lines for students admitted to Ameri- ▶▶





An affirmative reaction in California

► ca's most selective colleges.

To have an equal chance of admission as a black applicant, an Asian applicant to a top college needs as much as 450 additional points out of 1600 on the SAT (a whopping amount to those unaccustomed to American psychometrics). Encouragingly, research by David Card and Alan Krueger, two economists, shows that talented minority students apply at the same rate to leading universities with or without affirmative action.

Admissions offices determined to craft diverse campuses would still have recourse to artifice. After California's ban went into effect, one study found that 20% of the losses to minority enrolment at the University of California, Berkeley were counteracted by such admissions tweaks. Three of the states with affirmative-action bans—Texas, California and Florida—try to mitigate their effects by using top-percent programmes. These award places at leading public colleges to the best-performing students in every high school (in Texas, to the top 10%, and in Florida, to the top 20%), in effect using existing racial segregation by geography to produce more racial diversity once students graduate.

Perhaps most promising is the idea—most forcefully advanced by Richard Kahlenberg of the Century Foundation—that colleges should move towards considering socioeconomic diversity, which would sweep in large numbers of black and Hispanic students while also avoiding the fraught and possibly unsustainable politics of overt racial preferences. Compared with class, affirmative action based solely on race seems awfully blunt in today's America: it would be hard to claim that the son of black millionaires was more deserving of special consideration than the daughter of hard-up white coalminers. ■

Labour unions

One and done

LAS VEGAS

The unreplicable power of Nevada's unions

THE busiest pharmacy in Nevada sits in an unremarkable strip mall in the shadows of Las Vegas's glitzy casinos. Pharmacists accept prescriptions, dispense medicine and take no cash. Across town is the Culinary Academy of Las Vegas, which trains people to be chefs, bakers, sommeliers and other food-service workers. There too, most students pay nothing for their classes. The roughly 57,000 members of the Culinary Workers Union Local 226 (CWU)—the state's biggest union, representing employees at most of the casinos on the Vegas Strip and downtown—receive retraining and prescription drugs as benefits, along with comprehensive health care, pensions and supplemental insurance.

In addition to representing its members, the 82-year-old CWU has grown into a potent political force in Nevada. In the weeks leading up to last year's election, 300 CWU workers took temporary leaves of absence—also a contractual benefit—to persuade and register potential voters. According to Bethany Khan, the CWU's communications director, union members knocked on more than 350,000 doors and talked to over 75,000 voters.

For much of the 20th century, such campaigns were a staple of Democratic politics. Candidates stumped in union halls and relied on union donations. That helped keep culturally conservative but heavily unionised states such as Kentucky, Ohio and West Virginia reliably Democratic long after Richard Nixon and Ronald Reagan turned the South red.

But that connection has frayed. Donald Trump muses about turning the Republicans into "the party of the American worker". Last year, his hostility to free trade and the general perception that Hillary Clinton and her party cared more about immigrants and upwardly mobile professionals than native workers gave Democrats their worst showing among union households since Walter Mondale's 49-state loss to Reagan in 1984. In Ohio, for instance, Barack Obama beat Mitt Romney in union households by 23 percentage points. Four years later, Mrs Clinton lost to Mr Trump by 13 points while losing the state.

Nevada bucked this trend. Union efforts helped Hillary Clinton win Nevada on an otherwise disastrous day for Democrats, and also kept the state's Senate seat Democratic when Catherine Cortez Masto succeeded the retiring Harry Reid. Although Nevada is a right-to-work state—

meaning unions cannot compel workers in unionised sectors to pay dues—last year around 12% of its workers belonged to unions, down from 14% in 2015. Among similar states only Michigan, which did not go right-to-work until 2012, has a more unionised workforce. Union states in Appalachia and the Upper Midwest are white, old and shrinking, while Nevada and the CWU are young, multi-ethnic and growing. Maids and cleaners in Las Vegas average \$15.26 an hour, nearly \$4 more than they make elsewhere in America.

But anyone thinking that Nevada provides a blueprint for organised labour's resurgence will probably be disappointed. Nevada depends heavily on a single sector: leisure and hospitality, which employs over a quarter of its workforce. That sector, in turn, is dominated by a finite number of huge properties in a single city, Las Vegas, which itself is a virtual island surrounded by inhospitable desert. Casinos in Atlantic City can bus workers in from Philadelphia, an hour away. Travel an hour outside Las Vegas and you will find yourself parched in an oven-baked moonscape. This isolation gives management and labour a strong incentive to work together. Union members have gone on strike, of course, but both sides seem to understand that a poisonous relationship risks wrecking the state's main industry.

For now, Nevada's casinos and convention centres in Las Vegas generate enough cash to leave everyone reasonably happy. Not all casinos are unionised, but even those that are not must pay prevailing union-negotiated wages if they want to retain skilled workers. The lack of direct foreign competition helps, too. A carmaker can shut down a plant and open another in Mexico or another state if an industrial dispute goes badly. The owner of a casino on the Las Vegas Strip cannot: what's built in Vegas stays in Vegas. ■



Activists at work

Prisons

The corrections

CAÑON CITY, COLORADO

America's cheeriest prison town lacks enthusiasm for locking more people up

AT FIRST glance there is nothing unusual about the Cellhouse, a boutique in Cañon City, Colorado, except perhaps the diversity of its wares. A western saddle with ornate flower designs chiselled into the leather sits on a saddle rack by the shop's entrance. At the back, by a pair of fishing rods and wooden Adirondack chairs, a freezer holds packs of trout, goat, buffalo and tilapia. T-shirts displayed in the middle of the boutique read "Alcohol, Tobacco, and Firearms should be a convenience store, not a government agency." But a few details suggest this is no ordinary western general store. A sign on the wall warns, "If you take it, you'll be making it," and tucked in the store's front corner is an imitation jail cell, complete with a plaster prisoner sleeping on his bunk.

Opened in October on Cañon City's main street, which features a jumble of antique shops, an old-fashioned diner, an e-cigarette store and a trendy café that sells expensive mountain bikes as well as cold brew, the Cellhouse sells products made by the area's many prisoners. Fremont County, which has its seat in Cañon City and lies in a scenic valley a few hours south of Denver, has an incarceration rate much higher than the average in America, which in turn has the second highest imprisonment rate in the world (after the Seychelles). Though the county is relatively small, with a population of around 40,000 unconfined residents, it is home to 11 operational federal and state prisons that house some 7,600 inmates. By comparison, the whole state of Colorado houses around 24,000 prisoners.

Fremont County's residents have had a long time to embrace their area's reputation as "Prison Valley". The area's oldest prison, Colorado Territorial Correctional Facility, a fortified complex on the western edge of Cañon City, opened in 1871, five years before Colorado became a state. One of territory's legislators had lobbied for the penitentiary in hopes that it would boost the area's economy and provide employment for new settlers. Other prisons followed, building on ranchland already owned by the territorial correctional department, explains Stacey Cline, who directs Cañon City's Museum of Colorado Prisons. Today the prison industry accounts for more than half of all jobs there.

The result is a population that largely views the corrections industry with tolerance and humour. "It's just accepted," says

**54-46 was my number**

Jim Beicker, the affable sheriff of Fremont County, whose wife recently retired from a prison job. Mr Beicker recalls that when he was in high school in the 1980s, county residents were instructed to leave their car keys in their vehicles so that if a prisoner escaped, they would take the car and stage a peaceful escape instead of harming anyone. Such practices are no longer so common, as jailbreaks are rare. Anyway, quips Preston Troutman, Cañon City's mayor: "If you escape, you probably want to get as far away from Fremont County as possible."

Residents are quick to acknowledge the

area's reliance on prisons, but equally eager to dispel the notion that they root for full cells. "We have empty beds and I'm glad that we do," says Frank Jaquez, a Cañon City councilman. The state-prison population in Colorado declined by 7.2% between 2010 and 2015. In 2012, the state closed a prison it had opened in Cañon City only two years before, due to a dearth of inmates. Since its peak in 2013, the federal-prison population has also fallen.

The federal attorney-general, Jeff Sessions, may slow the downward trend—at least when it comes to federal prisons, of which there are four in Fremont County. In 2013 Barack Obama's attorney-general, Eric Holder, issued a memo urging federal prosecutors to avoid mandatory minimum sentences for non-violent drug offenders without gang ties. In May Mr Sessions reversed Mr Holder's policy, asking prosecutors to pursue the toughest sentences even for lower-level drug crimes.

Such a move might increase the number of federal prisoners flowing into Fremont County. But local officials doubt it will have too big an impact on the area, mainly because state prisons are a more important source of employment—and, even then, the jobs are not directly tied to prisoner numbers. Cañon City also shows how even if federal policies on crime are going backwards, the politics has not necessarily followed. None of the members of the city council or Fremont County commissioners interviewed would concede that a federal government set on putting more people in prison is good news for a town built around them. ■

Health care

The expanding universal

The fix for American health care has already been tried somewhere in Europe

MITCH MCCONNELL was visibly distraught after the Republicans' "skinny repeal" of Obamacare was defeated in the Senate, but he was not too out of sorts to get in a dig at Europe. The majority leader wondered acidly what ideas Democrats might have for fixing American health insurance, and noted that most Democratic senators had voted "present" on a bill proposing that America should embrace a single-payer system. "Apparently they didn't want to make a decision about whether they were for or against socialised medicine. A government takeover of everything. European health care," Mr McConnell said. These things, he implied, were all connected, and very bad.

Mr McConnell's syllogism, equating

single-payer health insurance systems with socialism, government and Europe, rests on a set of deep archetypes. It can trace its roots back more than a century, to the days when Gilded Age railroad barons fulminated against the leftist European immigrants who, they believed, were infecting America with communism. But it makes no sense in the context of the health-insurance debate. In the first place, it gets its terms all wrong. A single-payer system is socialised health insurance, not "socialised medicine": in many countries with single-payer systems, such as Canada, most medical providers are private, for-profit businesses. It does not imply a "government takeover of everything", or even of all health insurance. In France, Spain, ▶▶

▶ Britain and elsewhere, single-payer government-provided insurance co-exists with private health-insurance industries supplying supplemental policies for those who want extra coverage.

Nor is single-payer health insurance synonymous with “European health care”: not just because insurance is not care, but because much of Europe does not have a single-payer system. European countries that do not have single-payer health insurance include Switzerland, the Netherlands and an obscure republic called Germany. These countries achieve universal coverage through a mix of private, for-profit and not-for-profit insurers. This private-public combination may sound like the sort of ideological breakthrough that could serve as a compromise between Democrats and Republicans. But it isn’t new. Germany has been using some variety of this model ever since it invented public health insurance, 134 years ago, during the administration of Otto von Bismarck.

In fact, what is interesting about European schemes for universal health insurance is precisely their variety. The systems fall into three paradigms. In the first, the government takes over both health insurance and the provision of care, employing doctors and running hospitals. In the second, the government provides universal health insurance, but leaves much of the provision of care to the private sector. (This is the “single-payer” model to which Mr McConnell refers.) In the third, the government leaves both insurance and care to the private sector, but uses regulation, government subsidies and an individual mandate to guarantee that everyone is covered.

Most countries fall somewhere between these three. Britain, Italy, Spain and Sweden essentially use the first system. Everyone is enrolled in a national government-run health system, most health care is paid for by the government, usually free of charge, and most doctors work for the public health service. But there are also some private doctors and hospitals, and private insurers offering supplemental plans for those who can afford them.

France’s health-insurance system, like Canada’s, is mostly based on the second paradigm, the “single-payer” concept. Doctors are mostly private, but the basic insurance schemes that provide universal coverage are government-funded. Most people in France top up their coverage with supplemental private insurance plans. Germany, meanwhile, falls somewhere between paradigms two and three: most citizens are covered by government-administered schemes, but those earning above a certain threshold can choose to buy private health insurance.

Finally, in the Netherlands and Switzerland, health insurance is handled almost entirely by private insurance companies, and doctors and hospitals are generally

private. Coverage is universal because citizens are legally obliged to buy it, which ensures that healthy people stay in the system, holding insurers’ costs down. The government keeps premiums affordable by pumping in generous subsidies, and bars insurers from rejecting those with pre-existing conditions. It also regulates providers in order to control expenses.

Socialism in one country

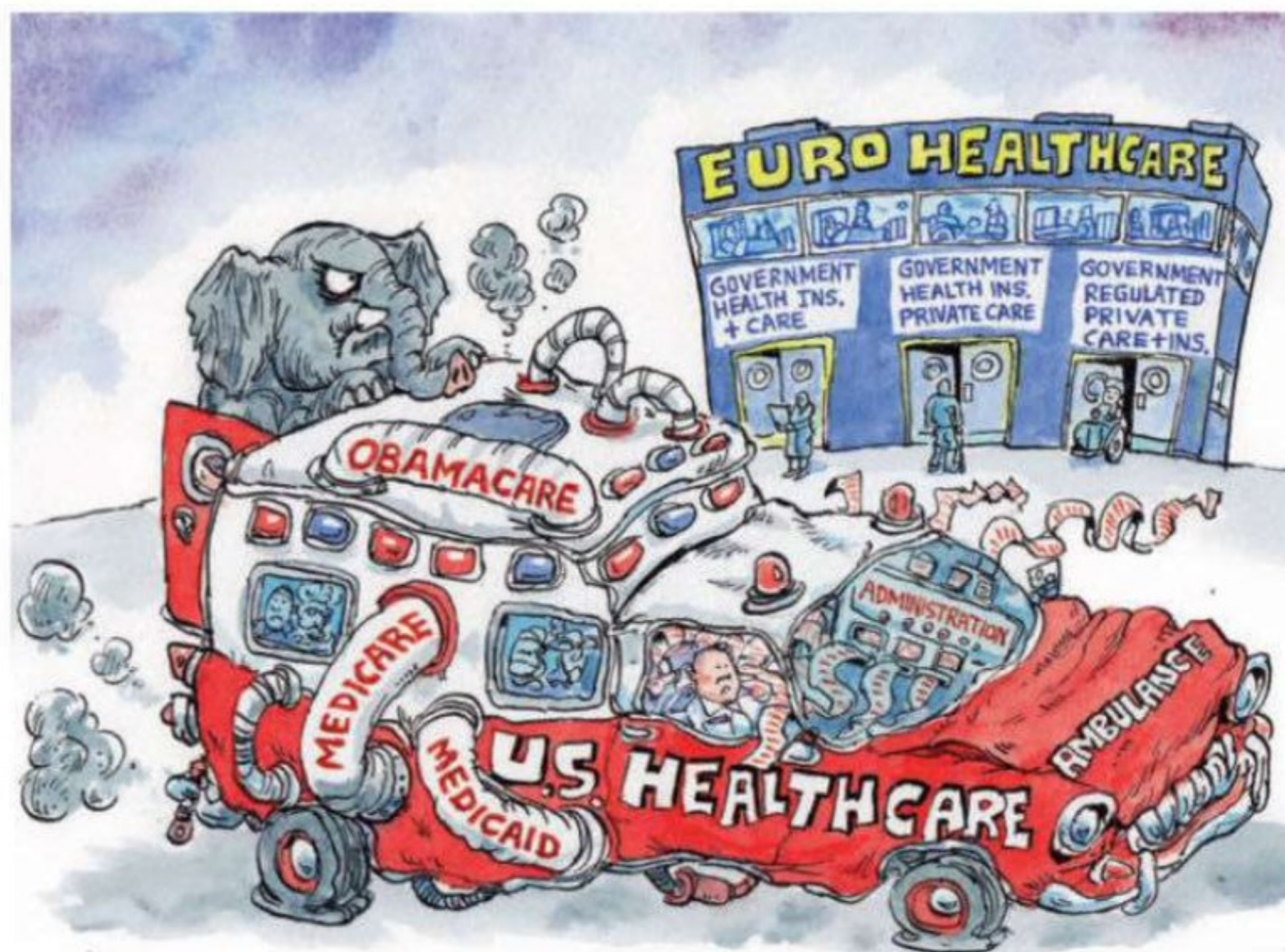
If this last variant sounds familiar to Americans, that is because it is essentially the same as Obamacare. One salient difference is that because the Netherlands and Switzerland provide more subsidies, premiums are much lower. They also enforce the mandate more strictly. As a result, they manage to insure over 99% of their citizens, whereas America insures only about 90%.

All this may seem terribly complex. In fact, European countries’ health-insurance systems are, without exception, simpler than America’s, which is a bewildering hodgepodge of private and public systems. For those over 65, America has a single-payer system, Medicare, that dishes out taxpayer money to for-profit private health-care providers with virtually no cost controls. For those earning below a certain threshold (which varies by state), there is another single-payer system, Medicaid, that does have cost controls. For those who have served in the armed forces, America has a single-payer system, the Veterans’ Administration; some veterans are treated at government-run hospitals, as with Britain’s National Health Service. For those who are employed by businesses above a certain size, America requires employers to provide private insurance subsidised by a regressive tax break. For those who earn too much for

Medicaid but whose employers do not provide insurance, America has Obamacare: a heavily regulated, government-subsidised system of private insurance exchanges with an individual mandate, like the Netherlands and Switzerland.

That complexity contributes to costs. America spends vastly more on administration: 8% of health spending, versus 2.5% in Britain. As of 2013, Duke University hospital had 400 more billing clerks (1,300) than hospital beds (900). Americans also consume more health care. The result is that health care manages to chew up about 17% of GDP without even covering everyone. (No European system costs more than 12% of GDP.) Americans would be getting a terrible bargain even if their resulting health was as good as that of Europeans. In fact, it is worse. Europeans have longer life expectancy than Americans. Fully 28% of Americans have multiple chronic health problems (such as diabetes or arthritis), more than in any European country. America does manage to outperform most European countries on cancer mortality, though even there, Sweden does better. Even on that hoary measure of public health, adult height, America fails. A survey of the youngest mature adults (born in 1996) shows that the latest cohort of Americans are shorter than the French.

But the main reason why Mr McConnell should hesitate before dismissing “European health care” is not so much its effectiveness as its variety. There are not that many ways to achieve universal health insurance coverage in a country. Fundamentally, the government must either provide it directly, or regulate and subsidise the insurance industry to do it. For any variant one can imagine, some European country has probably tried it out. ■



Lexington | Centre of attention

Moderate Democrats ponder how to beat Donald Trump without resorting to angry populism



A SORT of fever grips the American left. With each grim headline for Donald Trump, or show of division among Republicans in Congress, excitement builds among those sworn to resist the president and his works. Democrats outnumbered Republicans in the popular vote in 2016, it is recalled—and that was before Mr Trump broke his promises. If the Democratic Party just picks fierier policies and more inspiring candidates, that anti-Trump majority will surely boil over, sweeping the right from power.

Moderate Democrats find this confidence alarming. A high-octane group of elected officials—including governors, members of Congress and city mayors—were joined by donors, the heads of progressive campaign groups and veterans of presidential campaigns at a retreat in the cool, mist-shrouded mountain resort of Aspen, Colorado on August 4th-5th. Hosted by Third Way, a centrist think-tank, the gathering pondered politics as it is, and not as ideologues wish it to be. The country is home to lots of people who dislike Mr Trump. But many are clustered in big cities, coastal states or college towns, blunting their electoral impact. In the election of 2016 Hillary Clinton outperformed her predecessor, Barack Obama, by 1.2m votes in California, Massachusetts and New York. Those three states, indeed, elected a third of all the Democrats in the House of Representatives. But in the other 47 states, Mrs Clinton underperformed Mr Obama by a total of 3.3m votes—and did especially badly in swing states that gave Mr Trump his improbable win.

As the Third Way retreat heard, the only quick route to Democratic dominance would involve the forced moving of millions of Americans. In the real world, political geography condemns Democrats to slog their way back to power in a daunting array of places: struggling rustbelt towns, thriving suburbs near such cities as Minneapolis or Philadelphia, fast-growing communities in the south-west. These regions have turned away from Democrats since Mr Obama won the presidency in 2008. The party has ceded dozens of seats in Congress and almost 1,000 seats in state legislatures. Republicans control 34 of 50 governors' mansions.

A Democratic push for power will expose weaknesses within the anti-Trump majority. Lots of voters express doubts that the president shares their concerns. But even more say they think Democrats are out of touch with regular folk. In surveys, Demo-

crats are seen as the party of government, and voters are far more likely to condemn big government than big business. Mr Trump's approval numbers may be sliding, but Republicans are more trusted than Democrats to bring good jobs. That thought haunted the Third Way gathering Lexington attended as an observer.

The left longs to see Democrats use government's powers to tackle income inequality, perhaps by backing higher minimum wages, a universal basic income, or by promising to make college tuition free, as Senator Bernie Sanders of Vermont did during the presidential primary. Some seem to think the trick is to explain Democratic ideas more slowly and loudly. A high-profile darling of the grassroots, invited to Aspen, fretted that Democrats are losing a "messaging war" against such conservative donors as David and Charles Koch. Because of right-wing attacks, she lamented, "People think that what is good for them is actually bad for them."

Others, notably politicians from swing states and regions where Democrats need moderate Republicans to win, retorted, in effect, that their party needs to stop telling voters "what is good for them". One centrist told the gathering to ponder a shocking development: that their "party of the working class" is seen as "against jobs". Several elected Democrats urged their party to step back, raise its sights and consider voters' highest aspirations and greatest fears. It is right to campaign for a minimum wage, a politician said, "but I don't know a single person that wants to earn a minimum wage." Free college is a crowd-pleaser, but Democrats also need to win back factory towns where a skilled trade, not a university degree, is a cherished path to success.

No short cuts

Third Way's own pitch involves tackling income inequality not as the final goal of policymaking, but as a symptom of a larger problem: the difficulty of building a good life filled with meaning, especially in left-behind bits of the country where too few jobs offer chances for training and self-improvement, or even simple dignity. The campaigning think-tank would like to see the left, right and centre wooed with an overarching message. Rather than stress ways to redistribute wealth, Third Way wants Democrats to offer an "opportunity to earn a good life"—a phrase intended to capture the central promise of American capitalism, in which a good life is made open to all, but must be earned.

This was a gathering of realists. Governor John Hickenlooper of Colorado talked of working with business and non-profits on "trans-partisan" tasks like creating apprenticeships. Others called for Democrats not to be anti-business, but to return to their mid-20th-century identity as a party that stands with small business against overmighty corporate behemoths. Several suggested casting priorities such as climate change in concrete terms, for instance by stressing that jobs installing solar panels cannot be sent abroad. Strikingly, given the eagerness of some "Resistance" activists to stage purity contests at election-time, the heads of two prominent progressive groups said they saw no merit in demanding that all candidates, everywhere run on such issues as abortion rights. Governor John Bel Edwards of Louisiana bluntly told colleagues that if the national Democratic Party had not tolerated his views on abortion (anti) and gun rights (pro), he would not have won his conservative state and "would not be here today".

Democrats are bracing for a circus-like presidential primary in 2020. Centrists will be attacked as sell-outs. Their urgent task is to avoid left-wing populism becoming the default option. For their party is in a deep hole, and no narrow path will lead them out. ■



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A shadowy experiment

AMAPALA

The Central American country has a bold plan to overcome its weaknesses and attract investment. It is not going well

ONE sunny Wednesday in Amapala, off the coast of Honduras, 33 working-age men settled themselves on rows of chairs on the main street under a tarpaulin to watch a football game. There was not much traffic to disrupt. The dilapidated town on the island of El Tigre had once been a bustling port, dispatching coffee and other commodities to Europe. Herbert Hoover and Albert Einstein thought the place worth visiting. But the German merchants and shipowners who had managed Amapala's commerce left after the second world war; in 1979 the port moved to the mainland. The football fans now work intermittently as fishermen, farmers and drivers of three-wheeled *mototaxis*, most earning less than \$2 a day. Some of the peeling pastel-coloured buildings bear signs in English, put up in expectation of a tourism revival that never happened.

Honduras's government is promising a return to the glory days. In 2013 it announced plans to build a "megaport" in Amapala, along with a customs office and processing plants for exports such as shrimp, textiles and bananas. The money would come from private investors, who would be enticed by the establishment of three "employment and economic development zones" (ZEDES). More ambitious than typical free-trade zones, these would be independent jurisdictions with their own laws, courts and police. The capi-

tal they attract would create jobs and relieve poverty. Rather than fleeing to the United States, Hondurans threatened by the country's ubiquitous gangs could find security and livelihoods in ZEDES.

The government has such faith in this idea that in 2013 it passed a law that adds ZEDES to municipalities and departments as units of the republic. It is considering proposals for 20 ZEDES across the country and has signed more than ten memorandums of understanding (MOUs) with investors, says Octavio Sánchez, one of the project's leaders. Some are "ready to go—land bought, maps drawn and capital raised", he says. The government may announce the first few projects at the end of August. They might be as small as a call centre or cover an entire city.

Sweet dreams are made of ZEDES

It is easy to see why Honduras might want to create enclaves of safety and efficiency on its territory. It is one of the world's most violent countries; laws and contracts are spottily enforced; its bureaucracy is a hindrance rather than a help to its citizens; infrastructure is rudimentary and in poor repair (see chart on next page).

The government's proposal for overcoming these defects draws inspiration from the idea of "charter cities", new jurisdictions on empty land that bypass weak institutions to attract investment and jobs.

Paul Romer, now the World Bank's chief economist, popularised the idea after noticing that autonomous cities like Hong Kong and Dubai became magnets for investment. In 2010 Mr Sánchez, chief of staff for Porfirio Lobo, Honduras's president at the time, asked Mr Romer to help set up the first "model cities" after seeing a TED talk that he gave.

Like Dubai's free-trade zones, ZEDES are to be "seamlessly integrated into the city", says Mr Sánchez. But they also hark back to an older model from Honduras's banana-republic days, when the country in effect turned over swathes of territory to giant firms like the United Fruit Company. "Banana enclaves are an example of the successful functioning of models from other states," says Ebal Díaz, the secretary of Honduras's council of ministers.

But the plan to correct the country's faults one ZEDE at a time is causing alarm. The zones can be created in thinly populated areas without the consent of the locals. Hondurans inside them will lose some rights. Under the law creating ZEDES, just six of the constitution's 379 articles must apply within them, points out Fernando García, a lawyer in Tegucigalpa, the capital. These do not include those underwriting such rights as habeas corpus and press freedom.

The project is beset by conflict between foreigners brought in to help monitor it and Honduran officials responsible for putting it into practice, and by strife among the Hondurans themselves. What decisions have been made and who has made them are a mystery to people outside the process, and even to some who are supposedly part of it. Outsiders assume the worst. A recent report by the Carnegie Endowment, a think-tank, calls Honduras "emblematic" of countries in which "cor- ▶▶

ruption is the operating system” of networks formed by government, business and “out-and-out criminals”. The ZEDE saga suggests that such a system will have great difficulty in creating one that is free of its own shortcomings.

The ZEDE plan has its origins in a coup and the complicated politics that ensued. The government of Mr Lobo, who won hastily arranged elections after the army ousted a predecessor in 2009, passed a law creating a forerunner to ZEDES. After the constitutional court struck down the law, saying it violated Honduran sovereignty, congress dismissed the four justices who had voted against it and amended the constitution to allow passage of the current “model-cities” statute in 2013.

By then Mr Romer had broken with the project (after he realised that the “transparency commission” he was supposed to chair would never in fact exist). But it still has plenty of political support. The current president, Juan Orlando Hernández, who is running for re-election, sees ZEDES as a vote-winner. He recently posted on Facebook a (perhaps fanciful) map showing how they would transform Honduras into the Americas’ “logistics centre”. A motley group of foreign libertarians, who like the idea of lightly regulated mini-Utopias for enterprise, are still involved. The Inter-American Development Bank has said it may lend \$20m to back their development.

Even after seven years of work, the scheme is as vague as it is ambitious. No one outside a small group knows what the first project will be. Agile Solutions, a Brazilian software firm, talks of investing \$200m to open a “startup village” in Tegucigalpa, creating 6,000 jobs. Its Honduran boss, Carlos Cruz, sees the zone as a “blank slate”, which the company could use as a laboratory for new approaches to health care, education and tax.

Another candidate to be the first ZEDE is a public-private partnership with Canadian investors to create an “energy district” in Olancho department, where wood would be harvested for fuel. The ZEDE itself would be confined at first to a 1.6 square km (0.6 square mile) patch, which will be occupied by a power station. But it could eventually expand to an area covering 8% of Honduras’s territory and including 380,000 people. HOI, a Christian NGO based in the United States, is to provide health care and education from the outset in this “area of influence”.

After spending millions of dollars on feasibility studies for Amapala, South Korea’s development agency concluded that the area is not ready for a megaport. So the Honduran government decided to start with a tourism project that scoops into several fishing villages on the bay, plus factories and a customs centre nearby. Some proposed ZEDES are based on “Plan 2020”, a master plan for the country drawn up by

McKinsey, a consultancy. It suggests creating 600,000 jobs by attracting vehicle-assembly operations, call centres and other industries from Asia.

Even now, just how ZEDES will work is a matter of argument among their supporters. The law places effective control in the hands of investors and a “technical secretary” who will administer each zone (and must be a Honduran citizen). They are answerable to an independent “commission for best practices” (CAMP). Civil and criminal cases will be adjudicated by special ZEDE courts, though it is not clear whether each zone will have its own or whether they will join a single parallel system. They could employ foreign judges to hear civil and criminal cases, just as Honduran football teams hire foreign players, suggests Mr Díaz. A “tribunal of individual rights”, guided by international conventions, will protect residents. Its decisions can be appealed to international courts.

But this governance structure is not settled; participants do not agree on what has been decided or even on who is part of it. The original CAMP, appointed by Mr Lobo, had 21 members, including Grover Norquist, an American anti-tax campaigner, Richard Rahn, then of the libertarian Cato Institute in Washington, DC, and Mark Klugmann, a former speechwriter for Ronald Reagan. This body met just once, in March 2015, on the resort island of Roatán.

According to Mr Sánchez and Mr Díaz, it has been pared down to 12 members. Seven are Hondurans from the ruling National Party; the five foreigners include Mr Rahn and Barbara Kolm, an economist with links to Austria’s far-right Freedom Party, but not Mr Klugmann. This group has been meeting secretly in Miami. But power is now exercised by a five-person standing committee led by Ms Kolm, who is the only foreign member.

Mr Klugmann denounces the sidelining of the original CAMP as “illegitimate” and illegal. Arnaldo Castillo, Honduras’s minister of economic development, denies that it has occurred. The argument over which CAMP is in charge is also about



principle. Mr Klugmann thinks good governance matters more to investors than cheap labour and light regulation. He wants ZEDES to perfect their institutional set-up before they start operations. Mr Rahn seems to be losing heart. He was “asked to try to bring in best practices of corporate governance”, he says. But it has been an “uphill struggle”. Although the CAMP is supposed to be independent, Mr Rahn has “the strong impression that there is government interference”.

Mr Sánchez’s Honduran faction seems more eager to sign deals, and more willing to cut corners. One proposal is for a public-private partnership with Conatel, the state-owned telecoms company. Its boss is Mr Díaz, who is also the member of the CAMP authorised to sign MOUs and the head of the agency that registers land titles. Mr Sánchez sees no conflict of interest in this accumulation of roles. “It’s the same government,” he says.

The fuzziness about governance will increase suspicion that ZEDES are a further way to enrich an entrenched elite and erode the rights of ordinary Hondurans. The National Lawyers Guild, a left-leaning American NGO, fears that the CAMP and the technical secretaries will wield unchallengeable power over ZEDES and the people who live and work within their boundaries. Once established, ZEDES can seize land to expand the zones. That may provoke conflict: 90% of Hondurans do not have titles to their homes and scores have died in land disputes in recent years. Hondurans living in areas marked out for ZEDES have little idea what is in store. “We have never been in the loop,” says Julio Ramírez, Amapala’s bespectacled town clerk.

It is possible that nothing will change in sleepy Amapala. Salvador Nasralla, the leading candidate to unseat Mr Hernández in elections on November 26th, says he would repeal the ZEDE law (though that would require a two-thirds majority in congress). The CAMP chaos may drive away investors. But if they come, the football aficionados of Amapala may learn what it is like to be guinea pigs in a daring economic experiment. Their little island will be in Honduras, but no longer of it. ■



Chile

Term endings

SANTIAGO

A feminist president seeks to relax a strict anti-abortion law

MICHELLE BACHELET's second term as Chile's president, which will end next March, has been frustrating. Economic growth has been slow, her reforms of education, tax and labour laws have not worked as planned and her son has been implicated in an influence-peddling scandal. Her approval rating is only 32%.

But Ms Bachelet is bowing out with a reform that she no doubt hopes will secure a more popular legacy: an end to the country's ban on abortion. On August 3rd congress passed a law to decriminalise abortion in three types of case: when the mother's life is at risk, when the pregnancy is the result of rape and when the fetus has a fatal defect. The right-leaning opposition and the Catholic church strongly oppose it. The constitutional court will now decide whether it can take effect, even though the constitution "protects the life of the unborn". If it upholds the new law, Ms Bachelet will be able to claim a robust record of promoting women's rights in defiance of deep-rooted social conservatism. More than 70% of Chileans want the court to endorse the reform.

Abortion to protect the health of the mother was legal from 1931 until 1989. Augusto Pinochet, Chile's dictator until 1990, ended that exception. His social conservatism has shaped present-day Chile as much as his economic liberalism, which has helped the country thrive. "There has been very slow change on cultural and moral issues," says Carlos Peña, the rector of Diego Portales University.

That has not meant stasis. In the 1990s children born out of wedlock gained equal rights and sodomy was decriminalised; divorce and same-sex civil unions became legal in this century. Ms Bachelet, who became head of the UN's women's-equality arm after her first term, sought to advance women's rights in both her administrations. Under a law passed in 2010 women aged 14 and older won the right to receive the contraception of their choice, including the morning-after pill. Ms Bachelet also introduced a basic pension for old people who had not built up a right to a benefit through work. It goes mostly to women.

