

The Economist

Abenomics five years on

Mugabe, fall of a dictator

America's blue-collar revival

Does GE have the right mechanic?

NOVEMBER 18TH-24TH 2017

**What they
don't tell you
about climate
change**



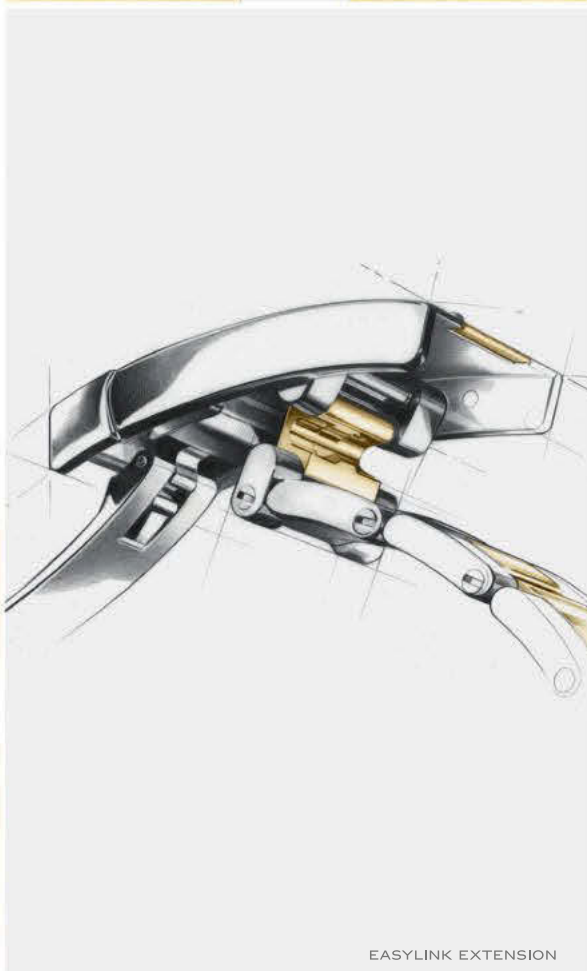


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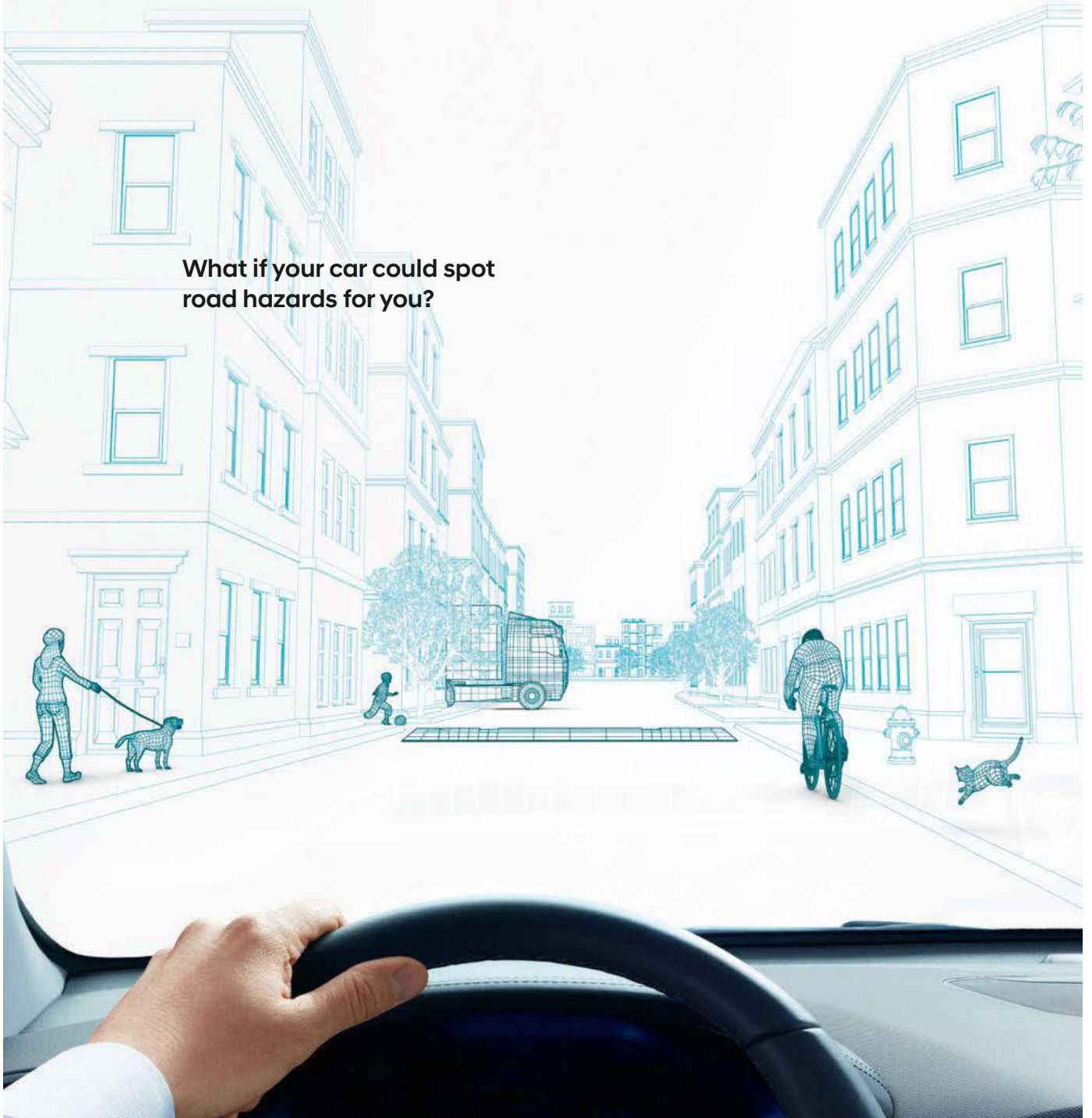
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Politics



The army took control of **Zimbabwe**, insisting that its coup was not a coup. The generals wanted to stop Robert Mugabe, the country's 93-year-old dictator, from passing power to his shopaholic wife, Grace. The most likely person to end up in charge is Emmerson Mnangagwa, who was sacked as vice-president earlier this month.

João Lourenço, the president of **Angola**, fired Isabel dos Santos, the daughter of his predecessor and Africa's richest woman, as chairman of the state oil company. Since succeeding José Eduardo dos Santos in September, Mr Lourenço, who vowed to fight corruption, has also dismissed the governor of the central bank, the head of the state diamond company and the boards of all three state-owned media companies.

An earthquake in **Iran** killed at least 530 people and injured thousands more. Hassan Rouhani, the president, blamed some of the damage on the poor construction of state-built homes. He blamed corruption in a housing scheme initiated by his predecessor, Mahmoud Ahmadi-nejad. The quake was also felt in **Iraq**, killing several people and injuring hundreds.

It emerged that last month rebels in **Syria** allowed the jihadists of Islamic State to leave Raqqa, which was once their putative capital. After four months of intense fighting, the two sides reached a deal that allowed hundreds of IS fighters to escape with their ammunition, preventing im-

mediate bloodshed, but storing up trouble for the future.

Fortress Europe

France and Germany edged closer towards their ambition to achieve more integration in European defence, signing a pact with 21 other governments in the EU to fund, develop and deploy armed forces. This follows Britain's decision to quit the EU.

Russia came under attack for allegedly using social media to interfere with Britain's vote last year on leaving the EU. It was also accused of meddling with Catalonia's referendum on independence from Spain.

In **Northern Ireland**, fears mounted of a return to direct rule as a budget for the devolved Assembly was passed by MPs in Westminster. A deterioration in relations between the Democratic Unionists and Sinn Féin, exacerbated by the paring of Irish language programmes and a green-energy funding scandal, resulted in the Assembly's dissolution in January; the subsequent failure to form a power-sharing executive has led to months of stalemate. Agreement is still far from certain.

The final death toll in the Grenfell tower fire in **London** was put at 71. It took police five months to identify the dead.



Around 60,000 nationalists marched through Warsaw on **Poland's** independence day. Faces covered and chanting slogans to keep Poland white and kick out refugees, the demonstration was described as a "beautiful sight" by the minister for the interior. The annual march draws extremists from across Europe.

Truth and reconciliation

Colombia's supreme court unanimously approved the establishment of a transitional-justice system to try atrocities committed during the country's decades-long civil conflict. The court ruled that former guerrillas can run for office as long as they submit to the tribunal.

Women flocked to the streets of Rio de Janeiro and São Paulo to protest against a proposed constitutional amendment to make abortion illegal without exception in **Brazil** (abortion is allowed in instances of rape, when the mother's life is in danger and in other limited cases). A congressional committee voted by 18 to one (the lone dissenter was a woman) to approve the amendment, but it is unlikely to muster the three-fifths support needed in both chambers of congress to become law.

America's State Department abruptly stopped accepting applications for a programme that allows children fleeing violence in **Guatemala, Honduras** or **El Salvador** to apply for refugee status in order to join family members living legally in the United States. More than 13,000 people have applied and 1,500 children have been resettled since the programme began in 2014.

Thou shalt not

Prominent Republicans, including Mitch McConnell, the leader of the Senate, called on **Roy Moore** to step down as the party's candidate in the race for a Senate seat in Alabama. Several women have accused Mr Moore, a religious zealot and former chief justice of Alabama's Supreme Court, of sexually harassing them when he was in his 30s and they were under 18. He denies the allegations.

Donald Trump nominated Alex Azar as his new **health secretary**, following the resignation of Tom Price over an expenses scandal. Mr Azar was the department's deputy head for 18 months under George W. Bush. He spent five years lead-

ing the American division of Eli Lilly, a big drugs firm.

Mr Trump said he had every faith in the leadership of America's **spy agencies**, but described the previous leaders as "political hacks". His comments came after he indicated that he believed Vladimir Putin's claim that Russia did not interfere in last year's election—"you can only ask so many times"—despite a raft of reports from the spooks concluding that it did.

A self-published study

The armed forces in **Myanmar** published a report absolving themselves of any wrongdoing in a campaign ostensibly directed at guerrillas from the Rohingya minority but which has been a cover for ethnic cleansing. On a visit to Myanmar Rex Tillerson, America's secretary of state, said there had been human-rights abuses and the government should investigate.

A paramilitary police officer was shot dead in the **Indonesian** part of New Guinea. Armed separatists are in a tense stand-off with the security services in several villages, in an apparent revival of a long-running regional insurgency.

China's Communist Party expelled the retired chief of China News Service, a state-run news agency, because of alleged corrupt behaviour. It said Liu Beixian had accepted bribes and abused his power.



Australian voters signalled their approval of gay marriage by 62% to 38% in a non-binding postal survey. The government promised to pass a law allowing gay couples to marry by the end of the year. ▶▶

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Business

General Electric announced a long-awaited turnaround plan. The conglomerate is to refocus its business on three core areas—power, aerospace and health care—and to retreat from other industries, such as transportation and lighting. It wants to sell \$20bn-worth of assets. But the plan, coupled with only the third dividend cut in GE's 125-year history, did not go down well with investors, who pushed its share price to a six-year low.

Procter & Gamble, another giant conglomerate that is feeling the heat from investors, faced an embarrassing defeat in a proxy fight. A preliminary count of shareholders showed that **Nelson Peltz**, who runs an activist management fund, had won a seat on the board, reversing P&G's claims of victory last month.

On the cusp of change

The former chief executive of **Uber**, Travis Kalanick, reversed a disagreement with Benchmark, a big investor, over appointments to board seats, three of which are in effect controlled by Mr Kalanick. The issue had been a stumbling block in talks between Uber and SoftBank, which is considering buying a big stake in the business.

The major credit-rating agencies declared that **Venezuela**, whose cash-strapped socialist government has said that it will need to restructure its debt, had defaulted on some international bonds. A first meeting with creditors in Caracas brought no tangible progress. But a loan-restructuring agreement with Russia should provide the regime with some breathing-space.

Missouri's attorney-general launched an investigation into **Google** for possibly violating the state's competition laws. The probe is wide-ranging and will look at how Google collects data and whether it has unfairly used its dominance in the search market. Missouri's

broadside could be the opening shot in a potential volley of state lawsuits aimed at the giants of Silicon Valley.

Steve Jurvetson, one of the most prominent investors in Silicon Valley, stepped down from the venture-capital firm he helped to found. He said that claims about "sexual predation and workplace harassment" were "wholly false". Mr Jurvetson is also on leave from the boards of Tesla Motors and SpaceX until the matter is cleared up.

Altice's share price plunged amid concerns about the amount of debt held by the telecoms group and its ability to grow in France, its biggest market. Its share price has tumbled by almost half since the start of November. The company's chief executive has left. Patrick Drahi, who founded Altice, has been appointed president.

In an effort to comply with laws that limit short-term leases in Paris, **Airbnb** imposed an automatic cap on the number of days its hosts in the French capital can rent out their homes. Paris is Airbnb's biggest market worldwide. But its cap applies only to four of the city's most central arron-

dissements, which may not be enough to assuage officials.

Seasonal prices

Britain's annual **inflation** rate remained unchanged in October, at 3%. The stability of the headline figure disguised some uncomfortable pressures on household finances. Until the beginning of 2017 food prices had been falling for more than two years, but they soared last month. Alcohol and tobacco prices have also risen and clothing and other household goods are also costlier. With Christmas around the corner, festive cheer may be in short supply this year.

Richard Cordray said he would step down as the head of America's Consumer Financial Protection Bureau. The agency was created during the Obama administration, earning the wrath of many in the banking industry for its regulatory activism. Mr Cordray managed to push back against plans to curb the CFPB's powers. His successor, who will be appointed by Donald Trump, may support them.

Singles Day in China reaped \$25bn in sales for Alibaba, surpassing last year's tally of \$18bn. At its peak customers bought 325,000 items a sec-

ond. The e-commerce giant hopes to make Singles Day a truly global affair, so that consumers elsewhere can participate in the orgy of shopping.

Duck and drive

Geely, a Chinese carmaker, made a bet that **flying cars** are ready to take off by buying Terrafugia, an American startup that hopes to bring its first aerial vehicle to the road, and the air, by 2019.



A painting of Christ attributed to Leonardo da Vinci was auctioned at Christie's in New York for \$450m, smashing the previous record for a piece of art. The provenance of "Salvator Mundi" is controversial. Many scholars believe it was painted by a follower of da Vinci and not the master himself. It was sold at an auction in 1958 for £45 (\$126).

Other economic data and news can be found on pages 76-77



What they don't tell you

Stopping the flow of carbon dioxide into the atmosphere is not enough. It has to be sucked out, too



TWO years ago the world pledged to keep global warming “well below” 2°C hotter than pre-industrial times. Climate scientists and campaigners purred. Politicians patted themselves on the back. Despite the Paris agreement’s ambiguities and some setbacks, including President Donald Trump’s decision to yank America out of the deal, the air of self-congratulation was still on show among those who gathered in Bonn this month for a follow-up summit.

Yet the most damaging thing about America’s renewed spasm of climate-change rejection may not be the effect on its own emissions, which could turn out to be negligible. It is the cover America has given other countries to avoid acknowledging the problems of the agreement America is abandoning.

The Paris agreement assumes, in effect, that the world will find ways to suck CO₂ out of the air. That is because, in any realistic scenario, emissions cannot be cut fast enough to keep the total stock of greenhouse gases sufficiently small to limit the rise in temperature successfully. But there is barely any public discussion of how to bring about the extra “negative emissions” needed to reduce the stock of CO₂ (and even less about the more radical idea of lowering the temperature by blocking out sunlight). Unless that changes, the promise of limiting the harm of climate change is almost certain to be broken.

Don't be so positive

Fully 101 of the 116 models the Intergovernmental Panel on Climate Change uses to chart what lies ahead assume that carbon will be taken out of the air in order for the world to have a good chance of meeting the 2°C target. The total amount of CO₂ to be soaked up by 2100 could be a staggering 810bn tonnes, as much as the world’s economy produces in 20 years at today’s rate (see page 20). Putting in place carbon-removal schemes of this magnitude would be an epic endeavour even if tried-and-tested techniques existed.

They do not. A few power stations and industrial facilities capture CO₂ that would otherwise end up in the air and store it away underground, a practice known as carbon capture and storage. But this long-touted approach to cutting emissions still operates on only a very small scale, dealing with just a few tens of millions of tonnes of CO₂ a year. And such schemes merely lower emissions; they do not reverse them.

What might? One option is to plant more forests (which act as a carbon sink) or to replace the deep-ploughing of fields with shallow tillage (which helps soils absorb and retain more CO₂). Another is to apply carbon capture and storage to biomass-burning power plants, stashing the carbon sucked up by crops or trees burnt as fuel. Fancier ideas exist. Carbon could be seized directly from the air, using chemical filters, and stored. Or minerals could be ground up and sowed over land or sea, accelerating from aeons to years the natural weathering process that binds them to CO₂ to form carbonate rocks.

Whether any of these technologies can do the job in time is

unknown. All of them are very expensive and none is proven at scale. Persuading Earth’s swelling population to plant an India’s worth of new trees or crops to produce energy, as the climate simulations require, looks highly improbable. Changing agricultural practices would be cheaper, but scientists doubt that this would suck up enough CO₂ even to offset the greenhouse gases released by farming. Direct air capture and enhanced weathering use less land, but both are costlier. Though renewable energy could profitably generate a fair share of the world’s electricity, nobody knows how to get rich simply by removing greenhouse gases.

When the need is great, the science is nascent and commercial incentives are missing, the task falls to government and private foundations. But they are falling short.

More science would serve as a collective insurance policy against a grave threat. However, this year Britain became just the first country to devote cash to such projects; America is eyeing grants, too, despite Mr Trump. Britain’s one-off £8.6m (\$11.3m) is footling. Roughly \$15bn a year goes to research into all low-carbon technologies; that pot needs to increase, and more of it should be channelled to extracting carbon.

Another form of climate denial

A big market for CO₂ would provide an extra incentive to mine it from the atmosphere. But its uses are still limited. If regulators forced industries that cannot convert to electricity, such as aviation, to use synthetic fuels rather than fossil ones, demand for the CO₂ that is the raw material for those fuels could increase greatly. The industries, though, would resist.

If the market will not provide an incentive, governments could. The case for a proper price on carbon (this paper has favoured a tax) is strong. Its absence is one of the reasons carbon capture and storage has not taken off as a way of reducing emissions from fossil-fuel plants; the kit needed can double the price of electricity. Yet, setting a price high enough to encourage negative emissions would asphyxiate the economy.

Subsidies are another option. Without them, renewables would have taken longer to compete with fossil fuels. But they are wasteful. Germany has lavished \$1trn on low-carbon electricity, and even then still depends on fossil fuels for over half its power. Still, governments could offer a reward for every tonne of CO₂ that is extracted and stored. In theory such a bounty should be paid from a fund bankrolled by countries according to their cumulative historical emissions (top comes America followed by Europe, with China rapidly closing the gap). In practice no mechanism exists to get them to cough up.

Indeed, facing the shortcomings of Paris is beyond most governments. Under Mr Trump, America is not prepared to reduce the flow of emissions, let alone the stock. But the problem would not magically be solved even if America returned to the fold. Many rich countries say they are already doing their bit by cutting emissions more steeply than developing countries. In fact, taking carbon dioxide from the atmosphere is not an alternative to belching out less greenhouse gas. It is necessary in its own right. Unless policymakers take negative emissions seriously, the promises of Paris will ring ever more hollow. ■

A coup in Zimbabwe

Fall of the dictator

After 37 years Robert Mugabe has been sidelined by the army. The world should learn from his misrule



CALIGULA wanted to make his horse consul. Robert Mugabe wanted his wife, Grace, to take over from him as president of Zimbabwe. The comparison is a bit unfair. Caligula's horse did not go on lavish shopping trips while Romans starved; nor was it accused of assaulting anyone with an electric cable in a hotel room. Grace Mugabe's only qualification for high office was her marriage to Mr Mugabe, a man 41 years her senior with whom she began an affair while his first wife was dying. Her ambitions were thwarted this week when the army seized power, insisting that this was not a coup while making it perfectly clear that it was (see page 39).

Thus, sordidly, ends the era of one of Africa's great dictators. Mr Mugabe has misruled Zimbabwe for 37 years. As *The Economist* went to press, he was in detention but unharmed. Even if he is allowed to keep his title, his power is gone. At 93, frail and forgetful, he has finally lost control of the country he ruined. The wonder—and the shame—is that he lasted so long. There is much to learn from the failure of his revolution.

Coup de Grace

Mr Mugabe was once widely admired (and still is, among those who think anti-imperialist rhetoric matters more than competence). He fought against white rule in the 1970s, in what was then called Rhodesia, and legitimately won an election in 1980. He preached reconciliation with the white former oppressors. Buoyed by aid, global goodwill and good harvests, the new country of Zimbabwe prospered for a while.

But like so many revolutionaries, Mr Mugabe could not tolerate any challenge to his rule. Viewing the second-largest ethnic group, the Ndebele, as disloyal, he used a minor insurrection as an excuse to crush them. In 1983 he unleashed his special forces (trained by North Korea) on the Ndebele, raping, torturing and murdering thousands of civilians. Survivors of village massacres were forced to dance on their neighbours' mass graves, singing praise to the ruling party, Zanu-PF, in the language of the Shona majority. Unlike, say, Saddam Hussein or Idi Amin, Mr Mugabe did not particularly enjoy violence, but he never hesitated to use enough of it to stay in power.

His grasp of economics was revolutionary in the worst sense. He liked the language of socialism because it let him boss people around while posing as a champion of the poor. He spent public money wildly—some of it on good things like education, but much of it on patronage. When he ran out of cash, he started seizing things, such as white-owned commercial farms, and giving them to his supporters. His disregard for property rights scared off investors. He printed money to pay the army and the civil service, sparking hyperinflation so severe that, at one point, Z\$1trn would not buy a boiled sweet. He tried to fight inflation with price controls, causing shops to run out of basic goods. All the while his cronies gleefully looted the country's public purse and diamond mines. After nearly four decades of Mr Mugabe, Zimbabweans are on average a fifth

poorer. This year a quarter of the population were short of food; perhaps 3m-5m out of 17m have emigrated in despair.

Will the coup improve matters? It is hard to be optimistic. Coups are never legal and usually spread misery. The generals and ruling-party old guard who engineered this one are not reformers; they are part of the grubby system Mr Mugabe created. Many have profited handsomely from it, and intervened this week not out of principle but to stop Mrs Mugabe and her younger supporters from taking their places at the trough. Emmerson Mnangagwa, the 75-year-old man who may end up in charge, is a longtime Mugabe loyalist and every bit as nasty as his ex-boss. (He was security minister during the Ndebele massacres; during an election campaign in 2000 his supporters burned his opponent's home down.) This blood-stained crew of plotters make unlikely national saviours.

A big ditch to climb out of

Nonetheless, there is a sliver of hope. Zimbabwe's ruling elite have long honoured the forms of democracy, and have occasionally lost elections despite cheating on a grand scale. Mr Mnangagwa may be a thug, but he is a pragmatic one, free of the Messiah complex that caused Mr Mugabe to lose touch with reality. He knows that the treasury is empty, and that Zimbabwe needs urgent help from donors such as the IMF. He has put out feelers to the opposition. He talks of ending some of Mr Mugabe's woeful policies, such as the law requiring all companies above a certain size to be majority-owned by black Zimbabweans (in practice, ruling-party fat cats).

An election is due to be held by the middle of next year. Any aid to a new, transitional government should be conditional on a free and fair ballot. Exiles, whose remittances have saved countless Zimbabweans from destitution, should be allowed to vote. The polls should be monitored by neutral observers such as the UN and the EU. South Africa will no doubt play a role in the transition, but it may not be a constructive one under Jacob Zuma—another ruler who tolerates grotesque corruption and wants to put his former wife on the throne. China, which propped up Mr Mugabe for a while but then decided he was a deadbeat, has not made its intentions known.

There are two morals to draw from Mr Mugabe's long, ignominious career. The first is that bad policies, corruptly implemented, can wreck a country with alarming speed and go on wrecking it long after you would have thought there was nothing left. Venezuela has little in common with Zimbabwe culturally, but has also achieved disastrous results by embracing a Latin version of Mugabenomics. By contrast, Botswana, Zimbabwe's culturally similar but well-governed neighbour, was roughly as rich in 1980 but is now seven times richer.

The second moral is that, for all its disappointments, democracy remains the best antidote for bad rulers. Had Zimbabweans been allowed to choose, they would have tossed Mr Mugabe and his henchmen out long ago. Were there an honest vote now, his successor would start out with real legitimacy.

The world has abandoned Zimbabwe to its fate too many times before. This time, outsiders should offer a hand to help it climb out of the ditch into which Mr Mugabe drove it. ■



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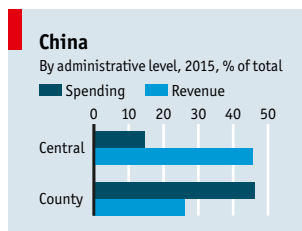
DARKTRACE

Machine learning for cyber defense

China's fiscal system

Muddled model

Local-government finances in China are a dangerous mess. The best fix is a political one



AS CHINESE officials admit, one of the biggest threats to the country's financial stability is a reckless build-up of local-government debt. What they are less keen to admit is that local governments' thuggish behaviour, such as grabbing land to

sell to developers, and failing to provide the services expected of them, has become a cause of unrest.

One reason local governments in China are dysfunctional is the way their finances work (see page 28). They have very limited tax-raising powers of their own. Issuing bonds requires tricky high-level approval. Much of what they raise has to be handed over to the centre, which then redistributes money back to the provinces—supposedly according to their needs. To see how well that works, compare the shabby state-run schools and hospitals of rural counties with their smart counterparts in wealthy cities. No wonder local officials often turn to dodgy ways of generating cash, such as using shadowy “financing vehicles” to borrow money from banks.

At the root of all this is disharmony between central and local governments. You might think that, in China of all places, the centre reigned supreme. At a Communist Party congress last month, its leader, Xi Jinping, acquired even greater power by filling jobs with his allies. Yet local governments will not always heed him, even with his new clout. True, they will put on a show if it does not cost much—as when officials from the sycophantic government of Henan province went to pay homage to a Paulownia tree planted by Mr Xi, who had urged delegates at the congress to “follow the leadership core”, ie, him. But do not expect Henan to leap into action to honour Mr Xi's pledge at the congress to “improve community-level health-

care services”. Where is the money for that?

In the coming years, local governments will get only sulker. The central authorities are suppressing the murky financing vehicles they have used to circumvent restrictions on borrowing. Less land is readily available for local authorities to seize and sell to developers. As the economy slows, the tax take will grow more slowly, too.

Taxation, with representation

The central government is looking for remedies. It is working on a crucial one: to clarify which level of government is responsible for what spending, so as to avoid the common problem of buck-passing. But it is dithering over another good fix, the introduction of a property tax. Local governments around the world rely on such a levy, based on the market value of homes. China's government is fearful of upsetting middle-class homeowners. Local officials worry that a property tax would expose their possession of ill-gotten luxury villas, since it would involve setting up a database of who owns what.

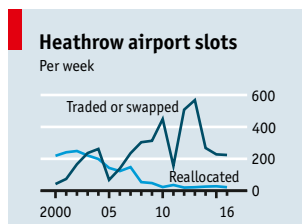
To make sure local governments manage their budgets wisely, more controls will be needed. Mr Xi hinted at what this would mean with his admission at the congress that demands for democracy were “increasing by the day”. He did not mean the multiparty kind, although some people do want that. Instead Mr Xi was acknowledging that the citizens want a greater say. He is right.

Since 2014 governments at every level have been required to publish their budgets. How about going a step further? Local legislatures, like the national one, are rubber stamps. Mr Xi should resume an experiment that his predecessors briefly toyed with, and allow independent candidates to stand for election to them. That would give citizens a long-stifled voice. It might even help ensure that their money is spent well. ■

Aviation

Winning the slottery

The allocation of airport capacity is skewed towards legacy carriers. It is time to break their grip



YOU may think that an airline's most valuable asset is its planes. But with Monarch, Britain's fifth-biggest carrier, which went bust in October, creditors were keenest to claim slices of airspace at particular times of day. Monarch's landing

and take-off slots at British airports are a big enough prize to have caused a court battle. That is a sign of how much the system for allocating them harms competition and consumers.

Slots have been sought-after since the 1960s, when airports began to fill up. In response IATA, an airline-industry body, developed a set of guidelines which state that an airline can keep

a slot from the previous year if it has been used at least 80% of the time. Those that are not are put into a pool and reallocated; half are supposed to go to new entrants. Over 190 congested airports—103 of them in Europe—follow rules that IATA describes as “fair, neutral and transparent” (see page 58).

Hogwash. To comply with the “use it or lose it” rule, many airlines resort to artifice—flying smaller planes than necessary in order to spread capacity across their slots, for example, and even running empty “ghost” flights to ensure that the runways are busy at the appointed time. So instead of slots being recycled from established carriers to new ones, they are clung to. One analysis showed that only 0.4% of London Heathrow's total slots and 0.7% of Paris Charles de Gaulle's were allocated to new entrants during the period under study. ▶▶

TIME, A HERMÈS OBJECT.



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Incumbents have good reason to hoard the best spots on the schedule. They are allocated according to IATA's guidelines at no cost, but the money they generate goes to the carrier. A shortage of landing slots in Europe inflates the fares passengers pay at busy times by €2.1bn (\$2.5bn) a year, according to SEO Amsterdam Economics, a consultancy, and Cranfield University. That extra money flows straight to the lucky airlines. Carriers can also sell some slots. The money on offer for slots with genuine scarcity value is astonishing, especially among hub airlines that rely on a central airport to transfer connecting passengers. Last year Air France-KLM, a legacy carrier, sold a single daily landing and take-off slot at London Heathrow, Europe's most congested airport, to Oman Air for \$75m. The slots owned by Monarch are worth an estimated £60m (\$79m).

None of this is fair, neutral or transparent. Legacy carriers can pocket the proceeds from plum slots they did not pay for. Upstarts are kept at a distance, unable to compete for the services that consumers prize most. The value of slots is obscure.

A better solution would be slot auctions, in which carriers bid to hold slots for staggered periods of five or ten years. Regulators in America and China have thought about this sort of

approach. An alternative would be to adopt a congestion-pricing model for runways, in which airlines pay more to land or take off at busier times of the day than quieter ones. Facing higher costs for using prized early-morning slots, airlines would have a greater incentive to fill planes to capacity and to get rid of slots they cannot use. The extra money could be put into a central infrastructure pot to build more airport capacity.

Air fair

No system is perfect. The sums of money needed to be paid upfront to win an auction, given the necessity of doing so for hub carriers, may be too high for new firms. The burden of making payments could destabilise the finances of some carriers. If congestion charges truly reflect the scarcity value of a runway slot at a crowded airport, fares could rise. Airlines' share prices would certainly fall. But the case for change is nonetheless clear. Frequent flyers are among the world's richest people; the global airline industry just had its three most profitable years ever; the market share of the big three airline alliances is rising. The aviation industry should pay for the infrastructure it uses, not make hay from it. ■

Transgender identity

Caught in the crossfire

Children are the most vulnerable victims of the latest identity-driven culture war



THE first question asked of any new parent is: "Boy or girl?" Across the developed world, the answer matters far less than it used to. Both girls and boys are less constrained by their sex than ever before. Women can not only vote and own property, but stand for election and run companies. Men can care for children—and for their appearance. Both sexes are free to love, and in many countries marry, whomever they wish.

But for some, even today's capacious gender roles do not fit. The number of transgender adults—those who do not identify with the sex on their birth certificates—seems to be rising (see page 51). More are changing their names, clothing and pronouns, taking cross-sex hormones and seeking gender-reassignment surgery. Their rights and status have become the *casus belli* for the latest culture war.

The fiercest fire is left-on-left. Some feminists reject the claim that trans women (people registered male at birth who have made the transition to a female identity) are indeed women, rather than men who eschew stereotypically male behaviour. But to trans people being thus "misgendered" feels downright cruel. Such feminists are called "transphobes" and accused of hate speech. The hard words fly both ways: witness Germaine Greer declaring that "just because you lop off your dick" does not make you a woman.

None of this is edifying. What is unforgivable is that children are caught in the crossfire. Soaring numbers are seeking help for gender dysphoria—the distressing conviction that the sex on their birth certificate is the wrong one. If they are unlucky, what happens next will have more to do with an adult battle over identity than with what is right for them.

Gender reassignment is a momentous choice, since it causes irreversible physical changes and, if surgery is done to reshape the genitalia, perhaps also sterility. For gender-dysphoric children the clock is ticking, since puberty moulds bodies in ways no drugs or scalpel can undo. Waiting until adulthood to start the transition therefore means worse results.

Some clinics buy time with puberty-blockers, which suppress the action of sex hormones. But these may have harmful side-effects. Furthermore, most gender-dysphoric children will probably not become transgender adults. Studies are scarce and small, but suggest that, without treatment, a majority will end up comfortable in their birth sex, so treatment would be harmful. Unfortunately, no one knows how to tell which group is which. Yet some trans activists have thrown caution to the wind. Specialists who start by trying to help gender-dysphoric children settle in their birth identities, rather than making a speedy switch, risk being labelled transphobes and forced out of their jobs. Few are willing to say that some such children may actually be suffering from a different underlying problem, such as anorexia or depression.

Won't someone think of the children?

It is bad enough that doctors, parents and gender-dysphoric children must make high-stakes choices against time without good evidence about what will happen. Worse is that children's plight is being used by adults as an opportunity for moral grandstanding. The child's interests depend not on the feelings of transgender activists—nor those of feminists—but on facts that still need to be established. Doctors need to know more about how to tell when gender dysphoria is likely to persist. Until they have that information, they should not rush in with drugs. Before acting, doctors should have reasonable grounds for thinking that they are doing good. ■



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**Deadline for applications:
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Trying to keep the peace

You criticised the UN's peace-keeping operations for failing to stop atrocities ("Looking the other way", October 28th). The article oversimplified the way the organisation works and minimised the responsibility of criminals and host governments. The UN frequently denounces human-rights violations. We are also mindful of the complexity involved in maintaining international peace and security. The global balance of power means that influential countries defending their interests have a big say in what the UN can do, which can empower the UN bureaucracy but also constrain it.

To put it plainly, the UN cannot single-handedly solve crises. Nor were we ever meant to. However, our peacekeepers have helped to restore peace in many countries (East Timor, Ivory Coast and Liberia, among others) and many of our colleagues have lost their lives in the process. The UN's preventive diplomacy has also helped countries as diverse as Burkina Faso and Kyrgyzstan to avoid major conflict. In Myanmar we have mobilised tremendous resources and worked privately and publicly to end the violence. But the UN cannot impose itself. Government resistance and a lack of international consensus limits what we can do.

It is also true that our peace operations are often hamstrung by inadequate resources. This is the case in the Democratic Republic of the Congo, where a force of 16,000 peacekeepers cannot alone bring peace to a country the size of western Europe. Congo illustrates the sobering reality that when host governments are not co-operative and there are divisions in the Security Council, our operations do not always get the strong backing they need. The counter-example is Colombia, where the government and the FARC guerrillas asked the UN for help in ending half a century of war. The successful Colombian peace process and UN mission there enjoy strong international support.

We are aware we don't always get it right. António Guterres, the secretary-general, has decried the fragmentation of efforts across the UN system, which contributes to undermine our ability to respond to crises and conflicts early and effectively. That is why he has proposed reforms to make the secretariat's peace and security departments more nimble, pragmatic, coherent and flexible. We hope the UN's members will support these efforts.

JEAN-PIERRE LACROIX

Undersecretary-general for
peacekeeping operations

JEFFREY FELTMAN

Undersecretary-general for
political affairs
United Nations

New York

Mr Guterres's proposed reforms are bold. The heads of UN country teams would no longer fall under the purview of the UN Development Programme, making them more directly accountable for the political and human-rights strategy on the ground. The peacekeeping, political and peacebuilding departments would be reorganised, enabling mediators and diplomats to work more effectively with the blue helmets. These are just two ideas that could transform the UN and help it do better in places like Myanmar. Even old UN hands are excited.

If countries really want the UN to be more effective, they should embrace Mr Guterres's reforms. That is a big "if". Sadly, too many governments are more than happy to let the UN take the blame for their own failures.