In her second term, congress passed a law compelling political parties to select women as at least 40% of their candidates in parliamentary elections (just 16% of today's legislators are women). Ms Bachelet set state-owned enterprises a goal of appointing women to fill 40% of the seats on

their boards, which they have met. (Only 6% of directors of publicly traded companies are women.)

The partial lifting of the abortion ban would be a final flourish to her presidential push to empower women. Perhaps 60,000-200,000 illegal abortions a year occur in Chile. These kill fewer mothers than they once did, partly because pregnancy-ending drugs can be acquired on the internet. Chile's maternal-mortality rate is among the lowest in Latin America.

The government hopes that the new law will make it still lower by lifting the threat of prosecution of doctors who end a pregnancy to save a woman's life. From 2004 to 2012, 21 women died from ectopic pregnancies, according to Paz Robledo of the health ministry. Others die needlessly from hypertension and other maladies.

The main opposition to lifting the ban comes from Chile Vamos (Let's Go Chile), a coalition of right-leaning parties, including National Renewal, the party of Sebastián Piñera, the front-runner in presidential elections due in November. Senators from the coalition brought the suit now being considered by the constitutional tribunal.

Opponents worry that the new law will open the way for abortion on demand, though it has safeguards to prevent this. Two doctors must agree that a fetus is not viable or that a mother's life is in danger to justify an abortion. If a woman says a pregnancy is the result of rape, the hospital must notify a prosecutor. That is supposed to deter women from ending pregnancies that come from consensual sex.

That will not persuade people with deeper objections. "We are discriminating against human beings by saying they don't have the right to be born because they are sick or because they've been conceived by rape," says Jacqueline van Rysselberghe, the leader of the Independent Democratic Union, part of Chile Vamos. Ms Bachelet's legacy will depend in part on whether the constitutional court agrees. ■



Bachelet, feeling empowered

Ecuador

Breaking Glas

QUITO

The new president emerges from the shadow of the old

WILL Lenín Moreno be his own man? Or will he be the puppet of his forceful predecessor, Rafael Correa? Ecuadoreans have been wondering that since Mr Moreno became president on May 24th. An answer came on August 3rd, when Mr Moreno removed the vice-president, Jorge Glas, from any active role in government. Mr Glas has been friends with Mr Correa since they were boy scouts and was seen as the former president's agent. Mr Moreno has stripped Mr Glas of his powers and perks, including the use of two presidential jets. He may now undo much of the work of his left-wing predecessor, who spent lavishly and squelched dissent.

Even before the break with Mr Glas, the new president showed an independent streak. He appointed a journalist from the private-sector media to run *El Telégrafo*, a state-owned newspaper. That is a sign, perhaps, that Mr Moreno will bully the press less. Mr Correa's overspending had left the economy "at the brink of sustainability", leaving a debt well above the legal limit of 40% of GDP, Mr Moreno declared.

His heresies provoked Mr Glas to write an open letter on August 2nd accusing him of betraying their political movement, Alianza PAIS, of "manipulating economic data" and of handing over public media to the private sector. Mr Glas may have been trying to shift attention away from corruption allegations levelled against him. A day before he published his letter, a Peruvian news website released a recording of a conversation in 2016 between Ecuador's then-comptroller-general and an executive at Odebrecht, a Brazilian infrastructure firm that has bribed officials in a dozen Latin American countries. The executive can be heard saying that Mr Glas received cash from Odebrecht and from "the Chinese".

Mr Glas insists that Odebrecht is smearing him because, as head of the state asset-holding fund, he criticised it for shoddy work on a power plant in 2008. (Odebrecht paid \$20m, then won numerous contracts for other projects in Ecuador.) Mr Moreno has not tried to obstruct investigations. The prosecutor-general, Carlos Baca, has confirmed that the vice-president is a target of a probe into embezzlement in an oil deal in 2012; Mr Glas called the decision "infamy".

The president cannot get rid of Mr Glas entirely: unless congress impeaches him by a two-thirds vote, he will take over if Mr Moreno is incapacitated. Ecuadoreans are praying for the president's health. ■

대륙간탄도로켓 《화성-14》형 시험발사 성공

Successful Test Launch of Intercontinental Ballistic Missile Hwasong-14



America and North Korea

Tone Defcon

SEOUL

Donald Trump's bluster may be thwarting efforts to persuade the nuclear dictatorship to negotiate

THE Korean Central News Agency (KCNA), the mouthpiece of Kim Jong Un's bloodthirsty regime in North Korea, is not known for nuance. Its propagandists were kept busier than usual last week, hammering out tirades against economic sanctions imposed by the UN in response to Mr Kim's unrelenting missile tests. Reports threatened America with "nuclear weapons of justice". A typical article warned that: "It is a daydream for the US to think that its mainland is an invulnerable Heavenly kingdom."

American presidents used to brush off such bombast. Not so Donald Trump. Speaking off-the-cuff at one of his golf clubs, he chided North Korea for its threats, pledging to meet further provocations "with fire and fury like the world has never seen". Even the hyperbole-prone hacks of the KCNA seemed to think this was a little strong. They accused America of "war hysteria" and ticked off the president for being "reckless". Just hours later, the Korean People's Army claimed to be "carefully examining" a strike on Guam, a Pacific island that hosts a large American military base.

North Korea's neighbours are jittery. Moon Jae-in, South Korea's president, called for a "complete" overhaul of his country's armed forces. Japan's defence ministry published a 563-page report charting how the threat from the North reached a "new stage". A day after Mr Trump's outburst, China appealed for calm.

The sanctions that sparked this exchange of rhetorical fire were a rare example of co-operation between China, America and Russia. The UN Security Council unanimously endorsed the crackdown a week after North Korea's second test of an intercontinental ballistic missile (ICBM), which could soon enable Mr Kim to order a nuclear strike on an American city.

The new restrictions ban purchases of North Korean coal, iron, lead and seafood (the country's main exports). According to some estimates, this will deprive the regime of \$1bn a year—a third of its foreign earnings. The sanctions also prohibit governments around the world from admitting any more North Korean workers, as the regime pockets most of their wages.

Seventh time lucky

Yet sanctions have not brought the Kim family to heel in the past. This is the sixth tightening of them since the UN first imposed them in 2006, after Mr Kim's father, Kim Jong Il, conducted a nuclear test. North Korea has since carried out four more tests. The regime has grown adept at dodging the restrictions, using illicit slush funds in China to finance business partnerships, says John Park of Harvard's Kennedy School of Government. The higher commissions on offer for such risky transactions simply attract more capable middlemen, he adds. Enforcement has been patchy: of the UN's 193 members, only 77

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have reported on their implementation of the previous round of sanctions, adopted in November.

China, which accounts for more than 90% of North Korea's trade, has promised to apply the new restrictions "fully and strictly". But they do not include the one measure thought likely to cause Mr Kim real difficulty: a curb on the North's imports of oil. They are unlikely, therefore, to convince Mr Kim to give up his weapons, but some Korea-watchers hope they may inflict enough pain to bring him to the negotiating table at least.

Sanctions will only work if they are part of a "cohesive, clearer strategy", argues a report by the Brookings Institution, an American think-tank. But analysts accuse the Trump administration of sending mixed messages. Only a week before Mr Trump's inflammatory remarks, Rex Tillerson, his secretary of state, had reassured North Korea, calling for talks and insisting, "We are not your enemy, we are not your threat." Mark Fitzpatrick of the International Institute for Strategic Studies, another think-tank, says a response to the nuclear threat requires "carefulness and co-ordination", which are "not Trump hallmarks".

Far from talking the regime down, Mr Trump's bombastic (indeed, Kim-like) rhetoric risks making allies nervous while doing nothing to persuade the North Korean leader to take his foot off the missile-testing accelerator. His statement appears to sug- ▶▶

gest that America is prepared to retaliate against North Korean threats, not just hostile actions, such as an attack on Seoul, points out Evans Revere, a former American diplomat who took part in the most recent negotiations with North Korea. “If we’re going to respond with nuclear weapons every time the North Koreans say something outrageous, there are going to be a lot of nuclear weapons flying through the air,” he says.

Mr Trump should follow up the sanctions with an offer of talks, even though the former goal of denuclearisation is now vanishingly remote. On the campaign trail last year, he said he would be willing to chat with Mr Kim over a hamburger. Now that blood-curdling barbs are flying across the Pacific, Mr Fitzpatrick believes, “It’s time to have that hamburger.” ■

Tokyo’s vanishing bath-houses

Troubled waters

TOKYO

Once-ubiquitous public baths are fighting to survive

STEP from the fraying lobby into the tiled interior of Akebono-Yu, Tokyo’s oldest *senjo*, or public bath-house, and there is an almost churchlike silence, interrupted only by the tinkle of spring water and the odd groan of pleasure from one of the elderly customers sinking into its tubs. A mural depicts the iconic, snow-capped Mount Fuji, 100km and a world away from the grime and din of the city outside.

Once attached to Buddhist shrines, *sentos* still have a whiff of the spiritual. For

centuries they were places where neighbours—men and women—stripped and bathed together. The custom was intensely practical. Until the frenetic modernisation in the run-up to the Olympics in 1964, 40% of homes in Tokyo lacked baths, so millions of people depended on *sentos* for their nightly soak.

Those days are long gone. Across the city’s skyline, the bath-houses’ distinctive chimney stacks are disappearing. From a peak of perhaps 2,700 *sentos*, fewer than 600 remain, according to the National Sento Association. Most are run by elderly couples. Luring customers is a struggle. Many have posted signs in English explaining bathing etiquette to the growing number of foreign tourists (eg, shower before you get in the tub). Plush new spas have opened, with beauty salons and massage parlours. A few have become more inventive, laying on concerts and performances. One even offers naked classes in comedy and Go, a Japanese board game, in the hope of luring younger customers.

Teruo Shimada, the owner of Akebono-Yu, says customers will no longer come just to get clean: “You have to give them something extra.” His premises have become something of a social club for pensioners. Some sip beer and sake in the restaurant while watching sumo on a large-screen television. Among the 12 baths inside are a jacuzzi and one that delivers a mild electric shock, said to stimulate sagging muscles and (say men) libido.

Mr Shimada’s ancestors started the business in 1773. A volcanic stream over 1,000m underground, discovered while digging a well, feeds the baths. They have survived fires, war and disaster, including the earthquake that levelled much of the city in 1923, and the firebombing of Tokyo by American planes in 1945. They seemed

to have survived the advent of domestic baths, but changing social attitudes are a graver threat. His daughter wants nothing to do with the trade, with its long hours and uncertain rewards, laments Mr Shimada. Once, he could have arranged her marriage and nudged his son-in-law into taking over, but that’s all in the past. After 19 generations in the family, he fears that Akebono-Yu may die with him. ■

Singapore’s first family

Bad blood

SINGAPORE

The courts step in

“I **N**ORMAL circumstances... I would have sued,” said Lee Hsien Loong, the prime minister of Singapore, in July. He was responding to claims by his siblings that he was secretly manoeuvring to prevent the demolition of the house of his father, Lee Kuan Yew, Singapore’s founding prime minister, in violation of the terms of the older Mr Lee’s will. In the end, the younger Mr Lee said in a public statement, he concluded that such action would “further besmirch my parents’ names”.

Singapore’s attorney-general, however, takes a different view. On July 21st his office wrote to Li Shengwu, the son of one of the critical siblings and thus the prime minister’s nephew, to denounce a private post on his Facebook page as “an egregious and baseless attack on the Singapore judiciary” and one which “constitutes an offence of contempt of court”. It demanded that he should delete the post and apologise by July 28th. Mr Li, an economist at Harvard University (and a former intern at *The Economist*), had described the Singaporean government as “very litigious” and the country’s court system as “pliant” by way of explaining the cautious international coverage of his father’s allegations. “This constrains what the international media can usually report,” he said. Screenshots from his page began to be shared publicly.

Mr Li asked to be allowed to consider the request until August 4th; on that day he tweaked his message, but neither removed it nor said sorry. The attorney-general’s office duly filed an application in the High Court to start proceedings against him.

The case has drawn national and international attention to Mr Li’s views—far greater publicity than he could have expected otherwise. He says he has no political aspirations, believing instead that Singapore “must be bigger than one family”. But the family feud is now all that Singaporeans can talk about.



Not to be confused with Soapland



Muslim minorities (1)

Trampled by elephants

PATTANI

The first of two articles on the mistreatment of Muslim minorities looks at the grievances of Malays in southern Thailand

AT FIRST all seems well in the old centre of Pattani, a city surrounded by lush vegetation near the southern edge of Thailand. Shop buildings painted with bright purple, orange and blue rhombuses offer clove cigarettes, mobile phones, *abayas* and much more. But there is one jarring detail: vehicles park next to a low green wall down the middle of the street, not by the kerb. Car bombs are sufficiently common for parking to be shifted away from the multicoloured emporia to limit injuries and damage from the explosions.

Pattani used to be the capital of a Muslim sultanate that traded with China, Japan and Europe in its glory days. The current insurgency has its roots in the engulfing of the sultanate by Siam, as Thailand was then known, in the late 18th century. Resistance by the local, ethnically Malay population met cruelty: Thai generals ordered groups of men, women and children to be tied together and trampled to death by elephants, according to historical accounts. To this day the 3m or so inhabitants of the provinces of Pattani, Yala and Narathiwat, as well as nearby parts of Songkhla (see map) remain predominantly Muslim and Malay, an anomaly in a country that is mainly Buddhist and Thai.

Nonetheless, southern Thailand had been largely peaceful until 2001, when a series of mysterious attacks began, not only on police and soldiers, but also on civil servants, school teachers and Buddhist

monks—anyone, in short, seen as an agent of Thai imperialism. Locals had long bridled at the government's assimilation policies. Particular sore points included its refusal to recognise the Malay language (although locals speak little else) and its imposition on the region of bureaucrats from elsewhere in the country. One local businessman says government money for development goes missing too, harmful in an area which otherwise depends on the skinny white trunks of rubber trees to sustain its economy. The three provinces were the only southern ones to reject the ruling



junta's new constitution in a referendum last year—probably because of its directive that the government protect and nurture Buddhism but not other religions.

But the main grievance of southerners is the government's extraordinarily heavy-handed response to what began, at any rate, as sporadic assassinations by gunmen riding pillion on motorbikes. In a gruesome incident in 2004 the army detained hundreds of young men for protesting against other arrests; they were packed so tightly into trucks to be carted off to an army base that 78 of them suffocated. Extra-judicial killings by the security forces are commonplace, and the Thai government has yet to successfully prosecute anyone for them. Gauging the scale of abuse is difficult, in part because the authorities often pay off families of victims to pre-empt lawsuits. Torture is not a criminal offence, despite politicians' promises to make it one, and martial law in the region, first imposed more than a decade ago, makes it easy for young men suspected of militancy to be held for weeks arbitrarily. Many are beaten, suffocated with plastic bags, kicked, strangled and electrocuted, according to Human Rights Watch, a charity.

Over steamed cupcakes at the Pattani office of the Muslim Attorney Centre, Abduqahar Awaeputeh, a lawyer, explains that his organisation handles roughly 100 security-related cases every year. The security services have got better at disguising their handiwork, he says. One man detained by the army who sought the centre's help had to be carried into the office by relatives, although he appeared unharmed. "They made him stand up for two days straight," explains Mr Awaeputeh; "when he ate, when he slept, the whole time."

Feeble peace talks between the junta and a panel representing several militant movements have been under way since 2015. But little changes. Other attempts at dialogue, both public and private, have failed over the years as different Thai governments have approached different militant factions. In April the Barisan Revolusi Nasional (BRN), the most powerful insurgent group, released a rare statement criticising the current approach. It called for fresh talks in which it can have a direct role. Two months later the deputy minister of defence, Udomdej Sitabutr, admitted that the government may not have been working with "the right dialogue partners". Even if the process changes, however, many wonder how interested in peace the generals really are.

Granting a degree of political autonomy to the region could prove part of a solution, reckons Sidney Jones of the Institute for Policy Analysis of Conflict, a think-tank. Aceh, a province at the tip of the Indonesian island of Sumatra, provides an encouraging precedent. Years of violence ended after talks in 2005 gave it a special

status within Indonesia and allowed the armed resistance movement to contest local elections as a political party.

By the same token, in the Philippines, “the vast majority” of those joining insurgencies for autonomy or independence oppose jihadism, explains Ms Jones. The parochial nature of the conflict in places such as Pattani means that militants have little truck with international movements inspired by foreign strains of Islamic teach-

ing. This local focus also means that the plight of other Muslim minorities rarely inspires militants from one country to fight in internal conflicts elsewhere in the region. Rather, Muslims in troubled communities view others like them in South-East Asia rather as they do, say, Palestinians. “We have feelings for the global brotherhood of Islam,” says a member of the Pattani Provincial Islamic Committee. “But we don’t want violence, just quiet.” ■

leader, is a practising Buddhist.

Nonetheless, Ma Ba Tha’s fear-mongering finds many receptive ears. More than 2m people signed one of its petitions. “Muslims are cunning,” says a young Burmese in a tea shop. “They will outbreed us,” laments another. A taxi driver insists that Muslims never use his services: “Muslim money goes to Muslim businesses; that’s the way they think.” Such prejudices are common: a survey conducted in 2015 by the Myanmar Centre for Responsible Business, a non-profit, found that almost 90% of the hateful online posts they reviewed were directed at Muslims.

Wirathu’s ideas have also percolated through Myanmar’s government. The previous army-dominated parliament passed four laws in keeping with Ma Ba Tha’s agenda. Two are a sop to those who fear an army of Muslim babies: one allows local officials to order Muslim parents to wait up to three years before having another baby, while the other outlaws polygamy. The other two laws aim to reduce conversions, even though they are vanishingly rare: one requires people wanting to change religion to register with the authorities and submit to an interview; the other allows concerned third parties to prevent Buddhist women from marrying outside the faith.

The new, civilian government has not been much better. It has allowed bureaucrats to close mosques and Islamic schools in Yangon at the behest of angry mobs. When members of the evicted congregations prayed in the street in protest, several of them were charged with “threatening stability and the rule of law”.

“We feel like second-rate citizens,” says a veiled Muslim woman living in Yangon. “We have to be very careful: a simple incident can turn into a riot.” On July 4th in Rakhine, for instance, a Rohingya man was killed by a group of Buddhists amid an argument over the purchase of a boat.

In recent months the authorities have tried to curb the extremists. The State Sangha, a government-appointed body of monks, banned the use of the acronym Ma Ba Tha in May, saying the group had not been set up in accordance with the proper procedures. Wirathu has responded by saying that it is the government, not Ma Ba Tha, that must go. Sympathisers have already set up a new charity and a separate political party. The leader of the party, Maung Thway Chon, says its mission is to “make Myanmar great again”.

Miss Suu Kyi has little to say about all this. Some argue that speaking out would be counterproductive: as it is, angry monks began protesting earlier this month outside Myanmar’s most famous temple, the Shwedagon, accusing the government of failing to protect Buddhism. But in elections in 2015, her party, the National League for Democracy, did not put forward a single Muslim candidate for parliament. ■

Muslim minorities (2)

Mantras of hate

MANDALAY

Militant Buddhist monks are stoking sectarian tensions in Myanmar

INSIDE a Buddhist monastery in Mandalay five teenagers are looking at a poster, bemused. A graphic collage of photos depicts children’s corpses, monks covered in blood and enraged jihadists brandishing weapons. A monk in a maroon robe approaches. “This is a reminder of what Muslims are like,” he says.

Ashin Wirathu, the most famous resident of the Masoeyein monastery, expands on the theme during a break between meditation sessions. Buddhism, he explains, is in danger. Centuries ago, he points out, Indonesia was principally a Hindu and Buddhist country, but it has since “fallen” to Islam. The Philippines, meanwhile, is struggling with “hordes” of jihadists. Myanmar, he warns, is next. As the leader of the most extreme fringe of the Organisation for the Protection of Race and Religion, a Buddhist charity best known by its Burmese acronym, Ma Ba Tha, he is mounting a fierce campaign to rouse Burmese Buddhists to confront this danger.

Muslims make up about 4% of Myanmar’s 54m people. Some claim to be Bamar, the country’s main ethnic group. Others are the descendants of immigrants from India during the British colonial period. Perhaps 1m are Rohingyas, a community of Bengali origin living in Rakhine state near the border with Bangladesh (see map on previous page). They are stateless, and have been excluded from Myanmar’s official list of 135 indigenous ethnic groups. The authorities consider them illegal immigrants, even though they have lived in Myanmar for generations.

Indeed, by most accounts it is Muslims, and especially Rohingyas, who are under threat in Myanmar. In recent years there have been sporadic attacks on mosques and on Muslim homes and businesses. Sectarian clashes descended into a pogrom against Rohingyas in Rakhine state in 2012 that claimed some 200 lives, the vast

majority of them Muslims. Last year, after Muslim militants attacked several police posts in Rakhine, killing nine officers and stealing numerous weapons, the army went on a rampage. The UN and various human-rights groups say soldiers embarked on a campaign of rape, murder and other horrors, including the burning of Rohingya villages. Some 75,000 people have fled across the border into Bangladesh. Yet the authorities deny that the violence is widespread or systematic: this week they produced a report exonerating the security services.

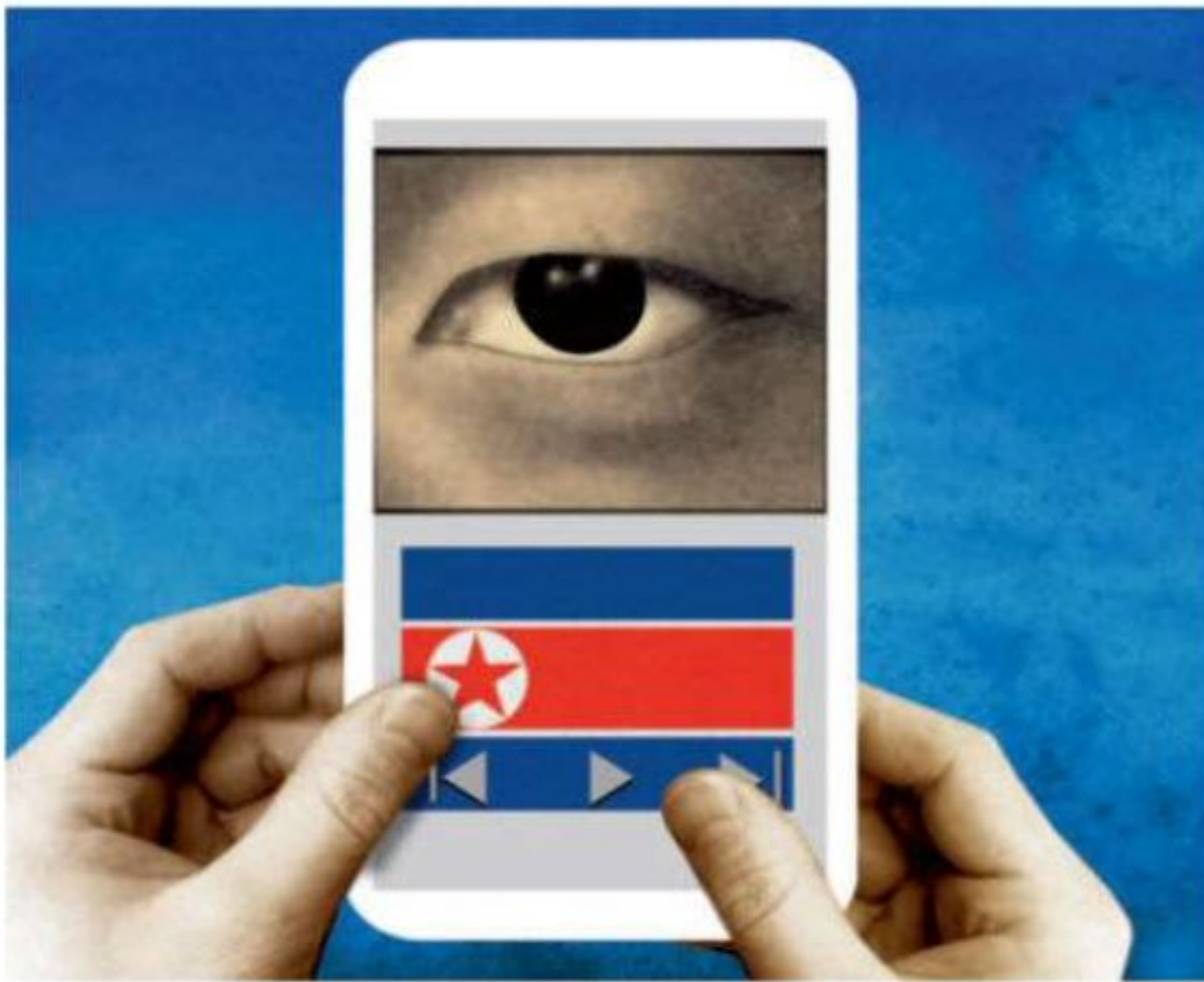
Buddhists account for almost 90% of Myanmar’s population. There is no evidence that their share of the population is declining. The monkhood, or *sangha*, is as popular as ever with an estimated 500,000 members—almost 1% of the population. Aung San Suu Kyi, the country’s



Alerting the world to Muslim misdeeds

Banyan | Phoney war

Smartphones help North Koreans keep track of what's going on; and the regime, of its people



THE world may think of North Korea as a “hermit kingdom”, but its 25m citizens are surprisingly wired. Perhaps half of all urban households now own a Chinese-made “notel”, a portable media player. Over 3m have mobile-phone subscriptions, with Northern-branded smartphones like the Pyongyang and the Ari-rang. South Korean NGOs that smuggle foreign films and TV shows into the North on USBs receive text messages from their contacts there with requests for specific titles (South Korean soaps and Hollywood dramas are popular).

The North Korean government, which has long relied on isolation to keep its wretched people in servitude, has nonetheless abetted this revolution. In 2008 it invited Orascom, an Egyptian telecoms firm, to develop a 3G network in a joint venture with a state-owned enterprise. There are now many more sanctioned North Korean mobile phones than illegal Chinese ones (which can pick up a signal near the border); many use them to conduct business on the black market, to which the state turns a blind eye, by checking prices elsewhere in the country. Notels, which can be bought for around \$50 on the black market, are also sold in state-run shops and appear to have been legalised in 2014.

If North Koreans are more easily able to trade information within their country, attempts to expunge information from elsewhere have never been so fierce. Since Kim Jong Un came to power in 2011, signal jammers for mobile phones have been set up along the border with China. These are so powerful that they have affected Chinese living on the other side. (North Koreans are banned from calling abroad.) CCTV cameras have also been installed to catch illicit callers.

Group 109, a new squad created by Mr Kim, frequently raids homes to crack down on foreign content, Chinese mobiles and short-wave radios. Of some 300 North Korean refugees surveyed in 2015 by America’s Broadcasting Board of Governors, almost two-thirds said that it had become more dangerous to watch foreign dramas under the young, Swiss-educated Mr Kim; none said it had become less so. Most North Koreans do not have access to the internet, and the few who are allowed to go online are limited to a state-run intranet with 28 tedious websites.

Nat Kretchun, one of the authors of “Compromising Connectivity”, a recent report on North Korea’s digitisation, says that the

state is arming itself with censorship methods that “go beyond what is observed even in other authoritarian states”. The toolkit he describes is sobering. The new 3G network allows the regime to automate surveillance through a home-grown operating system called Red Star. One update, rolled out in late 2013, made unsanctioned media files unreadable. TraceViewer, installed by default on North Korean phones, takes random screenshots of users’ devices. Yet another bit of software scans files for suspicious phrases and deletes them. Red Star also allows authorities to trace forbidden content from device to device, as it is copied from one friend to the next. New rules require North Koreans to register their notels, allowing the authorities to monitor them, too. Mr Kretchun thinks that, as it brings more North Koreans on to its own “clean” network of devices, the state may eventually ban notels altogether.

Many watchers believe that, if North Koreans had enough mobile phones, received enough outside news and saw enough soaps depicting the South’s freedoms and riches, the regime would founder. The example of East Germany is tantalising. Thae Yong Ho, a North Korean diplomat who defected to South Korea last year, says that the regime will “collapse on its own when enough external information introduced through drones or USBs reveals the truth of the Kim regime”. In a recent poll of defectors, 98% said they had used USBs to store illegal content.

Yet the jump from watching smuggled soaps to rising up against the government is a long one. Entertainment brings colour to dreary North Korean lives; rebellion brings death. And the work of activists ferreting content into North Korea is devilishly hard. Their methods are low-tech: floating sealed bags of USBs across the Yalu river on the Chinese border; sending balloons carrying DVDs over the heavily militarised border with the South. Some radio stations play content to recently arrived defectors to check that it is relevant. But few know what gets picked up. Some groups continue to promote ideological or incendiary content—such as clips of “The Interview”, a boorish comedy about an assassination attempt on Mr Kim—which may be more of a turn-off.

All the same, even sanctioned devices are allowing North Koreans to experiment with what they watch and say. As they continue to communicate about shared economic interests, they could one day form fledgling lobbies, perhaps first of traders, says Mr Kretchun. If the currency revaluation of 2009, which wiped out people’s savings, were to happen today, these new networks would be abuzz in an instant.

Soap operation

The state’s calculation is that technology will allow it to gain more control than it gives up. It can still dictate which kinds of handsets North Koreans use; it can terrorise its people with the threat of execution or the gulag; it can shut off the mobile network altogether. In 2004 it banned all mobiles after it concluded that one had been used to ignite a bomb at a railway station soon after a train carrying Kim Jong Il, Mr Kim’s father, had left. But part of the appeal of this new network to the regime is that it knows it can no longer keep all the information out, or its people from exchanging ideas. Better to monitor them.

In the meantime, foreign media will continue to fuel what young North Koreans have begun to call their “awakening”. There is a quiet defiance in enjoying foreign media and sharing it with a small group of friends, or complaining about the government’s attempts to block it. And defiance is rare in North Korea. ■



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Rural Hong Kong

Ding-dong

HONG KONG

A row over rural land rights pits democrats against backers of the Communist Party

HONG KONG'S serried ranks of high-rises, stuffed with small flats, are the epitome of modern city living. Yet more than half of the 1,100-square-km territory is green: outside the dense urban centres lie countryside and mountainous jungle dotted with ancient villages. Many are still inhabited by the clans who founded them hundreds of years ago. Families gather in ancestral halls bearing the names of their forefathers, who are buried in traditional horseshoe-shaped graves nearby, nestled at the spots on the hillsides with the most auspicious *feng shui*. By dint of this historical connection, some villagers receive a valuable and controversial privilege: the right to buy land at a discount from the government and to build a house on it, of a size most Hong Kongers would envy. The system has become a topic of fierce debate in the territory—a proxy war, in effect, between pro-democracy activists and the most powerful defender of the privileges: China's ruling Communist Party.

The party seized power in China 68 years ago on the back of a rural rebellion fuelled by hatred of landlords. In Hong Kong, however, the twists and turns of history have left it on the other side; the territory's rural landowners are a pillar of the party's support. They have a seat reserved for them in Hong Kong's quasi-parliament, the Legislative Council (or Legco). They also have 26 guaranteed seats in the 1,200-

member committee that elects Hong Kong's leader. In a territory bitterly divided between democrats and the party's backers, the party needs any friends it can get.

In recent months pro-democracy politicians have been mounting a vocal campaign against the rural landowners, whose privileges they consider deeply unfair. At issue is what is known, ironically enough, as the "small-house policy". This was introduced in 1972, a quarter-century before Britain handed Hong Kong back to China. It grants male villagers the right to build a house of up to three storeys on a plot of land in their ancestral village. If they have no land themselves, they can buy it from the government at a discount.

The lucky few

It is a policy wrapped in layers of unfairness. First, there is the obvious discrimination between men and women: the policy is exempt from Hong Kong's sex-discrimination laws. Then there is a further refinement: it applies only to "indigenous" men who can trace their ancestry through the male line to occupants of their village at the time when Britain took control (Hong Kongers often refer to these privileges as "ding rights"; *ding* means an adult male). Therein lies a third layer of inequity: the policy applies only to inhabitants of villages in the New Territories, a largely rural district of Hong Kong, much of which bor-

ders on Guangdong province. Britain acquired this area on lease from China in 1898, 56 years after it had seized the island of Hong Kong and nearly 40 years after it had expanded its control into Kowloon. Villagers in the rest of Hong Kong (there are very few of them) do not get the same deal.

By Hong Kong's standards, the "small houses" are palatial. They typically have a floor area of 2,100 square feet (195 square metres). The most common type of apartment built by developers in recent years, in contrast, is the "micro-home", of 215 square feet or less. To many urban Hong Kongers, who struggle to buy even such minuscule dwellings in what is one of the most unaffordable cities in the world, the small-house policy seems grossly unjust. Worse, it is often abused by villagers who make fortunes by illegally selling their *ding* rights to developers or by selling their houses, which can go for millions of dollars.

It is not clear how many people have unexercised *ding* rights. One recent study put the number at 90,000; an earlier one at 240,000. Recipients argue that the scheme is less generous than most Hong Kongers suppose. As homes can only be built in areas designated by the government, many villagers own land they are not allowed to build on. Some villages are running out of land for construction. It is not clear if the government will expand the amount available. What is more, most villages are not connected to the sewage system; some have no water or roads. Applications to build a small house can take years to be approved, and if their owners want to sell within five years they must pay a penalty to the government.

Few outside the villages are sympathetic. The New Territories are now home to half of Hong Kong's 7m people. Most live in small apartments in new towns; many live ▶▶

▶ in illegally subdivided flats or wait years for public housing. One of the leaders of the campaign against the villagers' economic and political privileges is Eddie Chu, a pro-democracy legislator and founder of a group called the Land Justice League. Mr Chu accuses rural landowners of hiring thugs to intimidate unfriendly politicians and adversaries in land disputes. Last year he received death threats after exposing hitherto unpublicised meetings between officials and landowners that had apparently resulted in a public-housing development being scaled back to avoid encroaching on villagers' land.