NATALIE SAMARASINGHE

Executive director
United Nations Association UK
London

Kenya's election

Your leader on the re-run of Kenya's presidential election ("Democracy deferred", October 28th) stated that Uhuru Kenyatta, the head of state, should have ordered the ballot to be halted. This is a power no Kenyan president possesses. To assume the

president has the power to change a decision by the Supreme Court is fundamentally to misunderstand Kenya's constitution and its independent institutions. The constitution makes clear that elections must take place within 60 days of an annulment, with the authority to make such an annulment residing solely with the Supreme Court. You also suggested that Mr Kenyatta has passed laws to restrict the Independent Electoral and Boundaries Commission. No such laws have been passed.

The president won by over 1m votes on August 8th; he received 91% of these votes again in the new election on October 26th. Your article may infer that the legitimacy of Mr Kenyatta's presidency is in question. Clearly, the votes cast in both elections demonstrate this is not a view shared by the Kenyan people.

KORIR SING'OEI

Legal adviser to the Kenyan
presidency
Nairobi

A rich musical heritage

It is not quite true that rock 'n' roll "was the first music that crossed from black to white worlds" (Obituary of Fats Domino, November 4th). That distinction might belong to the African-Irish shuffle that backed Master Juba (William Henry Lane) when he performed for Charles Dickens in New York's Five Points neighbourhood in 1842. Lane was followed in later years by the Fisk Jubilee Singers, ragtime, the blues, jazz from New Orleans, swing, boogie-woogie and bebop. All these musical styles, starting with Master Juba's, crossed the Atlantic.

JAY WEISER

Associate professor of law
Zicklin School of Business
Baruch College
New York

Unsocial media

Regarding social media's debilitating effect on democracy ("How the world was trolled", November 4th), Jürgen Habermas has indeed said that the internet may destabilise

authoritarian regimes but also erode public discourse in liberal democracies. However, Mr Habermas also thinks that the dominant effect of online networks is the same in both kinds of societies; the "isolated publics" he describes act in response only to information they find agreeable. This is the basis on which the "fake-news squalor" finds a robust and immediate audience.

At the start of the television age, liberal democracies established national broadcasting agencies as a means of providing a public space for citizens, protecting cultural sovereignty and diffusing reliable information. Similar policies for the online age are yet to be created.

MARCO ADRIA
Professor emeritus of
communication
University of Alberta
Edmonton, Canada

"Doxing" is, first and foremost, the exposure of a person's private information, notably address and phone number, for the purpose of harassment. This includes "swatting", where the police are hoaxed into thinking a crime is taking place with the intent that they arrive at the hoax victim's door ready to deliver lethal force.

BEN LIBERT
Normal, Illinois

How on earth do you know that "the population of America farts about 3m times a minute"? Surely they can't all post each one on Facebook.

TRUDY PAYNE
London

Why would we care how many times a minute a population farts? Is *The Economist* going to start using this data more often? As a statistic it stinks.

ANDY ARMSTRONG
Edinburgh ■

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Sucking up carbon

BONN

Cutting emissions will not be enough to keep global warming in check. Greenhouse gases must also be scrubbed from the air

SWEDEN'S parliament passed a law in June which obliges the country to have “no net emissions” of greenhouse gases into the atmosphere by 2045. The clue is in the wording. This does not mean that three decades from now Swedes must emit no planet-heating substances; even if all their electricity came from renewables and they only drove Teslas, they would presumably still want to fly in aeroplanes, or use cement and fertiliser, the making of which releases plenty of carbon dioxide. Indeed, the law only requires gross emissions to drop by 85% compared with 1990 levels. But it demands that remaining carbon sources are offset with new carbon sinks. In other words greenhouse gases will need to be extracted from the air.

Sweden's pledge is among the world's most ambitious. But if the global temperature is to have a good chance of not rising more than 2°C above its pre-industrial level, as stipulated in the Paris climate agreement of 2015, worldwide emissions must similarly hit “net zero” no later than 2090. After that, emissions must go “net negative”, with more carbon removed from the stock than is emitted.

This is because what matters to the climate is the total amount of carbon dioxide in the atmosphere. To keep the temperature below a certain level means keeping

within a certain “carbon budget”—allowing only so much to accumulate, and no more. Once you have spent that budget, you have to balance all new emissions with removals. If you overspend it, the fact that the world takes time to warm up means you have a brief opportunity to put things right by taking out more than you are putting in (see chart 1 on next page).

Being able to remove carbon dioxide from the atmosphere is, therefore, a crucial element in meeting climate targets. Of the 116 models the Intergovernmental Panel on Climate Change (IPCC) looks at to chart the economically optimal paths to the Paris goal, 101 assume “negative emissions”. No scenarios are at all likely to keep warming under 1.5°C without greenhouse-gas removal. “It is built into the assumptions of the Paris agreement,” says Gideon Henderson of Oxford University.

Climate scientists like Mr Henderson have been discussing negative-emissions technologies (NETS) with economists and policy wonks since the 1990s. Their debate has turned livelier since the Paris agreement, the phrasing of which strongly suggests that countries will need to invent new sinks as well as cutting emissions. But so far politicians have largely ignored the issue, preferring to focus on curbing current flows of greenhouse gases into the at-

mosphere. NETS were conspicuous by their absence from the agenda of the annual UN climate jamboree which ended in Bonn on November 17th.

In the short term this makes sense. The marginal cost of reducing emissions is currently far lower than the marginal cost of taking carbon dioxide straight from the atmosphere. But climate is not a short-term game. And in the long term, ignoring the need for negative emissions is complacent at best. The eventual undertaking, after all, will be gargantuan. The median IPCC model assumes sucking up a total of 810bn tonnes of carbon dioxide by 2100, equivalent to roughly 20 years of global emissions at the current rate. To have any hope of doing so, preparations for large-scale extraction ought to begin in the 2020s.

Modellers favour NETS that use plants because they are a tried and true technology. Reforesting logged areas or “afforesting” previously treeless ones presents no great technical challenges. More controversially, they also tend to invoke “bioenergy with carbon capture and storage” (BECCS). In BECCS, power stations fuelled by crops that can be burned to make energy have their carbon-dioxide emissions injected into deep geological strata, rather than released into the atmosphere.

The technology for doing the CCS part of BECCS has been around for a while; some scenarios for future energy generation rely heavily on it. But so far there are only 17 CCS programmes big enough to dispose of around 1m tonnes of carbon dioxide a year. Promoting CCS is an uphill struggle, mainly because it doubles the cost of energy from the dirty power plants whose flues it scrubs. Other forms of low- ▶▶

emission electricity are much cheaper. Affixed to bioenergy generation, though, CCS does something that other forms of generation cannot. The carbon which the plants that serve as fuel originally took from the atmosphere above is sent into the rocks below, making it a negative emitter.

The problem with afforestation and BECCS is that the plants involved need a huge amount of land. The area estimated ranges from 3.2m square kilometres (roughly the size of India) to as much as 9.7m square kilometres (roughly the size of Canada). That is the equivalent of between 23% and 68% of the world's arable land. It may be that future agricultural yields can be increased so dramatically that, even in a world with at least 2bn more mouths to feed, the area of its farms could be halved, and that the farmers involved might be happy with this turn of events. But it seems highly unlikely—and blithely assuming it can be done is plainly reckless.

Negative thinking

Less land-intensive alternatives exist—at least on paper. Some are low tech, like stimulating the soil to store more carbon by limiting or halting deep-ploughing. Others are less so, such as contraptions to seize carbon dioxide directly from the air, or methods that accelerate the natural weathering processes by which minerals in the Earth's crust bind atmospheric carbon over aeons or that introduce alkaline compounds into the sea to make it absorb more carbon dioxide.

According to Jennifer Wilcox of the Colorado School of Mines, and her colleagues, the technology with the second-highest theoretical potential, after BECCS, is direct air capture (see chart 2 on next page). This uses CCS-like technology on the open air, rather than on exhaust gases. The problem is that the concentration of carbon dioxide in the air, while very high by historical standards, is very low by chemical-engineering ones: just 0.04%, as opposed to the 10% or more offered by power-plant chimneys and industrial processes such as cement-making.

The technologies that exist today, under development by companies such as Global Thermostat in America, Carbon Engineering in Canada or Climeworks of Switzerland, remain pricey. In 2011 a review by the American Physical Society to which Ms Wilcox contributed put extraction costs above \$600 per tonne, compared with an average estimate of \$60-250 for BECCS.

Enhanced weathering is at an even earlier stage of development and costs are still harder to assess. Estimates range from \$25 per tonne of carbon dioxide to \$600. On average, 2-4 tonnes of silicate minerals (olive, sometimes used in Finnish saunas because it withstands repeated heating and cooling, is a favourite) are needed for every tonne removed. To extract 5bn

tonnes of carbon dioxide a year may require up to 20bn tonnes of minerals that must be ground into fine dust. Grinding is energy-intensive. Distributing the powder evenly, on land or sea, would be a logistical challenge to put it mildly.

Ideas abound on a small scale, in labs or in researchers' heads, but the bigger mechanical schemes in existence today capture a paltry 40m tonnes of carbon dioxide a year. Most involve CCS and have prevented more carbon dioxide escaping into the atmosphere from fossil-burning power plants, rather than removing it. Removing 8bn-10bn tonnes by 2050, as the more sanguine scenarios envisage, let alone the 35bn-40bn tonnes in more pessimistic ones, will be a vast undertaking.

Progress will be needed on many fronts. All the more reason to test lots of technologies. For the time being even researchers with a horse in the race are unwilling to bet on a winner. Pete Smith of Aberdeen University speaks for many NETS experts when he says that "none is a silver bullet, and none has a fatal flaw."

It will also not come cheap. WITCH, constructed by Massimo Tavoni of Politecnico di Milano, is a model which analyses climate scenarios. Unlike most simulations, it also estimates how much research-and-development funding is necessary to achieve roll-out at the sort of scale these models forecast. For all low-carbon technologies, it puts the figure at \$65bn a year until 2050, four times the sum that renewables, batteries and the like attract today. Mr Tavoni says a chunk of that would obviously need to go to NETS, which currently get next to nothing.

Even the less speculative technologies need investment right away. Trees take decades to reach their carbon-sucking potential, so large-scale planting needs to start soon, notes Tim Searchinger of Princeton University. Direct air capture in particular looks expensive. Boosters note that a few years ago so did renewables. Before technological progress brought prices down, many countries subsidised renewable-energy sources to the tune of \$500 per tonne of carbon dioxide avoided and often spent huge sums on it. Christoph Gebald, co-founder of Climeworks, says that "the first data point on our technological learning curve" is \$600, at the lower end of previous estimates. But like the price of solar panels, he expects his costs to drop in the coming years, perhaps to as low as \$100 per tonne.

However, the falling price of solar panels was a result of surging production volumes, which NETS will struggle to replicate. As Oliver Geden of the German Institute of International and Security Affairs observes, "You cannot tell the green-growth story with negative emissions." A market exists for rooftop solar panels and electric vehicles; one for removing an invisible gas from the air to avert disaster decades from now does not.

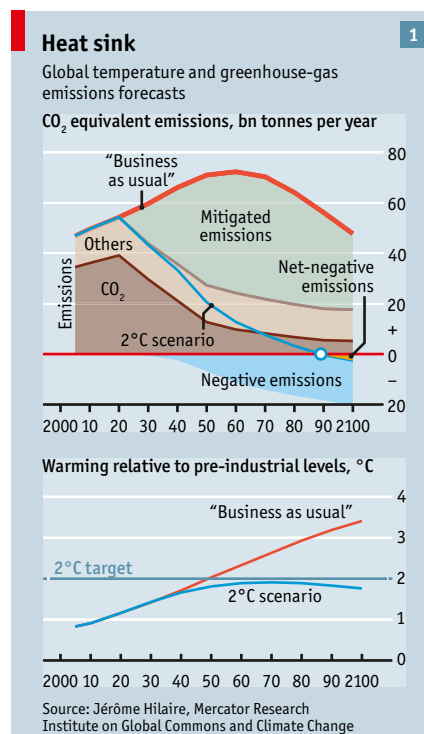
Much of the gas captured by Clime-works and other pure NETS firms (as opposed to fossil-fuel CCS) is sold to makers of fizzy drinks or greenhouses to help plants grow. It is hard to imagine that market growing far beyond today's total of 10m tonnes. And in neither case is the gas stored indefinitely. It is either burped out by consumers of carbonated drinks or otherwise exuded by eaters of greenhouse-grown produce.

There may be other markets, though. It is very hard to imagine aircraft operating without liquid fuels. One way to provide them would be to create them chemically using carbon dioxide taken from the atmosphere. It is conceivable that this might be cheaper than alternatives, such as bio-fuels—especially if the full environmental impact of the biofuels is accounted for. The demand for direct air capture spurred by such a market might drive its costs low enough to make it a more plausible NET.

From thin air

One way to create a market for NETS would be for governments to put a price on carbon. Where they have done so, the technologies have been adopted. Take Norway, which in 1991 told oil firms drilling in the North Sea to capture carbon dioxide from their operations or pay up. This cost is now around \$50 per tonne emitted; in one field, called Sleipner, the firms have found ways to pump it back underground for less than that. A broader carbon price—either a tax or tradable emissions permits—would promote negative emissions elsewhere, too.

Then there is the issue of who should ▶▶



Emission statement

CO₂ equivalent, bn tonnes per year

Removal potential of negative-emissions technologies

Bioenergy with carbon capture and storage	12	Direct air capture	12	Land management	6	Mineral carbonation	5
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Global emissions, 2010

Total 49.5

Projected emissions, 2100

2°C scenario 17.6 "Business as usual" scenario 47.7

Sources: Jérôme Hilaire, Mercator Research Institute on Global Commons and Climate Change; WIREs Energy and Environment

foot the bill. Many high-impact negative-emissions schemes make most sense in low-emitting countries, says Ms Wilcox. Brazil could in theory reforest the *cerrado* (though that would face resistance because of the region's role in growing soyabeans and beef). Countries of sub-Saharan Africa could do the same in their own tropical savannahs. Spreading olivine in the Amazon and Congo river basins could soak up 2bn tonnes of carbon dioxide.

Developing countries would be understandably loth to bankroll any of this to tackle cumulative emissions, most of which come from the rich world. The latter would doubtless recoil at footing the bill, preferring to concentrate on curbing current emissions in the mistaken belief that once these reach zero, the job is done.

Whether NETS deserve to be lumped in with more outlandish "geoengineering" proposals, such as cooling the Earth with sunlight-reflecting sulphur particles in the stratosphere, is much debated. What they have in common is that they offer ways to deal with the effects of emissions that have already taken place. Proponents of small-scale, low-impact NETS, such as changes to soil management on farms, though, bridle at being considered alongside what they see as high-tech hubris of the most disturbing kind. NETS certainly inspire fewer fears of catastrophic, planetary-scale side-effects than "solar radiation management".

But they do stoke some when it comes to the consequences of tinkering with the ocean's alkalinity or injecting large amounts of gas underground. And the direct effects of large-scale BECCS or afforestation projects would be huge. If they don't take up arable land, they need to take up pasture or wilderness. Either option would be a big deal in terms of both human amenity and biodiversity.

Another concern is the impact on politicians and the dangers of moral hazard.

Correction: In our briefing on the impact of social media on democracy (November 4th) we described as "totally fictitious" a "poll" which was reported during the French presidential campaign by Sputnik, a government-controlled Russian news agency, that put François Fillon, the conservative candidate, at the head of the field. In fact, it was an unrepresentative social-media study by Brand Analytics, an audience-research firm based in Moscow. We apologise for the misrepresentation.

NETS allow politicians to go easy on emission cuts now in the hope that a quick fix will appear in the future. This could prove costly if the technology works—and costlier still if it does not. One study found that following a 2°C mitigation path which takes for granted NETS that fail to materialise would leave the world closer to 3°C warmer. Mr Geden is not alone in fearing that models that increasingly rely on NETS are "a cover for political inaction".

Everything and the carbon sink

There is some progress. Academics are paying more attention. This year's edition of "Emissions Gap", an influential annual report from the UN Environment Programme, devotes a chapter to carbon-dioxide removal. Mr Henderson is leading a study of the subject for Britain's Royal Society; America's National Academy of Sciences has commissioned one, too. Both are due next spring. The IPCC will look at the technology in its special report on the 1.5°C target, due next autumn.

There's some money, too. Carbon Engineering has attracted backers such as Bill Gates, and now has a pilot plant in Canada. Climeworks has actually sold some carbon-offset credits—to a private investor and a big corporation—on the basis of the carbon dioxide it has squirrelled away at a demonstration plant it recently launched in Iceland. Earlier this year Britain's government became the first to set aside some cash specifically for NETS research. In October America's Department of Energy announced a series of grants for "novel and enabling" carbon-capture technologies, some of which could help in the development of schemes for direct air capture. Richard Branson, a British tycoon, has offered \$25m to whoever first comes up with a "commercially viable design" that would remove 1bn tonnes of greenhouse gases a year for ten years.

All this is welcome, but not enough. The sums involved are trifling: £8.6m (\$11.3m) in Britain and \$26m from the Department of Energy. The offset sold by Climeworks was for just 100 tonnes. Mr Branson's prize has gone unclaimed for a decade.

A carbon price—which is a good idea for other reasons, too, would beef up interest

in NETS. But one high enough to encourage pricey moonshots may prove too onerous for the rest of the economy. Any price would promote more established low-carbon technologies first and NETS only much later, thinks Glen Peters of the Centre for International Climate Research in Oslo.

Encouraging CCS for fossil fuels as a stepping stone to NETS appeals to some. The fossil-fuel industry says it is committed to the technology. Total, a French oil giant, has promised to spend a tenth of its \$600m research budget on CCS and related technologies. A group of oil majors says it will spend up to \$500m on similar projects between now and 2027. But the field's slow progress to date hardly encourages optimism. Governments' commitment to CCS has historically proved fickle.

Last year Britain abruptly scrapped a £1bn public grant for an industrial-scale CCS plant which would have helped fine-tune the technology. For this to change, politicians must expand the focus of the 23-year-old UN Framework Convention on Climate Change from cutting emissions of greenhouse gases to controlling their airborne concentrations, suggests Janos Pasztor, a former climate adviser to the UN secretary-general. In other words, they must think about stocks of carbon dioxide, not just flows.