But Mr Chu is up against a powerful force: the Heung Yee Kuk, an advisory body to the government that holds considerable sway in rural politics. It is this body, usually known as the Kuk (meaning "council"), that represents the landowners in Legco and the election committee. The Kuk's leader, Kenneth Lau, inherited the position from his father in 2015. Lau Wong-fat, known to all as "Uncle Fat", was a rural patriarch who ran the Kuk for 35 years; he died in July. Mr Lau speaks proudly of how his ancestors resisted the British in 1898. But he has a lot to thank them for. Fifty years ago Hong Kong was shaken by violent pro-Communist protests against British rule. The colonial authorities created *ding* rights to reward the Kuk for its support and to win backing from villagers for plans to build new towns in rural areas.

To ensure the Kuk's loyalty to the post-colonial government, China all but endorsed *ding* rights when it drew up a mini-constitution for the territory, known as the Basic Law. Article 40 calls for the protection of "the lawful traditional rights and interests of the indigenous inhabitants" of the New Territories. Loyal the Kuk certainly is. During a recent visit by China's president, Xi Jinping, the Kuk flew 100,000 Chinese and Hong Kong flags in his honour in villages across the New Territories—even as supporters of greater democracy took to the streets in protest.

Mr Chu, the campaigner, says the government is unwilling to do battle with the rural landowners. Carrie Lam, who was sworn in by Mr Xi as Hong Kong's leader on July 1st, has experience of the risks of fighting them. In 2011, when Mrs Lam was head of the civil service, rural groups burned effigies of her after she suggested cracking down on illegal extensions that villagers had been adding to their houses. The Kuk seems determined to fight for *ding* rights too. Junius Ho, a legislator and member of the Kuk, can trace his family back 32 generations. He agrees that the small-house policy is contentious, but only because "people have sour grapes". Mr Ho accuses other politicians of "stirring up conflict" over the issue. His advice to the government is to process villagers' applications for *ding*-rights land more quickly. ■

Tourism

Love yurts

XILURAMEN, INNER MONGOLIA

Rich Chinese go glamping

A TOUR party of 30 people in red baseball caps piles off a coach at "Swan Lake", a yurt park in Inner Mongolia in the north of China. "I wanted to see the grasslands," says a woman from Kunming, 2,000km to the south, who is posing for photos beside a giant bronze statue of a pointy-helmeted Mongolian warrior on horseback. The "authentic Mongolian experience" costs 380 yuan (\$55) a night. Yet unlike traditional yurts with portable metal or wood frames overlaid with thick wool covers, these structures are made of sheet plastic and have beds, windows, Wi-Fi and en suite bathrooms. And instead of being dotted across the steppe, they are arranged in tightly packed clumps. Glamping, or glamorous camping, meaning camping minus the hassle and grunge, usually in pre-erected and well-appointed tents, is becoming a popular pursuit for city folk at beauty spots all over China.

The proliferation of glampsites partly reflects an overall rise in domestic tourism by 10-15% a year for much of the past decade. Rural tourism has been an important strand in this. The government has encouraged it, in the hope that it will help its campaign to cut poverty. Across the countryside *nongjiale*, or rural guesthouses, promote themselves as relaxing retreats from urban life. In Hunan in central China pods with transparent roofs offer campers a chance to enjoy "a special view of the sky". Other glampsites house customers in geodesic domes. New camp and caravan

parks are appearing all over the country. The government hopes a further 2,000 will open by 2020.

Most of China's glampers are not seeking glorious solitude. They seem unperturbed by experiencing the wilderness in crowds. The southern shore of Qinghai Lake in the eastern part of the Tibetan plateau is lined with a range of yurts, sleeping pods and other structures. A single campsite in Hubei can accommodate 8,000 people. Many offer entertainment too. The Swan Lake tourists enjoy Mongolian banquets and dancing in a giant concrete yurt.

While glamping has gained ground, China's genuine campers—nomadic herders—have been settled, often forcibly, under successive policies that have divided common land, banned free grazing and compelled households to move. Nearly half of China's 2m registered nomads had become sedentary by 2010 (the most recent date for which data exist). Most were members of one of China's ethnic minorities, including Tibetans, Mongolians and Kazakhs. The sightseers and campsite owners, by contrast, are usually ethnic Han, who make up some 92% of China's population.

The Chinese government boasts that relinquishing the nomadic lifestyle represents "enormous strides towards modernity" and refers to the annual migration of pastoralists' herds as a dangerous "ordeal". Yet in recent years herders have staged repeated protests at forced relocation, appropriation or pollution of their grazing lands and poor compensation. Many lack the skills to find work in cities; those remaining on the grasslands often struggle to make a living now that grazing has been curtailed. Some also see resettlement as part of a broader erosion of their ethnic identity. The happy glampers at Swan Lake and elsewhere, it seems safe to assume, are unaware of all that. ■



Beats the air in Beijing



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Kenya's disputed election

The tinderbox and the ballot

NAIROBI

A peaceful vote may be marred by violence as the opposition disputes the count

IN KIBERA, a slum in the south of Nairobi, Kenya's capital, the tyres were burning by mid-afternoon. Across the country five people had been killed in protests and other violence. Several of them were shot by the police. A day after Kenyans voted for president, this was a hint of the menace that often lurks beneath the country's elections. "It seems clear that somebody hacked this election," said Kennedy Mhando, a 34-year-old clothes seller. "We want the actual results...If they are credible, we will accept them." If not, "we will get the directives from our leaders."

On August 8th some 15m Kenyans voted in an election to fill 1,882 positions. A few hours after polls had closed, provisional results released by the election commission showed that Uhuru Kenyatta, the incumbent president, had amassed a commanding lead over his main rival, Raila Odinga: 54% of the vote to 45%. What was not clear, however, was whether Mr Odinga would accept defeat. At a press conference in an upmarket restaurant in Nairobi, the veteran opposition leader claimed that the preliminary results were a "complete fraud". The electronic voting system, he claimed, had been hacked to distort the tallies and to give Mr Kenyatta "votes that were not cast".

That statement left Kenya on tenterhooks. Since the restoration of multi-party

democracy in 1992, most of Kenya's elections have been fraught. Its citizens still tend to vote along tribal lines, hoping that candidates of their kin or region will be more likely to direct state spending towards them. Incumbents, meanwhile, use patronage and control of the machinery of government to help their campaigns. Losers seldom concede gracefully. Couple that with a deep distrust of state institutions, and political anger all too often turns into violence. After elections in 2007 a dispute over the result led to mass inter-ethnic bloodletting. Perhaps 1,400 people were killed and hundreds of thousands fled from their homes.

Many in Kenya fear that something similar could happen again. Mr Odinga is a stalwart of the opposition and the son of Oginga Odinga, Kenya's first vice-president after independence in 1963. Father and son were detained in the 1980s after they were accused of organising a failed coup against Kenya's then dictator, Daniel arap Moi. At 72, this is probably his last chance to become president. In the run-up to the vote he repeatedly told his supporters that the only way he could lose would be if the election were rigged. His coalition of opposition parties, the National Super Alliance (NASA), has repeatedly claimed to have uncovered plots to steal the vote. More worrying has been Mr Odinga's re-

fusal to discourage his supporters from protesting violently if he does not win.

Tension mounted a week before polling day, when Chris Msando, an official in charge of the electronic voting system, was found murdered—and apparently tortured. The Kenya Human Rights Commission, a local NGO, said that "many Kenyans believe elements within or close to the state to be responsible for this murder." The government strongly denies the accusation. The killing raised fears that a voting system designed to make fraud difficult (by insisting, for example, that individual voters be identified by their fingerprints) may have been compromised.

On polling day the system worked smoothly enough, with 15m people casting their ballots. Unlike in previous Kenyan elections, the votes were counted and local results were released fairly quickly.

Good on paper

Yet disputes have arisen over the national tabulation of votes. As *The Economist* went to press, Kenya was gripped by an obsession over the fate of forms labelled 34A. These paper documents, signed by election officials and party agents at each of Kenya's voting stations, represent the final and legally binding outcome of the vote. Mr Odinga's NASA coalition argues that the provisional electronic results, which showed a lead for Mr Kenyatta, are incorrect because the computers that collated them had been hacked. Mr Odinga's allies say that a manual tally of the paper forms would show a different result. Yet a small sample of these forms viewed by *The Economist* on August 9th tallied with the announced provisional results. It is only once more paper forms have come in that it will be possible to tell whether Mr Odinga's

Scions behaving badly

Lots not to like

JOHANNESBURG

Watching the offspring of African strongmen on social media

THE Mugabe brothers are having a night out again. Here they are showing off their outfits: distressed white denim, high-top sneakers, statement sunglasses. Now they're in a VIP booth at a club, swaying and swigging from bottles of Moët & Chandon while the music pumps. At some point they will post a flame emoji, indicating that the evening is "lit".

Like many millennials, Robert Mugabe junior and Bellarmine, his younger brother, shamelessly chronicle their days (and late nights) on Instagram, a social-media site for sharing pictures. Uniquely, however, their 93-year-old father is the president of Zimbabwe. The steady stream of photos and videos they post offers an unusual and oddly intimate window into their privileged personal lives. Lately the two brothers appear to be spending much of their time in Johannesburg. Life is more "lit" there than back home in Zimbabwe, where their father has ruined the economy.

The Mugabe brothers are not the only scions of African strongmen who are tactless about what they share on social media. Lawrence Lual Malong Yor junior, the stepson of a South Sudanese general, documents his love of luxury on Facebook with photos of himself flying first-class and getting hot-stone massages. One video shows him lying in a pile of \$100 bills (which he claims make up \$1m that he will donate to charity).

Teodoro Nguema Obiang Mangue, the son of the president of Equatorial Guinea (and coincidentally also the vice-president) posts photos of himself luxuriating in private jets, posing behind the wheels of fancy cars, at parties and on exotic foreign trips. A photo from his recent 1920s-themed birthday bash shows a woman jumping out of a giant

cake. He appears undeterred by his trial in France, where he is accused of embezzling more than \$100m from public funds and spending it on his high-flying lifestyle. Mr Obiang claimed that he has immunity from prosecution. A verdict is expected in October.

The active social lives of the two youngest Mugabe brothers have not gone unnoticed back home. The People's Democratic Party, which is led by a former finance minister, Tendai Biti, has accused them of "spending taxpayers' money like confetti".

Despots' brats do not only use social media for boasting. Robert Mugabe junior's Instagram account has, at times, provided helpful updates on the health of his father, a matter of national importance given the president's faltering grip on power. On one occasion the younger Mr Mugabe kindly informed the world that the nonagenarian was "healthy and alive...so all the haters can RIP."



► claims are credible. But that could take until August 15th, the legal deadline for the election commission to announce the final results and declare the winners.

Michael Chege, a political scientist at the University of Nairobi, says that Mr Odinga may use allegations that the vote was rigged to incite his supporters to take to the streets as a way of forcing the government to make concessions. "This is the guy who organised a failed coup d'état in 1982," says Mr Chege. "It's not beyond him to test this situation to the limit."

Though Kenya is no stranger to vote rigging, such is Mr Kenyatta's lead that it will

be difficult to show that he stole the election, even if minor discrepancies emerge between the paper forms and the electronic tally. Assuming there is not a big gap between the two, foreign governments will press Mr Odinga to concede.

Whether that will convince his supporters to stand down is hard to predict. If they do not, the police and army—some 180,000 of whom stand ready—will have a tough job keeping the peace. And the underlying lack of trust in democratic institutions that makes every election a tinderbox will need to be addressed. If it is not, the next election in 2022 will be just as fraught. ■

Iraqi Kurdistan

Inching towards Kexit

ERBIL AND KIRKUK

A referendum on Kurdish independence carries great risks

THE enormous new statue of a peshmerga soldier, overlooking the Baba Gurgur oilfield, just outside Kirkuk, is a stark indication of the Iraqi Kurds' aspirations to establish an independent state with borders that stretch beyond their historic homeland to encompass some of Iraq's richest oilfields. A referendum on independence scheduled for September 25th will probably move the Kurdish Regional Government (KRG) further down that path. But the timing of the poll has been questioned, not least because it is unclear what will come after. Some fear that a vote for independence will elicit violent responses from the government in Baghdad and from neighbouring countries.

Iraqi Kurdistan, which has enjoyed relative autonomy since 1991, already has many of the trappings of a sovereign country, including an army, a parliament and its own domain on the internet. After Baghdad withheld budget payments to the region in 2014, the KRG began selling its crude independently of the federal government. Its resources were further boosted months later after Iraq's federal army fled the oil region in and around Kirkuk when it was threatened by the jihadists of Islamic State (IS). The job of repelling IS then fell to Kurdish militias, known as the peshmerga, who did it bravely and well.

Even so, some Kurds argue that a bid for independence is premature. "Beforehand we need to have Kurdish unity and some sort of an understanding with Baghdad," says Mahmoud Othman, a veteran politician. "We do not have either." The peshmerga is a unified force only on paper. Its fighters' loyalties are divided between the ruling Kurdistan Democratic Party (KDP) and the opposition Patriotic Union of Kurdistan. Parliament has not convened since 2015, when Masoud Barzani, the president, had his term extended for a second time, prompting violent protests and political deadlock. Some see the referendum as an attempt by the KDP to shore up nationalist support ahead of elections in November.

The economy is also in a shambles. Revenue from oil is much less than the 17% share of Iraq's budget to which the KRG was entitled before its relationship with the federal government broke down. So the Kurdish government is short of cash. Firms that poured into the region in the 2000s have been pouring out. The KRG blames the crisis on cheap oil and the high cost of fighting IS and hosting some 1.8m ►►

▶ refugees. Critics also blame official incompetence and corruption.

Another question revolves around Kirkuk, which has a Kurdish majority but is also home to Arabs and Turkmen and is prized by all because of its oil. The KRG has long accused Baghdad of flouting a constitutional provision that calls for a local vote on the province's status. By including Kirkuk in the referendum next month, it hopes to legitimise its claim over the territory. "If the people say yes, it means they are deciding to be part of Kurdistan," says Rebwar Talabani, the head of Kirkuk's provincial council. But many non-Kurdish residents are planning to boycott the vote. "We will not recognise any result," says Hassan Toran, an Iraqi Turkmen MP. "Our future is in Iraq."

Winning over regional powers will be even harder. Turkey has cracked down on home-grown Kurdish militants and has carried out air strikes on Kurdish forces in Syria. It opposes the formation of an independent Kurdish state in Iraq lest it encourage separatists at home. Iran appears even more hostile to such a move, largely for similar reasons. Even the Kurds' closest allies are urging them to postpone the vote. America worries it will lead to turmoil in the rest of Iraq, weakening the country's prime minister, Haider al-Abadi, and compromising the war against IS.

KRG leaders say they are in no hurry to declare independence, but they do plan to head to Baghdad after the vote to hammer out the terms of the divorce. It will not be amicable. Mr Abadi's government will not sanction what it sees as a grab for oil and land, particularly Kirkuk. "There is a risk that the Arabs, the Turkmen and the Shia will protest and that Baghdad, backed by Iran, will send in militias or security forces," says Joost Hiltermann of the International Crisis Group, a think-tank.

Some analysts think Mr Barzani will postpone the referendum at the last minute. But Kurdish politicians are growing impatient. "We cannot wait for the right time [for independence], we have to create the right time," says Safeen Dizayee, the KRG's spokesperson. ■



Hizbullah

When the guns come home

ARSAL

Hizbullah's arsenal is growing. So are Israeli fears

FROM a rocky outcrop overlooking a limestone quarry in the desolate valley below, a fighter from Hizbullah surveys what just days before had been territory controlled by militants linked to al-Qaeda. "There were snipers behind every rock," recalls the young man with a wispy moustache. The operation to drive the jihadists from their mountain lair on Lebanon's north-east border with Syria began on July 21st. It took only a week for Hizbullah to defeat its militant rivals, adding yet another victory to its growing list of military achievements since war broke out in Syria six years ago.

Along with Russian air power and Iranian military aid, Hizbullah's ground units have kept the regime of Bashar al-Assad, Syria's blood-soaked president, in power. The cost has been high. About 2,000 of the group's fighters, out of a total of perhaps 15,000 (excluding reservists), have died on Syria's front lines. But the conflict has also transformed Hizbullah, a Lebanese militia-cum-political party. Hardened by the fighting and flush with arms from Iran, it now more closely resembles a regular—and quite effective—army. That worries Israel, its traditional adversary.

Hizbullah's roots date back to the early 1980s, when Iran's Revolutionary Guard trained Shia militants to harass the Israeli soldiers then occupying southern Lebanon. The group honed its guerrilla tactics, including car bombs and assassinations, during Lebanon's civil war. It claimed vic-



tory when Israeli forces withdrew from the south in 2000 and fought them to a bloody stalemate again six years later. But during its campaign in Syria Hizbullah has adopted more conventional tactics, and gained a bigger arsenal. It has used tanks, guided missiles and a fleet of drones and fought across deserts, mountains and cities.

Israeli officials report, with some alarm, that Hizbullah has 17 times more rockets than it did a decade ago. The weapons are also more sophisticated, and are said to include anti-aircraft missiles. Hassan Nasrallah, Hizbullah's leader, says his rockets can now reach anywhere in Israel, including its ▶▶

▶ nuclear reactor in the south and a chemical plant in the north. Israeli war planners are taking the boast seriously.

So far Israel has confined its response to actions inside Syria, where it has occasionally bombed weapons caches and Iranian arms convoys bound for Hizbullah. But Israeli officials say Iran is now building missile factories inside Lebanon. That could provoke Israeli strikes within the country. Iranian efforts to build up Hizbullah and other proxy forces on the Syrian side of the Golan Heights—thus opening up a second front against Israel—may also trigger a tougher Israeli response that could spark another conflict.

Both sides have reason to fear that the next war may be even worse than the last. Israel argues that the line between the Lebanese state and Hizbullah has blurred in recent years. So if the group launches attacks, Israel should send the entire country “back to the Middle Ages”, says Naftali Bennett, the education minister. Factories, power plants and other major infrastructure are legitimate targets, he says. Mr Nasrallah says he will muster “hundreds of thousands” of volunteers from across the Arab world to fight Israel. A miscalculation by either side could prove devastating.

New friends, with benefits

Hizbullah’s pan-Arab appeal has been damaged by its role in Syria’s sectarian-hued conflict. But it is growing stronger in Lebanon, where it has built new alliances. The group, which is Shia, has stoked Christian fears of Sunni refugees from Syria, who now make up around a quarter of Lebanon’s population. Michel Aoun, the Christian president, has allied himself with Hizbullah’s political wing. Mr Aoun says Hizbullah has a right to keep its weapons to protect Lebanon from Israel, infuriating politicians who want to disarm it. The cabinet is stacked with Hizbullah allies who support the regime in Syria and want it to take back the refugees.

This new political landscape is nowhere more apparent than in the Lebanese border village of Ras Baalbek. Jihadists from Syria infiltrated the Christian enclave in 2014. The local economy suffered as the limestone quarries and hunting lodges closed and the orchards withered. Hizbullah seized the opportunity, sending weapons, night-vision goggles and advisers to help the Christians form a militia to keep the jihadists at bay.

“Israel caricatures Hizbullah as a terrorist organisation,” says Rifaat Nasrallah, the Christian militia’s leader (and no relation of Hassan). “But the resistance is not some external force that comes to terrorise us. They are part of our society. They attend our weddings and funerals. They take care of me and I take care of them.” Alliances forged in the furnace of Syria’s war may be hard to break. ■

Israeli politics

Prime suspect

JERUSALEM

Binyamin Netanyahu’s growing legal troubles

THERE seems to be no end to the legal troubles piling up around Israel’s prime minister, Binyamin Netanyahu, his family and close circle. In the space of a week his former chief of staff, Ari Harow, signed a witness deal with the prosecutor’s office and police confirmed that they are investigating a case of bribery, fraud and breach of trust in which Mr Netanyahu is a suspect. His wife Sara has been questioned by police over allegations of misuse of public funds and his son Yair has been sued for libel over a post on Facebook.

Mr Harow, who worked with Mr Netanyahu for more than a decade, agreed to testify in return for a reduced sentence in his own trial on charges of defrauding the tax authorities. His testimony is expected to serve as evidence against Mr Netanyahu, who is suspected of receiving illicit gifts from businessmen. The prime minister is also suspected of a backroom deal in which he offered to limit the distribution of *Israel Hayom* (a free sheet financed by Sheldon Adelson, an American billionaire and supporter) in exchange for favourable coverage in a newspaper owned by Arnon Mozes. On August 7th Israel’s high court ruled that Mr Netanyahu must make public records of phone calls with Mr Adelson.

Mr Harow may also shed light on two other, potentially more serious, investigations that involve close associates of Mr Netanyahu. His personal attorney of nearly four decades is suspected of taking

bribes in return for facilitating the sale of German submarines and warships to the Israeli navy. Another former chief of staff, Shlomo Filber, was suspended from his job at the communications ministry over accusations that he provided Israel’s largest telecom company with confidential documents from which it stood to gain. The prime minister, so far, is not a suspect in either case.

Weekly protests aim to keep the pressure on Avichai Mandelblit, the attorney-general. Nevertheless, the investigations involving Mr Netanyahu have dragged on for over a year. Meanwhile, the prime minister and his supporters have adopted Trumpian tactics. On his social media accounts Mr Netanyahu has branded the Israeli press as “fake news”; loyalists accuse it of trying to bring down the elected government. Even right-wingers who have been critical of Mr Netanyahu in the past have fallen dutifully into line. “Neither the media, nor the protests against the attorney-general should decide, only facts [should]”, said Naftali Bennett, the education minister, who is seen as a political rival of the prime minister. “We’re supporting the Netanyahu government and my assessment is that elections will take place on time in 2019.”

Despite the intensifying investigations, Mr Netanyahu may well hold on that long. Once the police wrap up their probes, it will be up to the attorney-general to make the call on indictments after holding hearings with the suspects. The process can take months. And even if indicted, Mr Netanyahu says he plans to remain in office and fight the charges. Under Israeli law the prime minister is not required to resign unless convicted. As long as his coalition of right-wing and religious parties sticks together, he is unlikely to be forced out before the next election. ■



Don't bother me, I'm reading the fake news

Europe



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War games in Europe

Mr Putin flexes his muscles

Why Russia's forthcoming military exercise rings alarm bells in NATO

SEPTEMBER will be an edgy time for NATO's front-line member states. For a week in the middle of the month, Russia will be running what is being described as the biggest military exercise in Europe since the end of the cold war. The build-up is already under way.

Zapad ("West") exercises take place every four years and date from Soviet times, when they were used to test new weapons and tactics. Zapad 2017 is expected to involve at least 100,000 Russian troops. It will extend across the country's Western Military District and Belarus, which has a border with three NATO members. By next week, most of the advance elements of the forces taking part in the exercise will have arrived. The rest, expected a fortnight later, will include the First Guards Tank Army, a famous unit from the second world war that was reformed in 2015. It packs a mighty offensive punch.

Previous Zapads alarmed NATO because of their size and because of the kind of war game they have played out—one in 2009 included a simulated nuclear attack on Warsaw. But this year's is the first to be held since Russia's aggression against Ukraine. It unfolds against the backdrop of a relationship with the West more tense and adversarial than at any time in 30 years.

Earlier this year, as part of its response to Russia's annexation of Crimea and covert invasion of eastern Ukraine, NATO deployed four battalion-sized battle-groups to Poland, Estonia, Latvia and Lithuania.



Essentially a tripwire consisting of only about 4,000 troops, these multinational units are meant to send a message to Moscow that if it tries anything against a NATO member in the east, it will quickly face the whole alliance. Last month an American-led NATO exercise called Sabre Guardian saw 25,000 troops from more than 20 countries carrying out drills across Hungary, Romania and Bulgaria. The idea was to practise territorial defence against a technologically sophisticated aggressor.

Yet there are big differences between the way NATO conducts military exercises and the way Russia does. Zapad apart, since 2013 Russia's president, Vladimir Putin, has ordered a series of no-notice "snap" exercises, often involving up to 50,000 troops and anti-Western scenarios.

There is little doubt that Mr Putin sees these not just as a means of honing efficiency, but as a way to intimidate smaller neighbours and eventually draw them into a sphere of Russian influence.

Four such drills took place in 2013. A fifth, which began in late February 2014 and deployed large numbers of airborne troops, armoured vehicles and attack helicopters, became the springboard for the occupation of Crimea. Even before he turned to snap drills, Mr Putin used an earlier exercise, Kavkaz 2008, to launch his invasion of Georgia. Military deception, or *maskirovka*, is an art at which he excels.

General Ben Hodges, the commander of American forces in Europe, frets that Russia may be planning to use Zapad 2017 to bring soldiers and kit into Belarus and leave them there. Last month he said: "People are worried this is a Trojan horse. They [the Russians] say, 'We're just doing an exercise,' and then all of a sudden they've moved all these people and capabilities somewhere." In particular, NATO is worried about the movement of longer-range missiles, surveillance drones and special forces into threatening positions under the pretext of the exercise.

There are even fears, based on intelligence sources, that Zapad 2017 could be used to insert forces into Belarus that would shore up Russian influence in the event that its dictator, Alexander Lukashenko, either moves closer to the West or is deposed by someone careless of Moscow's interests. Russia's deputy foreign minister, Grigory Karasin, responded to General Hodge's remarks as might have been expected. "This artificial buffoonery over the routine Zapad 2017 exercises", he said, "is aimed at justifying the sharp intensification of the NATO bloc [activities] along the perimeter of Russian territory."

Russia has brought suspicion on itself. It routinely flouts the Vienna Document, an

► accord designed to avert misunderstandings during war games. Brokered through the Organisation for Security and Co-operation in Europe, it fosters transparency. Any drill involving more than 9,000 troops requires advance notification of at least 42 days; any exercise involving more than 13,000 troops must be preceded by an invitation to the other 56 participating states to send two observers.

Russia breaks both rules with its snap exercises, and the second with Zapad. As a cynical way of dodging its obligations, it often claims to be holding a series of different drills at slightly different times. At the last meeting, in July, of the NATO-Russia Council, a body set up 15 years ago to improve co-operation and understanding between the alliance and Moscow, both sides did at least give briefings on planned exercises.

However, NATO's secretary-general, Jens Stoltenberg, a former prime minister of Norway, was doubtful about the reported numbers for Zapad and urged Russia to obey the Vienna rules. His scepticism is well-founded. The Russians said before the last Zapad that it would involve just 12,000 troops. In fact, more than six times as many took part. Estonia's defence minister, Margus Tsahkna, recently revealed that Russia has requisitioned 4,000 railway carriages to take troops and equipment to Belarus.

Especially galling for NATO is the way Russia uses the Vienna Document to ensure it has its full complement of observers at its perceived enemy's big exercises. All NATO can do is remain vigilant and hope Mr Putin sends his troops back to barracks when Zapad is over. General Hodges says: "Look, we'll be ready; we'll be prepared. But we're not going to be up on the parapets waiting for something to happen." ■

A Croatian firm's collapse

Chain reaction

ZAGREB

A supermarket's demise could make a whole region sag

IN CROATIA idyllic scenes can alter quickly. On good days, its holiday resorts are a haven for swimmers and sailors. But only a few miles inland, there are barren mountains where tempests can blow up fast and then whistle along the coast. This year (see next story) fires were an added hazard.

A particularly dark storm-cloud is now hanging over the country's business world, with the potential to depress the entire region, spoiling the optimism spurred by good tourist numbers and signs of accelerating growth. This follows the collapse into state hands of a food-and-retail chain whose myriad customers and creditors are

still waiting to see the scope of the disaster.

Agrokor was the biggest private concern in Croatia and the western Balkans. It epitomised a cosy relationship between state and business that goes back to communist Yugoslavia and its aftermath. Its founder, Ivica Todoric, lives in a castle; he was a friend of Franjo Tudjman, the nationalist president who led the Croats through independence and war. With 700 Konzum supermarkets across Croatia, Agrokor is omnipresent in its homeland and active throughout the region.

In April, faced with huge debts, irate lenders and sceptical suppliers, Mr Todoric said he was "putting everything he had built" into the hands of the government. He is still technically the owner, but under a specially-passed law, the state is the administrator. This marks "the end of an era which began 25 years ago", says Ante Ramljak, who is winding up the group.

The figures are extraordinary, given that the population of Croatia is barely 4m and that of the whole post-Yugoslav region about 20m. The Agrokor holding company comprises 143 firms, which employ nearly 57,000 people directly. If you include suppliers and everyone whose job would be affected by a chaotic collapse, says Mr Ramljak, up to 500,000 might be caught up in the mayhem. If everything the group owned were to close, he adds, Croatia's economy might shrink by 10% or more. According to the European Bank for Reconstruction and Development, the conglomerate's outstanding obligations are the equivalent of almost 15% of Croatia's GDP.

Only a few years ago, Agrokor was a flagship of Croatian business. In the 1990s, when the country was embattled and isolated, outsiders shied away from investing but Mr Todoric scooped up parts of the old communist economy. Compared with the asset-strippers who swept through Croatia at that time, he was seen as a positive force, bent on modernising the retail business.

As Agrokor expanded across the region, says Dejan Jovic, a political scientist, it was hailed as a symbol of Croatian prowess. Politicians of all stripes backed Mr Todoric. Zdravko Maric, Croatia's finance minister, worked for Agrokor until last year. The press gave the magnate an easy ride; it feared a loss of advertising, or being dropped by kiosks he controlled.

In 2014, Agrokor bought Mercator, a faltering Slovenian retail giant with outlets across the region. Croats bristled with pride, but this sentiment was misplaced. By that time, Konzum faced keen competition from foreign rivals as Croatia's market opened up after joining the EU in 2013.

The Mercator deal, financed by borrowing, proved far too big for Agrokor to swallow. While domestic and foreign banks began to shy away from it, Russian ones stepped in. That turned out to be a mistake. Sberbank, the Russian savings bank which

is the biggest single creditor, is owed €1.1bn (\$1.3bn) and has initiated a case against Mr Todoric for fraud. Sberbank has criticised Mr Ramljak for entering "roll-up" deals with some creditors to get fresh finance.

Agrokor's known debts of at least €6.74bn (\$7.9bn) are eye-watering enough, but until audits for suspected irregularities are completed, people will worry that the total could be larger, and nobody is really sure how much its assets are worth.

On July 27th Mr Ramljak began paying off debts to small suppliers, a drop in the ocean of what is owed. Agrokor sourced a high share of its food from local growers who resented the group's power but needed its custom, says Tihomir Jaic, head of the Croatian Farmers' Association. Next year many will offer their produce to other retailers, but their prevailing mood is fear.

The biggest fear is that the accounts will turn out to be such a mess that Mr Ramljak's efforts to cushion the blow will have little chance of succeeding. If that happens, the region could slide back into the long recession from which it was just emerging. ■

Drought in the Mediterranean

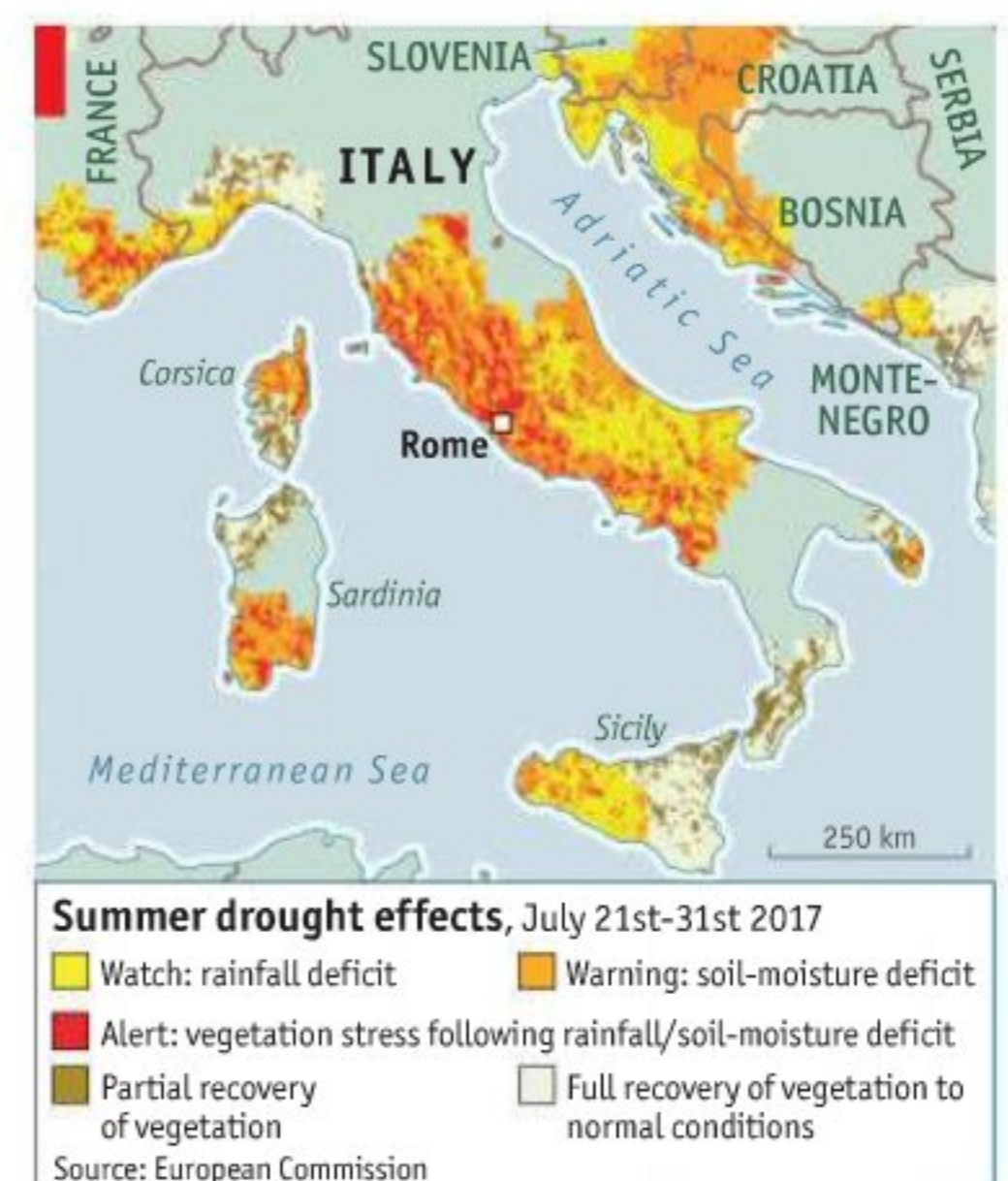
Nor any drop to drink

ROME

Across Europe's south, arid spells are here to stay

THE Gonella Hut, more than 3,000 metres up on the Italian side of Monte Bianco, should be bustling with climbers in August. Instead, it is empty. Davide Gonella, the manager, closed it at the end of last month for lack of water.

"The snowfield we use for our supply had gone," he says. The high summer temperatures that have seared southern Europe this year were only partly to blame. ►►



▶ When he reopened his refuge in early June, Mr Gonella could already see the snowfield was much smaller than usual, because so little snow had fallen last winter.

It is a story repeated with variations from the north-western edge of Spain to the south-eastern tip of Italy. At Bracciano outside Rome, rainfall in the first half of the year was more than 80% below its ten-year average. This has shrunk the lake of the same name, which is the capital's main water source. By late July Lake Bracciano was only 10cm above the level at which government scientists see a real risk of an ecological collapse, making water undrinkable without costly purification. A regional government ban on drawing further supplies from the lake was partially suspended on July 28th, averting the threat of eight-hour-a-day stoppages in the capital. But the ban will resume on September 1st, just as consumption revives with the return of Romans from their summer holidays.

Agriculture has been badly hit. Farmers in Castilla y León, Spain's largest cereal-growing region, expect to lose 60-70% of their crops. The drought has also encouraged forest fires. More than 10,000 people were evacuated from homes and campsites in July because of a huge blaze in south-eastern France. Fires have raged this summer in Corsica, along the Adriatic coast and on the Greek island of Kythera.

Even so, says Jürgen Vogt of the Commission's European Drought Observatory, the current emergency is not more serious than others in recent years. Nor, surprisingly, have scientists agreed on whether the intensity and frequency of droughts is increasing in Europe. Against a background of global warming, that might seem inevitable. But since evaporation (from sea, lakes and rivers) and evapotranspiration (from the land) lead to increased rainfall, higher temperatures do not necessarily cause more droughts. Problems do arise if the offsetting rainfall is unevenly distributed—as seems to be the case in Europe. Evidence has mounted over the past 30-odd years of a shift towards wetter winters in northern Europe and, says Mr Vogt, of “drier conditions in the Mediterranean, especially in spring and summer, the critical times of year for drought”.

Gregor Gregoric, who co-ordinates the Drought Management Centre for South-eastern Europe, says that since the 1980s that region has suffered a significant drought on average every five years. Even his lush Slovenian homeland has been hit.

“The problem is that agriculture is not adjusting,” he says. Traditionally, Slovenian farmers have eschewed irrigation. It was difficult to convince them they might need it now, if only to fall back on. Nor were they keen to diversify crops to include strains less sensitive to drought. “Farmers are quite conservative people,” sighs Mr Gregoric. Unless there is a strong

reason to change, they are inclined to follow the same methods as their fathers and grandfathers did.

They are not the only ones who must adapt to new realities. Mediterranean droughts have been seen hitherto as freak events, but that no longer holds good, says the EDO's Mr Vogt. The challenge is not one of coping with emergencies, but of risk management for the indefinite future. ■



Freedom for the Faroes

Fishing for liberty

TORSHAVN

If at first you don't secede

EVERY summer, Majbritt Jakobsen spends more time at her sewing machine. She makes the woollen breeches, skirts and embroidered waistcoats the Faroese wear for Olavsoka, a midsummer holiday of parades, dancing and ballad recitals. Demand is booming, even from fashion-conscious youngsters. A few years ago, she would stop taking orders in May. This year, it was February. She worked 16-hour days to get the outfits ready.

The Faroes, a remote cluster of rocks, are now cool. Politicians fretted for years about a shrinking population; these days more people are settling than leaving. There are 50,000 islanders, a record high, though they are still outnumbered by 80,000 sheep. Tourism is up, as brave foodies sample fermented lamb and puffin stuffed with cake. National pride is surging, claims Mrs Jakobsen. “We will put the Faroe Islands on the map,” she says.

Secessionists want to seize the mo-

ment. They have been smarting since 1946, when islanders narrowly voted for independence from Denmark, which has ruled the Faroes (at first in a union with Norway) for six centuries. The Danish government rejected the referendum and dissolved the islands' parliament. The Faroes won home rule two years later, yet Copenhagen, located 800 miles away, still controls the currency, foreign affairs and some of the courts.

Republicans want the islanders to adopt their own constitution. Four tries to introduce one failed, but they persist. Last month, the government—a coalition of traditionally unionist Social Democrats and pro-independence Republican and Progressive parties—issued a new draft. It wants parliament to back a referendum on the text, pencilled in for next April.

The nine-page charter is not exactly a divorce letter. It echoes the entitlements already conferred by the Danish version, as well as enshrining the Faroese language and outlawing sex discrimination. Denmark accepts the Faroes' right to a constitution, so long as it does not clash with its own. Yet the draft has no clear mention of Denmark and offers paths to more autonomy. Social Democrats see it as desirable in its own right; both secessionists and unionists regard it as a possible step towards independence.

Republicans say there has never been a better time to dump Denmark. The economy is surging, thanks to rising fish prices. Fishermen have found new markets in America, China and Russia. Faroese GDP per head equals that of Iceland, a former Danish possession, and trumps Britain's. Unemployment is negligible. The government relies less than ever on subsidies from Denmark, which last year totalled 642m Danish kroner (\$102m). The block grant has shrunk from 11.2% of GDP in 2000 to 3.3% in 2017. Kristina Hafoss, the finance minister and a Republican, complains that Danish ministers do not root for the Faroes in global negotiations; they won't defend whale-hunting, for example. Unionists say the economy is too small to flourish alone: at some point, low fish prices or overfishing could cause a slump. When catches sagged in the 1990s, government debt soared and GDP shrank by 40%. A survey last year, by Gallup Foroyar, a pollster, showed a slim pro-union majority, even when respondents were asked to ignore the Danish subsidy. Yet in another poll, this year, most islanders favoured independence by 2035.

A constitutional referendum would test support for independence, but the ballot may be shelved. Unionists dislike the draft and want big changes. The ruling coalition has the slimmest possible majority and is mired in controversial fishing reforms. It will be hard to get enough lawmakers to endorse the poll. Yet again, the prize catch could slip through the net. ■

Charlemagne | France v Italy

A Latin love-hate story



CAST your mind back to July 9th, 2006. Italy had just won the World Cup. Charlemagne was in Rome and joined the rumbustious football fans marching through the centre. A great victory, he said to the young woman next to him. “Yes,” she shot back. “And all the better for having been won against the French.”

France and Italy are no exception to the rule that a country’s relations are often trickiest with its immediate neighbour. The final had seen an Italian flattened in a style that would have made Asterix and Obelix proud. In extra time, with the French unable to penetrate Italy’s tight defence, their star player, Zinedine Zidane, turned on the man marking him, Marco Materazzi, and head-butted him. Mr Zidane had been provoked: Mr Materazzi later admitted that he “spoke about his [opponent’s] sister”. But it was still a brutal piece of retaliation, and Mr Zidane was sent off.

Italians—or at least Italy’s chattering classes—feel as if they are getting similar treatment from France’s new president, Emmanuel Macron. At a meeting with Italy’s prime minister, Paolo Gentiloni, on July 12th, he refused to help his neighbour cope with the growing problem of up to 200,000 migrants blocked in Italy by the effects of EU policy, and by the French decision in late 2015 to close its border to migrants from the south. Then, apparently without consulting Rome, Mr Macron arranged a meeting on July 25th between the two main rivals for power in Libya, the country from which most of the migrants depart, and one that Rome has always seen as crucial to its interests. Two days later the new man in the Élysée blocked an Italian shipbuilding firm, Fincantieri, from taking control of a French shipyard at Saint Nazaire, citing dubious national-security concerns.

To see why such injuries hurt, remember that all Italy’s relations with other big, continental states are coloured by history. Fractured into mini-states except in the south, the territory of present-day Italy was once easy prey for the centralised powers, including France, which began to flex their muscles in the late 15th century. It was a French invasion that began the so-called Italian Wars in which the peninsula was mortifyingly reduced to a battlefield on which Europe’s rival powers slugged it out.

Another French invasion, in 1796, put Italy at the mercy of Napoleon Bonaparte and gave rise to the practice, which has since become widespread, of well-organised looting by victors of the

cultural treasures of the vanquished. The first military unit tasked with seizing and exporting works of art was set up during Napoleon’s Italian campaign. Venice, Parma, Mantua, Modena and Milan were all looted by the French.

The treaty in which the Papal State sued for peace stipulated that it was to hand over “A hundred pictures, busts, vases, or statues to be selected by [French experts]... also, five hundred manuscripts”. Though most of what was stolen was later repatriated, the biggest work in the Louvre, Veronese’s “The Wedding at Cana”, is the fruit of Napoleon’s depredation.

But the interaction between France and Italy has not always been hostile. Napoleon III was the main external sponsor of Italy’s unification. Its leading internal protagonist was a kingdom that had straddled the Alps for centuries, taking in Savoy to the west and Piedmont to the east. The Italians had to pay a price to France for its intervention; that’s why Nizza is today the French city of Nice, and Savoy is split between two French departments.

But if Italy leaks into France, the reverse is also true. More than three-quarters of people in an autonomous pocket of Italy called Valle d’Aosta speak either French or a Franco-Provençal patois.

What unites the two countries often seems far more substantial than what divides them—an innate sense of elegance, a passion for gastronomy and proud histories of artistic and intellectual attainment. But all that, says Franco Venturini, is precisely what bedevils their relations. France and Italy both consider themselves the cultural superpower of Europe and the result is reciprocal jealousy. For Mr Venturini, who is a columnist on an Italian daily, *Corriere della Sera*, but French-educated and an officer of the Légion d’Honneur, the links between the two countries are “very close, yet not characterised by any great love. We’re like two cousins, each of whom thinks she is the prettier.”

A superpower standoff

The breadth and multi-faceted nature of the latest rift has taken people in both countries by surprise. In all three of the areas in which Mr Macron has clashed with Italy, the common factor has appeared to be a France-first approach and an apparent disdain for the *communautaire* values that he espoused so fervently, and successfully, as a candidate. That has left Dominique Moïsi of the Institut Montaigne, a liberal think-tank, dismayed and bewildered. “Have we been collectively deceived?” he asks.

Perhaps not. Mr Macron is haunted by the threat that political extremism poses to Europe; if he let thousands of migrants across the frontier, his nationalist rival, Marine Le Pen, would have a field day. As for the French president’s blocking of the shipyard takeover, that could be seen as a canny exercise in domestic politics. It has won Mr Macron much-needed popularity at home, including among trade unionists whose support he will require for labour reforms that he plans. His failure to co-ordinate his Libyan initiative with Rome might be justified by the need to exploit a momentary window of opportunity. And even in Italy it is acknowledged that, if the deal the president brokered helps stabilise Libya, he will have done his EU partners a big favour.

Nevertheless, the dangers of Mr Macron’s apparent fondness for go-it-alone diplomacy are considerable. Many in continental Europe consoled themselves over the Brexit vote with the hope that it might now be easier to pursue a common security policy. But if France intervenes unilaterally and without consultation in areas as sensitive and vital to the EU’s interests as Libya, well, so much for a pan-European diplomatic front. ■



Also in this section

45 Bagehot: Peak Corbyn

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Higher education

University challenge

Which universities do most to boost graduate salaries?

THE Conservative-Lib Dem coalition formed in 2010 wanted universities to expand. Much to the chagrin of thousands of youngsters, it got its way in 2012 by nearly trebling the tuition-fee ceiling to £9,000 (\$14,000) a year. With students shouldering the bulk of the cost of teaching at universities, the government was able to remove the cap on the numbers that universities were allowed to accept. An additional benefit of the shift, hoped officials, was that increased competition for students should drive up standards.

So far competition has not had that desired effect. Most universities charge the maximum, and there has been little change in the quality of teaching. In a bid to ensure that students and taxpayers get better value for money, the government has created a ranking, the “Teaching Excellence Framework” (TEF), which tries to categorise universities by their teaching quality, not their reputation. It hopes to be able to link the fees that universities may charge to instruction.

One way to measure a university’s impact is to look at earnings data, which the government also hopes to include in future versions of the TEF. On June 13th the Department for Education released the latest wave of its “longitudinal education outcomes” data, which analyse tax returns to show how much people earn five years after they graduate. To find out which factors are most relevant, *The Economist* has

analysed the data and created a ranking that compares graduates’ wages with how much they would have been expected to earn regardless of their university.

Our estimate of expected earnings is built from a statistical model that predicts wages based on the subjects people study, their exam results at school, age, family income, whether they went to private or state school and where the university was located. The difference between the predicted and actual amounts that students earn ought to reflect a university’s impact on graduate wages. Our analysis measures how well universities perform compared with the average institution, and is blind to their prestige.

Wait, what about Oxbridge?

The rankings have their flaws. They are based on a single cohort of graduates, who left university in 2009 in the middle of a financial crisis. Using median earnings as a measure understates how much variability there is in graduates’ incomes, especially at the top. Nevertheless, the data offer a glimpse of which universities do most to boost earnings. Those at the top are a mix of the illustrious (Nottingham and Oxford) and the unfamiliar (Brunel and Robert Gordon)—see table on next page.

Most of the differences in median earnings can be explained by just two factors: how selective a university is and what subjects their students choose to study there.

Once these are accounted for, graduates’ wages are remarkably predictable. Differences in entry tariffs, as defined by UCAS points mostly earned in exams taken at 18, account for nearly 70% of the variation in median earnings. Swots from Cambridge, the most selective university in Britain, earn almost £40,000 a year on average five years after graduating. Their peers at Bedfordshire, the country’s least-selective institution, make only half as much.

Subjects which include some element of maths are well-rewarded. Our analysis finds that the five fields with the highest salaries are medicine, veterinary science, economics, engineering and mathematics. By contrast, creative arts, agriculture and communications graduates earn the least. There is a big difference between top earners and poorer ones. After half a decade, medicine and dentistry graduates earn £47,000 a year on average; creative-arts graduates just £20,000.

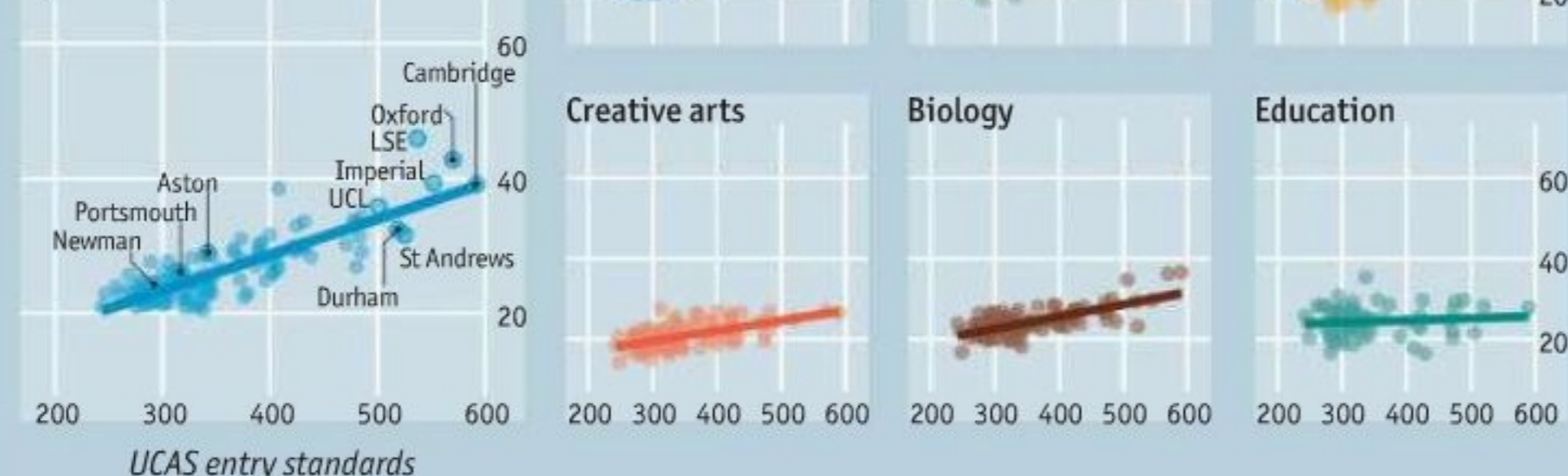
Encouraging more students to sign up for maths-related degrees may be hard. One problem is that schools in Britain produce few maths whizzes compared with those in other countries, says Anna Vignoles, an economist at Cambridge. Portsmouth, which tops our rankings, provides remedial maths and literacy catch-ups for those needing them. Another difficulty is that universities are not allowed to vary their prices by subject, which means they have little incentive to nudge students towards courses like engineering or science, since it is cheaper to teach the humanities.

Alison Wolf, an economist at King’s College London, worries that today’s financing system means the number of low-quality courses will grow. A recent study by the Institute for Fiscal Studies, a think-tank, found that funding per student for humanities and business courses has increased by 47% since the reforms of 2012, ▶▶

Hire education

Britain, median salary five years after graduation*, by programme of study 2014, £'000

All subjects
By university



Sources: Department for Education; UCAS; *The Economist*

*From 124 institutions †Excluding economics

▶ whereas for laboratory sciences it has risen by just 19%. Yet although some business graduates earn a fortune, there is a large gap between those from higher- and lower-ranked universities. For instance, graduates who study economics and management at Oxford, the most lucrative course according to our data, can expect to be earning three times as much as their contemporaries at the least-selective universities five years after they leave.

Although graduates from research-intensive universities tend to earn more, research quality is no guarantee of a good performance in our rankings. Some of Britain's grandest institutions do well. Oxford, which comes tenth, adds £1,900 to graduate earnings compared with the average university. But the top three universities—Portsmouth, Aston and Newman—are not often found leading the rankings.

Less reputable universities may struggle to attract the brightest students, but they can do plenty to ensure that their graduates do well in the labour market. Many of the universities at the top of our rankings convert bad grades into good jobs. At Newman, a former teacher-training college on the outskirts of Birmingham, classes are small (the staff:student ratio is 16:1), students are few (around 3,000) and all have to do a work placement as part of their degree. (Newman became a university only in 2013, though it previously had the power to award degrees.)

Part of Newman's excellent performance can be explained because more than half its students take education-related degrees, meaning many will work in the public sector. That is a good place for those with bad school grades. Indeed, in courses like education or nursing there is no correlation between earnings and the school grades a university expects (see chart).

Other universities punch above their weight by establishing links with successful industries. At Southampton Solent, on England's south coast, many students take degrees in courses related to the maritime industry. The university, which comes 12th

in our rankings, has one of only five ship-handling lakes in the world, where students can be trained using large-scale models of ships and yachts in a variety of conditions. Similarly, Bournemouth, which comes fourth, has strong links to the film industry and a global reputation for visual effects. John Fletcher, a senior administrator at the university, boasts: "We've won many Oscars."

Some things are beyond a university's control. Graduates from universities in richer areas will tend to earn more—we estimate that, all else being equal, those from a typical university in Glasgow can expect

to earn £4,200 a year less than graduates of a university in London. Our model attempts to account for geographical differences by being more generous to universities in poor parts of the country. That graduates from Durham and St Andrews, two highly selective universities far from London, fare so poorly is surprising given these adjustments.

First-class universities

The reforms of 2012 increased funding for all universities, but may also have encouraged wasteful spending. Universities now have an incentive to invest in things that will lure more students. There has been a big rise in new buildings. In 2013 universities spent £2.4bn on construction, 43% more than a year earlier, and they have continued to spend at that level since. Spending on marketing has grown (Hull University has the naming rights to the local football team's training ground, for instance). Surveys suggest that students are more satisfied with the state of their campuses, and some were shabby before the investment. But critics question whether this was the best use of extra cash.

Many universities at the top of our rankings are struggling to recruit enough students. This is partly because of the tough climate: there is a demographic dip in the number of 18-year-olds, Brexit is reducing the numbers of European Union students and the abolition of nursing bursaries has had predictable consequences. Yet it also reflects the fact that many students choose their university on the basis of prestige, not teaching quality. Much may depend on whether the government can begin to shift that calculation.

Even if it does, the importance of selectivity in determining graduate outcomes suggests that much of a university education is about "signalling", rather than learning useful skills. This is no bad thing if it makes it easier for employers to spot the best employees, making the labour market more efficient. But, since there has been little improvement in teaching quality, it is not clear how much students have benefited from the increased fees.

Two years ago we built an American ranking using a similar methodology. In comparing the two countries, we find that the school grades of 18-year-olds are a closer predictor of future earnings in Britain than in America. This helps students, because earnings data can provide guidance about what to study, and where. It also helps policymakers, because the analysis shows that it is not always the famous universities that make the biggest difference. Focusing too much attention on elite universities may be ill-advised if much of their success is attributable to the calibre of students they attract. It can be better to study what goes on in Portsmouth and Aston than in Oxford and Cambridge. ■

Great expectations

Britain, median salary five years after graduation 2014, £'000

Highest-ranked universities	Graduate earnings		Performance over
	actual	expected*	under
Portsmouth	26.2	23.1	3.1
Aston	29.1	26.1	3.0
Newman†	24.4	21.6	2.8
Bournemouth	26.7	23.9	2.7
Robert Gordon	28.9	26.2	2.7
Nottingham	33.0	30.7	2.3
City University	31.1	28.9	2.2
Harper Adams†	28.4	26.2	2.1
Brunel	28.6	26.5	2.0
Oxford	42.8	40.9	1.9
Lowest			
Uni. Campus Suffolk†	20.9	23.3	2.4
Lincoln	21.0	23.5	2.4
Norwich Uni. of the Arts†	17.3	19.9	2.6
Buckingham	23.0	25.7	2.7
Bradford	20.9	23.6	2.7
University of S. Wales	20.8	23.9	3.0
Cumbria	21.7	25.1	3.3
SOAS	27.4	30.9	3.5
Royal Agricultural	27.6	32.2	4.6
St Andrews	31.7	36.6	4.9

Sources: Department for Education; UCAS; ONS; Google Maps; *The Economist*

*Based on calculations by *The Economist* †Recently granted university status

Interactive: See the full rankings and methodology at Economist.com/UniRankings17

Bagehot | Peak Corbyn

Is the Corbyn bubble about to burst?



JEREMY CORBYN may have lost the general election but his cult grows, regardless. There are Corbyn T-shirts all over the place, as well as more exotic items of clothing: David Cameron, Britain's former prime minister, was photographed at a pop festival, drink in one hand, cigarette in the other, half-embracing a female reveller who was wearing a cape with Corbyn's name on the back, encircled by a heart. A mural of his face can be found in Islington. Siobhan Freegard, the founder of channelmum.com, reports that "Corbyn is the stand-out naming trend this year", with 50% of parents saying they would be willing to consider naming their child after the MP for Islington North.

The great question of British politics is whether this is too much of a good thing. Is this adulation a bubble that will burst, leaving trustafarians with embarrassing bits of clothing and children with awkward names? Or is it the British equivalent of the posters and T-shirts that proliferated before Barack Obama's first victory? There are good psephological reasons for thinking that Labour's 40% score in June might be a high-water mark. The Conservative campaign was about as bad as you can get, a presidential effort with a nothing at its heart. Lots of people voted for Mr Corbyn precisely because they did not think he could win. They wanted to curtail Theresa May's "Brexit means Brexit" triumphalism, not install a far-leftist in Downing Street.

There are also signs that Mr Corbyn's Teflon coating is wearing thin. On August 7th he returned from a cycling holiday in Croatia to face a barrage of questions about Venezuela. Why is a country that he once praised as a land of milk and honey turning into a giant gulag? Why had he said nothing while the regime beat and killed dissenters? Mr Corbyn eventually broke his silence only to say he condemned violence on "all sides", seemingly oblivious to his own recent tweet that "If you are neutral in situations of injustice you have chosen the side of the oppressor." This came on the heels of two other embarrassments. He back-pedalled on his promise to forgive all past student loans on the ground that, even in Labour's free-spending Britain, writing off £100bn might be a bit irresponsible. And he clashed with the pro-European wing of his party when he insisted that Britain would leave the single market when it left the European Union.

Further skeletons lurk in Mr Corbyn's closet. He has spent his

life forgiving people their nastiness so long as they are hostile to the Great Satan of the United States. And there are more potential fissures in his coalition. The sort of people who ooh over him at Glastonbury will start aahing if their taxes rocket. But anyone inclined to think that Britain is approaching peak Corbyn or even that, as *Country Squire Magazine*, a website, argues, "peak Corbyn has passed", should consider three things.

The first is that peak Corbyn will be determined by the Conservative Party rather than the Labour Party or Venezuela's ruling elite. The Conservatives have been in power since 2010 either as the dominant party in a coalition or in their own right. Even in the best of times, voters tire of long-serving ruling parties, blaming them for everything from bad weather to noisy roadworks. These have not been the best of times. The Tories are far more divided than Labour over Brexit—in particular, their "ultras" are more extreme—and, as the party of government, their divisions will be more damaging both to themselves and to the country.

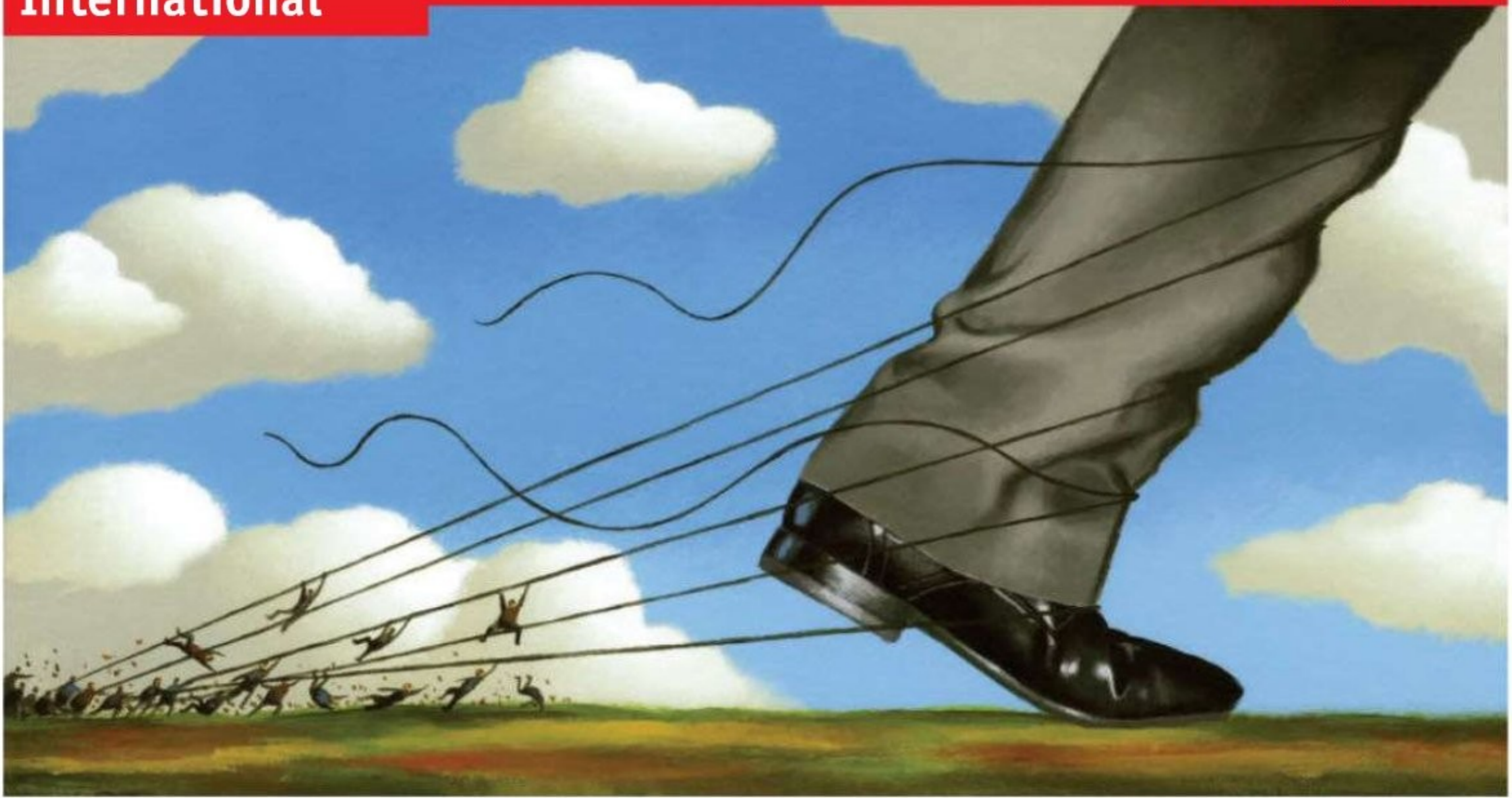
Second, a few fiff-faffs over communist tyrants aside, Mr Corbyn is acquitting himself quite well as party leader. He is forcing Blairites and Brownites to bend the knee with a judicious mixture of promises of promotion and threats of a beating by his praetorian guard, Momentum. In June Labour humiliated Mrs May despite the fact that most of its MPs thought Mr Corbyn was leading them to disaster. Next time they will be more behind him. His refusal to operate a pairing system (whereby MPs from opposing parties agree to cancel each other out by abstaining from voting) shows a good understanding of guerrilla tactics. Tory MPs will have to turn up for every vote to save the government from defeat, becoming increasingly exhausted, tired and fractious, whereas opposition MPs will be able to pick their moments.

The third reason is that a combination of economic forces, both long-term and short-term, favour Mr Corbyn. Brexit and its attendant uncertainties will further weaken Britain's already weakening economy. That will give voters more incentive to punish the party that has "banged on" about Europe for decades and seems to be doing a dismal job of handling the divorce settlement. The hollowing out of the middle classes, as salaried workers see their jobs threatened by artificial intelligence and globalisation and their dreams of home ownership destroyed by rising property prices, is increasing the number of people who are sympathetic to Corbyn-style socialism.

London pride

The clearest signs of this can be seen in the country's most globalised city, London, where Labour has gained 11 seats since 2010. Having lost such previously deep-blue seats as Kensington and Battersea in the latest election, the Tories could easily lose Chingford & Woodford Green, where Iain Duncan Smith's majority fell from 8,386 to 2,438, and Uxbridge & South Ruislip, where Boris Johnson's majority fell from 10,695 to 5,034, in the next one.

Mr Corbyn also has perhaps the most important thing in politics on his side: the idea of "change" and "hope". People are fed up with stagnant living standards. They are fed up with squabbling politicians. And they are fed up with the rich seeming to be held to different standards from the poor. The Tories are right to argue that this "changey-hopey" stuff is nonsense. Corbynism will make the country poorer, the infrastructure shoddier and political life more rancorous. But if they cannot go beyond criticising Mr Corbyn's policies to offering a vision of a better future themselves, they might just as well whistle in the wind. ■



The global techlash

Chaining giants

SAN FRANCISCO

Though big tech firms are thriving, they are facing more scrutiny than ever

HOW much bigger can they get? The five biggest technology firms—Alphabet (Google’s parent), Amazon, Apple, Facebook and Microsoft—have published financial results in recent weeks that put their combined quarterly revenues at \$143bn. Yet this rude financial health conceals a more troubling long-term trend: governments, long willing to let internet firms act as they wish, are increasingly trying to tie them down.

This goes far beyond the latest row over sexism and tolerance of diverse political viewpoints in Silicon Valley, sparked by a memo written by a Google employee (see next article). Scarcely a week passes without a sign of the shift in attitudes. On August 1st Amber Rudd, Britain’s home secretary, warned that unless the firms did more to block extremist content from their platforms, they would be forced to do so by new laws. Stephen Bannon, the chief strategist at the White House, reportedly wants to regulate Facebook and Google as utilities. Steven Mnuchin, the treasury secretary, has talked of taking action against Amazon because it allegedly does not pay its fair share of tax.

Under pressure from the Chinese government, Apple removed several “virtual private networks” (VPNs)—services that enable users to bypass China’s censorship

apparatus—from its local app store. In June Canada’s Supreme Court ordered Google to stop its search engine returning a result advertising a product that infringed on a firm’s intellectual property. And on August 9th it emerged that the Internet Archive’s Wayback Machine, which preserves old versions of edited web pages, has been blocked in India, apparently by order of the department of telecommunications.

The examples vary, but they amount to a significant change in the regulatory environment. When the internet went mainstream in the late 1990s, tech firms and most democratic governments embraced its global nature. Firms operated largely free from onerous rules (blocking pornography featuring children has been the main exception).

One reason is technological. It has become easier to enforce borders in cyberspace. Tools that use “IP addresses”, the numbers that identify internet connections, have become much better at enabling online firms and regulators to work out where users are. The shift to smartphones has increased governments’ power. App stores have local links, for example to payment services, which make it easier to monitor and control users’ activity.

Meanwhile, as the internet has penetrated every aspect of life offline, incum-

bents from publishers to carmakers are coming to see the tech titans as a threat to their survival. Indeed, tech firms are easy targets for anyone worried about change. They employ relatively few people, and pay little tax. President Donald Trump does not see them as natural allies, as Barack Obama did. (Mr Obama’s administration was packed with former Google employees.) Some governments are unsettled by the growing role in their national lives of firms whose values are distinctively American, in particular in their commitment to free speech ahead of privacy.