This is all the more true because emissions continue to elude control. After three years of more or less stable emissions, a zippier world economy looks on track to belch 2% more carbon dioxide this year. That amounts once again to borrowing more of the planet's remaining carbon budget against future removal. It doesn't take a numerate modeller like Mr Tavoni to grasp that, in his words, "If you create a debt, you must repay it." The price of default does not bear thinking about. ■



Nature's way of capturing carbon



Also in this section

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Sexism in Japan

Flower power

TOKYO

Women are working more, but few are getting ahead

WHEN Kanako Kitano was job-hunting, she looked for a company that would not treat her differently because she is female. “The companies talked about how they gave the same opportunities to men and women,” the 21-year-old says. “But at the career fair they had men doing the talking surrounded by a bunch of women handing out leaflets.” She eventually opted for a job at Bloomberg, an American media company.

By and large, women in Japan work: 68% of those aged 15 to 64 are employed or looking for a job, a similar figure to America. The chart of the proportion of women in work by age is still “m-shaped”, as women drop out of work when they marry or have kids before returning later on. But the decline in the middle is now more of a dip than a valley. Today just over half of women continue working after their first child is born, compared with 38% in 2011.

Office culture is slowly changing, too. Gone are the days when female workers were only hired as lowly administrators or unabashedly referred to as “office flowers”. Few now think like Kazuyo Sejima, a renowned architect, who forswore children when she started out in the 1970s because she never imagined that she could have both a fulfilling career and a family.

Shinzo Abe, the prime minister, has sworn to boost women’s economic opportunities as a way to revive the economy (see page 61). The advancing participation

rate suggests his effort to “make women shine” is having some success. But huge problems remain. “The limitlessness of Japan’s working culture—in terms of the hours, giving everything you have and being expected to move at the whim of the company—is the biggest obstacle,” says Kimie Iwata, who sits on the board of Japan Airlines and heads the Japan Institute for Women’s Empowerment and Diversity Management.

The government estimates that 2.7m women want to work, but do not. Caring for children or elderly parents often pulls them away from the office. A shortage of nursery places is a particular gripe. But more often women cite factors pushing

them out of the workplace, such as *matahara*, harassment for getting pregnant or taking maternity leave. Women are disproportionately in part-time or casual work (see chart)—with worse pay, worse benefits and worse career prospects. They earn 74% of the median male wage on average, compared with 81% in America.

The disparity is especially stark at the highest ranks. Only two of Japan’s 20 cabinet ministers are women. A woman cannot head the imperial family. No company on the Nikkei index has a female boss, an even poorer showing than the paltry seven on Britain’s FTSE 100.

Keiko Takegawa, who heads the government’s gender-equality bureau, says that by some measures Japan fares worse than Arab countries. Only 10% of lawmakers are women, compared with 27% in Iraq. Only 15% of scientific researchers are female, compared with 25% in Libya. “We lack role models,” says Kaori Fujiwara of Calbee, a snack-food company known for promoting women.

Since Mr Abe came to office in 2012, he has created more nursery places and, in last month’s general election, promised free child care. Since last year big companies have been required by law to document their efforts to promote women. A few firms now allow remote working or more flexible hours.

But, both for Mr Abe and for society as a whole, there is a sense that economic imperatives, rather than evolving cultural attitudes, are prompting these changes. Many members of Mr Abe’s Liberal Democratic Party see putting women to work as a lesser evil than accepting mass immigra- ▶▶



Award: Miranda Johnson, *The Economist's* former environment correspondent now based in South-East Asia, has won the Maritime Foundation's Desmond Wetherill Media Award for her coverage of the ocean.

tion, and thus as the only way to counter a shrinking working-age population. The erosion of the old unwritten guarantee of a job for life for employees of big firms has led more men to say they want their wives to work; women, too, cite money as a consideration. What is missing, says Kumiko Nemoto of Kyoto University of Foreign Studies, who has written a book on working women, “is any discussion about the value of equality in and of itself”.

The media continue to convey a “super feminine” ideal of womanhood, says Ms Nemoto. Magazines discuss how women can improve their *joshi-ryoku*. This is often translated as “girl power”, but applies to a woman who can cook, sew and make impressive *bento* (lunch) boxes. Even Mr Abe’s catchphrase about letting women “shine” has a condescending ring.

Career women do not get much help at home. In households where both partners work, men spent 46 minutes a day on do-

mestic tasks compared with almost five hours for women, a far lower share than American men. Agony columns and online forums are full of women grumbling about being *wan ope ikuji* (solo childcare), an adaptation of a phrase originally coined to refer to convenience-store employees who were left to mind the shop on their own. Only 3.1% of men take their (relatively generous) statutory year’s paternity leave, with low uptake even in workplaces where it is culturally accepted, such as Ochanomizu University, a women’s institution in Tokyo.

Some women do not mind all this. “I feel sorry for my brother. I have choices on how to be successful whereas for men work is the only way,” says 20-year-old Hinano Sukeda. Some older career women accuse their younger peers of lacking ambition and preferring to be kept. Ms Kitano admits, “I feel we should speak out more, but there is a culture of just fitting in.” ■

leader and prime minister in 2015.

After parliament rejected legislation to allow the plebiscite, his answer was to hold a plebiscite by another name: the “Australian Marriage Law Postal Survey”, which Australians have just completed. It did not require parliamentary approval, since it was not a formal vote. Yet Australians took it seriously. Almost four-fifths of 16m eligible voters participated. David Kalisch, the head of the statistical bureau that oversaw the proceedings, calls this “outstanding for a voluntary survey and well above other voluntary exercises conducted around the world”.

The campaign was hard-fought. In full-page newspaper advertisements Mr Howard warned of threats to “parental rights, freedom of speech and religious freedom” if Australians voted for gay marriage. The Anglican church in Sydney donated A\$1m (\$760,000) to the No campaign. Alan Joyce, the openly gay head of Qantas, Australia’s biggest airline, donated A\$1m of his own money to the Yes camp. Jennifer Westacott, the head of the Business Council of Australia, a lobby group, declared that she had been in a same-sex relationship for 30 years and had “spent my whole life feeling like an outsider”.

The focus will now shift to parliament. Dean Smith, an openly gay Liberal member of the Senate (the upper house), introduced a bill to allow gay marriage within hours of the survey result. The opposition Labor Party supports it. Liberals, previously bound by their party’s opposition to gay marriage, will now have a free vote.

James Paterson, a conservative Liberal, wants not only clergy (as in Mr Smith’s bill) but also businesses to be free to refuse to participate in gay weddings. But Mr Turnbull says Mr Smith’s measure is “clearly a good bill to start with”. The government, he maintains, would not “countenance making legal discrimination that is...unlawful today”. The Liberals, in other words, are as divided as ever.

Mr Turnbull is already under pressure. His government has lost its majority in the lower house, after the forced resignation of two MPs from the governing coalition found to be dual nationals and thus in breach of the constitution. At least until by-elections next month, Mr Turnbull must rely on support from independents.

The citizenship mess was not of Mr Turnbull’s making, but it has taken a toll. The government trailed the opposition by ten points in a recent opinion poll. Australians’ ringing endorsement of gay marriage gives him a chance to reclaim some authority, by bringing about a change he has long advocated. Both houses of parliament are due to reconvene on November 27th for the year’s final session. How he shepherds the legislation to make good on his promise may well prove pivotal not just for gay Australians but for his own career. ■



Gay marriage in Australia

Almost there

SYDNEY

The government promises to change the law by the end of the year

FINALLY, after voting that lasted two months, November 15th brought a result. To the question “Should the law be changed to allow same-sex couples to marry?” almost 62% of Australians said yes; 38% said no. The Yes vote prevailed in all six of Australia’s states and its two main territories. Barely hiding a sense of relief, if not triumph, Malcolm Turnbull, the prime minister, called the result “overwhelming”. He promised that a parliamentary vote to legalise gay marriage would follow by Christmas.

At rallies around the country, suppor-

ters of change cheered the prospect. But the issue has long divided Mr Turnbull’s conservative Liberal Party. The Marriage Act originally left the meaning of marriage undefined. John Howard, a Liberal prime minister, had it amended in 2004 to specify “the union of a man and a woman”.

A leader of his party’s progressive wing, Mr Turnbull once favoured reversing this change with a parliamentary vote. But as a delaying tactic Tony Abbott, Mr Turnbull’s predecessor, proposed a non-binding plebiscite. Mr Turnbull acquiesced in that policy when he unseated Mr Abbott as Liberal

Geographical indications in India

Ode to cloy

KOLKATA

West Bengal wins culinary vindication

THE bowl filled with *rasgulle* at the counter of the K.C. Das sweet-shop wears a bejewelled turban, as if it were a human head. Its contents look like brains in a vat—and exert an unearthly power over the local imagination. On November 14th, to the delight of sweet-toothed Bengalis, India's official registry of legally protected "geographical indications" ruled that this spongy white ball of cottage cheese, soaked in syrup, is originally from West Bengal—as locals have always taken for granted. Nobin Chandra Das, father to K.C., is said to have invented it in 1868.

Since 2015 the neighbouring state of Odisha had besieged West Bengal with a contrary story. Odisha's state government deployed ancient texts and bas-reliefs to argue that *rasgulle* have been made there for 600 years. It pressed its case by designating a date in July as *rasgulla day*.

Victory at the national registry came as sweet revenge for Bengalis. "We are very happy and proud that #Bengal has been granted GI (Geographical Indication) status for Rosogolla," tweeted the chief minister. (*Rasgulla*—the singular—is the Hindi spelling; Bengali, the saying goes, is how Hindi would sound if you spoke it with a *rasgulla* in your mouth.) So precious is the delicacy to locals that travellers at Kolkata's airport have to be reminded that "Liquids above 100ml (Including Rosogolla) are Not Allowed".

It was not just Bengali ego that was on the line. India passed a law to protect geographical indications in 1999. In 2004 it registered its first protected product with the WTO: Darjeeling tea, another prized item from Bengal. Darjeeling's small estates were tired of seeing their good name used to sell inferior teas abroad. Kaushik Basu of the Darjeeling Tea Association says the ruling has helped to keep the genuine producers in business.

This week the GI registry faced an even more fraught claim. Basmati rice, one of India's best-known exports, may only be grown in the plains near the Indus and Ganges rivers. But the state of Madhya Pradesh, which includes a tiny corner of the Ganges basin, wants its rice-growers to be able to use the name. Other states, led by Punjab, hope to exclude it, to preserve the reputation (meaning price) of their crop.

India's GI registry includes more than 300 protected designations. In theory, these should allow the officially recognised producers to sell their wares at a pre-



A rasgulla by any other name...

mium. Most of them do not resonate much with consumers, however, even within India. Who has ever heard of Dahanu-Gholvad chikoos? (They are an especially sweet variety of a sandy, brown-fleshed fruit.) *Rasgulle*, in contrast, are known and prized throughout India. Alas for producers of the genuine Bengali article, their state government applied to protect only *Banglar* (Bengali) *rasgulle*. Anyone wishing to sell another sort is still free to use the name. ■

Collecting tax in Myanmar

Cash in hand

YANGON

Burmese have got out of the habit of paying taxes

INSIDE a noodle house in central Yangon, business is buzzing. Customers huddle over tables, slurping down chicken soup or gobbling dumplings. Everyone pays in cash. Few customers ask for receipts. When your correspondent does so, one is handed over, complete with government-issued stickers. But the cost of the meal goes up. On the vast majority of the restaurant's sales, it seems, no one is paying any tax.

Over the past decade the Burmese economy has boomed. Last year it grew by 5.9%. In the medium term growth is expected to average 7.1% a year, according to the World Bank, making the country one of the peppiest in the region. Poverty, though still stark, has fallen.

Yet Myanmar has the lowest tax take in South-East Asia and one of the lowest in the world, at a meagre 7.5% of GDP. That compares with 16% in Thailand and 14% in Cambodia. Under Myanmar's military rulers, the picture used to be even worse. In 2011 the government collected less than 4%

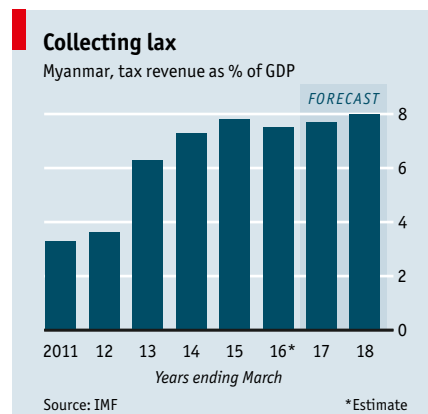
of GDP. That year, however, Thein Sein, the general who had just become president, launched an economic reform programme that included opening an office responsible for collecting tax from big firms. By 2015 government revenue had more than doubled (see chart). It has since stagnated.

The generals permitted free elections in 2015, allowing the National League for Democracy to come to power. Among its priorities are clamping down on corruption and broadening the tax base. Businessmen complain that taxmen gouge them for bribes, not revenue for the state. Humbler citizens, meanwhile, tend not to pay tax on their income.

Other taxes are routinely dodged, too. In order to avoid paying property taxes, some buyers and sellers, or landlords and tenants, create two contracts: one recording the actual transaction and a dummy to be submitted for tax purposes, says Lachlan McDonald, an economist at the Renaissance Institute, a think-tank in Yangon. Most Burmese donate money to Buddhist temples or other religious institutions as a matter of course. Handing money over to the exchequer is a far less common activity.

"People do not want to pay tax because they have never had much from the government," says Matthew Arnold of the Asia Foundation, an American NGO. Under the military regime, generals made money from jade, narcotics and construction; Burmese without connections made so little money there was little point asking them for any. As a result, municipal services, which are meant to be paid for through local taxes, were and are scant. In Yangon the official municipal charge for rubbish collection is a token 600 kyats (\$0.44) a month. But a resident complains that to get the rubbish taken away, she must pay informal street-cleaners an extra 200 kyats a bag.

It does not help that the system for collecting taxes is hopelessly antiquated. Assessments for property taxes are based on poor proxies for value such as the number of storeys in a building and the materials from which it is built. There is no effort to account for inflation. All the relevant infor- ►►



mation is kept on paper, with almost no digital records. According to Michael Lwin of Koe Koe Tech, a firm that has launched a pilot scheme to allow local governments to offer services online, this system puts the average annual rental value of the 23,516 recorded properties in the relatively affluent city of Taunggyi at \$21, when in practice buildings are let out for much more. Even if tax collectors really intended to raise money for the government, it would be hard to collect much.

The city government in Yangon, the commercial capital, has set up an office to check up on a broader range of potential taxpayers, beyond the big fish. But the NLD government may be facing a Catch-22: it will be hard to persuade Burmese to pay tax unless they receive some services in return, but it will also be hard to offer decent services without collecting some tax. ■

New Zealand's water

Cows and seep

CHRISTCHURCH

Dairy farming is polluting rivers

NICK SMITH may be the first politician to be immortalised in horse manure. Before the recent general election, a super-sized sculpture depicting the environment minister, trousers down, squatting over a glass, was paraded through central Christchurch. It was carved from dung in protest at an alarming increase in water pollution. Data published in 2013 suggested that it was not safe for people to submerge themselves in 60% of New Zealand's waterways. "We used to swim in these rivers," says Sam Mahon, the artist. "Now they've turned to crap."

Mr Smith's National Party is now out of government. But the real villains behind New Zealand's deteriorating water quality are still at large: cows. Scrub where sheep once grazed is being given over to intensive dairy farms—some of them irrigated to help the pasture grow. Some 6.6m cattle are now squeezed into the country of 4.7m people, transforming even an iconic arid grassland, the Mackenzie Basin (made famous by the "Lord of the Rings" films), into a tapestry of emerald fields.

The first concern is bovine urine, which is rich in nitrogen. Nitrogen can cause toxic algae to grow when it leaches into water. Nitrogen fertiliser, used to increase fodder yields so that more cows can be raised on less land, exacerbates the problem.

At many of the sites where the government tests the groundwater it contains too much nitrate to be safe to drink—a particular problem in New Zealand, since water in

much of the country has long been considered clean enough that it is used as drinking water with only minimal treatment. In Canterbury, one of the most polluted areas, expectant mothers are told to test tap water to avoid "blue baby syndrome", a potentially fatal ailment thought to be caused by nitrates. The poisonous blooms have killed dogs.

An even greater concern for human health comes from cow dung, which contains nasty bacteria such as *E.coli*. Three people died last year after a well was contaminated with another bug called campylobacter. Sheep were to blame in that case, yet cows have a proclivity for wading in rivers and their faeces often find their way into water. New Zealanders are twice as likely to fall ill from campylobacter as Britons, and three times more than Australians or Canadians.

And then there is the damage to native flora and fauna. The algal blooms suck the oxygen from rivers. Sediment washed from farmland can also choke the life out of streams. Almost three-quarters of native species of freshwater fish are under threat.

New Zealand is a rainy place, but farmers are also criticised for causing rivers to shrivel and groundwater to fall in certain overburdened spots. One recent tally suggested that just 2,000 of the thirstiest dairies suck up as much water as 60m people would—equivalent to the population of London, New York, Tokyo, Los Angeles and Rio de Janeiro combined. Most is hosed on the stony Canterbury region, including the Mackenzie Basin. Earlier this year locals were forced to rescue fish and eels from puddles which formerly constituted the Selwyn river, after drought and over-exploitation caused long stretches to dry up.

Dairies are trying to clean up their act. Farmers have fenced off thousands of kilometres of rivers to prevent livestock from wading in. Some have planted trees along

waterways to curb erosion; others remove animals from muddy fields during winter. Some parts of the country are using more sophisticated techniques: around Lake Taupo, the country's biggest lake, farmers can buy and sell nitrogen allowances in a cap-and-trade scheme. A technique called "precision irrigation" may curb both water consumption and the leaching of nitrogen.

Earlier this year the National Party launched a plan to make 90% of rivers "swimmable" by 2040. Yet it ignored several recommendations of a forum of scientists and agrarians established to thrash out water policy, and removed elected officials from an environmental council in Canterbury after they attempted to curb the spread of irrigation. One of its big initiatives to improve water quality involved lowering pollution standards, making rivers look much cleaner at a stroke.

The Labour Party, now in government, had promised during the election campaign to tax irrigators and use the cash to clean up rivers. But Labour's populist coalition partner disliked the idea, so it has been dropped. Jacinda Ardern, the new prime minister, says that she will charge companies that bottle and export local water—little more than a gesture, as they account for only a tiny share of water use.