One consequence of governments’ fading deference towards tech firms is a more muscular approach towards taxation. Apple is expected soon to put €13bn (\$15.3bn) into an escrow account while courts consider its appeal against last year’s ruling by the European Commission that the firm owed back taxes in Ireland, home to its European headquarters. Another consequence is public policies that pay little heed to their needs, for example on immigration. Mr Trump has complained that tech firms import foreign workers rather than hiring Americans, and has ordered a review of the rules governing work visas.

Shooting the messenger

For more than two decades internet platforms have largely been treated as intermediaries. They have been seen as more like telecom companies, which may transmit criminal material for which they are not liable, than media firms, which can be prosecuted or sued for what they publish. Now, governments in America and Europe are starting to hold them responsible for what their users do and say. Germany is the most striking example. From October ►►

► 1st it will require social-media platforms to take down hate speech, such as Holocaust denial, within 24 hours or face fines of up to €50m.

Under Germany's law, the clock starts when firms are alerted by users or the authorities. But some governments are thinking of requiring firms to block some objectionable content as soon as it appears (as they already do with child porn). Britain's government, for example, wants them to block Islamist propaganda, such as videos of beheadings. It has ignored tech firms' complaints that this will be difficult and costly. Distinguishing such content from mainstream reporting on the war in Syria is harder than sifting out child porn. Automated techniques will block some legitimate content. Humans will often have to make the final decision.

Border control

Tech firms have been building barriers in cyberspace for some time. Their aim has been commercial: to keep users within "walled gardens" where it is easier to sell them services. But governments are also erecting borders—and theirs are more constraining. Like China, Russia plans to clamp down on VPNs. Both countries now require data on domestic users to be stored within their borders. Such data-localisation rules are a growing problem in democratic countries, too. In January the European Commission complained about "unjustified restrictions on the free movement of data" within the EU.

Even as the internet starts to fragment into local versions, some countries are trying to extend their legal reach beyond their borders. In the past internet firms would ignore requests from governments that sought to censor what people elsewhere saw online, for example requests originating in Thailand, with its stifling *lèse-majesté* laws that ban all criticism of its king. But now some democracies are passing extra-territorial laws that seek to regulate online content wherever it appears. "We risk a heckler's veto, where any single country can get a piece of information removed not just within that country but anywhere around the world," says Alan Davidson, who served in Mr Obama's administration and is now a fellow at the New America Foundation, a think-tank.

The Canadian ruling against Google, which applies worldwide, could be just the start. Later this year the European Court of Justice will decide whether the EU's much-contested "right to be forgotten" applies not just to Google's European sites, but to all of them. This would mean that links to information about people that is deemed "inadequate, irrelevant or no longer relevant" in the EU will no longer be returned in response to any Google search anywhere. If the firm does not comply, it may face stiff fines.

The biggest long-term threat to tech firms is probably antitrust law. Regulators, particularly in America, have long held that online, competition is only a click away. But they are increasingly concluding that even in cyberspace competition can be restricted by dominant firms, for instance when the tech giants buy up smaller rivals before they mature into a threat, or discriminate against their offerings (for example, in search rankings). Governments have also started to fret about foreign data monopolies, which they think Hoover up local information and turn it into valuable artificial-intelligence services.

Perhaps unsurprisingly, given that Europe has produced no big digital platform of its own, such thinking is common in the EU. In June the European Commission hit Google with a €2.4bn fine for abusing its "monopoly" in online search. But elsewhere, too, regulators are becoming more active. In Japan the head of the Fair Trade Commission has warned that exclusive access to data could be used to restrict competition. Even in America, such thinking is gaining ground.

As tech giants build up their offline presence, they can expect regulatory scrutiny to increase still further. Though Amazon has so far got off lightly, its recent purchase of Whole Foods, an American grocer, is likely to change that. Amazon's fulfilment centres (warehouses from which products are shipped) have created hundreds of thousands of jobs; earlier this month it sought to hire 50,000 people across America in one day. That has given it brownie points with governments. But as more retail jobs are lost to e-commerce, and positions at Amazon become automated, the mood could shift. Amazon is not alone in venturing into the physical



world. Google is experimenting with self-driving cars and Facebook with drones, which will bring new headaches and increased oversight.

The tech giants are not all equally vulnerable. As a legacy of the antitrust investigations it faced in the 2000s, Microsoft still has plenty of lawyers and lobbyists. It also comes under less scrutiny than Facebook and Google, which play a bigger role in consumers' daily lives. Both firms are now ramping up their lobbying operations, having seen how Microsoft only belatedly recognised the risks that accompany commercial dominance. Google, for example, has around 500 people in its public-affairs and regulatory team, only a handful of whom work from its headquarters in California. Many are based in Europe. "Each company learns from the mistakes of those that went before," says Mr Davidson.

Complying with a proliferation of new laws means expanding local teams: Facebook is planning to have 650 "moderators" in Germany to enable it to respond to take-down requests within the stipulated 24 hours. Services and technical infrastructure are also becoming more fragmented. On August 4th it emerged that Google had agreed to tighten monitoring of terrorist and other offensive material on its YouTube video-sharing service in Indonesia. Amazon and Microsoft, for their part, have built data centres in certain jurisdictions, such as Germany, to be able to comply with data-protection rules.

The firms hope that funding local initiatives will help curb resentment. Google's "Growth Engine for Europe" aims, among other things, to help small businesses hone their digital skills. Facebook's "Journalism Project" will seek to fight fake news and to develop new subscription services with publishers, including Axel Springer, which played a big part in the campaign against Google in Europe. In October Microsoft published a book that could easily be mistaken for a political party's manifesto. It lists dozens of detailed public-policy recommendations, ranging from protecting privacy to fighting cybercrime. Amazon, which faced criticism a few years ago for its working conditions, has started offering public tours of its fulfilment centres in Europe.

Things fall apart

Governments sometimes have good reason to claim sovereignty over the digital realm. They are responsible for national security and elected to uphold national laws. But their regulatory push threatens to create a "splinternet", with national borders reproduced in cyberspace. That would harm the internet's function as an open forum where people can communicate freely and come up with new global products and services—which is precisely what made it great in the first place. ■



Work culture in Silicon Valley

You're fired

SAN FRANCISCO

A Google employee inflames a debate about sexism and free speech at work

SILICON VALLEY'S leading firms celebrate disruption, but not disruptive employees. Google has found itself at the centre of controversy after an anonymous software engineer, later revealed to be a young Harvard graduate called James Damore, published a ten-page memo on two internal company networks explaining why there are so few women in the upper echelons of the technology industry.

Instead of sexism, he pointed to "biological" factors, such as women's supposedly greater interest in people and their predisposition to anxiety and stress at work. In promoting gender diversity, he charged, Google silences those people whose political views differ from California's liberal mainstream.

Mr Damore's insinuation that the small portion of Google's workforce that is both female and works in technology-related roles (see chart) may be unsuited for the work sparked an uproar inside and outside the company. Google was in a bind. It champions free expression and access to information, so many wondered how it would handle an employee who had complained that Silicon Valley was intolerant of different political viewpoints.

The answer came on August 7th, when Google sacked him. Sundar Pichai, its boss, said that parts of Mr Damore's memo violated its code of conduct and made its work environment hostile for women. Acting swiftly was important for the firm, which

has been under investigation by the Department of Labour since April for discriminating against women by allegedly underpaying them by comparison with men.

Men still occupy four-fifths of Google's technology-related roles, and 91% of its employees are either white or Asian. The firm probably felt a need to reassure its female employees and workers from ethnic and sexual-minority groups that it takes diversity seriously. In recent months Silicon Valley has been beset with proven cases of sexism against women at work and sexual harassment of female employees. So far it has been Uber, a ride-hailing firm with a particularly toxic culture of sexual harassment, that has come off worst: in recent months it has lost most of its executive

Band of brothers

Male roles as % of total number of jobs
June 2017 or latest, selected companies



Source: Company reports

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ranks, including its boss, Travis Kalanick.

Even had Google preferred to dress down rather than dismiss Mr Damore, in practice it would have been difficult to keep him. Women and others could have complained of discomfort working alongside him or reporting to him, and could have made claims against Google for employing someone disrespectful of colleagues and of the firm's values.

Yet to dismiss Mr Damore's memo entirely is to overlook Silicon Valley's character and, perhaps, ways in which it might be changed. Most techies there consider him a black sheep, but he expressed ideas that some male computer-programmers think even if they never utter them aloud. "I would be hard-pressed to name a person at Google who would disagree with 100% of what he wrote," says one female Googler. For the boss of a prominent tech startup, Google's sacking of him was chiefly for public consumption. "This isn't a question of legality or policy. This is a question of virtue-signalling," he says, reflecting the view of many in the Valley.

And although many of the memo's assertions were risible, such as the idea that women are not coders because they are less intrigued by "things" than men are, others made more sense. One is that diversity initiatives could be more transparent. Today firms publish annual numbers about the composition of their workforce, but reveal little else. Companies across all industries could try harder to quantify how their initiatives are faring.

Mr Damore's broad argument, that the Valley is fairly tolerant of racial and gender diversity but intolerant of diversity of opinion, was his most powerful. In the liberal tech industry, vocal conservatives are as scarce and unpopular as feature phones. When Peter Thiel, a prominent venture capitalist, backed Donald Trump during

▶ the 2016 presidential campaign, he was condemned by many of his peers. Some say Mr Thiel's politics will affect his firm, because some entrepreneurs do not want to be associated with his views and are unwilling to accept investment from his fund. A similar wind of intolerance is sweeping America's liberal universities, where conservative speakers are facing protests and seeing their speeches cancelled.

Mr Damore has said he may sue Google for infringing his right to free speech, although this may not go far. Americans' right to free speech is protected by the constitution but does not exist legally at work, though many do not understand the distinction. In California, like most states in America, people are employees "at will", so they can be rapidly dismissed if their conduct breaches company policies.

He will certainly be lionised by supporters. The Alt-Right movement in America is celebrating his frankness. Some members have started a crowdfunding campaign to support him, should he sue Google and fail. Some wonder if the memo's timing—

published in the dog-days of summer when it was likely to get most attention—was carefully chosen. Before Mr Damore was fired he filed a complaint with America's National Labour Relations Board, which few employees would think to do without early legal advice, says Pamela Sayad, an employment lawyer.

The sacking of Mr Damore may fade from the news, but the debate about gender in technology is likely only to intensify. Those under fire for their treatment of women include not only Uber but several venture-capital firms, accused of inculcating the male-dominated cultures of the young companies they finance. The other effect will be to deepen debate about freedom of expression at work. Google may have acted wisely for its female employees and for its public image. But it has not satisfactorily answered the question of how those who express controversial opinions at work should be handled. Many people will note that a company that is known for its bold, out-of-the-box thinking chose to live and die by its employee manual. ■

the national success story are speaking of a need to look into the firm's business and perhaps even intervene. Eli Cohen, the economics minister, this week called for Teva to take care of employees and to relocate its foreign activities in Israel.

Such heavy-handedness is hardly justified. Unemployment in Israel is near an all-time low, at 4.5%, and Teva's highly qualified employees would find new jobs if the firm sinks further. Most of the pension funds have diversified in recent years and can absorb the losses from its tumbling shares. Although Israelis are sentimental about Teva because of its past success, says Guy Rolnik, editor of the *Marker*, a business newspaper, they need to "wake up" to the fact that it is a multinational.

Yet Teva's plight has revived a debate about whether Israel is benefiting enough from its high level of investment in research and development. Hundreds of technology startups have been snapped up by global firms in recent decades, and many of them have moved abroad. Israel now has two economies, notes Eugene Kandel, the former chairman of the government's National Economic Council and the chief executive of Start-Up Nation Central, a non-profit organisation. There is the lucrative, high-tech economy for a small share of the workforce and a second economy where most Israelis work and earn much less, he says.

To sustain the first, Israel needs to keep companies such as Teva. But it may now be taken over and lose its Israeli identity. Israel will try to persuade firms such as Mobileye, a developer of driverless car systems that was bought earlier this year by Intel, an American chip giant, for \$15.3bn, to base not only their research centres in Israel, but their manufacturing. Yet the economy as a whole is still suffering from low labour productivity and over-regulation. A new wave of state intervention in cases such as Teva's is unlikely to be the right way to build and attract big firms in future. ■

Israeli business

Startup and leave nation

JERUSALEM

Israel frets about what Teva's crisis means for the economy

THE headlong plunge of shares in Teva, a pharmaceutical giant—down by over 40% since August 2nd—is causing consternation beyond the firm's shareholders and employees. The company was founded in Jerusalem in 1901, is the largest in Israel and is the country's only multinational with its headquarters still at home. Since beginning its rapid expansion abroad in the early 1980s it has been called "the nation's share" by Israelis, whose pension funds have invested heavily in its success.

That prosperity came chiefly thanks to the firm's most popular proprietary drug, a bestselling medication for multiple sclerosis called Copaxone. Over the past two decades its sales paid for a global spree of buying generic-drugs competitors. Last year Teva completed its most ambitious purchase, of Actavis Generics, an American generics manufacturer, for \$40.5bn; financing the deal took its debt to \$35bn. But Teva's transformation into the world's largest supplier of generic medicines turned out to be ill-fated. The mood has turned in recent months as American pharmacies and wholesalers have squeezed the prices of generic drugs.

Last week Teva said its second-quarter earnings had fallen by a tenth and announced plans to cut 7,000 jobs and pull

out of 45 countries by the end of 2017. Seemingly overnight, it has gone from being the darling of the Israeli economy into a byword for mismanagement. Having been run for 26 years by one CEO, Eli Hurvitz, who had married into the founder's family and who led its international expansion, in the past decade the firm has gone through a further five. Israeli politicians who in the past approved big tax write-offs to boost



National pride and joy



Fox's bid for Sky

What the Fox said

NEW YORK

An attempted takeover hits more obstacles

RUPERT MURDOCH'S penchant for mass-market media has made him billions of dollars. It also gets in the way of empire-building. In 2011 News Corp's bid to take full ownership of Sky, a European pay-TV giant, fell apart amid public rancour over phone hacking by journalists at the *News of the World*, one of his tabloids (since closed). Now a renewed Murdoch family takeover attempt for Sky, a bid of £11.7bn (\$15.2bn) by 21st Century Fox, faces yet more scrutiny over concerns about alleged scurrilous reporting at Fox News, Mr Murdoch's American cable-news channel.

On August 8th Karen Bradley, Britain's culture secretary, asked Ofcom, the media regulator which had already reviewed the bid, to take another look to determine whether 21st Century Fox meets Britain's broadcasting standards. Ms Bradley's request followed fresh complaints about Fox News from members of parliament, including Ed Miliband, the former leader of the opposition Labour Party, and from activists who have lobbied against the deal. Sky's shares fell slightly on fears that the acquisition might not happen, even though other European regulators have signed off.

The latest objections concerned a lawsuit filed in America on August 1st alleging that Fox News had aired a false story about the 2016 murder of a Democratic Party staffer, Seth Rich, with the knowledge of the White House. The alleged aim was to divert attention from the investigation of Donald Trump's possible links to Russia's government. Fox denies the allegations.

British critics of the takeover fear Sky's news channel could come to resemble Fox

Helen Alexander

The best of bosses

Dame Helen Alexander died on August 5th, aged 60

ROLE models for women in business are still too rare, not least in Britain. Last November an independent review backed by the government urged FTSE 100 companies to raise the share of women on their boards from 27% to 33% by 2020. Sadly, that push this week lost one of its leading champions, Helen Alexander, the deputy chair of the review.

Business had no better ambassador. She was self-effacing but a world-class networker—a winning combination that helps explain, along with her intelligence and charm, why all sorts of firms wanted her on their board (from Northern Foods to Centrica, Rolls-Royce and the British arm of Huawei), to advise them (Bain Capital) or to chair them (the Port of London Authority and, more recently, UBM, an events business). In 2009 she became the first woman to be president of the Confederation of British Industry, the country's main employers' group.

But Helen had built her reputation in the media industry. From 1997 to 2008 she was chief executive of The Economist Group (the publisher of this newspaper), the company she joined as a marketing executive in 1985. During her tenure, profits soared and *The Economist's* circulation more than doubled, to 1.3m.

Her success owed much to a leadership style that lacked fireworks and did not seek fame, but deserved more recognition, for both its humanity and effectiveness. Helen relied on a quiet wisdom: listening, not lecturing. No name was ever forgotten, no thoughtful personal gesture was too small. For all the fashionable fascination with big strategy, she was unerringly sensible and, where need be, decisive: nothing foolish would happen on her watch. She treated her colleagues with respect, set an example of discipline and solid values (the diary always cleared time for family), and in

return inspired confidence. "You can trust Helen completely," was the word from one *Economist* editor to his successor.

Although she could seem quintessentially British (St Paul's Girls' School, Oxford University), she was also thoroughly global. She loved travelling to the Olympic games, where the world came together in good-spirited competition. Her mother was Russian (with roots in Estonia), her grandmother had been Maxim Gorky's lover; Helen's MBA was from INSEAD in France and she was a stalwart of an annual Franco-British gathering called the Colloque. France awarded her the Légion d'Honneur in November 2015.

At her acceptance speech at the French embassy in London, delivered in flawless French, her one pause to collect herself came when thanking her husband and three children for their support in her battle against cancer, which had been diagnosed about a year earlier. Helen approached that struggle as she did all else: head on, admirably, a class act.



Circulation wizard

News. Britain's tight regulation of broadcasting should prevent that, but it is unclear what the Murdochs are willing to do to assuage such worries. Mr Murdoch returned to oversee Fox News after the departure of its long-time boss, Roger Ailes in July 2016, following multiple allegations of sexual harassment (Mr Ailes died this year). Since then it has continued to carry notably favourable coverage of Mr Trump.

Losing the Sky deal would be a huge blow. Fox, a leading supplier of TV content internationally, already owns 39% of Sky, a leading distributor of TV in Europe. By buy-

ing the other 61%, the Murdochs would take full control of a pay-TV firm with a growing customer base of 22.5m in Europe (in contrast to the shrinking numbers watching pay-TV in America). By marrying content and distribution, the combined company could better compete with firms such as Netflix and Amazon, two online giants, with a direct-to-consumer streaming-video service in future. As if to rub it in, Disney, a competitor unencumbered by tabloids or politicised news channels, this week said it would launch two such streaming services by 2019. ■

Create an experience

85% of digital
transformations fail.

worth talking about.

Let's talk about why.

The business of airports

Losing altitude

Boring shops, tighter security and ride-hailing are hurting airports' profits

WHEN Heathrow airport opened, in 1946, the only retail facilities were a bar with chintz armchairs and a small newsagent's. The first terminal was a tent, a far cry from the four halls, resembling vast shopping malls, at the London airport today. Retail spending per passenger is the highest of any airport. This summer's consumer crazes include Harry Potter wands and cactus-shaped lilos.

Heathrow's journey from waiting room to retail paradise is the story of many airports. Before the 1980s, most income came from airlines' landing and passenger-handling charges. Then "non-aeronautical" revenue—from shops, airport parking, car rental and so on—rose to around two-fifths of their revenues, of \$152bn worldwide in 2015. But amid signs that non-aeronautical income is peaking, especially in mature aviation markets such as North America and Europe, the industry fears for its business model.

When airports were state-owned, and run not for profit but for the benefit of the local flag-carrier, such ancillary income was less important. Airports in Asia, Africa and the Middle East still operate like this. Globally, two-thirds lose money; the share is 75% in China and 90% in India. But most airports in Europe and the Americas have to pay their own way.

Britain led the way with privatisation in the 1980s. Canada leased its major airports to private-sector entities in 1994, and is now considering whether to sell them completely. Squeezed state budgets in America mean that most publicly owned airports are managed by arms-length organisations that must break even. And a wave of privatisation is sweeping Europe, where nearly half of terminal capacity is now owned by the private sector. France's main airports in Paris are still partly in state hands, but Emmanuel Macron, the president, aims to sell the rest. Latin American countries are following closely behind.

Their timing may be off. Although passenger numbers are still booming—growing worldwide by 6.3% last year, according to IATA, an airline-industry group—non-aeronautical revenues per person are falling across North America and Europe, a trend that is offsetting some of the rise in aeronautical revenues from higher passenger numbers.

On the retail side, some temporary factors are at work, such as a crackdown on corruption by Xi Jinping, China's presi-



dent, which has crimped sales of luxury items to high-spending Chinese. Extra security checks introduced after a run of terror attacks have cut passengers' shopping time, and that may change in future.

Yet there are structural causes too. Tyler Brûlé, an airport-design guru and editor-in-chief of *Monocle*, a British magazine, notes that the duplication of nearly identical duty-free and luxury-goods outlets at airports across the world has left many passengers unexcited by the range of items on offer. The demographics of regular flyers, which have shifted towards people with less money to spare, have not helped. At the start of the year, Aéroports de Paris, Frankfurt airport and Schiphol airport, in Amsterdam, announced drops in spending per passenger in 2016 of around 4-8%.



Under even greater threat, especially in North America, is income from car parks, which makes up two-fifths of non-aeronautical revenues across the continent, and car-rental concessions, which brings in a further one-fifth. At European airports the shares are 20% and 3% respectively (see chart). These businesses are being disrupted by ride-hailing apps, mainly Uber and Lyft, which make travel by taxi more affordable compared with renting or parking a car at the airport. In the past year, revenues from parking have fallen short of forecast budgets by up to a tenth, airport managers say, and next year they expect worse results. Many airports at first tried to ban Uber's and Lyft's cars from their taxi ranks, but drivers found a way round it, in some cases picking up rides from nearby houses. Now more are allowing Uber and Lyft to use their facilities.

The likely direction of new technology and environmental regulation will continue to sap revenue from parking and car hire, reckons Francois-Xavier Delenclos of BCG, a consultancy. Because airports must meet local air-pollution targets, they will discourage passengers from using cars with internal combustion engines. Heathrow, for instance, wants the share of passengers using public transport to reach the airport to increase from 41% to 55% by 2040; many American airports have similar targets. Even the adoption of electric self-driving cars will offer little respite. After dropping off passengers, they will be able to take themselves home.

Revenues are stagnating just when airports in America and Europe need more cash to expand, to cope with demand for flights. Without expansion beyond current plans, by 2035, 19 of Europe's biggest airports will be as congested as Heathrow today, which operates at full capacity, according to Olivier Jankovec, director-general of ACI Europe, a trade group in Brussels. In America the Federal Aviation Administration, a regulator, estimates that congestion and delays at the country's airports cost the economy \$22bn in 2012. This will rise to \$34bn in 2020 and \$63bn by 2040 if capacity is not increased. Meanwhile, the cost of airport construction is rising more than twice as fast as general inflation, mainly due to rising costs of specialised labour.

For those tramping through airports, this is bad news. Without space for extra airlines, established carriers can raise their fares without fear of new competitors moving in. Neither are incumbent airlines keen to foot the bill for expansion. IAG, an Anglo-Spanish group, is fighting plans to levy higher landing fees on its airlines, including British Airways, to pay for new runways at Heathrow and in Dublin. Expect to see more battles like this, for lilos and duty-free Smirnoff vodka cannot pay for all the terminals and runways that America and Europe need. ■

Schumpeter | Suspicious minds

The economic consequences of Americans' distrust



AMERICA is a grumpy and confused place. For an overarching explanation of what has gone wrong, a decline in trust is a good place to start. Trust can be defined as the expectation that other people, or organisations, will act in ways that are fair to you. In the White House and beyond there is precious little of it about. People increasingly view institutions as corrupt, strangers as suspicious, rivals as illegitimate and facts as negotiable.

The share of Americans who say “most people can be trusted” fell from 44% in 1976 to 32% in 2016, according to a survey from the University of Chicago. In a new book, “The Retreat of Western Liberalism”, Edward Luce, a commentator for the *Financial Times* in Washington, argues that distrust will contribute to America’s decline and eventually, even, to autocracy. Lack of faith is chewed over in boardrooms, too. In his latest letter to shareholders, Jamie Dimon, JPMorgan Chase’s boss, describes trust as America’s “secret sauce” and worries that the bottle is running dry.

The tricky bit is reconciling this distrust with the rosy business outlook. The S&P 500 index is near an all-time high, even though many economists say that distrust is toxic for prosperity because transactions become dearer and riskier. An OECD study of 30 economies shows that those with low levels of trust, such as Turkey and Mexico, are far poorer. Three scholars, Luigi Guiso, Paola Sapienza and Luigi Zingales, have shown that pairs of countries (such as Britain and France) whose populations say they distrust each other, have less bilateral trade and investment.

America’s mistrust outbreak can be split into two parts: what consumers think, and what firms think. The share of folk who have “little or no confidence” in big business has risen from 26% in 1976 to 39% in June, according to Gallup. For banks it has risen from 10% in 1979 to 28% today. Over decades big firms have broken implicit promises to their employees, such as providing a job for life and paying generous pensions. That has probably soured the public’s view. And the financial crisis of 2007-08 blew a giant hole in the reputation of big business and finance.

Yet despite their customers’ distaste, big firms mint huge profits. One explanation is declining competition over the past 20 years. If markets are working, firms that are perceived to behave badly lose market share. In concentrated industries this discipline is lacking. Two recent scandals in oligopolistic bits of the

economy illustrate the point. Wells Fargo, a bank, created millions of fake accounts, yet in the three months to June its year-on-year profits rose by 5%. In April a United Airlines passenger was assaulted, causing an outcry. Its underlying profits later rose by 5%, too. In such industries Americans are inured to mistreatment.

Trust between firms, and between firms and investors, is more resilient, but there is evidence of greater wariness. Banks charge corporate borrowers a spread of 2.6 percentage points above the federal-funds rate, compared with 2.0 points in the 20 years before the crisis. The equity-risk premium, or the annual excess return that investors demand to hold shares rather than bonds, is 5.03 points, against a pre-crisis average of 3.45 points, notes Aswath Damodaran of the Stern School of Business at NYU.

The median firm in the S&P 500 holds 62 cents of cash on its balance-sheet per dollar of gross operating profit, up from 45 cents in 2006 (this yardstick excludes America’s giant technology companies, which hoard money). In a sign that more corporate deals end in tears, litigation costs are rising. The revenues of legal firms rose by 103% in 1997-2012, according to the Census Bureau, more quickly than nominal GDP growth, of 85%. And spending on corporate lobbying, a signal that firms think politicians are corruptible, has risen faster than GDP, too.

In the long term it is possible that firms could become as mistrustful as consumers. Though individual companies can gain from cronyism, overall confidence will fall if there is sustained political meddling in the courts and regulatory system. And companies as well as people can be trapped into doing business with monopolies that are inept or shifty. In 2016 Facebook said that for the past two years it had overstated how long its users watched videos for, but advertisers have little choice but to stick with the social-media firm. Its profits rose by 71% in the latest quarter.

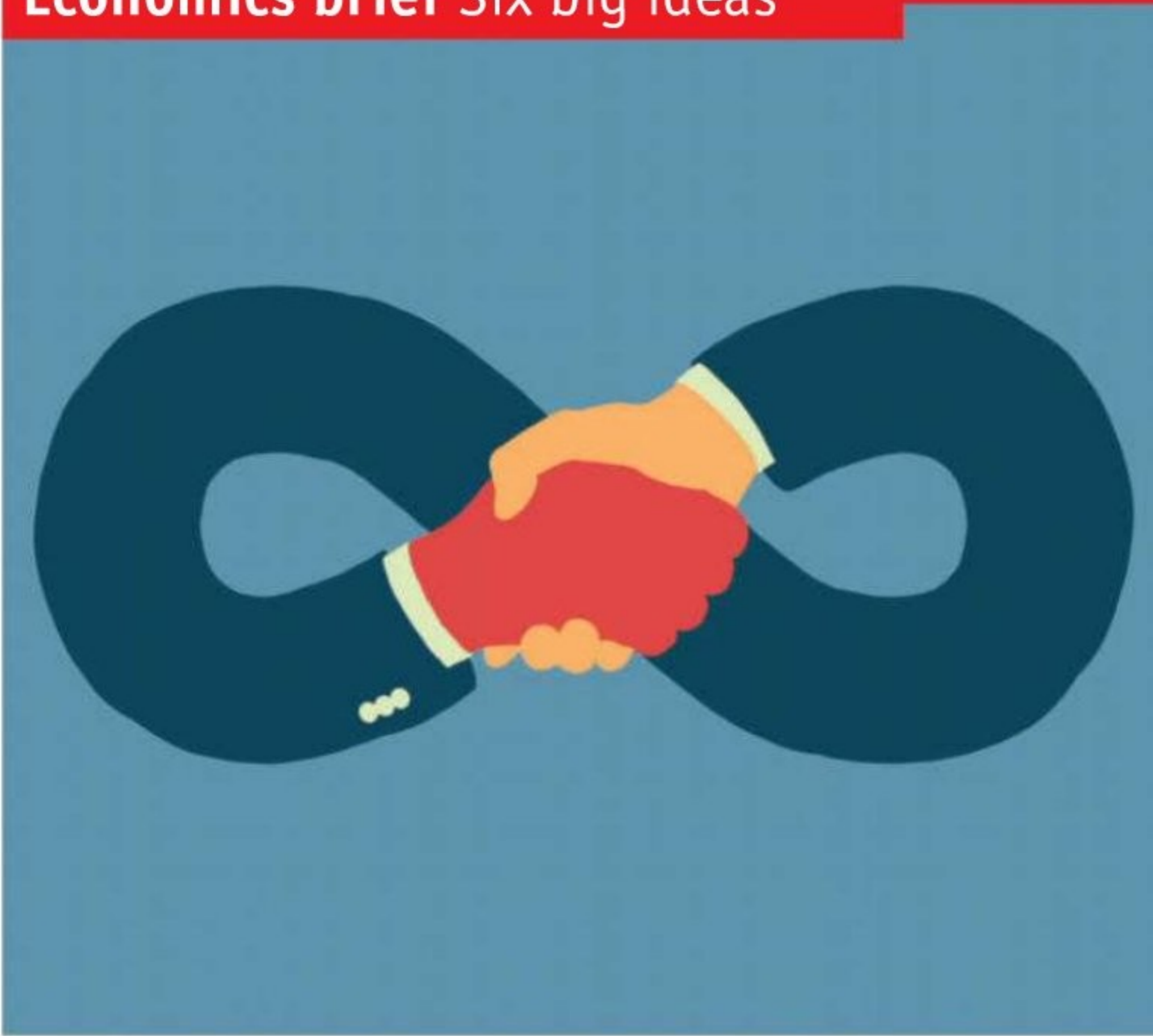
If the bleak predictions of observers such as Mr Luce come true, how might America Inc adjust? One guide is the work of Ronald Coase, an economist who theorised that the boundary of a firm is set according to whether an activity is best done in-house or can be outsourced to the market. If counterparties are less reliable, and contracts expensive to enforce, firms will become “vertically integrated”, bringing their supply chain in-house.

If there is deeper decay of America’s legal system and greater political corruption, then firms would go further and spread “horizontally” too, expanding into new industries where their political contacts, and access to favours and capital can be used. This is how business works in much of the emerging world.

Gotta have faith

America is nowhere near such an outcome, at least not yet. Still, a concerted effort to shore up trust between consumers and firms, and between firms, would be healthy. If you subscribe to Silicon Valley’s Utopianism, technology can fill the gap, manufacturing mutual faith where none existed before. Uber’s system of scoring drivers and passengers allows strangers to have confidence in each other. E-commerce sites such as eBay and Alibaba work by creating networks of trust between merchants and customers.

In the end, however, government has a vital role. By enforcing competition rules, it can ensure that poor conduct is punished. And by observing the independence of courts and regulators, it can demonstrate that contracts are sacred and that firms operate on a level playing-field. Suspicion is not about to bring American capitalism to its knees. But the country’s vast stock of trust, built up over a century or more, is being depleted quickly. ■



Overcapacity and undercapacity

Glutology

The third brief in our series on big economic ideas looks at Say's law

IN 1804 Jean-Baptiste Say enrolled in the National Conservatory of Arts and Crafts in Paris to learn the principles of spinning cotton. The new student was 37 years old, points out his biographer, Evert Schoorl, with a pregnant wife, four children and a successful career in politics and letters trailing behind him. To resume his studies, he had turned down two lucrative offers from France's most powerful man, Napoleon Bonaparte. The ruler would have paid him handsomely to write in support of his policies. But rather than "deliver orations in favour of the usurper", Say decided instead to build a cotton mill, spinning yarn not policy.

Napoleon was right to value (and fear) Say's pen. As a pamphleteer, editor, scholar and adviser, he was a passionate advocate for free speech, trade and markets. He had imbibed liberal principles from his heavily annotated copy of Adam Smith's "The Wealth Of Nations" and bolstered his patriotic credentials in battle against Prussian invaders. (During breaks in the fighting, he discussed literature and political economy with other learned volunteers "almost within cannonballs' reach".)

His greatest work was "A Treatise on Po-

In this series	
1	Coase and the firm
2	Becker and human capital
3	Say's law
4	Pigouvian taxes
5	The natural rate of unemployment
6	Overlapping generations

litical Economy", a graceful exposition (and extension) of Smith's economic ideas. In Say's time, as nowadays, the world economy combined strong technological progress with fitful demand, spurts of innovation with bouts of austerity. In France output of yarn grew by 125% from 1806 to 1808, when Say was starting his factory. In Britain the Luddites broke stocking frames to stop machines taking their jobs.

On the other hand, global demand was damaged by failed ventures in South America and debilitated by the eventual downfall of Napoleon. In Britain government spending was cut by 40% after the Battle of Waterloo in 1815. Some 300,000

discharged soldiers and sailors were forced to seek alternative employment.

The result was a tide of overcapacity, what Say's contemporaries called a "general glut". Britain was accused of inundating foreign markets, from Italy to Brazil, much as China is blamed for dumping products today. In 1818 a visitor to America found "not a city, nor a town, in which the quantity of goods offered for sale is not infinitely greater than the means of the buyers". It was this "general overstock of all the markets of the universe" that came to preoccupy Say and his critics.

In trying to explain it, Say at first denied that a "general" glut could exist. Some goods can be oversupplied, he conceded. But goods in general cannot. His reasoning became known as Say's law: "it is production which opens a demand for products", or, in a later, snappier formulation: supply creates its own demand.

This proposition, he admitted, has a "paradoxical complexion, which creates a prejudice against it". To the modern ear, it sounds like the foolhardy belief that "if you build it, they will come". Rick Perry, America's energy secretary, was ridiculed after a recent visit to a West Virginia coal plant for saying, "You put the supply out there and the demand will follow."

To grasp Say's point requires two intellectual jumps. The first is to see past money, which can obscure what is really going on in an economy. The second is to jump from micro to macro, from a worm's eye view of individual plants and specific customers to a panoramic view of the economy as a whole.

Firms, like coal plants and cotton mills, sell their products for money. But in order to obtain that money, their customers must themselves have previously sold something of value. Thus, before they can become a source of demand, customers must themselves have been a source of supply.

What most people sell is their labour, one of several "productive services" on offer to entrepreneurs. By marshalling these productive forces, entrepreneurs can create a new item of value, for which other equally valuable items can then be exchanged. It is in this sense that production creates a market for other products.

In the course of making his merchandise, a producer will pay wages to his workers, rent to his landlord, interest to his creditors, the bills of his suppliers and any residual profits to himself. These payments will at least equal the amount the entrepreneur can get for selling his product. The payments will therefore add as much to spendable income as the recipients' joint enterprise has added to supply.

That supply creates demand in this way may be easy enough to grasp. But in what sense does supply create its "own" demand? The epigram seems to suggest that a

► coal plant could buy its own coal—like a subsistence farmer eating the food he grows. In fact, of course, most producers sell to, and buy from, someone else.

But what is true at the micro level is not true at the macro level. At the macro level, there is no someone else. The economy is an integrated whole. What it purchases and distributes among its members are the self-same goods and services those members have jointly produced. At this level of aggregation, the economy is in fact not that different from the subsistence farmer. What it produces, what it earns, and what it buys is all the same, a “harvest” of goods and services, better known as gross domestic product.

From head to foot

How then did Say explain the woes of his age, the stuffed warehouses, clogged ports and choked markets? He understood that an economy might oversupply some commodities, if not all. That could cause severe, if temporary, distress to anyone involved in the hypertrophied industries. But he argued that for every good that is too abundant, there must be another that is too scarce. The labour, capital and other resources devoted to oversupplying one market must have been denied to another more valuable channel of industry, leaving it under-resourced.

Subsequent economists have tried to make sense of Say’s law in the following way. Imagine an economy that consists only of shoes and hats. The cobblers intend to sell \$100-worth of shoes in order to buy the equivalent amount of hats. The hatters intend to sell wares worth \$80 so as to spend the same sum at the cobbler’s. Each plan is internally consistent (planned spending matches revenue). Added together, they imply \$180 of sales and an equal amount of purchases.

Sadly, the two plans are mutually inconsistent. In the shoe market the producers plan to sell more than the consumers will buy. In the hat market the opposite is the case. A journalist, attentive to the woes of the shoe industry, might bemoan the economy’s egregious overcapacity and look askance at its \$180 GDP target. Cobblers, he would conclude, must grasp the nettle and cut production to \$80.

The journalist might not notice that the hat market is also out of whack, in an equal and opposite way. Hat-buyers plan to purchase \$100 from producers who plan to sell only \$80. Unfortunately, this excess demand for hats cannot easily express itself. If cobblers can only sell \$80 of shoes, they will only be able to buy the equivalent amount of hats. No one will see how many hats they would have bought had their more ambitious sales plans been fulfilled. The economy will settle at a GDP of \$160, \$20 below its potential.

Say believed a happier outcome was

possible. In a free market, he thought, shoe prices would quickly fall and hat prices rise. This would encourage shoe consumption and hat production, even as it discouraged the consumption of hats and production of shoes. As a result, both cobblers and hatters might sell \$90 of their good, allowing the economy to reach its \$180 potential. In short: what the economy required was a change in the mix of GDP, not a reduction in its level. Or as one intellectual ally put it, “production is not excessive, but merely ill-assorted”.

Supply gives people the ability to buy the economy’s output. But what ensures their willingness to do so? According to the logic of Say and his allies, people would not bother to produce anything unless they intended to do something with the proceeds. Why suffer the inconvenience of providing \$100-worth of labour, unless something of equal value was sought in return? Even if people chose to save not consume the proceeds, Say was sure this saving would translate faithfully into investment in new capital, like his own cotton factory. And that kind of investment, Say knew all too well, was a voracious source of demand for men and materials.

But what if the sought-after thing was \$100 itself? What if people produced goods to obtain money, not merely as a transactional device to be swiftly exchanged for other things, but as a store of value, to be held indefinitely? A widespread propensity to hoard money posed a problem for Say’s vision. It interrupted the exchange of goods for goods on which his theory relied. Unlike the purchase of newly created products, the accumulation of money pro-

vides no stimulus to production (except perhaps the mining of precious metals under a gold or silver standard). And if, as he had argued, an oversupply of some commodities is offset by an undersupply of others, then by the same logic, an undersupply of money might indeed entail an oversupply of everything else.

Say recognised this as a theoretical danger, but not a practical one. He did not believe that anyone would hold money for long. Say’s own father had been bankrupted by the collapse of *assignats*, paper money issued after the French Revolution. Far from hoarding this depreciating asset, people were in such a rush to spend it, that “one might have supposed it burnt the fingers it passed through.”

In principle, if people want to hold more money, a simple solution suggests itself: print more. In today’s world, unlike Say’s, central banks can create more money (or ease the terms on which it is obtainable) at their own discretion. This should allow them to accommodate the desire to hoard money, while leaving enough left over to buy whatever goods and services the economy is capable of producing. But in practice, even this solution appears to have limits, judging by the disappointing results of monetary expansions since the financial crisis of 2007-08.

Say it ain’t so

Today, many people scoff at Say’s law even before they have fully appreciated it. That is a pity. He was wrong to say that economy-wide shortfalls of demand do not happen. But he was right to suggest that they should not happen. Contrary to popular belief, they serve no salutary economic purpose. There is instead something perverse about an economy impoverished by lack of spending. It is like a subsistence farmer leaving his field untilled and his belly unfilled, farming less than he’d like even as he eats less than he’d choose. When Say’s law fails to hold, workers lack jobs because firms lack customers, and firms lack customers because workers lack jobs.

Say himself faced both a ruinous shortage of demand for his cotton and excess demand for his treatise. The first edition sold out quickly; Napoleon blocked the publication of a second. Eventually, Say was able to adapt, remixing his activities as his own theory would prescribe. He quit his cotton mill in 1812, notes Mr Schoorl. And within weeks of Napoleon’s exile in 1814, he printed a second edition of his treatise (there would be six in all). In 1820 he began work once again at the Conservatory in Paris—not this time as a student of spinning, but as France’s first professor of economics, instructing students in the production, distribution and consumption of wealth. He considered it a “new and beautiful science”. And, in his hands, it was. ■





The Fed's next chair

Rate race

WASHINGTON, DC

Who will be the next head of the Federal Reserve?

LOOK only at unemployment and inflation, says Peter Conti-Brown, a historian of the Federal Reserve, and Janet Yellen is the Fed's most successful boss of all time. The second indicator may be below target, but that is a blip compared with the recessions most Fed chairmen have endured. So it is perhaps not surprising that President Donald Trump is openly considering retaining Ms Yellen, a Democrat installed by Barack Obama, after her term ends in February 2018. Nor by historical standards is it odd: the Fed's past three leaders were all reappointed by presidents from the other party. Yet Ms Yellen, whom Mr Trump criticised on the campaign trail, is not the leading candidate. PredictIt, a betting site, gives her a 28% chance of staying put. In front of her, with a 36% chance of appointment, is someone else Mr Trump is publicly weighing up: Gary Cohn (on the left above).

Mr Cohn was until January the chief operating officer and president of Goldman Sachs. He left that role to become the president's senior economic adviser. A domineering personality, he has amassed influence in the administration, outshining Peter Navarro, Mr Trump's trade economist. Mr Cohn is often said to lead a "globalist" faction within the White House, against protectionists like Mr Navarro and Steve Bannon, another adviser.

He would, however, make an unusual Fed chairman. He has no background in economics, even as a student. The previ-

ous chief to have been similarly unqualified was William Miller, who spent an unhappy year and a half in 1978 and 1979 presiding over low growth and soaring inflation. A happier comparison is to Marriner Eccles, chairman from 1934 to 1948. Like Mr Cohn—and unlike Miller—Eccles had been a successful financier. Also like Mr Cohn, he was close to the president who appointed him, Franklin Roosevelt. And his lack of economics training did not stop him from backing Keynesian stimulus after the Depression, even before Keynes himself had published "The General Theory". Eccles made such a mark that the Fed's headquarters are named after him.

Mr Cohn might find the Eccles building staid. It lacks the day-to-day energy of the White House or Treasury, let alone the buzz of the trading floor. Inside, staff quietly digest vast quantities of economic research to prepare for less-than-monthly monetary-policy decisions. Some wonder if Mr Cohn has an appetite for the minute analysis which, unlike the practice in most organisations, is carried out even by the Fed's leaders. The chairman can, of course, lean on his staff. But one of Miller's problems, says Mr Conti-Brown, was that he lost the respect of his better-trained colleagues.

The Fed's chairman has to be confirmed by the Senate, and some doubt whether it would accept Mr Cohn. Despite the Republicans' control of the chamber, Ms Yellen, given her record, may be a surer bet. Yet the

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praise for her record can be overdone. She has not been tested by many economic shocks. And the inflation shortfall—underlying inflation, currently 1.5%, has not hit the Fed's 2% target during her tenure—was not entirely unforeseen. Larry Summers, the former treasury secretary whom she beat to the job, has been relentlessly advocating looser monetary policy to stoke more inflation. Ironically, Ms Yellen's main charm for Mr Trump seems to be that she is "a low-interest-rate person". In truth, she relies on the unemployment rate to guide her. While it was too high, she was doveish. Now it is just 4.3%, she seems comparatively hawkish.

The Cohn unknowns

The interest-rate opinions of the favourite to succeed her are less clear. Mr Cohn thinks that monetary policy is a global endeavour, and that central banks may have been playing beggar-thy-neighbour. In March 2016 he told a conference that if every central bank suddenly raised interest rates by three percentage points, "the world would be a better place". Yet he also said he was not sure Ms Yellen had been right to raise rates three months earlier. And he criticised the Fed's recent forward guidance as confusing for the markets. He said it should worry more about what it does than what it says.

The Fed is not only responsible for monetary policy. It is also the biggest regulator of banks. Here Mr Cohn is more in sync with Mr Trump's deregulatory agenda. However, that may not matter much. The president recently nominated Randal Quarles, another critic of recent regulation, to be vice-chairman for supervision, a post left empty since it was created in 2010 (though in practice the job was done by Daniel Tarullo, who left the Fed in April). Whoever heads the Fed, Mr Quarles will ▶▶

probably take the lead on regulation.

Other candidates are in the frame. Kevin Warsh (pictured on the right), a former banker who was a Fed policymaker from 2006 to 2011, appears to be manoeuvring for the job. Republicans in Congress may favour John Taylor (in glasses), a Stanford academic who devised a mathematical rule that describes central banks' actions and, like many Republicans, wants the Fed to follow such an algorithm.

The two outsiders have contrasting skills. Mr Warsh is a smooth-talking politician who may lack the intellectual firepower of past Fed chairs. Nobody can

doubt Mr Taylor's braininess. But he did not leave much of a mark on Washington during previous stints there, most recently at the Treasury during George W. Bush's first presidential term. So he may lack the political nous the job demands. In any case, Mr Warsh and Mr Taylor may well both be too hawkish for Mr Trump. After the financial crisis, both opposed the Fed's quantitative easing (QE)—ie, purchases of securities using newly created money—warning of a surge in inflation. In fact, inflation has mostly been too low since then.

No names spring to mind, but Mr Trump still has time to find a trained econ-

omist who is a Republican and yet tends towards Ms Yellen's views on interest rates. Even such a conservative dove might shake up the Fed. Republicans have long complained about its \$1.8trn portfolio of mortgage-backed securities, a result of QE. The central bank hopes to start unwinding QE soon, but its current plans would leave some mortgage-backed securities on its balance-sheet for more than a decade. A Republican chairman might make his mark by offloading these securities faster. But given the stability of Ms Yellen's tenure, markets could be forgiven for wanting as few changes as possible. ■

Buttonwood | Not as smart as they think

Investors rarely make the best political analysts

FINANCIAL markets are supposed to be the font of all wisdom, weighing up the information available and condensing it into a set of prices. Investors are presumed to have an insight into the future—falling bond yields are seen as a sign that the economy is slowing, for example.

But are investors that clever when it comes to politics? Gambling markets show how they assess political risk. They expected the Remain campaign to win the Brexit referendum and Hillary Clinton to become America's president, and were proved wrong. Indeed, on Brexit, the mass of gamblers (the general public, in other words) backed Leave, but the odds were skewed by some wealthy punters who favoured Remain. Those rich gamblers were probably people who trade in financial markets; the plunge in the pound after the result suggests that most investors were caught on the hop.

Before the presidential election, most people on Wall Street to whom Buttonwood spoke thought that a victory for Donald Trump would be bad for the markets. But as the results came in, there was a sudden change of tone and both the dollar and equities rallied.

With the American stockmarket repeatedly reaching new highs (as Mr Trump is fond of pointing out), it may look as if this post-election mood change was prescient. But not really. The rationale for the "Trump bump" was that the administration would quickly pass a stimulus package in the form of tax cuts and infrastructure spending. This would cause economic growth to accelerate (good for equities); in turn, this would prompt the Federal Reserve to push up interest rates (good for the dollar).

But the stimulus plan has yet to be put in place, and is nowhere near passing Congress. American GDP grew by around

0.3% in the first quarter and just over 0.6% in the second; the more recent figure is not bad, but only in line with the euro zone's growth in the same period. In June the IMF trimmed its forecast for American growth in 2017 to 2.1%, and predicted the same figure for 2018.

The result is that the dollar has been losing ground against the euro for much of the year, and is now lower than before Mr Trump took office. That is not just because of events in America, of course: the euro zone has seen growth pick up and political risk decline since Emmanuel Macron was elected president of France.

This currency shift puts the stockmarket rally in context. In dollar terms, euro-zone equities have easily outperformed Wall Street this year. Or, to put it another way, in euro terms American equities have fallen (see chart).

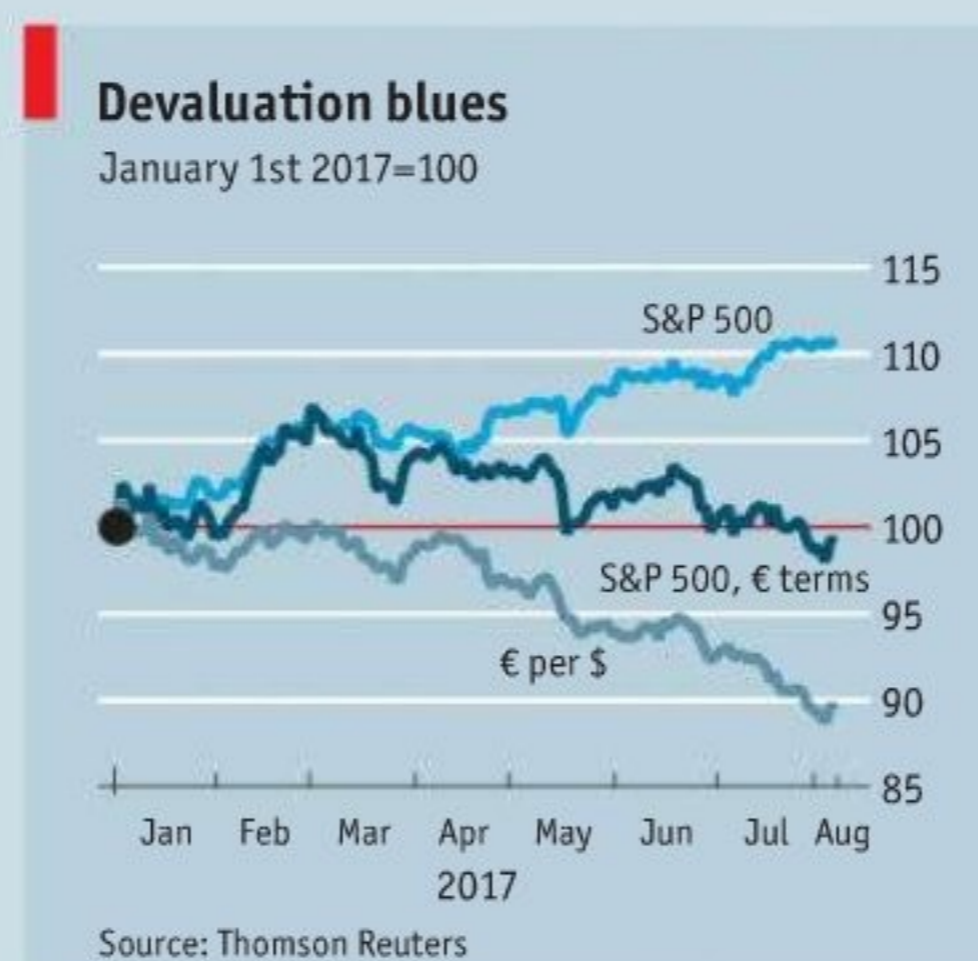
American investors won't mind about that; they are still enjoying strong gains. But some of those returns are the result of a weaker currency, which means that the foreign earnings of multinationals are worth more in dollars. And the strongest-performing sector of the year has been tech-

nology, which tends to benefit from global, rather than purely domestic, growth. The yield on the ten-year Treasury bond is lower than it was at the start of the year—a sign that hopes of faster growth have cooled. In short, the stockmarket may be up, but not for the reasons that investors had expected.

Furthermore, it seemed even at the start of the year that investors were naively optimistic about the administration's agenda. As a candidate, Mr Trump did not have a very detailed economic plan, nor the range of high-powered advisers that most nominees tend to accumulate. As well as promising to cut taxes, he also threatened to introduce protectionist policies directed against Mexico, China and other countries. If those policies had been pushed through (and they may still be), the stockmarket would have taken a severe hit.

It may be that, when it comes to politics, wishful thinking plays a large part for investors. Brexit creates risks for financial companies that are based in London, so it was tempting for those involved to think that it would not happen. The Republican agenda promised tax cuts for the better-off in America, as well as financial deregulation. Both would be good news for the denizens of Wall Street, so it is not surprising that they hoped their dreams would come true.

But it is a mistake to think that investors know something about politics that everyone else does not. Before elections, they must simply rely on the opinion polls. And analysing corporate balance-sheets is a lot easier than making sense of the policy pronouncements of elected officials—especially when a leader is as unpredictable as Mr Trump.





Banking in Australia

Cuckoo in the nest

SYDNEY

A big lender is accused of letting its deposit machines serve as laundromats

WHEN the Commonwealth Bank of Australia on August 9th reported its profit for the year to June—above forecasts and just shy of A\$10bn (\$7.9bn)—it faced questions about cashflows of another sort. Six days earlier the Australian Transaction Reports and Analysis Centre (AUSTRAC), a regulator charged with gathering financial intelligence to combat money-laundering and terrorism, had launched proceedings against it for “serious and systemic non-compliance”. Citing “collective responsibility” for the bank’s reputation, Catherine Livingstone, its chairwoman, has announced cuts to bonuses for Ian Narev, the chief executive, and others.

Founded 106 years ago, CommBank, as it is known, is one of Australia’s biggest banks. AUSTRAC traces its case to 2012, when the bank started installing “intelligent deposit machines”. They accept cash, let depositors stay anonymous and allow money to be switched to other accounts in Australia and overseas straight away. CommBank sets a ceiling of A\$20,000 per transaction through the machines, but no limit on the number of daily transactions. Australia’s other three big banks—Westpac, Australia and New Zealand Bank and National Australia Bank—limit single transactions through their machines to about a quarter of that value.

Shifting money around this way has become increasingly popular—in some months CommBank’s machines have re-

Dutch disease

The Nigerian complaint

Resource riches stunt banks as well as pushing up exchange rates

IN 1959 geologists discovered 2.8trn cubic metres of natural gas—the largest field in Europe—under the city of Groningen in the Netherlands. Cheap gas and free-spending energy firms were thought to be good news for the entire Dutch economy. But higher gas-export prices in the 1970s raised the value of the guilder by a sixth, hitting the competitiveness of Dutch manufacturing and services. In 1977 *The Economist* dubbed this economic curse “Dutch disease”.

Other resource-rich countries have tried to avoid this trap. Some have adopted fixed exchange rates to prevent their currencies appreciating. Others save capital inflows in sovereign-wealth funds to avoid distorting their economies. Yet many still have underdeveloped non-commodity sectors. And despite having plenty of cash to invest, banks are particularly affected.

Two recent IMF papers point to a new explanation of why commodity exporters have such stunted banks. The problem, they find, is less the commodity income itself than the sudden changes in it. The first paper* looks at data on trade and financial stability for 71 commodity exporters between 1997 and 2013. It finds a very strong relationship between negative commodity-price shocks and signs of financial fragility that increase the likelihood of severe banking crises.

A new paper** extends this idea. It takes data for 68 developing countries between 1980 and 2014 and finds, strikingly, that bank lending was crimped not only during sudden falls in commodity prices, but also during sudden rises.

ceived A\$1bn in cash deposits. The regulator says the bank took no steps to assess money-laundering and terrorism-financing risks from this deposit system until mid-2015, three years after it started.

The Anti-Money Laundering and Counter-Terrorism Financing Act obliges banks to report cash transactions above A\$10,000 made through their machines within ten days. AUSTRAC claims CommBank failed to do so for about 53,500 suspicious transactions valued in total at A\$625m. Some were linked to money-laundering groups under investigation by the police; a few even involved customers CommBank itself saw as potential risks for terrorism financing.

Deposits of A\$27m into one account came from a drug syndicate, three members of which have been charged. The reg-

Investing in and lending to the commodity sector became so seductive that loans to the private sector as a share of GDP, bank deposits and liquidity ratios all fell.

This story, of banks starving other industries of credit during commodity booms, as well as in downturns, is surprisingly common, says Montfort Mlachila, one of the papers’ authors. Nigeria is an example. An oil-price dip in 1998 forced 28 banks to close. Another in 2009 caused a further ten to collapse. Low prices since 2014 mean Nigeria today again risks a banking crisis.

This discovery may also help explain economic underdevelopment. History shows that banking crises—which starve firms of credit in their aftermath—result in deeper recessions, with much slower growth after they end, than other types of slump. So strengthening financial stability should aid economic growth.

The second paper finds that democracies receive a smaller hit from commodity shocks than other regimes. Maybe they are better at curbing corruption, which can skew lending even more towards the commodity sector. But building democracy takes time. It may be easier to use macroprudential policies to rein in overlending to the commodities sector during the boom years. That lesson applies to developing economies as well as advanced ones.

* T. Kinda, M. Mlachila and R. Ouedraogo, “Commodity Price Shocks and Financial Sector Fragility”, IMF Working Paper No. 16/12 (February 2016).

** M. Mlachila and R. Ouedraogo, “Financial Development Resource Curse in Resource-Rich Countries”, IMF Working Paper No. 17/163 (July 2017).

ulator says some CommBank accounts were used for “cuckoo smurfing”, a form of laundering money from one country to another without sending it across a border. It said the bank’s conduct exposed Australia to “serious and ongoing financial crime”.

Mr Narev admits CommBank made “mistakes”. The bank blames these on a software “coding error” linked to its machines and says it has complied with its reporting obligations since late 2015. Each of the 53,500 alleged contraventions could attract a fine of A\$18m, leading to a theoretical total of nearly A\$1trn. But the bank suggests they could all stem from the same cause, the one coding error, so the fine might not be catastrophic. It is preparing a defence statement for the Federal Court.

Many Australians resent bigger banks, believing that they put profits before cus- ▶▶

▶ tomer service. Three years ago, a parliamentary committee criticised CommBank after revelations that some of its advisers had steered people into investments that soured. Malcolm Turnbull's conservative government has resisted calls from the Labor opposition for a royal-commission inquiry into banks. Instead, in its latest budget it imposed a levy on Australia's five biggest, to raise about A\$1.5bn a year.

The CommBank drama will only aggravate public exasperation with banks. Scott Morrison, the treasurer, has warned Ms Livingstone that the government will "consider all options", without naming them. Anna Bligh of the Australian Bankers' Association, a trade body, hopes that the CommBank affair will be a lesson "for the entire financial industry". Even Mr Narev concedes banks are "not exactly drawing on a deep reservoir of public goodwill". ■

Risky sovereign bonds

Still crazy after falling yields

The reach for yield becomes quite a stretch

WHERE can you find a 7% interest rate on a sovereign dollar-bond? You would have to take a time-machine to the mid-1990s to find such a yield on a ten-year American Treasury. Alternatively, you could slip back a few days to August 2nd and bid for the \$1bn of five-year bonds sold by the government of Iraq. The yield was expected to be 7%, but it was trimmed to 6.75% once orders rose above \$6bn.

Such eagerness for hard-currency debt

American infrastructure investment

Idle shovels

NEW YORK

Plans for a spending surge get off to a slow start

IT IS not a number to tweet about. President Donald Trump plans to plough \$1trn of spending into America's crumbling infrastructure. And a dearth of capital is not a problem: investors are keen on such assets. But investment seems to be falling.

Government infrastructure spending in the second quarter fell to 1.4% of GDP, the lowest share on record (see chart). According to Thomson Reuters, investment by American municipalities in the first seven months of this year, at \$50.7bn, was nearly 20% below the same period in 2016. Private-sector infrastructure funds show a similar trend, according to Preqin, another data provider: deal volume in the first half of 2017 fell by 7.5%, year on year, to \$36.6bn; the number of deals fell by a quarter.

Not long ago optimists were expecting an infrastructure-spending boom. In May

Blackstone, a private-equity firm, announced with much fanfare a new \$40bn fund for American infrastructure, with a \$20bn investment from one of Saudi Arabia's sovereign-wealth funds.

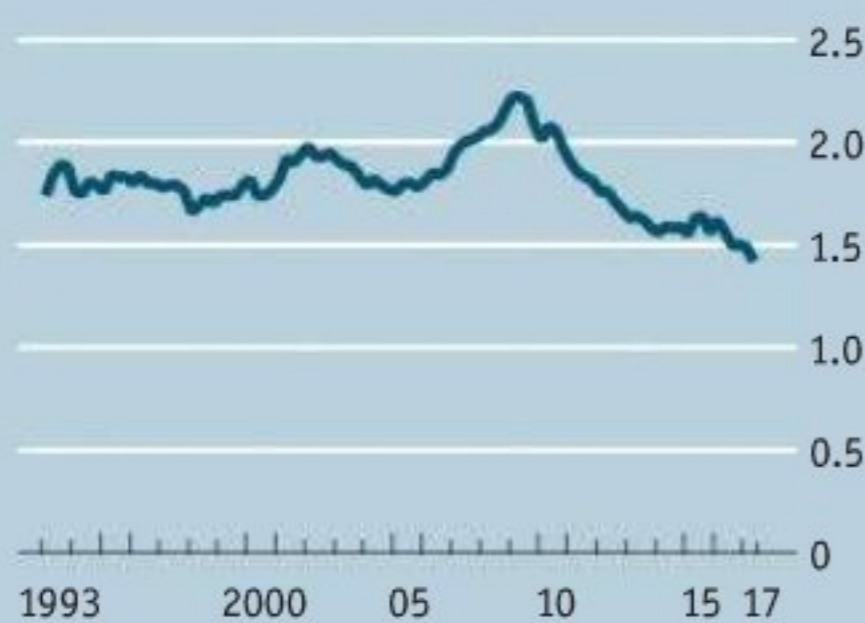
Yet the obstacles to investment in American infrastructure, particularly for private capital, remain daunting. Planning procedures are arduous. Many decisions are taken at state or local level by transport agencies that remain, in one investor's words, "great bastions of political patronage". Private ownership of certain types of infrastructure still encounters resistance. Many European airports are now private, for example, whereas American ones are public. So American private-sector investment hovers at a meagre \$100bn or so a year, around four-fifths of it in energy.

The recent downward trend in both public and private investment suggests the administration's lack of action has had an additional cooling effect. Anton Pil of J.P. Morgan points out that most large infrastructure projects in America need at least some federal funding to succeed. Unless the federal government leads the way, there is unlikely to be much new activity.

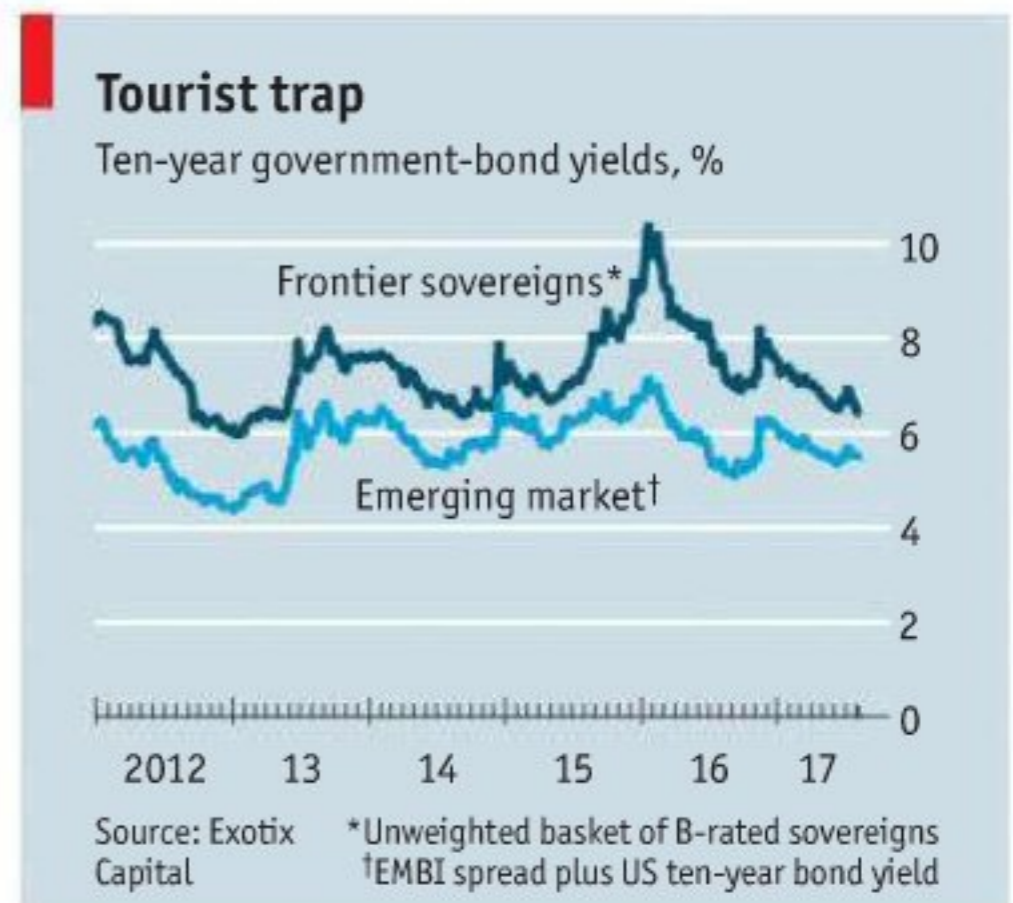
Even if the administration does set an example, a further difficulty is the shortage of investable projects, particularly big-ticket ones. Mr Pil's team has been making deals as small as \$100m, for instance in small solar farms; large-deal opportunities remain rare, he says. It is easier, it seems, to raise money to invest in infrastructure than to spend it.

Unreconstructed

United States, public-construction spending
As % of GDP



Source: US Census Bureau



from a country still reeling from a civil war shows just how far bond investors will now go to get a decent yield. Oversubscribed issues for risky sovereign bonds have become almost normal. The Iraqi sale came just a week after Greece (whose privately held debt was partly written off in 2012) raised €3bn (\$3.5bn) in its first bond sale for three years. In June Argentina was inundated with bids for its 100-year euro-bond, as dollar-denominated bonds are known. Sceptics noted that Argentina had defaulted on its debts six times in the previous century, with the most recent such upset in 2014. Egypt, Ivory Coast, Nigeria and Senegal have also placed big eurobond issues this year. None enjoys a credit-rating that approaches investment grade, though the eurobond market is familiar with many of them. Ivory Coast, for instance, issued a bond in 2010 in lieu of unpaid debts. It proceeded to miss an interest payment the following year.

Bond investors are ready to forgive such slip-ups. They do not have much choice. The yield on ten-year Treasuries is 2.26%, not much more than inflation in America. A basket of high-yield corporate (or "junk") bonds pays less than 6%. Yet despite a long period of low short-term interest rates in America, inflation is still quiescent. So the Federal Reserve seems unlikely to raise interest rates much further. "Investors have concluded that we're not going to get meaningfully higher yields on safe assets," says David Riley, of BlueBay Asset Management. In this context, lowly-rated sovereign eurobonds can look appealing. Indeed the weight of money has driven the average yield on such "frontier-market" bonds below 7%, according to Stuart Culverhouse, of Exotix, a broker (see chart).

The appetite for ever-riskier bets recalls the recklessness that led up to the financial crisis, which began a decade ago this week. What is different, though, is the absence of euphoria. Few seem to want to cheer the rally in risky eurobonds. But nor do they want to bet against it.