Environmentalists argue that the national dairy herd should be cut to prevent further damage. That may not be as hard on farmers as it sounds, argues Jan Wright, a former parliamentary commissioner for the environment. She says recent growth in the industry has been relatively inefficient, denting margins. Yet the chances of change are slim. The regulations governing Fonterra, a big dairy co-operative, encourage volume more than value, says Kevin Hackwell of Forest & Bird, a pressure group. And pollutants moving through groundwater can take decades to emerge in lakes. The worst may still be to come. ■



The majestic and the toxic

Banyan | Under a cloud

As South Asians gasp for breath, governments sit on their hands



THROUGHOUT its steep climb away from Delhi, the plane remained enveloped in an acrid fog. It was not until it reached cruising altitude that sunlight could break through. Off to the north, tickling an achingly blue sky, the pristine pinnacles of the Himalayas whispered a promise of fresh air. But as the aircraft crested the lip of the jagged bowl that cradles Kathmandu, the fabled capital of Nepal looked less like Shangri-La than like a giant curdled cappuccino. The plane descended into a yellow-brown smear that stretched clear across the valley, thick enough at the centre to blur away streets and buildings entirely.

Kathmandu is far smaller than Delhi, and the ingredients in its noxious halo are different. The cocktail at this dry time of year is mostly plain old dust. Stirred by swarms of motorbikes bumping over potholes, and through builders' heaps of sand, gravel and cement made ubiquitous by the devastating earthquake of 2015, the permanent choking cloud blots out stars in the night sky. Though close by, the world's highest mountains make only a brief appearance as tantalising wisps in the early morning before vanishing into the murk.

Delhi's autumnal pollution is of a more dangerous kind. Its 25m people suffer under a seasonal plague that afflicts the Indo-Gangetic Plain from the city of Lucknow in the east all the way to Lahore, in Pakistan, to the west, as millions of rice farmers conclude their harvest by burning off the leftover stalks to clear paddies for winter planting. Add to this Delhi's unique mix of spices: ash spewed out of coal-fired power plants, fine grit from dirty diesel engines, exhaust from generators running on the cheapest bunker and coking fuels, fumes from crematoria and malodorous miasmas from spontaneously combusting trash mountains. All this gets chucked up into the air where, in early November, rising humidity combines with falling temperatures and an almost complete lack of wind to produce a clammy, smelly suspension of ultrafine toxic dust. It hangs over the city like congealed smoke.

Yet if the chemical components and proximate causes of air pollution across South Asia are different, the ultimate source is the same: poor governance. It is not that political bosses have uniformly failed to recognise the dangers of air pollution, or taken no steps to curb it. Across the region they have done both. Delhi, for instance, converted all its buses to cleaner natural gas 15 years ago.

But governments have for years dealt with the issue haphazardly, half-heartedly and with all the shortcomings in state capacity that put Asia's underbelly to shame compared with the continent's less democratic but more efficient countries. Delhi has become the world's most polluted mega-city, supplanting Beijing.

Indeed, the contrast with China is stark. For nearly a decade its government has exerted a massive, concerted effort to tackle pollution, with encouraging results. In Beijing the average level of PM 2.5, the finest and most dangerous sort of dust, fell by about 20% between 2012 and 2016. Greenpeace, an environmental pressure group, reckons that around 160,000 premature deaths have been avoided as a result. NASA, America's space agency, reckons that China's emissions of sulphur dioxide have fallen by 75% since 2007. India's grew by 50% over the same period, largely as a result of building ever more coal-fired power stations and failing to equip old ones with filters.

India is not alone among its neighbours in being so neglectful. Pakistan has also made a big, controversial push for coal. Just like Delhi, Lahore has flailed feebly at tackling toxic air. Only when public anger over the stink mounted in recent weeks did the city government reveal that it had bought six pollution monitors some time ago, but had not yet installed them. As in India, Pakistan's state governments have been wary of forcing farmers, a crucial vote bank, to curb their pyromania.

In Nepal, meanwhile, it is not poverty so much as delays in disbursing budgets, compounded by an anti-corruption agency that terrifies bureaucrats, that is largely responsible for the failure to pave streets. Ignoring evidence that diesel exhaust is carcinogenic, and keen to placate the truckers and farmers who use it most, the government has maintained a steep price differential: petrol costs 30% more. In any case, lack of sufficient oversight means that petrol and diesel alike are often heavily adulterated with even dirtier stuff by the time they reach consumers.

For decades India has maintained a similar pro-diesel policy, promoting a shift by consumers and carmakers such that, by 2013, some 55% of cars registered had diesel engines. In Delhi diesel accounts for 78% of the PM 2.5 produced by cars. The International Council on Clean Transportation reckons this could potentially translate into an additional 284,600 cases of lung cancer a year. Overall, perhaps as many as 2.5m people in India die prematurely every year owing in part to air pollution.

The elephant in the smog-filled room

Yet despite gasps and cries from the public, and stark warnings from doctors, the national government remains strangely aloof. The prime minister, Narendra Modi, loudly promotes a Clean India campaign aimed at building toilets and tidying streets. But he has shied from broaching the electorally trickier question of air pollution, which is hard to fix and risks treading on the toes of both big industry and small farmers. His environment minister, Harsh Vardan, airily waves off suggestions that anyone might actually be dying from air pollution.

This is foolish. India does not even need to look to China to see what can be done. Inadvertently, for instance, another of Mr Modi's projects, promoting cooking gas to replace traditional stoves that burned wood or dung, is saving thousands of lives previously shortened by indoor pollution. Up in the terraced hills of Nepal, meanwhile, farmers can teach their peers down on the plains a lesson. They do not burn off rice straw. They carefully dry and stack it, feeding the hay to cows and buffaloes all winter. ■

Also in this section

29 Forcing “cures” on gay people



Centre-local relations

The walking debt

BEIJING

What a local debt crisis says about the difficulty of governing China

IT IS a truth universally acknowledged, said China's central-bank chief, Zhou Xiaochuan, recently, that huge debts are “the root of weakness in China's macro financial system”. A truth less universally acknowledged is the role of politics. A big part of the debt problem stems from a dysfunctional relationship between central and local governments. Tensions between them pushed up debt to dangerous levels in 2015. Changing the rules seemed to have solved the problem for a while. But as in the film “Pride and Prejudice and Zombies”, the horror is back from the dead.

China is so vast that relations between the centre and periphery have always been problematic. As one epigram puts it: “The empire, long divided, must unite; long united, must divide.” During the past few years the centre has been stressing the need for unity. Convinced that local governments have been enjoying too much autonomy, it has been trying to exert greater control over them. Localities, however, keep pushing back.

Under China's peculiar fiscal system, local governments—those at provincial, city and county levels—have strictly limited revenue-raising powers. Until 2014 they could not borrow or issue bonds without the centre's permission. Localities depend on fixed shares of certain taxes: 50% of value-added tax, for example, and 40% of personal income tax.

The share is never enough. Local governments receive roughly half of total tax revenues but are responsible for two-thirds of government spending. In counties the discrepancy is especially large (see chart). The result is that local authorities are permanently dependent on transfers from the centre to keep afloat. These transfers account for, on average, half of local spending. Such huge flows give the centre a lot of influence over lower tiers.

Equally naturally, local governments look for ways to escape control from above. One that began to emerge in the 1990s is a shadowy kind of investment company, under local-authority control,

known as a “local government financing vehicle”, or LGFV. Such firms used state-owned land and shares in local state firms as collateral to raise money from banks, the bond market and consumers.

The purpose of this borrowing was usually to build houses, roads and other infrastructure. But it was largely unregulated. LGFVs were not banks, so they were not subject to the same financial rules. Neither were they local-government departments, which are subject to central controls. They were set up as state-owned enterprises, which allowed them to ignore budget constraints and often to keep their balance-sheets hidden from public view.

Kicking the tyres

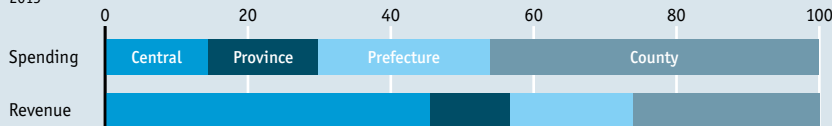
Alarmed by the growth of LGFVs, the central government set out to investigate. In 2013 it counted over 10,000 of them and calculated their total borrowing at 7trn yuan (\$1.1trn, or 13% of GDP). Mainland China has 31 provinces, 330 prefectures and 2,800 county-level administrations, so this works out at more than three per jurisdiction. At the end of 2015 total local-government debt, mostly involving LGFVs, amounted to 15trn yuan, or 24% of GDP. Compared with China's total outstanding credit, amounting to 250% of GDP at that time, this was not such a big share. But most borrowing by LGFVs was “off budget”, that is, unreported. It had exploded during the previous decade.

In 2014 the central government began trying to sort out the mess by banning local authorities from raising money through financing vehicles. Instead, it said, they could issue bonds and use the money to re-finance LGFV debt. By 2018 all such debt is supposed to be converted into bonds. This implies issuing about 15trn yuan, a huge amount. By putting local borrowing onto the books, the government hopes to bring some transparency to the debt problem. By ▶▶

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Mismatch

China, % of total, by administrative level
2015

Source: OECD

▶ imposing ceilings on the amount of locally issued bonds, it also aims to limit the issue of new debt. Turning LGFV debt into bonds, it reckons, should also help the local authorities because bond yields are cheaper than bank loans.

There followed an avalanche of other reforms. The national government began to include assessments of local officials' borrowing decisions in their annual performance reviews. They would be held responsible even after moving to another area. The centre also banned some dodgy incentives that local governments had used to attract private investors. Most ambitiously, the five-year plan for economic development that took effect in 2016 promised that there would be a new revenue- and tax-sharing deal between the central and local levels.

It all made excellent sense. Yet in July 2017 Mr Xi made clear that the fixes were not working. He told a conference on the financial system that local-government debt was still one of the two biggest threats to China's financial stability (the other was debt built up by state-owned firms). The problem was that local governments were still using every trick in the book to disguise their shenanigans.

Houze Song of the Paulson Institute, an American think-tank, says local officials have been reclassifying loans so they no longer appear in official statistics. As the finance ministry reported in August, complicated public-private partnerships are being used to disguise debt as private capital. This month a manager at one LGFV told *Caixin*, a Beijing-based magazine, that even if an institution announces that it is separating from the local government, it will quickly turn to the local government again when it gets in financial trouble. Huo Zhihu of China Securities Credit Rating, a domestic ratings agency, was quoted by the magazine as saying that such separations were "just a formality".

The persistence of the debt problem reveals much about the difficulties of governing China and the limits even of Xi Jinping's immense authority. In principle, it ought to be possible to make a clearer division of tax-raising powers between the centre and periphery, a prospect raised in the five-year plan and reiterated by Mr Xi at a party congress in October. Such a deal would lessen the mismatch between spending and revenues. In particular a property tax, promised in 2013, would give local governments a new tax base.

The trouble is that central and local governments do not trust each other enough to negotiate such a deal. To make matters worse, they have drawn different lessons from the LGFV debt saga. The centre thinks local authorities need to be reined in, not given their own tax base. The periphery seems to have decided that increasingly elaborate schemes are needed to defend

what little financial autonomy they have. Localities also worry that a property tax might lower house prices—and no one wants to be blamed for that.

Mr Xi has long complained that local officials are obstructing his policies and says he needs more powers to force changes through. The party congress has given him those. The local-debt crisis will be a test of whether he plans to reform the system of government in China, or whether he will be content merely to have its top layer stacked with his allies. ■

Homosexuality

Torture condoned

BEIJING

Many people in China believe gays can be "cured" by painful therapy

AFTER undergoing hypnosis at a clinic in Chongqing, Peng Yanhui—who goes by the name Yanzi—was told to lie on a sofa, think about having sex with another man and move his finger if he felt any emotional or physical reaction. "Then, when my eyes were closed, the clinician suddenly turned on the electroshock machine," he recalls. "I jumped up screaming loudly. When I said I was scared, he just smiled and said that was what he wanted."

Yanzi (pictured in 2014 outside a court in Beijing at which he successfully sued the clinic) had good cause to be frightened. But he was not surprised. As a gay-rights activist, he had volunteered for the abusive "conversion" therapy to expose the prevalence of such treatments in China, which most doctors in developed countries consider to be unethical and medically fallacious. But many people who suffer similar ordeals do so under coercion. A new report by Human Rights Watch, an American

NGO, gives details of 17 cases in 12 different provinces of people subjected to prolonged therapy involving medication or electric shocks, often under parental pressure. Most of the examples it cites occurred in public hospitals.

In 1997 China effectively stopped treating homosexuality as a crime and, in 2001, ceased defining it as a disorder. But, as in other countries, pseudoscientific attempts to "cure" gay people persist. In China, where there is a strong cultural belief in a patrilineal family system, it is mainly men who are subjected to such treatment. Most urban parents have only one child, partly as a result of once strict family-planning rules. If their only son is gay, they fear that the family line will be severed.

Some of those who endure the therapy attempt suicide, and some lie to their families about what the treatment has achieved, says Ying Xin, director of the Beijing LGBT Centre, an advocacy group for people who are lesbian, gay, bisexual or transgender. She says she does not know anyone for whom the treatment has worked. "It's like any other kind of torture," she says. "Some people eventually say whatever they are pressured to say."

The court that heard Yanzi's case did not rule that the treatment he was given was itself illegal—only that the clinician had lacked a licence and had engaged in false advertising by offering a cure for something that was not an illness. It ordered the clinic to publish the court's verdict in medical journals, at the clinic's expense. But Human Rights Watch believes that neither this case, nor the only other successful one like it, which was concluded in July, have had much deterrent effect. In both, the damages awarded were small.

Ms Xin of the LGBT centre says doctors must be taught to persuade families that there is nothing wrong with being gay. But that would mean driving away business. China's public hospitals are money-grubbing. They would be loth to do that. ■



Justice needs scaling up



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Wages

Great again

WASHINGTON, DC

Blue-collar wages are surging. Can it last?

IF THERE was a defining economic problem for America as it recovered from the financial crisis, it was stagnant wages. In the five years following the end of the recession in June 2009 wages and salaries rose by only 8.7%, while prices increased by 9.5%. In 2014 the median worker's inflation-adjusted earnings, by one measure, were no higher than they were in 2000. It is commonly said that wage stagnation contributed to an economic anxiety in middle America that carried Donald Trump into the White House.

Yet Mr Trump's rise seems to have coincided with a turnaround in fortunes for the middle class. In 2015 median household income, adjusted for inflation, rose by 5.2%; in 2016 it was up by another 3.2%. During those two years, poorer households gained more, on average, than richer ones. The latest development—one that will be of particular interest to Mr Trump—is that blue-collar wages have begun to rocket. In the year to the third quarter, wage and salary growth for the likes of factory workers, builders and drivers easily outstripped that for professionals and managers. In some cases, blue-collar pay growth now exceeds 4% (see chart).

Has Mr Trump kept his promise to revive American manufacturing, mining and the like? A more probable explanation is that he came to office just as America began to run out of willing workers to fill all of its job vacancies. As unemployment has

fallen, from over 6% in mid-2014 to 4.1% today, wage growth has gradually picked up.

At first it seemed as if the biggest beneficiaries of a tight labour market would be those in service occupations, such as waiting and cleaning. A year ago service workers were enjoying the biggest pay rises in the economy—3.4%, on average. (Higher minimum wages also helped; 25 states and localities raised minimum pay in 2016.) Over the past year, however, growth in service wages has decelerated slightly. Blue-collar wage growth has surged ahead.

In some industries the labour shortage

seems acute. Now is not a good time for Americans to remodel their bathrooms: tile and terrazzo contractors earn 11% more per hour than a year ago (and fully one-third more than in 2014). Having a bath may get pricier, too: workers who make soap have also enjoyed 11% wage gains over the past year.

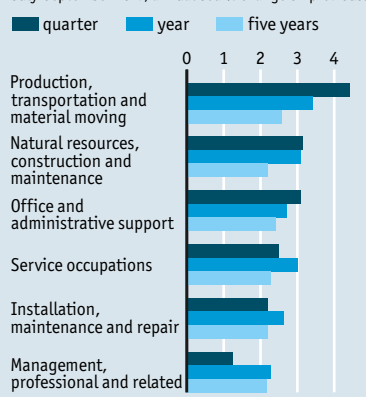
Strong demand, rather than a productivity boom, is driving the scramble for workers. In the manufacturing sector, for example, output per hour worked is just 0.1% higher than a year ago, and has not grown at all in the past five years. Production and wages have picked up anyway. One reason is a cheapening dollar. On a trade-weighted basis, the greenback fell by almost 9% between the start of the year and mid-September (it has since recovered a little). A weaker dollar and a strengthening world economy have spurred demand for American goods. In the first three quarters of the year, goods exports were up by nearly 4% on 2016.

At the same time, a rebound in oil prices from their trough in early 2016 has set off another cycle of investment in the shale industry. America currently has 907 active oil rigs, up from 568 a year ago, according to Baker Hughes, an oil-services firm. Economists at UBS, a bank, estimate that energy investment has caused nearly three-fifths of all economic growth in 2017, once the effect of fluctuating inventories has been stripped out of the figures.

If these trends continue, higher wages may begin to tempt more men, who dominate blue-collar occupations, to look for jobs (those who do not seek work do not count as unemployed). For the past two years, the strengthening labour market has encouraged more jobseeking by so-called prime-aged workers, those aged between 25 and 54. But the increase in workforce participation has been almost entirely con- ▶▶

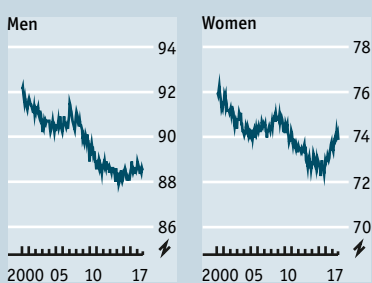
Blue-collar dollar

United States, wages and salaries by occupation
July-September 2017, annualised % change on previous:



Women who work

United States, civilian labour force participation rate*, %



Source: Bureau of Labour Statistics *25- to 54-year-olds

centrated among women (see chart). At 89%, male prime-age participation remains close to a record low.

Whether male participation improves may depend on whether men are prepared to up sticks and move to where the labour market is booming. UBS's economists note that Texas and neighbouring oil states such as Oklahoma account for almost all of the acceleration in manufacturing employment this year. Industries and places where blue-collar employment has been in a decades-long decline are unlikely to stage a recovery. Jed Kolko, chief economist for Indeed, a jobs website, says that even some of the recent wage gains are misleading, because they have occurred in industries, such as textile manufacturing, in which employment continues to fall.

Rising incomes for lower- and middle-earners may help reduce inequality, especially if wage growth for higher-earners remains subdued. A recent analysis by the Economic Policy Institute, a left-leaning think-tank, found that real wages for the top 1% of earners fell by 3.1% in 2016, and were lower that year than they were in 2007. As workers' wages grow, companies' profit margins may also come under pressure, reducing, somewhat, the capital income of the rich. Texas Roadhouse, a chain of steak restaurants, recently warned investors that it expects its wage bill to grow by 7-8% in 2017.

After years of imbalance, a shift in economic power towards workers is to be welcomed, so long as inflation remains low. Yet wage growth also helps determine the fate of politicians, whether or not they deserve it. Mr Trump's election led to soaring small-business confidence, which is yet to abate. His promise to deregulate the energy sector may have spurred some investment. Yet his apparent economic success to date mostly reflects fortunate timing.

That will not stop him from taking the credit should a tight labour market lift America's spirits as the 2020 presidential election approaches. Rightly or wrongly, the biggest beneficiary of a sustained wage boom for workers may be a suited man sitting in the Oval Office. ■

Scandal proliferation

Turkey before Thanksgiving

WASHINGTON, DC

Keeping up with this administration's news-generation is exhausting

AN ADVISER allegedly involved in a plot to force a migrant to return to his home country. An attorney-general who seems conveniently forgetful when testifying before Congress. A president's son exchanging messages with an agent of a hostile foreign power. In past administrations any of these things would have caused shock, hand-wringing and, probably, Congressional hearings and sackings. But it's just another week in Donald Trump's America.

On November 11th the *Wall Street Journal* reported that Robert Mueller, the special counsel appointed to investigate Russian interference in the 2016 election, is looking into allegations that Michael Flynn, Mr Trump's former national-security adviser, was involved in a plan to return Fethullah Gulen, a Turkish cleric living in Pennsylvania, to the Turkish government in exchange for \$15m. Turkey accuses Mr Gulen of masterminding last year's failed coup (charges the cleric denies) and has long sought his return.

The plan was allegedly discussed during meetings late last year between Mr Flynn, then a senior campaign adviser, and Turkish officials. James Woolsey, a former CIA director, said that the one meeting he briefly attended involved "brainstorming about a very serious matter that would pretty clearly be a violation of law." Mr Flynn had previously disclosed that a Turkish firm paid his lobbying outfit \$530,000—but the admission came after his 24-day stint as national security adviser. Mr Flynn's attorney called the allegations "outrageous" and "false"; Turkey's embassy called them "ludicrous and groundless."

Stephen Vladeck, a professor at the University of Texas specialising in national-security law, says the allegations against Mr Flynn provide "the first clear prospect of state criminal charges". The alleged plot was cooked up in New York; Mr Trump can only pardon federal crimes, and thus would be unable to offer Mr Flynn the same lifeline he could offer Paul Manafort, Mr Trump's former campaign chairman, and Rick Gates, a lobbyist, whom Mr Mueller has indicted on federal charges.

Not to be outdone, Jeff Sessions, Mr Trump's attorney-general, then testified before the House Judiciary Committee. In previous testimony he had stated that he knew of no communication between Russian government sources and the Trump campaign. But George Papadopoulos, a foreign-policy adviser to the campaign,

said that at a meeting Mr Sessions attended he proposed bringing together Mr Trump and Vladimir Putin. On November 14th Mr Sessions said that he now remembered speaking with Mr Papadopoulos. Carter Page, another campaign adviser, also testified that in June 2016 he told Mr Sessions about an upcoming trip to Moscow; Mr Sessions said he could not recall that conversation, but did not challenge Mr Page's version of events.

Mr Sessions's forgetfulness was soon forgotten when *The Atlantic*, a magazine, obtained leaked messages between Donald Trump junior and WikiLeaks, which American intelligence agencies believe Russia uses to publish hacked data. When WikiLeaks sought information on an anti-Trump website, Mr Trump junior promised to "ask around". On October 12th 2016 WikiLeaks sent Mr Trump junior a link to its cache of stolen documents. Fifteen minutes later the elder Mr Trump tweeted, "Very little pickup by the dishonest media of incredible information provided by WikiLeaks." The younger Mr Trump did not respond to a slew of other messages, including one sent in December suggesting that President-elect Trump urge Australia to appoint Julian Assange, founder of WikiLeaks, ambassador to America.

In these exchanges the younger Mr Trump appears trusting and his father opportunistic, an eager beneficiary of what seemed to be a Russian intelligence operation. Bob Anderson, who served as Mr Mueller's assistant director of counter-intelligence when both men were at the FBI, warns that proving Mr Trump or a member of his cabinet intentionally worked for the Russians will be hard. But intelligence agents do not need informed partners; naive ones work just as well. Mr Anderson says that "for a seasoned [Russian intelligence] agent to come up against a guy like Trump's kid, it's nirvana." ■



Cut-out and keep

Environmental policy

Calculating

WASHINGTON, DC

The EPA is rewriting the most important number in climate economics

CLIMATE economists refer to it as “the most important number you’ve never heard of”. The social cost of carbon (SCC) tries to capture the cost of an additional ton of carbon-dioxide pollution in a single number—around \$47 in present dollars. Using it, more than \$1trn worth of benefits have been calculated in economic-impact assessments that accompany environmental regulations. But now that the Environmental Protection Agency (EPA) is headed by Scott Pruitt, a climate-change sceptic who is friendly with fossil-fuel firms, the maths is likely to be redone. In its recent proposal to repeal the Clean Power Plan, a contentious Obama-era rule that sought to curb CO₂ emissions from power plants, the EPA buried a significant haircut to the cost of carbon. The new calculations place it anywhere between \$1 and \$6—a cut of between 87% and 98%. Mr Pruitt, who has zealously applied himself to undoing the work of the past administration, could use the revised number to justify wiping away reams of environmental regulation that are based on it.

After a court ruled in 2008 that regulators must take the negative externalities of CO₂ emissions into account, agencies began using differing estimates of the costs it imposed. The calculation requires simultaneous modelling of climate change and its impact on human health, migration and economic productivity—a fiendishly difficult task. The Obama administration convened a committee of experts to do this in 2009. It began publishing estimates that year. In March, President Donald Trump issued an executive order disbanding the committee and withdrawing all of its technical guidance (it had published social-cost estimates for other greenhouse gases like methane and nitrous oxide too).

Because regulations are subject to lawsuits, Mr Pruitt is somewhat constrained in what he can do at the EPA. Ignoring the cost of CO₂ altogether would not go down well in court. Refusing to propose an alternative to the Clean Power Plan would cross an even brighter red line: the Supreme Court ruled in 2007 that greenhouse gases were a risk to human health. Dismantling the resulting “endangerment finding” would require the EPA to muster a convincing argument that such emissions do not contribute to global warming—a daunting prospect. “The fossil-fuel flunkies in the Trump administration are always trying to maximise the fossil-fuel industry’s advan-

tage, while not stepping on any of the traps that will snap shut on them if they go into the wrong places with dishonest arguments and numbers,” says Sheldon Whitehouse, a Democratic senator from Rhode Island and outspoken critic of the Trump administration’s EPA, who at one point refers to Mr Pruitt as “that little scoundrel”.

Instead, the EPA has opted to put the cost of CO₂ much lower. This has been done by including only the domestic benefits of reducing greenhouse-gas emissions, instead of the global benefits, as the Obama-era calculation did. Because America contributes 15% of global CO₂ emissions, one idea would be to divide the worldwide cost by 7—which is what the new calculations seem to do. Another technique is to increase the discount rate. This greatly reduces the estimated cost of emitting CO₂, since many of the costs of climate change appear in the distant future.

The previous calculations of the social cost of carbon were not perfect. The National Academy of Science published a 300-page report in January offering refinements. “There was a consensus that the social cost of carbon was in need of updating,” says Michael Greenstone, who served on Mr Obama’s Council of Economic Advisers. “But we should be updating it so that all the advances in our understanding are included. Instead, the Trump administration is ignoring science, and trying to find the dials to turn down regulation, with no analytical evidence.” ■

Business taxes

Pass whos?

WASHINGTON, DC

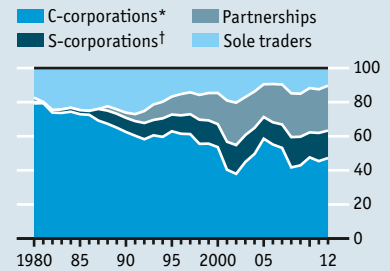
So-called pass through firms may soon get a big tax cut

PRESIDENT DONALD TRUMP broke with convention by not releasing his tax returns during his campaign for office. One reason might be his involvement in around 500 “pass-through” firms. The profits (and losses) of such businesses, unlike those of traditional corporations, flow directly onto the tax returns of their owners. So Mr Trump has good reason to pay attention as Republicans in Congress try to decide how such firms should be treated.

Rich countries typically allow sole traders to pay income rather than business taxes—think of taxi drivers and handymen. America is unusual in also offering this option to large firms. So-called s-corporations, one type of pass-through entity, can be huge. FMR, the parent company of Fidelity, an asset manager with \$2.4trn under management and 45,000 employees, is reportedly an s-corporation. So are many

Passing lane

Share of business income by type, %



Source: “The Rise of Partnerships”, *Who pay corporate tax by DeBacker and Prinsinzano, †Who pass profits through to shareholders’ tax returns Tax Notes, June 2015

sports teams. The main requirements for the status are that a firm issues only one type of share and has no more than 100 shareholders, all of whom must be tax resident in America. Owners enjoy the same protections from liability as shareholders in conventional companies.

In 1980 almost four-fifths of America’s business income accrued to corporations, with the most of the rest going to sole traders. But as the top rate of income tax fell in the 1980s, firms started to reorganise themselves as s-corporations and partnerships, another type of pass-through business (see chart). Today, 95% of firms are pass-throughs. They make more profit and employ more people than conventional companies do. They also have richer owners. Three-fifths of pass-through income flows to the top 1% of earners, compared with two-fifths of corporate dividends. This is partly because high-rolling law firms, hedge funds and consultancies are often partnerships.

The tax bill that the House of Representatives was due to vote on after *The Economist* went to press would cap taxes for pass-throughs at 25%, while leaving the top rate for wage income at 39.6%. The risk this poses is obvious: high-earners might masquerade as firms to reduce their taxes. This seems to have happened in Kansas, which abolished state taxes on pass-throughs in 2012. To limit such tax avoidance, the bill would loosen the cap for shareholders who help run a business; by default, their tax rate would be about 35%. Finally, because the cap benefits only high-earners, the bill would also cut the tax rate on profits up to \$75,000 to 9% for the smallest businesses.

As with several controversial parts of the tax bill, Republicans in the Senate have different ideas. They want taxpayers to be able to deduct about a fifth of their pass-through profits from their taxable income, giving a tax-break to firms of all sizes. Again, complicated rules would be needed to prevent abuse.

Is either plan justified? Because Republicans want to cut the corporate tax, they feel obligated to reduce levies on other ►►

► firms too. This makes some sense. But it is easy to forget that there is a second layer of taxes on corporations: their shareholders must pay levies on dividends and capital gains. These do not apply to pass-throughs. In any case, struggling or small pass-throughs are already taxed at less than the corporate rate, thanks to the progressivity of the personal income tax.

More importantly, decoupling the levies for profits and wages seems to defeat the whole point of pass-throughs: simplicity. Complex rules foster avoidance, whatever safeguards are supposedly in place. Nothing is stopping pass-throughs from reinventing themselves—or perhaps re-inventing themselves—as conventional corporations. When President George W. Bush’s advisers penned a tax plan in 2005, they proposed a single tax system for all large businesses. Republicans would do well to revisit that idea. ■

Sexual harassment

A norm is formed

NEW YORK

How common is sexual harassment?

FOR social scientists the apparent epidemic of propositioning, pinching, groping and flashing that is gripping America brings a rare opportunity to observe a new norm, around how men behave towards women, being created in real time. First though, they must figure out the extent of the problem. The most extreme example—rape—is hard enough to count. Government statistics produced by the Centres for Disease Control and Protection suggest that one in five women and one in 60 men have been a victim of rape or an attempted rape in their lifetime. On the other end of the scale, sexual harassment—a charge that rarely carries criminal punishment—is far more common, and harder still to count.

It is also a fairly new phenomenon, in the sense that there was no phrase that described it until the late-1970s. That coincided with women’s growing importance in the labour force as their share of jobs rose from 33% to 42% over the preceding two decades. A formal legal definition arrived in 1980 when the Equal Employment Opportunity Commission (EEOC), a federal agency, stated that unwelcome sexual advances which affected an individual’s work were grounds for a complaint.

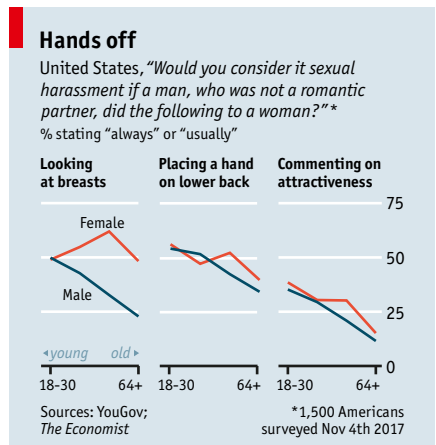
The law was slow to take hold. Just 16 cases of sexual harassment were received between 1980 and 1985. But after a Supreme Court ruling in 1986 decided that sexual harassment was covered by the 1964 Civil

Rights Act, and held companies liable for the harassment of employees even if they were not themselves aware of it, the number of EEOC harassment cases shot up. In the intervening 30 years there have been 400,000 complaints against companies. Even before the Harvey Weinstein story broke the dam, the number of cases had risen by 5% since 2014.

Yet since the majority of sexual harassment goes unreported, its true prevalence can only be guessed. A 2016 report by the EEOC provided a range of 25%-85% for the share of women who have faced sexual harassment at some point in their working lives. Victims tend to be young, junior and working in male-dominated industries. They are overwhelmingly women: just 17% of EEOC sexual harassment cases are brought by men. Once their relative workplace status and occupations are accounted for, non-white women are no more at risk of harassment than whites.

Training staff to prevent sexual harassment, which companies often do to lower their risk of being sued, has been ineffective. The most important single thing is for organisations to have a credible threat of sanction for the perpetrators. That also means protecting staff who speak out. Lilia Cortina, a professor of women’s studies at the University of Michigan, finds that this is rarely done well. To that end the EEOC has begun emphasising the role of what it calls “bystander intervention”—a technique shown to be effective in sexual assaults on university campuses.

The creation of new norms around acceptable behaviour is likely to prove more effective. And there is already evidence that attitudes to harassment are changing. YouGov, a pollster, asked Americans on behalf of *The Economist* about their views on acceptable physical contact between the sexes (see chart). Younger men are likely to be more respectful than older men in their behaviour towards women, and they are also more likely to agree with women about what is acceptable. On this subject at least, younger Americans are more conservative than their elders. ■



Model farming

A corny tale

DES MOINES

China imports a farm from Iowa

THE buddy seat on Rick Kimberley’s combine-harvester is a fine vantage point from which to observe precision farming. The combine’s satellite navigation allows farmers to make the most of good weather and to reap in the dark during peak harvesting periods. It is precise enough to trace the most efficient path to scoop up yellow, crinkly corn stalks to within a couple of centimetres. This enables Mr Kimberley, a 67-year old who farms near Maxwell, Iowa, to harvest about 100 acres in a 14-hour day, helped only by a big trailer into which he discharges his corn.

Almost by accident, the silver-haired Mr Kimberley has become a sought-after ambassador for modern farming methods in China. He travels there regularly to talk about precision farming and other tricks of his trade. Mr Kimberley has been to 40 Chinese cities in ten provinces during more than a dozen visits in the past five years. In September he was in China to break ground on a “Friendship Farm” in Hebei province, which is modelled on the Kimberley farm. This will be part of a 3,300-acre endeavour featuring fruit groves, livestock and even a Disney-style version of a small town in Iowa. It will be connected to nearby Beijing by a road and high-speed rail link now under construction.

The transplanting of the Kimberley farm to Hebei is a sign of friendship, says Wendong Zhang of Iowa State university. It ►►

▶ will be a museum rather than a model for China's 260m farmers, who farm two acres on average. The Kimberley way of farming 4,000 acres with some sophisticated machinery and only a couple of hired farm hands is cost-efficient, but would risk creating mass unemployment in rural China. It could possibly be transplanted into the north-east of the country, close to North Korea and Russia, says Mr Zhang. The area is sparsely populated and already operates some large-scale farms.

The Kimberleys' Chinese adventure started in 2012 when then vice-president, Xi Jinping, already in line to be the nation's next leader, travelled to Iowa on a tour of America. He had fond memories of a visit back in 1985 when he was a mid-level official from Hebei. During that time he stayed in the town of Muscatine, boarding in the spare bedroom of a family decorated with American football wallpaper and filled with Star Trek toys, and learned about farming. Mr Xi was keen to return to a farm in Iowa on his trip in 2012, so local officials picked the Kimberley farm, which is a half-hour drive from the state capital. With its shiny, silver grain bins, corn and soybean fields, brick-built homestead and photogenic family, it looks the part. The visit was masterminded by Terry Branstad who, as Iowa's then governor, had met Mr Xi back in 1985, and is now America's ambassador to Beijing. Mr Xi drove; Mr Kimberley took the buddy seat.

Iowa's friendly relationship with China, fostered by Mr Branstad, his predecessor, Robert Ray, and enterprising Iowans such as Luca Berrone, a businessman who drove Mr Xi around Iowa for two weeks on his first visit, has benefited the state handsomely. Iowa exports more soybeans to China than to all other countries combined, as well as corn, pork and beef (after a ban was lifted this year). In 1996 Iowa exported \$25m-worth of goods to China. Last year it was \$491m, says Kim Reynolds, Iowa's governor. The state's agri-businesses—Kemin Industries, Hyline, Diamond v, DuPont Pioneer, Vermeer, Emerson and John Deere—all invest in China.