A common complaint is that rich-world central banks are to blame—for keeping rates too low and for studiously avoiding any action or statement that might unsettle ▶▶

the markets (and make investors more jumpy). Other culprits include low-cost “passive” fund managers and exchange-traded funds, which track a basket of government bonds, such as J.P. Morgan’s emerging-market bond index, known as the EMBI. Such indices are also a yardstick for the performance of many “active” funds, ie, those with discretion over what sort of bonds to buy and how much of them to hold. The growing influence of passive funds makes active investors less willing to eschew a eurobond issue that qualifies for the indices, however unsound, for fear of underperforming.

It is easy to suspect that this episode, like so many before it, will end badly, but hard to know exactly when or how. Frontier-market specialists sense a greater inter-

est in their bailiwick from crossover (non-specialist) investors, also known as “tourists”, who are likelier to misjudge the odds of a default. And the reach for yield could always be stretched even further to local-currency bond markets, which are less liquid and a lot more volatile.

Take Ghana, once a darling of frontier investors, as an example. It is back in favour, as its newish government gets to grips with public finances. Yvette Babb, of J.P. Morgan, calculates that 37% of the stock of Ghana’s public debt is already held by foreigners. The effective interest rate it pays on domestic debt is around 16%. The weight of long-term investors is “substantial”, she says, so the risks of a knee-jerk sell-off are low. But how long before such high yields lure in the tourists? ■

Football finance

Shooting stars

Why the world’s best footballers are cheaper than they seem

FOR football clubs, August is often the costliest month, when they make vast bids for each other’s players. This year has been particularly lavish. On August 3rd Paris Saint-Germain (PSG), a French team, signed Neymar da Silva Santos Júnior, a Brazilian forward, from Barcelona for €222m (\$264m), more than double the previous record price for a footballer.

With three weeks of the transfer “window” left, teams in Europe’s “big five” leagues—the top divisions in England, Spain, Germany, Italy and France—have paid €3.2bn, just short of the record of €3.4bn set last year. The €179m splurged by Manchester City, an English club, on de-

fenders outstrips 47 countries’ defence budgets. Arsène Wenger, a veteran manager of Arsenal, a London team, and an economics graduate, describes the modern transfer market as “beyond calculation and beyond rationality”.

Neymar, as he is known, will cost PSG’s owners, a branch of Qatar’s sovereign-wealth fund, about €500m over five years. In the betting markets, his arrival has boosted PSG’s implied chances of winning the Champions League, Europe’s most coveted club competition—but only from around 5.5% to about 9%. And prize money and ticket sales alone struggle to generate enough revenue to recoup such an outlay.

That does not make Neymar a bad investment. The goals he scores may matter less than the gloss he lends to the club’s brand and the sponsors he will lure. He earns more from endorsements than any footballer except Cristiano Ronaldo and Lionel Messi. Some 59% of PSG’s revenue of €520m last year was commercial (ie, other than ticket sales and broadcasting fees), more than any other club in the big five leagues. Neymar has more followers on Instagram, a social network, than does Nike, his main sponsor and the provider of PSG’s kit, for which privilege it pays €24m a year. Neymar’s popularity will help PSG when this deal is renegotiated. Nike has already agreed to pay Barcelona €155m a season from 2018.

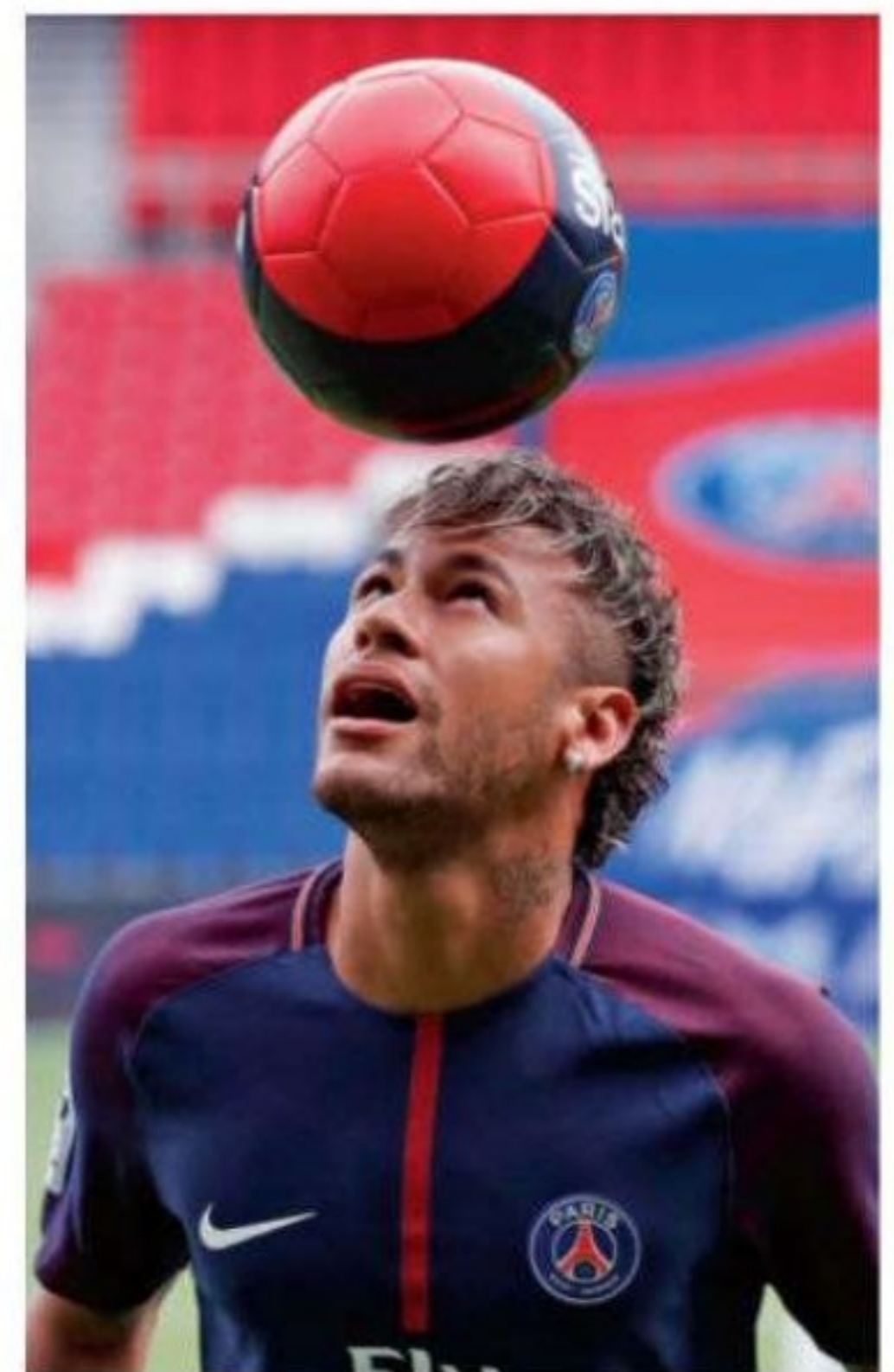
PSG’s owners are confident of breaking even, though they could afford a loss. Qatar has been spending €420m a week preparing for the 2022 World Cup, and the

signing of Neymar is a message that the otherwise embattled country remains strong and rich. The danger is to PSG, since under “financial fair play” rules, teams are punished if they fail to limit their losses. In 2014 the club was fined for violating these. Another failure to balance the books could mean a ban from the Champions League.

Such spending caps irk billionaire owners, but they have helped prevent the inflation of a transfer-fee bubble. The rapid rise is a result of European football’s expanding fan base. In the English Premier League, football’s richest, average net spending on players per club has stayed roughly constant, hovering at around 15% of revenue since the 1990s, according to the 21st Club, a football consultancy.

As long as clubs’ revenues keep growing, the transfer boom is likely to persist. Broadcasting revenue, the game’s first big injection of cash in the 1990s, has become, in the internet era, the weakest link. British television audiences for live games have dipped as some fans opt for illegal streaming sites or free highlights. Zach Fuller, a media analyst, reckons that signing a sponsorship magnet like Neymar is a hedge against volatility in that market.

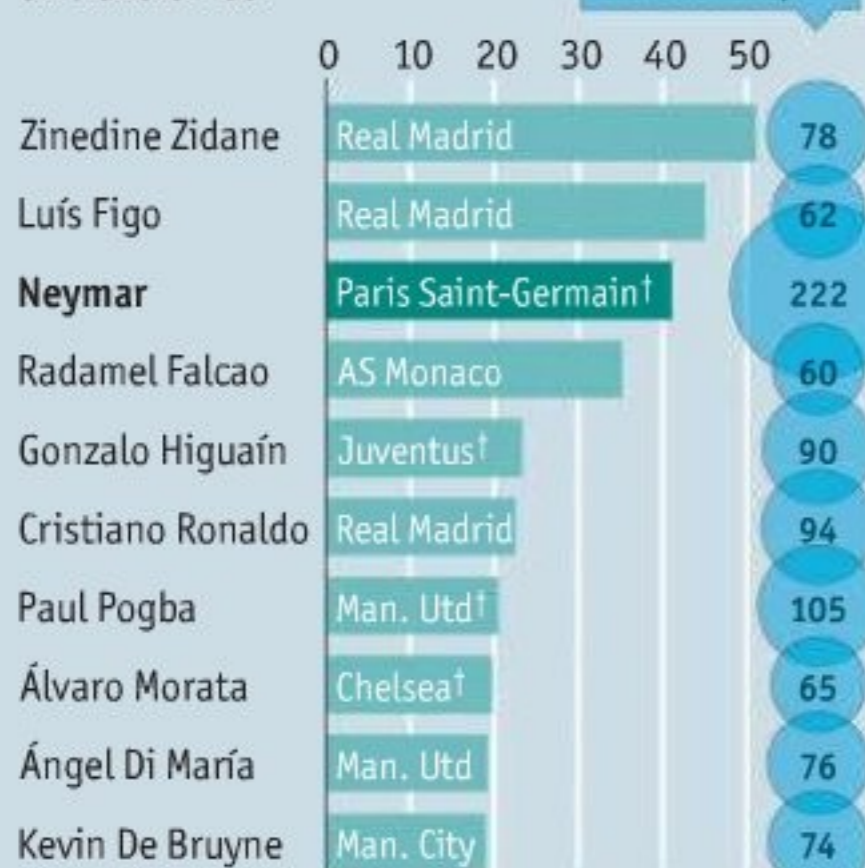
Audiences are more robust elsewhere: around 100m Chinese viewers tune into the biggest games. Manchester United are the most popular team on Chinese social media, despite qualifying for the Champions League only twice in the past four seasons. They have overtaken Real Madrid, who have won the trophy three times in the same period, as the world’s most prosperous club. If Neymar unlocks new markets as well as defences, then PSG may have backed a winner. ■



A head for figures

Transfer pricing

European football, % of buying club’s revenue from following season spent on transfer fee*



*Transfers over €60m at Aug 9th 2017, excluding add-ons
Source: Company reports †Latest revenue (2016)



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Nuclear energy

Putting to sea

Atomic power stations that float on the ocean or are anchored beneath it may have advantages over those built on land

AFTER the events of March 11th 2011, when an earthquake and tsunami led to a meltdown of three nuclear reactors at the Fukushima Dai-ichi power plant in Japan, you might be forgiven for concluding that atomic power and seawater don't mix. Many engineers, though, do not agree. They would like to see more seawater involved, not less. In fact, they have plans to site nuclear power plants in the ocean rather than on land—either floating on the surface or moored beneath it.

At first, this sounds a mad idea. It is not. Land-based power stations are bespoke structures, built by the techniques of civil engineering, in which each is slightly different and teams of specialists come and go according to the phase of the project. Marine stations, by contrast, could be mass-produced in factories using, if not the techniques of the assembly line, then at least those of the shipyard, with crews constantly employed.

That would make power stations at sea cheaper than those on land. Jacopo Buonigiorno, a nuclear engineer at the Massachusetts Institute of Technology, reckons that, when all is done and dusted, electricity from a marine station would cost at least a third less than that from a terrestrial equivalent. It would also make them safer. A reactor anchored on the seabed would never lack emergency cooling, the problem that caused the Fukushima meltdown. Nor would it need to be protected against the risk of terrorists flying an aircraft into it. It

would be tsunami-proof, too. Though tsunamis become great and destructive waves when they arrive in shallow water, in the open ocean they are mere ripples. Indeed, were it deep enough (100 metres or so), such a submarine reactor would not even be affected by passing storms.

Water power

All these reasons, observes Jacques Chénais, an engineer at France's atomic-energy commission, CEA, make underwater nuclear power stations an idea worth investigating. Dr Chénais is head of small reactors at CEA, and has had experience with one well-established type of underwater reactor—that which powers submarines. He and his team are now assisting Naval Group, a French military contractor, to design reactors that will stay put instead of moving around on a boat. The plan is to encase a reactor and an electricity-generating steam turbine in a steel cylinder the length of a football pitch and with a weight of around 12,000 tonnes.

The whole system, dubbed Flexblue, would be anchored to the seabed between five and 15km from the coast—far enough for safety in case of an emergency, but near enough to be serviced easily. The electricity generated (up to 250 megawatts, enough for 1m people) would be transmitted ashore by an undersea cable. For refuelling and maintenance unmanageable from a submarine, the cylinder would be floated to the surface with air injected into

its ballast tanks. And, when a station came to the end of its useful life, it could be towed to a specialist facility to be dismantled safely, rather than requiring yet another lot of civil engineers to demolish it.

Naval Group has not, as yet, attracted any customers for its designs. But a slightly less ambitious approach to marine reactors—anchoring them on the surface rather than below it—is about to come to fruition in Russia. The first such, *Akademik Lomonosov*, is under construction at the Baltic Shipyard, in St Petersburg (see picture). According to Andrey Bukhovtsev of Rosatom, the agency that runs Russia's civil nuclear programme, it is 96% complete. It will be launched later this year, towed to Murmansk, and thence transported to Pevek, a port in Russia's Far East, where it will begin generating power in 2019.

Akademik Lomonosov consists of two 35MW reactors mounted on a barge. The reactors are modified versions of those used to power *Taymyr*-class icebreakers. As such, they are designed to be able to take quite a battering, so the storms of the Arctic Ocean should not trouble them. To add to their safety, the barge bearing them will be moored, about 200 metres from shore, behind a storm-and-tsunami-resistant breakwater.

Altogether, *Akademik Lomonosov* will cost \$480m to build and install—far less than would have to be spent constructing an equivalent power station on land in such a remote and hostile environment. And, on the presumption that the whole thing will work, plans for a second, similar plant are being laid.

Nor is Russia alone in planning floating reactors. China has similar ambitions—though the destinations of the devices concerned are more controversial than those of Russia's. Specifically, the Chinese government intends, during the 2020s, to build up to 20 floating nuclear plants, with ▶▶

reactors as powerful as 200MW, to supply artificial islands it is building as part of its plan to enforce the country's claim to much of the South China Sea—a claim disputed by every other country in the area.

The firms involved in this project intend to tsunami-proof some of their reactors in the same way as the French, by stationing them in water too deep for massive tsunami waves to form. Because they are at the surface, though, that will not save them from storms—and locating them far from shore means the Russian approach of building sheltering breakwaters will not work either. That matters. Typhoons in the South China Sea can whip up waves with an amplitude exceeding 20 metres.

To withstand such storms, the barges will have anchors that are attached to swivelling “mooring turrets” under their bows. These will cause a barge to behave like a weather vane, always pointing into the wind. Since that is the direction waves come from, it will remain bow-on to those waves, giving it the best chance of riding out any storm that nature cares to throw at it. The barges' bows will also be built high, in order to cut through waves. This way, claims Mark Tipping of Lloyd's Register, a British firm that is advising on the plants' design, they will be able to survive a “10,000-year storm”.

The South China Sea is also a busy area for shipping, so any floating power stations there will need to be able to withstand a direct hit by a heavy-laden cargo vessel travelling at a speed of, say, 20 knots—whether that collision be accidental or the result of hostile action. One way to do this, says Chen Haibo, a naval architect working on the problem at Lloyd's Register's Beijing office, is to fit the barges with crumple zones packed with materials such as corrugated steel and wood.

Not everyone is delighted with the idea of marine nuclear power. Rashid Alimov, head of energy projects at Greenpeace Russia, an environmental charity, argues that offshore plants could be boarded by pirates or terrorists, be struck by an iceberg or might evade safety rules that are hard to enforce at sea. On July 21st Greenpeace scored a victory when Rosatom said that *Akademik Lomonosov's* nuclear fuel would be loaded in an unpopulated area away from St Petersburg.

That, though, is a pinprick. The future of marine nuclear power stations is more likely to depend on the future of nuclear power itself than on the actions of pressure groups such as Greenpeace. If, as many who worry about the climate-changing potential of fossil-fuel power stations think, uranium has an important part to play in generating electricity over coming decades, then many new nuclear plants will be needed. And if that does turn out to be the case, siting such plants out at sea may well prove a good idea. ■

Genetic engineering and transplantation

Cracking down on PERVs

CRISPR-Cas9 gene editing may make pigs into organ donors for people

“KEEP death off the road”, a Ministry of Transport slogan once enjoined the people of Britain. And it worked. Both driving and being a pedestrian have become far safer over the past few decades in Britain and many other countries. One consequence, though, is a shortage of human organs available for transplant. Waiting lists for such transplants have thus grown. In July, more than 117,000 people were awaiting suitable donors in the United States alone. An alternative source of supply is needed. And a paper published in *Science* this week, by Luhan Yang and her colleagues at eGenesis, an American biotechnology company, may help pave the way to providing it.

Dr Yang and her team are working on pigs. The idea of using pig organs as substitutes for human ones has been around for a while. Pigs are well studied and easy to breed. They are also about the same size as people, meaning that their internal bits and pieces are, too. Though there is an obvious “yuck” factor to the idea of transplanting, say, pigs' kidneys into people now hooked up to dialysis machines, those facing death from kidney failure might not be so squeamish.

Beyond the yuck factor, however, there are real, physiological objections to such “xenotransplantation”. One is that a human immune system will rapidly reject the xenograft. Another is that the graft may bring with it novel infections, caused by what are known as endogenous retroviruses. It is this second problem that Dr Yang's work may be able to deal with.

An endogenous retrovirus is a sequence of viral DNA that has been incorpo-

rated into an animal's genome and is then passed down the generations along with the rest of its DNA. Crucially, such viruses retain the power to break out and become independent, infective agents once again. Moreover, experiments using cell cultures show endogenous retroviruses can spread in this way from the cells of one species to those of another, infecting them with disease. In particular, those experiments suggest that porcine endogenous retroviruses (abbreviated, perhaps unfortunately, to “PERVs”) can spread to human cells. Whether PERVs can leap from a transplanted organ to the cells of that organ's host, rather than just making the journey in a Petri dish, has not yet been established. But even a minute risk of this happening is something no medical-licensing authority is likely to overlook.

To eliminate the possibility of such a leap taking place, Dr Yang and her team turned to CRISPR-Cas9, a gene-editing technique currently in the news for its potential use in modifying the DNA of human embryos to replace faulty genes. Dr Yang sought to use it to remove PERVs, and thus to clean up pigs' DNA to make it safe for xenotransplantation.

First, the team had to seek out every PERV hiding in the 2.7bn base pairs of the genomes of their pigs. That meant sequencing those genomes accurately and then searching them for places that looked like viral genes. They found 25 PERVs in this way. They then used CRISPR-Cas9, the nuts and bolts of which are a complex of molecules able to track down a particular arrangement of base pairs and cut the DNA in that place, to try to inactivate all the PERVs in some cultured pig-body cells—specifically, cells of a type called fibroblasts.

Their first attempts to do this failed. They found they were able to disable a maximum of 90% of the PERVs in a given fibroblast. After a while, they realised that the damage inflicted by more edits than this was triggering a cellular self-destruct mechanism called apoptosis. By applying a mixture of chemicals known to stop ▶▶



Fresh and CRISPRy

apoptosis along with the molecular editors, they overcame the problem and were able to inactivate every PERV in the nuclei of some of the fibroblasts. Then, by transplanting these purged nuclei into egg cells extracted from sows' ovaries, and implanting the results into other sows' uteruses, they created eight litters of PERV-free piglets—30 animals in all.

Half of those piglets are still alive, four and a half months after their birth—which would be the ideal age to harvest their organs for transplantation. That will not be the fate of these particular pigs, though. They will be studied carefully over the whole of their lives for any signs of abnormality. Moreover they, or others like them,

will be used as the foundation of a new strain of pigs, PERV-free, on which further research can be done. Having used gene editing to eliminate PERVs, the next phase is to apply it to the question of organ rejection. If porcine genes for the proteins that most provoke the human immune system could be eliminated in the way that PERVs have just been, then an important further step towards xenotransplantation would have been taken. It might even be possible to add genes that made pig organs seem, to human immune systems, more human-like. At that point, the possibility of growing acceptable substitutes for human organs in specialised pig farms would be just around the corner. ■

and bolted on. Moreover, many needed replacing after each mission. This arrangement proved so fragile that, when some of the tiles on a shuttle called *Columbia* were damaged by a piece of foam that broke free during an ascent into space in 2003, the heat shield failed on re-entry, and the vehicle and its crew were lost.

Dr Xiao's aim, therefore, has been to add flexibility to ceramic materials without lowering their melting points, and also without reducing their resistance to ablation—the wearing away of material caused by the extreme scouring that takes place at hypersonic speeds and their associated temperatures. His starting point is what is known as a carbon-carbon composite. This is a matrix of carbon reinforced with carbon fibres. Such composites are widely used in the aerospace industry because they are strong, light and flexible. They would not, however, survive 3,000°C. To protect them from this level of heating Dr Xiao and his team used a process called reactive melt infiltration to infuse the composite with a liquid mixture of zirconium, titanium, carbon and boron. When this happens, the composite acts as a sponge. It draws in the liquid, which then reacts to form a carbide.

Carbides are tough ceramic compounds formed when carbon combines with other elements. The trick Dr Xiao's process pulls off is to coat the carbon fibres in the original material with the complex carbide created during the infusion. That retains those fibres' mechanical strength and flexibility while protecting them from extreme temperatures. In tests they reported earlier this year, the researchers found that their carbide coating not only survived but displayed a lower rate of ablation than existing ultra-high temperature ceramics between 2,000°C and 3,000°C. At 2,500°C, for example, the rate of loss was less than a twelfth that of zirconium carbide, a ceramic widely used to provide heat protection in things ranging from drill bits to rockets.

Another advantage of infusing ceramic materials into carbon-carbon composites in this way is that it permits more complex heat-resistant shapes to be produced than is possible with conventional methods of moulding under heat and pressure. And the new materials should also be more resistant than conventional ones to thermal shock—when a sudden temperature change causes a material to break apart in an instant.

Beside its use in hypersonic aircraft, the new carbon-carbide composite may also, with appropriate adjustments to its recipe, be used to extend the lives of reusable rockets and gas turbines. But it is the thought that the plane you board at Heathrow at 7am will deliver you to Sydney two hours later, just in time for dinner, that will excite most people. ■



Hypersonic travel

Hot stuff

MANCHESTER

A new ceramic material could withstand the heat of Mach 5 and above

FRICITION burns. And the friction of the air on something travelling at five times the speed of sound burns hot. The leading edge of such an object can easily reach a temperature of 3,000°C. Inconveniently, that is above the melting point of most materials used by engineers, which makes it hard to design things like wings and nose cones for aircraft intended to achieve hypersonic velocities. The lure of hypersonic flight is such, though, that many are trying to do so. The world's air forces would love such planes. And for civilians (at least, for those with deep pockets), the idea of being able to jet in a couple of hours from Britain to Australia sounds extremely attractive.

Among those lured are Ping Xiao and his colleagues at the University of Manchester, in England, and in Central South

University in Changsha, China. And they think they have come up with a new material that might provide the answer.

Their novel substance is a ceramic. That is no surprise. Ceramics have strong bonds between their atoms—unlike metals, in which the electrons in those bonds have more freedom to move around. This gives ceramics high melting points, permitting them to be deployed in hot circumstances. But it also makes them brittle. That fragility became notorious when ceramic tiles were chosen as the re-entry heat shields for America's space shuttles. Each of those craft was fitted with more than 24,000 tiles made from high-grade silica sand. The tiles were indeed heat-resistant. They were also, however, so brittle that they had to be glued to the spacecraft, rather than drilled



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Prizes for puns

The quip and the dread

Why English is the language of champuns

LAST week's issue of this paper contained the following headlines: "Rooms for improvement" (in a story about British housing); "Though Mooch is taken, Mooch abides" (on the firing of Anthony Scaramucci); and "LIBOR pains" (on interbank loan rates). *The Economist* is not alone in its taste for wordplay. Our colleagues at the *Financial Times* routinely sneak subtle jokes into their headlines (July 17th: "Why China's global shipping ambitions will not easily be contained") while those at the tabloids indulge themselves more obviously. On the arrest of a famous golfer for drink-driving: "DUI of the Tiger".

These authors are fortunate to work at English-language publications. For English is unusually good for puns. It has a large vocabulary and a rich stock of homophones from which puns can be made. It is constantly evolving, with new words being invented and old ones given fresh meanings. And it is mostly uninflected, allowing for verbs and nouns to switch places. Moreover, other than the occasional customary feminine pronoun, for ships, say, or nation-states, it has no gendered nouns, which makes it easier to play with innuendo and double entendres. (Chinese is another good language for punsters, which is a boon for those keen to avoid the country's censors. Puns are especially popular around Chinese new year.)

Newspaper editors get paid to write sil-

Away With Words: An Irreverent Tour Through the World of Pun Competitions.
By Joe Berkowitz. *Harper Perennial*; 273 pages; \$15.99 and £8.99

ly jokes for an audience. But over the past few years a growing band of amateurs has taken up the sport. In New York a monthly event called Punderdome features jokesters with pseudonyms such as "Punder Enlightening", "Jargon Slayer" and "Words Nightmare" who compete over the course of four increasingly absurd rounds. Similar competitions exist in Washington, DC, (Beltway Pundits), Milwaukee (Pundamonium), San Francisco (Bay Area Pun-Off) and elsewhere. The annual O. Henry Pun-Off in Austin, Texas, which started in 1978, bills itself as the genre's World Championship. (Word Champunship, surely?)

But who would pay to watch people make puns? That was how Joe Berkowitz, an editor at *Fast Company*, an American business magazine, reacted when he first discovered Punderdome. He went on to spend a year travelling round America, attending pun-parties and interviewing humour experts and comedy writers. The outcome? "Away With Words", a faintly anthropological examination of puns and the people who make them. The chief attraction of these competitions, he reports, is that they create a space for something

"people feel like they're not supposed to like and ought not to do".

Puns are widely held in low esteem, a justifiable consideration. They are one of the first forms of humour that children understand and deploy, before they move on to more sophisticated jokes that use language semantically, Vinod Goel, a neuroscientist, tells Mr Berkowitz. That may account both for the reaction that puns get from listeners—the groan suggesting that the punster ought to know better—but also for their popularity. Many puns are indeed juvenile. They are also easy to understand.

Yet puns demand intelligence, creativity and general knowledge: the best draw on cultural references, allude to several things at the same time and are intricately constructed (such as the one about Mahatma Gandhi, who walked barefoot a lot and often fasted, leading to bad breath, thus making him a "super calloused fragile mystic hexed by halitosis"). The Harry Potter series would be less magical without Knockturn Alley and Diagon Alley. Salman Rushdie uses puns without shame.

It is not just the quality of puns that is divisive but also the definition. At Punderdome a pun is simply "a play on words". The winners are picked by volume of applause. At the O. Henry Pun-Off onstage referees disqualify what they consider subpar wordplay, and a panel of judges hold up scores at the end of each round. Every potential topic is heavily pun-tested by organisers before being deemed fit for play. "I sometimes get embarrassed by how seriously I take this," says one veteran contestant of both competitions.

He is not alone. This reviewer disregards any pun that requires a hyphen (ovine puns are egg-specially eggs-cruciating) and believes that puns must have a set-up (the more elaborate the better). ▶▶

Throughout "Away With Words" punsters, comedy writers and academics offer their own standards for how to tell a good pun from a bad one. Mr Berkowitz himself cannot resist the temptation to set a few rules. The four types of bad pun, according to him, are those that suffer from bad timing, are too obvious, have no second meaning or are too earnest.

A pun, like porn, is defined less by intention than by reception. One contestant at the O. Henry, on the topic of birds, told the audience, "Beak kind to me, don't thrush to judgment, I'm not robin anyone, hawking anything, talon tails out of school, ducking responsibilities or emulating anyone." Only the reader should decide whether that deserves a prize or social ostrichism. ■

Writer, hero, crank

Wild American

Henry David Thoreau: A Life. By Laura Dassow Walls. *University of Chicago Press*; 613 pages; \$35 and £26.50

ON AN April night in 1844, a distraught Henry David Thoreau walked through the blackened waste of a forest fire he had accidentally caused only hours before. The fire, near Concord, Massachusetts, surrounded Walden Pond, about which he would write so eloquently a decade later. The woods soon recovered, but Thoreau's reputation did not. After he died, the *Atlantic* published a confession from his journal and mocked him: "The icon of woodcraft, so careless he burned down the woods!...The town ne'er-do-well, off fishing when he should have been earning a living!"

Two centuries later Thoreau's reputation continues to be questioned. He is often derided as an ascetic crank, pond scum, or inversely, revered as a back-to-nature saint. Laura Dassow Walls's new biography is a compelling study that dispels both these notions, revealing an enigmatic American writer worthy of reappraisal.

Much of the animosity towards Thoreau centres on the two years he spent by Walden Pond and the book they inspired. "Walden" is seen by some as a retreat to a false wilderness, interspersed with trips to his family home for hot meals and to do his laundry. Ms Walls argues that Thoreau's seclusion at Walden Pond should instead be viewed as an inadvertent piece of performance art. "Walden" includes some of the most influential and lyrical nature writing in America and became the foundation for a new generation of environmental thinking. Ms Walls quotes little of it, preferring to

focus on the duality of Thoreau's personality: introspective and intensely private, yet self-certain and boastful.

While living by Walden Pond, Thoreau harboured a slave who had escaped from the South as part of the "Underground Railroad". This act of private rebellion led to a very public one a decade later. On November 1st 1859 the professed hermit stood up in front of a crowd in the Tremont Temple in Boston to deliver a lecture in support of Captain John Brown, an abolitionist who was to be hanged for leading an armed attack in what is now West Virginia. Thoreau, thought of as a quiet philosopher, held his audience enthralled and parts of his lecture were reprinted in newspapers around the country.

One of the pleasures of reading Ms Walls's book is learning of Thoreau's many-sided and relentlessly curious nature. As well as his writing and activism, he was an engineer, a surveyor, a lecturer and a meticulous naturalist. Only five weeks after the publication of Charles Darwin's "On the Origin of Species", Thoreau was applying evolutionary principles to his own study. The irony of his work as a surveyor was not lost on him. By the time he died, at 44, much of Concord had changed, and the cabin at Walden Pond no longer existed. Thoreau was wary of the unhindered industrialism espoused by his friend and mentor Ralph Waldo Emerson and asked why not "run the Earth off its track into a new orbit, some summer, and so change the tedious vicissitude of the seasons?" As the effects of climate change take hold, Thoreau's warning feels prescient.

Ms Walls's book is a timely and revealing study of an eminent American writer and environmentalist. Thoreau's thinking bound science, politics and nature together in the hope that both the human and the non-human could flourish. This was a novel idea at the time, and should still be heeded today. ■



In step with nature

"Jane Eyre"

The facts of fiction

The Secret History of Jane Eyre: How Charlotte Brontë Wrote Her Masterpiece.

By John Pfordresher. *W.W. Norton*; 254 pages; \$26.95; £20

CRITICS relish a bit of detective work. Four hundred years after William Shakespeare died, people still offer new theories about the true identity of the "Dark Lady" and the "Fair Youth" of his sonnets. Journalists have been dogged in their attempts to discover the writer behind the pseudonym "Elena Ferrante".

Charlotte Brontë has been the subject of many such investigations. During her lifetime, the pen name "Currer Bell" provoked wild speculations; reviewers variously concluded that the author was a man, a woman, or a mixed-sex writing duo. Readers past and present have wondered how a shy curate's daughter from Yorkshire came to write "Jane Eyre", a finely wrought tale of passion and darkness, when her life contained seemingly little of either. With "The Secret History of Jane Eyre", John Pfordresher, a professor at Georgetown University, seeks to provide some answers. His aim is to unearth the real-life people and events that inspired Brontë's much-loved classic novel.

Unfortunately, Mr Pfordresher cannot illuminate the writing process itself, save for noting the date that Brontë first put pen to paper. She left "no outlines, notes about characters, drafts scribbled over with revisions and additions" or any other such tantalising clues. So Mr Pfordresher chooses to follow the chronology of the novel and weave in the biographical detail.

John Reed, Jane Eyre's young adversary, is based on Charlotte's experience of the boys she met during her time in Belgium, as well as the unpleasant sons of the Sidgwick family (for whom she served as a governess) and a character in "Agnes Grey", her sister Anne's novel. Jane's time at the dreadful Lowood Institution is reconstructed from Charlotte's grim memories of Cowan Bridge school, only made less "exquisitely painful" (tracts were published defending the school and its proprietors). The virtuous and stoical Helen Burns is a reincarnation of Maria, the sister who died at 11; Emily and Anne are also present as Diana and Mary Rivers. So extensive is the biographical framework on which Charlotte built, Mr Pfordresher argues, that readers should view "Jane Eyre" as autobiography rather than a work of fiction.