Despite all this, Iowan farmers remain worried about what the federal government has in mind for them. "We cannot do this on our own with bilateral deals," says Debi Durham of the Iowa Economic Development Authority, who regrets America pulling out of the Trans-Pacific Partnership, a trade pact that was pushed by Barack Obama. Governor Reynolds says diplomatically that Mr Trump's and Mr Xi's 100-day plan for trade talks, agreed in April in Florida, was a good start. Having conquered Mr Xi with "Iowa nice", the state government hopes that a relationship fostered over 30 years will survive what comes next. And if that fails, the Friendship Farm will at least be a curious spectacle for China's city-dwellers. ■

The cannabis market

Disjointed

WASHINGTON, DC

Hazy regulations have strange consequences for marijuana firms

AFTER he was busted in 1974, Jeffrey Edmondson, a small-time dealer of marijuana, cocaine and amphetamines in Minneapolis, faced a daunting bill from the taxman for all his illicit income. He argued that he should be allowed to deduct \$100,000 worth of business expenses, and a court agreed. Enraged, Congress revised the tax code in the early Reagan years, forbidding tax exemptions for drug traffickers. One unintended consequence of Mr Edmondson's audacity persists four decades later: cannabis operations, now legitimate in many states, are forbidden from the usual business deductions and face crippling tax bills of as much as 70% of revenue.

That is just one of the weird results thrown up by the unique regulatory bind in which cannabis companies find themselves. For decades theirs was an underground enterprise, run by pacifist hippies and murderous drug cartels. And although 29 states have legalised marijuana—seven of them and the District of Columbia permit recreational use—the federal government still considers pot illegal. Marijuana retains the most restricted classification for drugs with "no currently accepted medical use", so-called schedule one, along with substances like heroin, LSD and ecstasy. For that reason, companies cannot ship materials across state lines. Compliance fears limit access to bank accounts, forcing companies to hoard cash and conduct business via armoured van. Lopsided tax incentives force firms to integrate verti-

cally, since some labour and administrative costs can be deducted for growing operations but not from dispensaries.

Specialised firms have cropped up in the regulatory lacunae between state and federal law, providing data analysis, human-resources management and compliance exclusively to cannabis companies, says Micah Tapman, managing director of CanopyBoulder, a business incubator. Supply-chain software called GrowForce is produced by MJardin, a Colorado company catering to other cannabis firms. In other industries, such drudgery would usually be outsourced to large firms specialising in analytics or human resources. But, fearful of the wrath of the federal government, they have stayed away, creating room for smaller operations. These service providers may have worried about the installation of Jeff Sessions—who once supported death sentences for twice-convicted drug traffickers in Alabama—as attorney-general. But since he came into office Mr Sessions has not rattled his sword much, and industry insiders say business is buzzing along. Northern Michigan University now offers a specialised marijuana degree.

Because of expanded supply and competition, the wholesale price of a pound of marijuana in Colorado has dropped from a peak of \$2,000 in January 2015 to \$1,300. Prices are seasonal, and tend to spike in ski season, when tourists partake in the local flora. Mexican drug cartels, facing lower prices, appear to be losing market share. Border seizures are down dramatically. Cartel skunk, a "commercial-grade" product, is also seen as inferior to domestically produced stuff, notes the Drug Enforcement Administration in its national drug threat assessment.

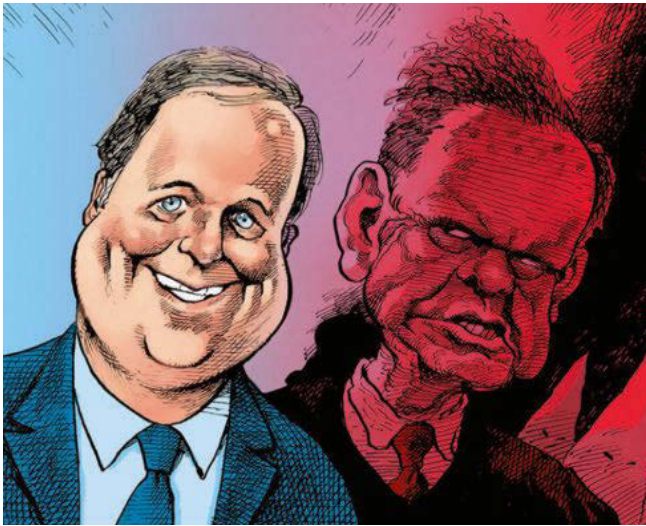
In addition to falling prices, firms find funding elusive. Investors remain skittish about the industry, and accessing American stock markets is onerous. Instead, firms are moving north to Canada, listing themselves on Canadian stock markets to raise capital, and then investing the funds in American companies. One such company, iAnthus Capital Holdings, has raised nearly \$50m says Hadley Ford, the co-founder. Mr Ford, a Wall Street veteran, found the northern relocation curious at first, but eventually adjusted. "It's like what John Dillinger said when asked about why he robbed banks," he says. "That's where the money is."



Seed capital

Lexington | Doug Jones against the darkness

The Democrats have a strong candidate for a Southern race they could actually win



IF DOUG JONES becomes the first Democrat in a quarter of a century to win a Senate seat from Alabama on December 12th, the state will have followed his own political evolution. The grandson of a coal miner and a steelworker, Mr Jones was born into a family of Democrats. But when the South went Republican, after Lyndon Johnson ended segregation in 1964, most of the Joneses went too. “Most everybody voted Republican more than they voted Democrat in recent years,” reflects the avuncular 63-year-old, during a recent campaign pit-stop in Mobile. In other words Mr Jones, who cast his first vote for Johnson’s Republican successor, Richard Nixon, is a Democrat by choice, not cultural inheritance, which in turn gives him an unusual grasp of the passions aroused across America’s political divide. Given that he must woo thousands of Republican voters to have a prayer of victory in a state that picked Donald Trump over Hillary Clinton by 28 percentage points, this is a useful advantage.

A bigger one, it must be admitted, is that Mr Jones’s opponent is a gay-hating, Muslim-baiting, religious zealot, who has twice been removed from his position as Alabama’s chief justice for disregarding the constitution in favour of his interpretation of the Bible. As soon as Roy Moore clinched the Republican nomination, Mr Jones’s chances of making history rose from roughly non-existent to slim. Following revelations that Mr Moore also has a special fondness for post-pubescent girls, they are evens.

Speaking the day after four women accused his rival in the *Washington Post* of hitting upon or molesting them as teenagers, Mr Jones was reluctant to say how this might help him. In the light of further allegations, including that Mr Moore tried to force himself upon a 16-year-old, it seems likely to help him a lot. Mitch McConnell says he believes Mr Moore’s accusers and the judge should be replaced with a less offensive candidate; if that happens, Mr Moore’s name would remain on the ballot, potentially splitting the Republican vote. The Republican National Committee has stopped supporting Mr Moore’s campaign. Asked whether he would vote for him, Jeff Flake, a Republican senator, said that he would instead “run to the polling place to vote for the Democrat”. Opinion polls suggest the race is too close to call.

The Democrats have a recent history of mistaking clement electoral circumstances for a compelling candidate. Yet even be-

fore Mr Moore landed the Republican ticket, Mr Jones’s strengths were apparent. A former US attorney, he is best known for bringing to justice two grizzled members of the Ku Klux Klan 38 years after they murdered four black children. This has given him cachet across Alabama’s racial gulf—which divides black and white Democrats almost as much as Republicans and Democrats. This enabled Mr Jones, who was endorsed early on by Congressman John Lewis among other black luminaries, to breeze through the Democratic primary. He claims the Klan case, which features prominently in his stump speech everywhere, also plays well among whites, as a token of his law-and-order credentials and determination to move Alabama beyond the reputation for backwardness and bigotry that his Republican opponent encapsulates. “It was a damn good thing for the state of Alabama that we were able to convict those guys,” Mr Jones says vigorously. “It was good for the state and good for business in the state that we could show we were excising some of the demons we’ve had here.”

Some of Mr Jones’s other strengths appear easier to replicate. Though he has the assurance of a public figure, this is his first run for elected office, so he is naturally running as an outsider. That is doubly wise in Alabama, where the Democrats’ name is mud and recent scandals in the state government have made career politicians more-than-usually hated. Mr Jones’s promise, offered less in Trumpian fury than with the exasperation of a frustrated citizen, is to rise above destructive partisanship and deal with economic problems in a consensual fashion: “I think people are very tired of the gridlock... They see nothing but chaos”.

As a peace offering to sceptical Republicans, this message implies both a desire to avoid unnecessary fights, and criticism of Mr Jones’s own party. He describes the health-care system as broken, despite Barack Obama’s reforms to it. He has also distanced himself from Democratic leaders: he has allowed only Joe Biden, an old friend, and Mr Lewis to campaign with him. At the same time, covered by his calls for “common ground”, he states his own progressive positions—including staunchly pro-choice views in a pro-life state—unapologetically. He says this is not just a matter of principle, but also because voters detest a phoney. “We can agree to disagree. But what you see is what you get.”

Moral lessons from Bama

With many Democrats outside Alabama arguing for a more beligerent, left-wing platform, there is a lot in Mr Jones’s pragmatism to admire. Indeed, for those looking for national meaning in Alabama’s contest, that is only the start. If Mr Jones wins, it will persuade Democrats that they can take control of the Senate next year. With the polls suggesting that Mr Jones is running well in the suburbs of Birmingham and with non-whites—a similar pattern to the recent Democratic sweep in Virginia—it might even convince them they have a shimmering path to recovery across the South. That would transform American politics—not least in a region where single-party rule has bred torpor and corruption. If the admired Mr Jones loses to the reviled Mr Moore, on the other hand, such a recovery might seem unimaginable.

But even that is not the main stake in Alabama. Sexual propriety and other old-fashioned virtues have taken a pummeling in American politics over the past 18 months, and now Alabamians have an opportunity to start putting that right. Mr Moore is unfit, incapable and repugnant. His opponent, who happens to be a Democrat, though he doesn’t always sound like one, is decent and substantial. It shouldn’t even be close. ■



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Chile's election

Middle class, and middle of the road

SANTIAGO

Voters are in no mood for reckless radicalism. The first of three articles on Latin America's upcoming year of elections

A WEEK before national elections, Chileans would normally be cursing the billboards and posters cluttering up their cities. On the eve of this year's presidential and congressional elections, scheduled for November 19th, there is much less to complain about. Restrictions on campaign spending imposed in 2016 after a party-financing scandal have kept much of the pesky propaganda off the streets.

This has not cheered up voters. "People are very disappointed with politicians," says Beatriz Díaz, a teacher of English in Pirque, on the outskirts of Santiago. "They keep stealing." The crackdown on campaign hoopla, meant to curb such behaviour, may deepen voters' apathy. Pollsters expect turnout to be low.

Yet voters are likely to endorse the political establishment that has governed since the 17-year dictatorship of Augusto Pinochet ended in 1990. The strong favourite to win the presidency is Sebastián Piñera (pictured left), a billionaire businessman who was president from 2010 to 2014. He leads Chile Vamos (Let's Go Chile), a coalition of centre-right and rightist parties. His main challenger, from the centre-left, is Alejandro Guillier, a popular television journalist (shown on the right). He proclaims himself a political outsider but is also running as the heir of Chile's president, Michelle Bachelet. The confusion that causes is one reason he is likely to lose, probably in a run-off on December 17th. Ms

Bachelet cannot run for re-election.

If voters were really angry they could choose one of six other contenders, most plausibly Beatriz Sánchez, a journalist with a radical plan for taxing the rich to ramp up spending by the state. Ms Díaz, the teacher, says without enthusiasm that she will probably vote for her. But pollsters give Ms Sánchez little chance. Chileans do not want to break with the liberal economic model set up under Pinochet and refined by his elected successors.

The centre holds

That is because it has largely worked for them. The economy has more than trebled in size since 1990 and the poverty rate has fallen from nearly 40% to less than 10%. More than half of Chileans are now middle class (on the World Bank's income-based definition); 84% of high-school students get further education, and most of those belong to the first generation in their families to get that much education.

Although the economy still depends largely on the price of copper, which provides nearly half of export revenues, its management is steady. An independent central bank holds down inflation; a "fiscal rule" requires governments to balance budgets over an economic cycle. This has given Chileans reasons for optimism. Most parents think their children will be better off than they are, says Harald Beyer of the Centro de Estudios Públicos, a polling firm.

Yet grievances have built up. Chile's hybrid welfare state, in which citizens often partly pay for services provided by private firms, is a disappointment to many. Newly middle-class Chileans fear that it does not protect them from slipping back into poverty. Last year tens of thousands of people protested against the privately managed pension system, which pays out lower benefits than some of the pensioners had hoped. "No more AFPs (pension-fund managers)," they demanded. In 2011-13 students held demonstrations against the role of the private sector in education.

Chile's distribution of income is more unequal than in any other member of the OECD (a grouping of mostly rich countries), bar Ireland. Taxes and benefits do little to correct this, in contrast to most other OECD nations. Chileans think their country is crime-ridden, even though its murder rate is among the lowest in Latin America.

In Ms Bachelet's second term, which began in 2014, the country entered a funk. Chile's potential GDP growth rate has dropped over the past two decades from about 5% a year to 3-3.5%, in part because the workforce has aged and regulation discourages investment. Over the past four years growth has averaged less than 2%, partly because of a fall in copper prices.

A series of reforms initiated by the president did not solve these problems. Her plans to change the tax system, give more power to labour unions and hold a national dialogue to revise the Pinochet-era constitution "scared investors", says Felipe Larraín, a finance minister under Mr Piñera. Fixed investment has fallen for four years in a row. When Ms Bachelet's daughter-in-law became the centre of an influence-peddling scandal, the president became the focus of anger about corruption. Her approval rating is a dismal 23%.

Yet Ms Bachelet contained the anger ►►

▶ that has grown under successive governments. Although she unnerved investors, she calmed voters' tempers by limiting political spending and introducing free university for students from families in the bottom half of the income scale. Her proposals to raise more money for pensions have quietened demands to abolish AFPs. Ms Bachelet "managed a real crisis of governance", says Eugenio Tironi of Tironi and Associates, a consultancy. There is less talk of scrapping the "neoliberal" model.

A few years ago a political neophyte like Mr Guillier might have been just what voters were looking for. But he has been an

uninspiring candidate, and has had a hard time explaining what he would do as president, aside from adding an extra dash of state protection to Ms Bachelet's reforms. Supporters of her New Majority coalition are split between him and Carolina Goic of the centrist Christian Democrats.

Ms Sánchez, who has even less political experience than Mr Guillier, himself a senator only since 2014, is more credible as a change candidate. She would transform Chile into a European-style welfare state, with much higher taxes. But support for her has dropped, perhaps because she scares voters. Franco Rodríguez, an engi-

neering student, agrees with Ms Sánchez that the private sector plays too big a role in public services but thinks she is "a populist". He plans to vote for Ms Goic. Mr Guillier hopes the supporters of both women will vote for him in the second round.

That will probably not be enough to deny victory to Mr Piñera. He is not loved and has been deflecting criticism in recent days of his (legal) manoeuvres to lower his own taxes. A political ally describes him as "an efficient guy", but "not a dreamer". Voters remember his first term as president as a time of prosperity, in part because copper prices were high. He is running as a prag- ▶▶

Bello | The voteathon

Anger at corruption is not the only factor in a slew of elections

IN THE annals of Latin American democracy, Marcelo Odebrecht, a Brazilian construction magnate, will occupy a place of unique infamy. From Mexico to Argentina and many places in between, his Brazilian construction company bribed presidents, ministers and candidates to win public contracts, setting a nefarious example that other firms followed. The damage to the public purses in padded contracts ran to over \$3bn. The intangible cost to the credibility and prestige of democratic politics in Latin America is incalculable.

The reverberations from the Odebrecht scandal come at the worst possible time. Starting with Chile on November 19th, seven Latin American countries will choose presidents over the next 12 months. They include the two regional giants, Brazil and Mexico. An eighth, Venezuela, is due to vote by December 2018, though its dictator, Nicolás Maduro, is unlikely to allow a fair contest. A further six presidential ballots are due in 2019, not least in Argentina. The region's political future is up for grabs.

Latin Americans are being called to vote just when polls indicate that they are more cynical about their democracies than they have been for 15 years or so. Largely because of corruption, there is a strong anti-establishment mood. The popular temper has not been improved by worsening crime in some countries, and by economic sluggishness after an earlier boom, which has left many Latin Americans with raised expectations and stagnant incomes. All this has stoked fears of a resurgence of populist nationalism—just when the region appeared to be shaking off the latest version of this.

That is a risk, notably in Mexico where Andrés Manuel López Obrador, a populist of the left, leads the opinion polls for



July's election. But there are other factors at work. One is a move away from the left, dominant for more than a decade in South America, which began with Mauricio Macri's triumph in Argentina in 2015. The strong showing of his business-friendly coalition in a congressional election in October confirmed that trend. Victory for Sebastián Piñera in Chile would extend it.

Another tendency is political fragmentation. The elections in both Brazil (a dozen or more hopefuls) and Colombia (a score) are wide open. That has allowed outsiders, such as Jair Bolsonaro, an extreme right-wing populist, to figure in the early opinion polls in Brazil. Fragmentation carries another danger. New presidents may struggle to command a legislative majority just when the region needs reforms to return to faster growth.

Yet fragmentation does not mean that firebrands will win. Because party loyalties are weaker, many voters are still undecided. Centrist parties in Brazil and Mexico have yet to settle on candidates; those who emerge from the pack will see their standing in the polls improve.

Middle-class Latin Americans, a bigger

share of the electorate than in the past, tend to be angrier about corruption than the poor, but they have more to lose and may thus be intolerant of adventurism. For that reason, Mr López Obrador lost the past two presidential elections in Mexico after leading in opinion polls. Mainstream media in Latin America have suffered less from competition with digital outlets than those in other regions; they will subject outsiders to interrogation.

Even in an era of weakened parties, political machines can be decisive. That applies in Paraguay's election due in April, where the ruling Colorado Party has a tight grip. In Honduras, which is set to vote on November 26th, the conservative incumbent, Juan Orlando Hernández, obtained a questionable court ruling allowing him to run for re-election. He may be building an autocracy.

Two-round elections provide additional protection from extremism. In run-offs voters tend to plump for the *mal menor* (the lesser evil)—usually the more centrist candidate. Presidential elections are likely to go to a second round in Chile, Costa Rica (which votes in February), Colombia and Brazil. In Mexico, which does not hold a run-off, voters tend to choose safer candidates in the first round.