Yet when it comes to the inspiration for Mr Rochester and Bertha Mason, two of the most compelling figures in English liter- ▶▶

ature, Mr Pfordresher stumbles. His argument that Charlotte drew on her father Patrick's demanding presence, fiery temper and "sexual energy" for Mr Rochester is unconvincing: Patrick's attempts to remarry after his wife's death seem more to do with caring for his six children than with lust. The claim that Bertha's lunacy was based on Charlotte's trip to North Lees Hall—where the mistress of the house "reputedly went mad, was confined in a padded room, and died in a fire"—is a fair one. But Branwell, the author's miscreant brother, is an equally good candidate that Mr Pfordresher ignores. In her biography of Charlotte, Claire Harman points out that he kept the household awake at night "with his noisy despairing" over a past

lover and is rumoured to have set his own bed on fire.

The verisimilitude of Brontë's novel has long been one of its greatest strengths (*The Economist*, reviewing it in 1847, argued that it was "perfectly fresh and lifelike" and, as such, "far removed from the namby pamby stuff of which fashionable novels are made"). Though this "secret history" illuminates much of the real-life mould that shaped the novel, it at times confuses autobiographical elements with autobiography. In its determination that Charlotte Brontë is Jane Eyre, many of the comparisons between true incidents and those of the fiction feel forced. Literary sleuthing is often illuminating—but it can also see clues where none really exist. ■

Autism

Rise of the autie-biography

Fall Down 7 Times Get Up 8. By Naoki Higashida. *Random House*; 206 pages; \$27. *Sceptre*; 288 pages; £14.99

IN 1995 Temple Grandin, a well-known animal scientist who designs livestock-holding equipment in America, brought out a memoir about just how baffling it can be to live with autism; she has Asperger's, but was not formally diagnosed until she was in her 40s. For autistic people, she once said, decoding social nuances can feel like being "an anthropologist on Mars".

Parents can feel just as ill-equipped when interpreting the symptoms of an autistic child. These range from social awkwardness to repetitive acts like banging one's head. At least a quarter of these children cannot speak. Inevitably, their families can find them hard to understand. Ms Grandin's "Thinking in Pictures" was part of a new genre of "autie-biographies". The latest is from Japan.

A few years ago, in search of insight into their non-verbal son's own "chaotic swirl", David Mitchell, a gifted British novelist, and his wife, Keiko Yoshida, unearthed a little-known book by a Japanese boy called Naoki Higashida. They translated the text for their son's carers, and later showed it to Mr Mitchell's publisher. "The Reason I Jump", which came out in 2007, was eventually translated into over 30 languages. Mr Higashida, then 13, became internationally famous and is now probably the most widely read Japanese author after Haruki Murakami.

Using an alphabet grid and a transcriber, Mr Higashida explained the hidden frustrations of his condition. Commanding his body to move is like "remote-controlling a faulty robot". He also exposed the depths of his emotions, admitting that a large statue of Buddha once moved him to tears. To many, these glimpses were a revelation; lack of speech clearly does not amount to mental incapacity.

Mr Higashida's latest book, "Fall Down 7 Times Get Up 8", provides a similar guide to the "immutable beauties" of the autistic mind. Now in his 20s, the author offers a wider perspective on life with a disorder. The title alludes to a Japanese proverb about persistence. The book is a gospel in praise of grit, not just for autistic people but for wider society. Do not give up on us, he urges parents and helpers. "The person with special needs will sense that resignation, lose their motivation and stop trying to speak." He even goes as far as to say that a carer's lack of grit can erode an autistic person's "will to live". ▶▶

New fiction

In a foreign land

Nevada Days. By Bernardo Atxaga. Translated by Margaret Jull Costa. *MacLehose Press*; 352 pages; £14.99

IN THE gambling city of Reno, where red, green and fuchsia neon signs shine like "boiled sweets", the University of Nevada has a Centre for Basque Studies. Bizarre at first glance, this odd match of place and subject makes sound historical sense. Emigrants from the Basque country left 19th-century Spain to settle in the American West, first as miners, then as shepherds. In 2007 Bernardo Atxaga, the foremost Basque author of his generation, followed in their wake as a writer-in-residence. From that year-long experience he has fashioned a subtle and touching book, offered as fiction but rich in topical allusions. It stands a canyon's-length away from the stereotypical travelogue of the snobby European scoffing at transatlantic vulgarity and ignorance.

Over 139 short sections, "Nevada Days" spans journal entries, news items, family memories and yarns imported from the Basque homeland. Without any surplus exoticism, Mr Atxaga records the strangeness, physical and social, of his desert berth: this primeval landscape where bare trapezoid mountains have "nothing to do with us". Pitiless nature feels "remote and alien". Poisonous spiders and rattlesnakes abound. On campus suspense builds as a spate of sexual assaults nearby ends with the abduction and murder of a student (a real case). Near and far, the prickle of threat and dread sharpens. Barack Obama, during his first candidacy, comes to town to denounce the war in Iraq.

Snapshots of Basque history and



Nevada nights

legend punctuate these eerie Western scenes. Margaret Jull Costa translates them with all her customary grace. The final illnesses of Mr Atxaga's parents put mourning, and memory, at the centre of his desert stage. In a dream he regrets that "metaphors can do little in the face of death". Yet flashing gems of insight illuminate mortality amid the hostile scrub and rocks. Closely observed, never patronised, Nevada becomes the "dream place" that helps the author settle with his past before a "return to our everyday life". Still, loss and grief persist. On war memorials, the roll-call of the fallen grows. As for the Reno campus killer: a man was convicted, and remains on death row.

▶ “Fall Down 7 Times Get up 8” also reveals the inherent sadness of a life without words. Mr Higashida is unable even to say “thank you” to his own mother. Non-verbal people with autism “are probably the loneliest souls of all,” he says. That loneliness could be eased if the rest of the world had more patience. “The failure of people with autism to communicate doesn’t stem from inner self-imprisonment: it stems from a failure of others to see that we are open and receptive.” A lack of imagination for what autistic people can achieve ultimately holds them back.

The book rightfully challenges the methods and attitudes that prevail in supporting people with autism. It is rich in metaphor, something Mr Mitchell was once told was beyond autistic people. As Mr Higashida himself writes: “Weeds like dandelions which you can find all over the world and which nobody really gives a second glance to...are the happiest.” “Fall Down 7 Times Get Up 8” should be read by many beyond the circle of parents seeking to understand their child. It places Mr Higashida among the first rank of gifted writers, not just writers with autism. ■

History in Lebanon

Empty halls and empty spaces

BEIRUT

The new museum of memory in Lebanon gets off to a troubled start

NEARLY three decades after the end of the civil war in Lebanon, the façade of the Barakat building in central Beirut is still pitted with bullet holes. Craters in its limestone walls have been patched with concrete and its elegant colonnade is held up by ugly metal struts. Inside, the upper flights of two stone staircases hang above rubble-strewn voids. The lower sections were blown apart by snipers to prevent anyone getting upstairs. The ceilings are scorched black and barricades of concrete-reinforced sandbags still divide some rooms in two. The Arabic graffiti scrawled by Christian militiamen have never been erased. One signed himself Begin, after the former Israeli prime minister. Another says simply: “Hell”.

Built in the 1920s, the building started off as the home of the wealthy Barakat family. But after the civil war began in 1975, it became a notorious snipers’ nest on the front line between east and west Beirut. Its site, coupled with its unique open architecture, made it the perfect redoubt. The crossroads on which it stood became known as *takaata al-mawt*—“the intersection of death”.

Later this month the Barakat building

will open to the public for the first time in its new incarnation as Beit Beirut (The House of Beirut), a memory museum, cultural centre and urban observatory dedicated to commemorating the everyday life of the city over the past century. But the building, which was expropriated by the Beirut municipality in 2003 and renovated with over \$18m of public funds, is opening on a temporary basis, with no board, no director, no cultural policy, no permanent collection and no staff—not even a maintenance team.

Beit Beirut was designed to have an auditorium and library on the ground floor, space for temporary exhibitions exploring urban issues and peace and reconciliation on the second and third floors, and a rooftop restaurant and café. The first floor, with the worst of the damage and the snipers’ barricades, is dedicated to the memory of the war years. Without a permanent collection, though, it is not really a museum, yet agreeing on which objects should be in that collection is easier said than done.

The civil war officially ended in 1991 with a fragile amnesty. In the absence of any official history of the period, the conflict is not taught in most schools. Beit Beirut has been plagued by disagreement. Mona El-Hallak, an architect and heritage-preservation activist who began a campaign to save the building in 1997, believes the museum should avoid names and dates completely, focusing instead on personal stories—both positive and negative—that explore “how war changes a human being and a city”.

The letters and documents that she salvaged from the building (stored, for the moment, in her attic) provide some insight into the lives of its pre-war tenants. Ms El-Hallak has also discovered 11,000 photographic negatives—most of them portraits dating from the 1950s to the 1970s—in a photography studio on the ground floor.

She hopes to hand them out to visitors and ask each one to research the photo and come back with a story.

Youssef Haidar, the architect responsible for the renovation, disputes the need for a permanent collection. For him “the collection is the building” and artefacts are unnecessary: “Look at the monstrosity of what we did. Look at the war. [Its] traces are there. The museum is finished.”

Matilda El-Khoury, who is also an architect and the city-council member responsible for managing the municipality’s cultural portfolio, holds yet another view. She sees the war years as “a small bracket” in the history of Lebanon, and wants Beit Beirut also to explore the city’s urban fabric all the way to the Ottomans.

None of this will be easy. In the absence of a director, there is no cohesive vision for the building; it will open until the end of the year as a gallery space, rather than as a museum. Without employees, the restaurant, library and other amenities will remain closed. The municipality has asked exhibitors to supply their own manpower and to choose their own opening hours.

On paper, Beit Beirut should provide a much-needed public space for reflection, reconciliation and the celebration of ordinary lives. Ms El-Hallak hoped it would offer people a chance to share their stories. But since construction was finished last year, only private events have taken place there. In April a local NGO threw a lavish invitation-only party attended by politicians, diplomats and celebrities. Its ostensible purpose was to mark the opening of the library; months later, it is still closed.

After much delay, Ms El-Khoury insists that, once the legalities are established, Beit Beirut will become the museum the public were promised. But Mr Haidar fears the building is being hijacked as a party-place for the politically connected. “It is not being used for its original intentions.” ■



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Economic data

% change on year ago

	Gross domestic product			Industrial production latest	Consumer prices		Unemployment rate, %	Current-account balance		Budget balance % of GDP 2017 [†]	Interest rates, % 10-year gov't bonds, latest	Currency units, per \$	
	latest	qtr* 2017 [†]	2017 [†]		latest	2017 [†]		latest 12 months, \$bn	% of GDP 2017 [†]			% of GDP 2017 [†]	Aug 9th
United States	+2.1 Q2	+2.6	+2.2	+2.0 Jun	+1.6 Jun	+1.9	4.3 Jul	-449.3 Q1	-2.5	-3.4	2.28	-	-
China	+6.9 Q2	+7.0	+6.7	+7.6 Jun	+1.4 Jul	+1.9	4.0 Q2 [§]	+157.3 Q2	+1.6	-3.9	3.64 ^{§§}	6.68	6.66
Japan	+1.3 Q1	+1.0	+1.4	+4.9 Jun	+0.3 Jun	+0.6	2.8 Jun	+187.8 Jun	+3.6	-5.1	0.07	110	102
Britain	+1.7 Q2	+1.2	+1.5	-0.3 May	+2.6 Jun	+2.7	4.5 Apr ^{††}	-99.8 Q1	-3.4	-3.6	1.16	0.77	0.77
Canada	+2.3 Q1	+3.7	+2.4	+12.6 May	+1.0 Jun	+1.8	6.3 Jul	-48.4 Q1	-2.6	-2.4	1.91	1.27	1.31
Euro area	+2.1 Q2	+2.3	+2.0	+4.0 May	+1.3 Jul	+1.5	9.1 Jun	+388.6 May	+3.2	-1.4	0.43	0.85	0.90
Austria	+2.3 Q1	+5.7	+1.9	+3.6 May	+1.9 Jun	+1.9	5.2 Jun	+6.4 Q1	+2.2	-1.2	0.62	0.85	0.90
Belgium	+1.5 Q2	+1.6	+1.6	+2.0 May	+1.8 Jul	+2.1	7.6 Mar	-4.2 Mar	+0.1	-2.1	0.75	0.85	0.90
France	+1.8 Q2	+2.2	+1.5	+3.2 May	+0.7 Jul	+1.2	9.6 Jun	-25.3 Jun	-1.3	-3.1	0.76	0.85	0.90
Germany	+1.7 Q1	+2.4	+1.9	+2.5 Jun	+1.7 Jul	+1.6	3.8 Jun [†]	+270.5 Jun	+8.0	+0.5	0.43	0.85	0.90
Greece	+0.8 Q1	+1.8	+1.0	+1.6 Jun	+1.0 Jul	+1.3	21.7 Apr	-0.9 May	-1.2	-1.3	5.49	0.85	0.90
Italy	+1.2 Q1	+1.8	+1.2	+5.3 Jun	+1.1 Jul	+1.3	11.1 Jun	+48.6 May	+2.1	-2.3	2.02	0.85	0.90
Netherlands	+3.2 Q1	+1.7	+2.2	+3.3 Jun	+1.3 Jul	+1.1	6.0 Jun	+68.4 Q1	+10.0	+0.6	0.60	0.85	0.90
Spain	+3.1 Q2	+3.6	+3.0	+3.4 Jun	+1.5 Jul	+1.9	17.1 Jun	+21.5 May	+1.7	-3.3	1.54	0.85	0.90
Czech Republic	+4.0 Q1	+6.3	+3.2	+2.2 Jun	+2.5 Jul	+2.3	2.9 Jun [†]	+1.4 Q1	+0.9	-0.2	0.94	22.3	24.3
Denmark	+3.6 Q1	+2.5	+1.8	+2.3 Jun	+0.6 Jun	+1.0	4.3 May	+26.4 Jun	+8.0	-0.6	0.57	6.34	6.69
Norway	+2.6 Q1	+0.9	+1.8	+2.8 Jun	+1.9 Jun	+2.4	4.3 May ^{††}	+22.4 Q1	+7.6	+4.2	1.65	7.97	8.41
Poland	+4.4 Q1	+4.5	+3.6	+4.5 Jun	+1.7 Jul	+1.8	7.1 Jul [§]	-2.2 May	-0.5	-2.2	3.36	3.63	3.83
Russia	+0.5 Q1	na	+1.5	+3.6 Jun	+3.9 Jul	+4.1	5.1 Jun [§]	+33.6 Q2	+2.5	-2.2	8.13	60.1	64.7
Sweden	+3.9 Q2	+7.1	+2.7	+8.0 May	+1.7 Jun	+1.7	7.4 Jun [§]	+22.0 Q1	+4.8	+0.3	0.64	8.20	8.52
Switzerland	+1.1 Q1	+1.1	+1.3	-1.3 Q1	+0.3 Jul	+0.5	3.2 Jul	+73.6 Q1	+9.6	+0.2	-0.09	0.97	0.98
Turkey	+5.0 Q1	na	+3.7	-3.6 Jun	+9.8 Jul	+10.3	10.5 Apr [§]	-35.3 May	-4.3	-2.3	10.77	3.54	2.97
Australia	+1.7 Q1	+1.1	+2.3	-0.8 Q1	+1.9 Q2	+2.2	5.6 Jun	-25.0 Q1	-1.5	-1.8	2.59	1.27	1.30
Hong Kong	+4.3 Q1	+2.9	+3.0	+0.2 Q1	+2.0 Jun	+1.6	3.1 Jun ^{††}	+14.8 Q1	+5.8	+1.7	1.55	7.82	7.76
India	+6.1 Q1	+7.2	+7.1	+1.7 May	+1.5 Jun	+3.9	5.0 2015	-15.2 Q1	-1.1	-3.2	6.47	63.8	66.9
Indonesia	+5.0 Q2	na	+5.2	+4.0 May	+3.9 Jul	+4.3	5.3 Q1 [§]	-14.6 Q1	-1.7	-2.2	6.82	13,343	13,133
Malaysia	+5.6 Q1	na	+5.2	+4.6 May	+3.6 Jun	+3.9	3.4 May [§]	+6.6 Q1	+2.2	-3.0	4.00	4.29	4.03
Pakistan	+5.7 2017 ^{**}	na	+5.7	+6.3 May	+2.9 Jul	+4.2	5.9 2015	-12.1 Q2	-3.8	-4.5	8.10 ^{†††}	105	105
Philippines	+6.4 Q1	+4.5	+6.5	+8.1 Jun	+2.8 Jul	+3.0	5.7 Q2 [§]	-0.4 Mar	+0.3	-2.8	5.04	50.6	46.9
Singapore	+2.5 Q2	+0.4	+2.9	+13.1 Jun	+0.5 Jun	+1.3	2.2 Q2	+59.0 Q1	+19.1	-1.0	2.11	1.36	1.35
South Korea	+2.7 Q2	+2.4	+2.8	-0.3 Jun	+2.2 Jul	+1.9	3.5 Jul [§]	+83.3 Jun	+5.9	+0.9	2.34	1,135	1,106
Taiwan	+2.1 Q2	+0.6	+2.4	+3.1 Jun	+0.8 Jul	+0.5	3.8 Jun	+69.1 Q1	+12.8	-0.9	1.05	30.2	31.4
Thailand	+3.3 Q1	+5.2	+3.3	-0.2 Jun	+0.1 Jul	+0.8	1.1 Jun [§]	+44.9 Q2	+11.9	-2.5	2.16	33.3	35.0
Argentina	+0.3 Q1	+4.3	+2.5	-2.5 Oct	+21.9 Jun [†]	+24.2	9.2 Q1 [§]	-16.8 Q1	-2.9	-6.1	na	17.8	14.8
Brazil	-0.4 Q1	+4.3	+0.5	+0.5 Jun	+2.7 Jul	+3.8	13.0 Jun [§]	-14.3 Jun	-1.0	-7.9	9.21	3.14	3.14
Chile	+0.1 Q1	+0.7	+1.4	-2.2 Jun	+1.7 Jul	+2.4	7.0 Jun ^{§††}	-5.0 Q1	-1.3	-3.1	4.36	650	653
Colombia	+1.1 Q1	-0.9	+2.0	-0.6 May	+3.4 Jul	+4.1	8.7 Jun [§]	-11.9 Q1	-3.6	-3.2	6.83	3,013	2,970
Mexico	+1.8 Q2	+2.4	+2.0	+1.0 May	+6.4 Jul	+5.7	3.3 Jun	-22.0 Q1	-2.0	-1.9	6.86	18.0	18.4
Venezuela	-8.8 Q4~	-6.2	-7.0	+0.8 Sep	na	+569	7.3 Apr [§]	-17.8 Q3~	-1.1	-19.5	11.02	10.1	9.99
Egypt	+4.3 Q1	na	+3.7	+25.1 May	+29.8 Jun	+22.8	12.0 Q1 [§]	-18.0 Q1	-5.9	-10.8	na	17.8	8.88
Israel	+4.0 Q1	+1.4	+4.1	-1.5 May	-0.2 Jun	+0.5	4.5 Jun	+11.7 Q1	+4.1	-2.6	1.82	3.60	3.82
Saudi Arabia	+1.7 2016	na	-0.5	na	-0.4 Jun	+1.1	5.6 2016	-1.0 Q1	+0.5	-8.2	3.68	3.75	3.75
South Africa	+1.0 Q1	-0.7	+0.6	-1.9 May	+5.1 Jun	+5.4	27.7 Q2 [§]	-7.9 Q1	-3.3	-3.2	8.57	13.5	13.4

Source: Haver Analytics. *% change on previous quarter, annual rate. [†]The Economist poll or Economist Intelligence Unit estimate/forecast. [§]Not seasonally adjusted. [†]New series. ~2014 **Year ending June. ^{††}Latest 3 months. ^{†††}3-month moving average. ^{§§§}5-year yield. ^{††††}Dollar-denominated bonds.

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Markets

	Index Aug 9th	% change on		
		one week	Dec 30th 2016 in local currency	in \$ terms
United States (DJIA)	22,048.7	+0.1	+11.6	+11.6
China (SSEA)	3,430.5	-0.3	+5.6	+9.8
Japan (Nikkei 225)	19,738.7	-1.7	+3.3	+9.5
Britain (FTSE 100)	7,498.1	+1.2	+5.0	+10.4
Canada (S&P TSX)	15,217.3	-0.3	-0.5	+5.0
Euro area (FTSE Euro 100)	1,189.6	+0.3	+7.0	+19.1
Euro area (EURO STOXX 50)	3,468.4	+0.3	+5.4	+17.3
Austria (ATX)	3,238.6	+0.3	+23.7	+37.7
Belgium (Bel 20)	3,926.6	-0.3	+8.9	+21.2
France (CAC 40)	5,145.7	+0.8	+5.8	+17.8
Germany (DAX)*	12,154.0	-0.2	+5.9	+17.9
Greece (Athex Comp)	833.6	+0.9	+29.5	+44.2
Italy (FTSE/MIB)	21,848.4	+1.3	+13.6	+26.5
Netherlands (AEX)	528.2	+0.6	+9.3	+21.7
Spain (Madrid SE)	1,067.1	+0.6	+13.1	+25.9
Czech Republic (PX)	1,029.9	+1.9	+11.7	+28.5
Denmark (OMXCBO)	912.6	+1.4	+14.3	+27.2
Hungary (BUX)	36,578.5	+1.5	+14.3	+28.8
Norway (OSEAX)	816.1	+0.7	+6.7	+15.3
Poland (WIG)	62,932.3	+0.8	+21.6	+39.7
Russia (RTS, \$ terms)	1,035.0	+1.3	-10.2	-10.2
Sweden (OMXS30)	1,571.2	+0.5	+3.6	+14.8
Switzerland (SMI)	9,027.2	-1.0	+9.8	+15.6
Turkey (BIST)	108,714.6	+2.1	+39.1	+38.3
Australia (All Ord.)	5,816.4	+0.4	+1.7	+11.2
Hong Kong (Hang Seng)	27,757.1	+0.5	+26.2	+25.1
India (BSE)	31,797.8	-2.1	+19.4	+27.0
Indonesia (JSX)	5,824.0	nil	+10.0	+11.0
Malaysia (KLSE)	1,777.9	+0.4	+8.3	+13.3
Pakistan (KSE)	45,998.8	-2.0	-3.8	-4.7
Singapore (STI)	3,318.1	-0.9	+15.2	+22.0
South Korea (KOSPI)	2,368.4	-2.4	+16.9	+24.4
Taiwan (TWI)	10,470.4	-0.5	+13.2	+20.7
Thailand (SET)	1,571.5	-0.6	+1.9	+9.6
Argentina (MERV)	20,925.0	-4.0	+23.7	+9.9
Brazil (BVSP)	67,671.1	+0.8	+12.4	+16.4
Chile (IGPA)	25,361.9	-0.3	+22.3	+26.1
Colombia (IGBC)	10,852.9	-1.0	+7.4	+7.0
Mexico (IPC)	51,237.5	+0.1	+12.3	+28.8
Venezuela (IBC)	184,187.9	+25.4	+481	na
Egypt (EGX 30)	13,580.8	+1.3	+10.0	+12.2
Israel (TA-125)	1,248.1	-3.2	-2.3	+4.6
Saudi Arabia (Tadawul)	7,153.2	+1.0	-1.2	-1.1
South Africa (JSE AS)	55,980.1	+1.4	+10.5	+12.1

The Economist poll of forecasters, August averages (previous month's, if changed)

	Real GDP, % change				Consumer prices % change		Current account % of GDP	
	Low/high range		average		2017	2018	2017	2018
	2017	2018	2017	2018	2017	2018	2017	2018
Australia	2.0/2.9	2.4/3.4	2.3 (2.4)	2.8 (2.9)	2.2	2.3	-1.5 (-1.6)	-2.1 (-2.2)
Brazil	nil/1.2	1.4/3.1	0.5 (0.6)	2.1 (1.9)	3.8	4.3 (4.4)	-1.0	-1.4 (-1.5)
Britain	1.3/1.7	0.7/1.7	1.5 (1.6)	1.2	2.7	2.7	-3.4 (-3.1)	-2.9 (-2.7)
Canada	1.7/3.0	1.5/2.3	2.4 (2.3)	2.0	1.8	1.9	-2.6	-2.3
China	6.6/6.9	4.6/7.0	6.7	6.3	1.9 (2.0)	2.3	1.6	1.6 (1.7)
France	1.2/1.8	1.4/1.9	1.5	1.7 (1.6)	1.2	1.2	-1.3 (-1.2)	-1.1
Germany	1.3/2.2	1.5/2.4	1.9 (1.8)	1.8 (1.7)	1.6 (1.7)	1.5	8.0	7.6
India	6.2/7.5	7.0/8.0	7.1	7.6	3.9 (4.2)	4.6 (4.7)	-1.1 (-1.2)	-1.5 (-1.6)
Italy	0.9/1.5	0.7/1.2	1.2 (1.1)	1.0	1.3 (1.4)	1.1 (1.2)	2.1	1.8
Japan	0.8/1.7	0.5/2.0	1.4 (1.3)	1.1	0.6	0.9	3.6	3.6
Russia	0.8/2.0	0.9/2.3	1.5 (1.4)	1.7	4.1 (4.2)	4.1	2.5 (2.2)	2.2 (2.0)
Spain	2.7/3.2	1.9/2.8	3.0 (2.9)	2.5 (2.4)	1.9 (2.0)	1.4	1.7 (1.8)	1.6 (1.7)
United States	1.9/2.4	1.8/2.9	2.2	2.3	1.9 (2.0)	2.0 (1.9)	-2.5 (-2.6)	-2.6 (-2.7)
Euro area	1.7/2.2	1.4/2.2	2.0 (1.9)	1.8 (1.7)	1.5 (1.6)	1.3 (1.4)	3.2 (3.1)	3.0

Sources: Bank of America, Barclays, BNP Paribas, Citigroup, Commerzbank, Credit Suisse, Decision Economics, Deutsche Bank, EIU, Goldman Sachs, HSBC Securities, ING, Itaú BBA, JPMorgan, Morgan Stanley, Nomura, RBS, Royal Bank of Canada, Schroders, Scotiabank, Société Générale, Standard Chartered, UBS. For more countries, go to: Economist.com/markets

Other markets

	Index Aug 9th	% change on		
		one week	Dec 30th 2016 in local currency	in \$ terms
United States (S&P 500)	2,474.0	-0.1	+10.5	+10.5
United States (NASComp)	6,352.3	-0.2	+18.0	+18.0
China (SSEB, \$ terms)	336.2	+0.7	-1.6	-1.6
Japan (Topix)	1,617.9	-1.0	+6.5	+12.9
Europe (FTSEurofirst 300)	1,493.9	+0.4	+4.6	+16.4
World, dev'd (MSCI)	1,961.9	-0.4	+12.0	+12.0
Emerging markets (MSCI)	1,068.9	-0.1	+24.0	+24.0
World, all (MSCI)	477.9	-0.4	+13.3	+13.3
World bonds (Citigroup)	943.6	-0.1	+6.8	+6.8
EMBI+ (JPMorgan)	827.1	+0.1	+7.1	+7.1
Hedge funds (HFRX)	1,244.3 [§]	-0.2	+3.4	+3.4
Volatility, US (VIX)	11.1	+10.3	+14.0 (levels)	
CDSs, Eur (iTRAXX) [†]	54.4	+5.5	-24.5	-16.0
CDSs, N Am (CDX) [†]	58.9	+4.5	-13.1	-13.1
Carbon trading (EU ETS) €	5.4	-0.9	-18.4	-9.1

Sources: IHS Markit; Thomson Reuters. *Total return index. †Credit-default-swap spreads, basis points. §Aug 8th.

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The Economist commodity-price index

2005=100

	Aug 1st	Aug 8th*	% change on	
			one month	one year
Dollar Index				
All Items	144.2	145.3	+0.1	+5.3
Food	153.6	153.2	-3.7	-3.1
Industrials				
All	134.5	137.1	+4.9	+17.0
Nfa [†]	129.2	130.0	-0.5	+1.3
Metals	136.8	140.1	+7.3	+24.7
Sterling Index				
All items	198.2	203.9	-0.8	+5.5
Euro Index				
All items	151.8	153.9	-2.6	-0.3
Gold				
\$ per oz	1,272.5	1,254.4	+3.6	-6.4
West Texas Intermediate				
\$ per barrel	49.2	49.2	+9.2	+15.0

Sources: Bloomberg; CME Group; Cotlook; Darmann & Curt; FT; ICCO; ICO; ISO; Live Rice Index; LME; NZ Wool Services; Thompson Lloyd & Ewart; Thomson Reuters; Urner Barry; WSJ. *Provisional. †Non-food agriculturals.

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Life as defiance

Jeanne Moreau, actress, died on July 31st, aged 89

THE moment Jeanne Moreau fell in love with acting was when, at 16, she saw Jean Anouilh's "Antigone". She was not allowed to go to the theatre, so she lied to her father and went anyway. To her delight, the play was also about a girl who said no.

She said it again when her father, a few years later, tried to stop her being an actress by calling her a *putain* and slapping her across the face. Off she went to the Conservatoire, then to the Comédie Française, then to the Théâtre National Populaire, where her tottering, gauzy Maggie in "Cat on a Hot Tin Roof" was soon the toast of Paris. You see?, she silently told him.

When she became, in the 1960s, the most famous actress in France and an international star of film, people called her a Grande Dame. She wouldn't have it. She was a woman, which was title enough for her: the sometime muse and sometimes lover of her dear friends Louis (Malle), François (Truffaut), Luis (Buñuel), Joseph (Losey) and Orson (Welles). She was simply herself. The New Wave that swept French cinema in the late 1950s, into which Malle induced her after some fruitless forays into film, allowed her to slip the thrall of costume designers complaining about the bags under her eyes and her lack of fashionable beauty. Instead she was in a real world of hand-held cameras, natural

light, unmasked skin, rain: total freedom.

She could now play complex, thinking women. And she would not let herself be typecast. True, at first she had a run of bored, bourgeois wives longing for love, roaming the night streets and parks with almost too much emotional turmoil brimming in her world-weary eyes. But she could also do tomboy light-heartedness, as the enchanting, cruelly teasing Catherine in "Jules et Jim", or jumped-up insolence, as Célestine in "The Diary of a Chambermaid", or full-feathered, gun-toting burlesque, with Brigitte Bardot in "Viva Maria!". Any outrageousness she blamed on her English blood, from her Tiller Girl mother. It let her flout convention in ways which, if purely French, she might not have dared.

These roles were still mostly *femmes fatales*. But they were weaponised with brains and spirit, as well as sex. (Spiritless ones, like Lidia in "La Notte", drove her to pills with their emptiness.) In almost every character spirit showed in the lift of her jaw, sometimes emphasised by the way the lines deepened round her downturned mouth as she let a cigarette dangle, then flicked the ash away. Perhaps only she could make defiance so desirable.

"Sensuality" was the word she wanted. "Sexuality" just meant a woman as an ob-

ject, a piece of meat. Sensuality meant power, as in her eating of a strawberry in "Les Amants" in 1958, very slowly, savouring it so her potential lover saw. That was the film in which she showed the world, for the first time on celluloid, how a woman really felt at the height of pleasure. Audiences gasped, and the censors cut away, but who cared? She had broken the taboo. In "Lumière", the first film she directed herself, women just sat around looking any old how, talking about their affairs. Again, she showed women as they were, in liberated mode. Not how men portrayed them, though it was still a man's world.

Well, perhaps it was. Yet she cut a cool swathe through it: Malle and Truffaut, Marcello Mastroianni and Miles Davis, Peter Handke and Tony Richardson, Pierre Cardin. (All Paris thought he was gay, but she saw to that.) She loved easily, deeply; then, when the fragrance wore off, moved elsewhere. Her two marriages were brief, because she would not be controlled. She was the one in charge: the one who hid any mismatching cups and put towels in rational piles, who stopped drinking in a day when it began to take her over, who gave up owning houses because they tied her down. Discipline in every part of her life.

As for that life, it was like a piece of land she had been given as a gift, and was meant to cultivate with concentration and dedication. The best thing she could do, was act. And acting meant she had to expose herself down to the bare nerves; or rather, lay bare the character imagined by somebody else. Under the simplest surface she built up elaborate back-stories, especially for the bit-parts she took as she grew older. Nothing would be said on screen explicitly; but when she played, for example, the lonely grandmother in François Ozon's "Time to Leave" (2005), she could still glow with a secret history of passion gratified.

Her favourite lover

That glow remained in her, too, and much hidden history. She resisted talking about it. Mystery added to her allure. Who were her influences? A widower who had told her the names of flowers, a grandfather who had shown her the stars. Her favourite director? You might as well ask who was her favourite lover. It was Buñuel who noticed that in heels she walked a little unsteadily, as if not so sure of herself. She admitted that the only thing she was certain of was what she did not want to do.

She knew that her films added up to a revolution in cinema, especially its portrayal of women. And yes, much of her life was in them, in one way or another. But why gape at the past? When anyone asked if she watched them, whether she gave a damn...the answer again, with a smoky laugh, and a toss of the perfect hair, and that tilt of the jaw, was no, and no. ■

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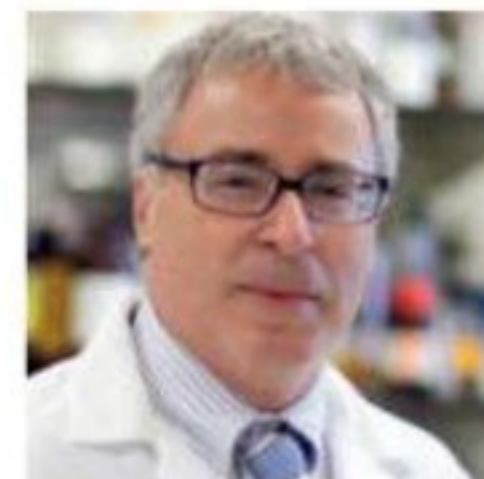
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