Nevertheless, Mr López Obrador could win. A run-off in Brazil could pit Mr Bolsonaro against Luiz Inácio Lula da Silva, the left-wing former president who has been convicted of corruption (which he is appealing against). Yet centrists are likely to do better than early polls suggest.

If there is a silver lining in the Odebrecht scandal it is that it has turned the spotlight onto campaign financing and political corruption, prompting some countries to clean themselves up. Latin American democracy may be wounded, but Venezuela apart, it is far from dead.

matic centrist who can create jobs and control crime. He will not undo Ms Bachelet's most popular policies, like free university for the poorer half of students, or reduce the overall tax burden of 20% of GDP.

Rather than make university free for everyone, as Ms Bachelet had wanted, Mr Piñera would spend extra money on pre-school and primary and secondary schools. That is part of a plan to spend an extra \$14bn over four years, about 1.4% of GDP a year, on pensions, health, infrastructure and education. Just how he means to pay for that is unclear; half the money will come from "ineffective" programmes and

"unnecessary" spending, he claims. He plans to encourage investment by simplifying corporate taxes and cutting red tape.

Even if he wanted to, Mr Piñera could not move Chile sharply to the right. Under an electoral reform enacted by Ms Bachelet's government, the next congress is likely to be more diverse than the outgoing one, which is dominated by New Majority and Chile Vamos. Whoever the next president is will probably have to seek support from outside his or her coalition, either in a stable coalition or law by law. Chileans may be cranky, but the government they elect will probably not abandon the centre. ■

model that aims to explain why Latin American turnout rates differ. The biggest determinants are rules and the type of election. Turnout is 12 percentage points lower in non-presidential ballots. In countries where voting is mandatory, it is 11 points higher than where it is not.

The next-most-persistent pattern is that electorates vote more when they feel their democracies are working well. Conversely, they express displeasure by staying home or spoiling their ballots, rather than by flocking to the polls. Countries where people express the most support for democracy, and particularly where they trust political parties—which have get-out-the-vote operations—lead the regional league table.

These variables can account for change over time within countries, too. For example, after a shambolic decade in which none of the three men elected as president of Ecuador finished his term, just 57% of those eligible cast valid votes in 2006. But Rafael Correa, a left-wing populist elected that year, served two terms. He was no paragon of democratic virtue, but during his rule Ecuadoreans' trust in parties rose from one of the region's lowest levels to one of its highest. Sure enough, turnout surged to 74% in the elections of 2013 and 2017.

Latin Americans' electoral behaviour in recent decades also supports the "resource model" of turnout. This treats voting as a kind of luxury item, available mainly to those with the time, money, schooling, security and information to take part in politics. Turnout tends to be high in places where crime is rare and levels of education and computer ownership are high. In contrast, overall wealth and employment rates provide little information about participation: Bolivia, for example, is a poor country where turnout has exceeded 80% since the first election won by Evo Morales, the country's first indigenous president.

However, countries do tend to enjoy unusually high participation relative to their long-run averages during years when survey respondents say their own incomes are sufficient for their needs, but that the country's economy as a whole is doing poorly. People directly affected by a recession may be too busy trying to make ends meet to bother voting in protest.

Concern over declining turnout is greatest in Chile, seen as one of Latin America's healthiest democracies. After three presidential first rounds in which participation exceeded 85%, it fell to 48% in 2013. The abolition of mandatory voting in 2012 explains only part of the drop. Based on Chile's historical turnout record and the Latinobarómetro survey, our model expects participation to rebound partway in this month's election, to 58% (though factors we did not include might have depressed turnout in 2013 and could do so again). Any figure over 50% would elicit sighs of relief. ■

Voter turnout

Half of democracy is showing up

Satisfaction, not protest, usually drives Latin American voters to the polls

THE flurry of elections coming up in Latin America will not only choose new leaders. It will also provide a check-up on the health of democracy itself, which in most countries on the continent has been in place for only a few decades. Latin Americans appear to be losing some of their enthusiasm for it. In the latest edition of the region-wide survey conducted annually by Latinobarómetro, a pollster based in Chile, the share of respondents saying democracy is the best form of government hit its lowest level in a decade, at 53% (in 2010 it was 61%). The proportion saying they had no preference for democracy over other systems reached an all-time high of 25%, up from 16% in 2010.

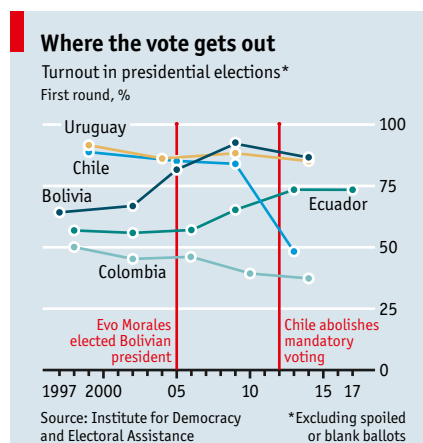
How worrying is this for Latin American democracy? One indicator will be voter turnout. Participation is only a rough proxy for political vibrancy. Some citizens might stay home because they are satisfied with their government and confident that its policies will continue. Others might vote because they expect that a clientelistic government will reward its backers.

Nonetheless, there is a rough consensus among political scientists that healthy democracies and high turnout often go hand in hand. When turnout is high, politicians seeking re-election need to address more people's concerns. This is particularly pressing in Latin America, where the poor and uneducated are least likely to cast ballots. Governments in low-turnout countries may be less responsive to their neediest citizens. Moreover, Latin American

states with high voter participation have also tended to score highly on other measures of democratic fitness, such as civil rights and regular alternation of power.

Overall, Latin America has performed reasonably well on turnout. Excluding blank or spoiled votes, the regional figure in presidential elections has held steady at just over two-thirds throughout the past two decades, close to the global average for established democracies. (Latinobarómetro's respondents began to express record levels of indifference to democracy only last year, making it too early to tell whether this trend foreshadows declining participation.) However, this stability masks wide variations. Since 1995, countries in the southern half of South America have boasted turnout rates in the mid-70s, with Uruguay leading the way at 87%. Colombia has managed just 43% (see chart).

To determine whether the worrisome polling trends portend an epidemic of electoral apathy, *The Economist* has built a



Correction: In "The founding of Maple Valley" (November 4th) we wrote that Sebastian Thrun and Jeff Hawkins were members of the Neural Computation and Adaptive Perception group, which studied neural networks. That was incorrect. We are sorry.



Zimbabwe

The man who wrecked a country

HARARE

Robert Mugabe's ruinous reign is ending messily. How did it go so wrong? And how can Zimbabwe recover?

IT WAS the dismissal and flight abroad of Robert Mugabe's oldest and trustiest lieutenant that finally led to his downfall. Grace Mugabe, the 93-year-old president's avaricious wife, was thought to be behind the sacking. Younger than her husband by 41 years, she plainly sought to inherit the throne. Yet she overplayed her hand. Within a week the armed forces' commander, alongside an array of generals, declared, without naming her, that Mrs Mugabe must be stopped. He demanded, also without naming names, that her nemesis, Emmerson Mnangagwa, must be reinstated as heir apparent. Mrs Mugabe's allies were denounced as "counter-revolutionaries" who had played no part in the "war of liberation" that 37 years ago had brought Mr Mugabe (pictured) to power.

A few days later armoured troop carriers rolled into Harare, the capital. Soldiers took control of the state broadcaster and surrounded Mr Mugabe's residence. In the small hours of the morning another general announced on television that the army was in charge. But the coup was not a coup, he insisted. Various traitors had merely been rounded up and the Mugabe family detained for their own safety. Mr Mnangagwa was set to return from his brief exile. The Mugabe era was at last ingloriously over. As *The Economist* went to press, events were still unfolding pell-mell. But the latest signals suggest that the fate of

Zimbabwe, at least for now, is in the hands of the 75-year-old Mr Mnangagwa.

Known as "the Crocodile" for his habit of waiting quietly before sinking his jaws into his next victim, Mr Mnangagwa has none of his erstwhile master's wit and charm. A former guerrilla and longtime political prisoner during the era of white supremacy that ended with independence under Mr Mugabe in 1980, for the next two decades he was minister of state security and of justice. He acquired a fearsome record of repression and an unrivalled knowledge of where the bodies—literal and metaphorical—were buried.

A pragmatist to the core, Mr Mnangagwa's first act on the day he took over his

department in 1980 was to visit the police station where he had been tortured by the white regime after his capture for trying to blow up a train. The leg-irons from which he had been hung upside down were still there, as were the white officers who had beaten him. Yet, according to an account by Martin Meredith, a historian, he promised them a "clean slate" in the new country.

Soon enough, however, he was making his own use of such men. He is accused of complicity in the brutal suppression of the minority Ndebele tribe in the early 1980s, when about 20,000 people, most of them civilians, were murdered by the Zimbabwean army. (He denies this.) He had a hand in the Zimbabwean army's deployment in the 1990s to the Democratic Republic of Congo, which it plundered. In 2008, when Mr Mugabe and his ruling Zanu-PF party lost a parliamentary election and the first round of the presidential one, he orchestrated a lethal wave of violence that forced the winning challenger, Morgan Tsvangirai, to withdraw from the second round. Standing for election to a parliamentary seat against the main opposition party, he was himself twice embarrassingly defeated. But Mr Mugabe ensured he would always retain a senior government or party post.

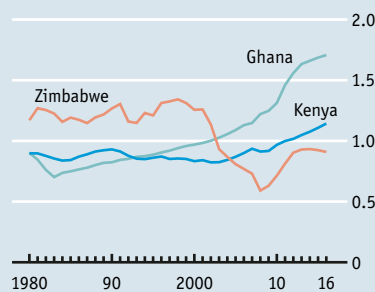
In the past few years, as Mr Mugabe's physical and mental powers have declined, Mr Mnangagwa has fostered a rep- ▶▶

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GDP per person, \$'000, 2010 prices



utation, with Western governments among others, as a man to do business with—and as the president's likeliest successor. Well before the coup, one Western diplomat remarked that he would be ruthless and powerful enough to grab power quickly should it slip from Mr Mugabe's hands, "with at most a few tens of deaths" forestalling a drawn-out power struggle that could result in a lot more killing. And he has courted multilateral financial institutions such as the IMF and World Bank.

Mr Mnangagwa has also let it be known that he would reverse the racist "indigenisation law" that requires businesses to be mainly owned by black Zimbabweans or by the state. He has argued for some kind of settlement, including compensation, for the white farmers whose properties have been confiscated since 2000, acknowledging that their skills are needed to rebuild what was one of Africa's most productive agricultural economies. Such a settlement might spur Western governments to start offering large-scale aid again. On the domestic front he has put out secret feelers to the opposition, hinting at a unity government after Mr Mugabe goes.

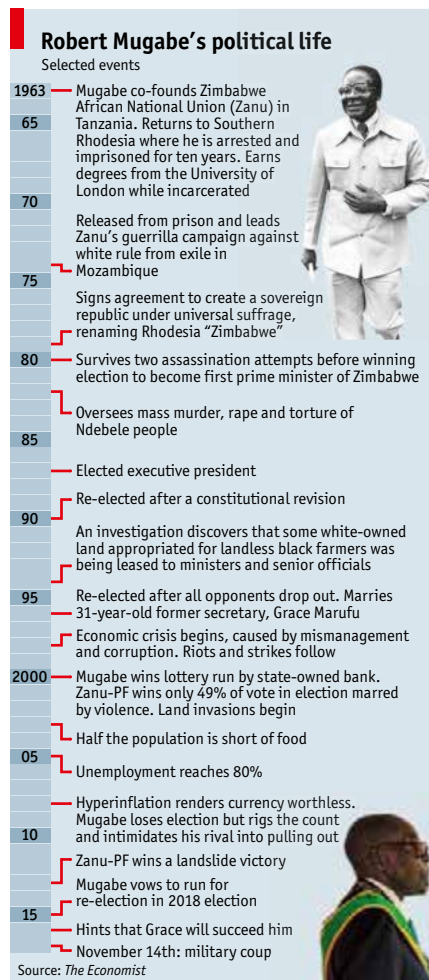
Fall from Grace

That happened faster than expected, once Mrs Mugabe had persuaded her wobbly husband to dispatch his senior vice-president into the wilderness on November 6th, egged on by the president's outrage after she was booed at a meeting.

Mrs Mugabe's bid for power has had a long gestation. Backed by a relatively younger coterie of Zanu-PF ministers known as the "G40" ("Generation 40"), she had already managed to eject one rival, Joyce Mujuru, from the vice-presidency in 2014. In gunning for Mr Mnangagwa—a few days earlier she had described him as "the snake [who] must be hit on the head"—it seemed she was finally bidding to replace her husband. At a church meeting earlier this month, it was reported that she declared she was ready to succeed him, saying "I say to Mr Mugabe you should ...leave me to take over your post."

The former secretary, who had become Mr Mugabe's mistress as his first wife lay dying, did not realise how despised she is within the ruling Zanu-PF party. She rashly picked fights with two of its sturdiest factions—the securocrats and former bush fighters—in her bid to eliminate rivals for the presidency. Yet the biggest fall was not that of Grace but of Mr Mugabe himself, a man who was among the last of Africa's presidents-for-life. His reign lasted so long that the vast majority of Zimbabweans remember no other ruler. And he bragged that it would continue "until God says come join the other angels".

Despite his viciousness and incompetence, he was hailed as a hero by many Africans. Some saw in him a symbol of resis-



tance to the old imperialist powers. At meeting after meeting of the African Union, he could count on a rousing ovation, as he railed against whites and the injustices that he imagined rich countries, chief among them Britain, and mysterious groups of homosexuals, were inflicting on Zimbabwe. Yet for all his bluster, blame for the immiseration of Zimbabwe rests chiefly on his shoulders. His ruinous policies caused the economy to collapse, impoverished his people and destroyed their health (see charts on next page).

That need not have happened. For a few years after independence, Zimbabwe prospered. Mr Mugabe shelved the full-blown Marxist economic policies he had espoused during the years in prison and in the guerrilla camps. He allowed the white farmers, who had once wanted him dead, to preserve Zimbabwe as the region's breadbasket. There was an unwritten understanding, he felt, that they should grow food and tobacco but keep out of politics.

He was far less tolerant of the Ndebele, a minority ethnic group who continued to back his long-standing rival for national leadership, Joshua Nkomo. He pretended that scattered instances of banditry amounted to a massive armed revolt, and ordered his North-Korean trained Fifth Bri-

gade to crush it. The massacres, torture and rape he inflicted on the Ndebele were on a larger scale than anything that occurred during the long war against white rule. In those early days, Western governments and aid agencies, keen to promote Zimbabwe as a donor-funded success story, generally looked the other way.

During the 1990s, however, corruption began to erode Mr Mugabe's authority. Towards the end of that decade, a group of aggrieved and landless "war veterans", many of them obvious impostors, successfully agitated for big handouts, after complaining that they had missed out on the patronage dished out to the bloated elite. This blew a hole in the budget and caused the IMF to withdraw support.

Instead of pulling back, Mr Mugabe spent more. "Have you ever heard of a country that collapsed because of borrowing?" he asked, as he opened the taps on spending and threatened to grab white-owned farms and hand them to his supporters. Soon after, he called a referendum on a constitutional change to bolster his power as president and enable him to confiscate land without paying compensation.

At this point, in 1999, a trade union-led movement rose up, with the help of some whites, including some of those farmers hitherto protected by Mr Mugabe in return for their quietly prosperous life. After his constitutional proposal was voted down, by 55% to 45%, he lost his temper, setting off a reckless campaign of land grabs. In remarkably short order one of Africa's most advanced economies collapsed. Short of taxes and revenues raised from the export of crops such as tobacco, the government soon began to run out of money. Gideon Gono, then governor of the Reserve Bank of Zimbabwe, simply printed more of it. "Traditional economics do not fully apply in this country," he said. "I am going to print and print and sign the money...because we need money." Inflation reached 500 billion percent, according to the IMF, or 89.7 sextillion percent, according to Steve Hanke of Johns Hopkins University. (Measuring hyperinflation is hard.)

At the same time, Mr Mugabe embarked on a murderous campaign to quell the opposition, led by a courageous if sometimes clumsy trade unionist, Morgan Tsvangirai, who refused to give up. In 2008 he soundly defeated Mr Mugabe in the first round of a presidential election, while his party won, more narrowly, the general election. Mr Mugabe was evidently shaken to the core, perhaps, like so many dictators, because he had come to believe that his people loved him.

For five weeks, a cowed electoral commission refused to divulge the result, eventually massaging the figure of Mr Tsvangirai's victory down to just under 50%, thus requiring a second round. The mayhem that then followed was so vicious that Mr

► Tsvangirai felt obliged to bow out.

Eight months later a unity government was formed. A dollarised currency had begun to rescue the economy but Mr Mugabe failed to implement any of the major reforms that were meant to restore a semblance of democracy. Mr Tsvangirai and his party had been tricked, humiliated and discredited by the time of the next election, in 2013, since when the economy has plummeted again. No one knows the exact figure, but a good 3m Zimbabweans—some say 5m—out of a population now estimated by the UN to be nearly 17m, have fled the country, to South Africa and overseas.

What next?

If Mr Mnangagwa succeeds in taking back the reins of government, his first task will be to consolidate power within Zanu-PF. Whether Mr Mugabe formally hands over or is kept on as a kind of ceremonial president is barely relevant, though it would be neater if the old man were ushered into as dignified a retirement as soon as is feasible in these ugly, humiliating circumstances.

Mr Mnangagwa's main concern will be to ensure that Mrs Mugabe and her G40 are dismissed. Many have already been locked up. Bigwigs who will probably sink with her include Saviour Kasukuwere, who enacted the racist indigenisation law; Ignatius Chombo, the finance minister; Jonathan Moyo, a serial plotter and former regime mouthpiece; Patrick Zhuwao, a nephew of Mr Mugabe; and the head of the police, Augustine Chihuri.

A Zanu-PF congress originally scheduled for next month, at which the top spots in the party are dished out and endorsed, may be brought forward. A drastic purge of anyone suspected of siding with Mrs Mugabe is likely, and could be bloody. The formal coronation of Mr Mnangagwa, or his anointing as the undisputed heir to the throne, is likely then to take place.

It is possible that Mr Mnangagwa may call for a government of national unity in the run-up to the general and presidential election constitutionally required by the middle of next year. If a president dies or resigns, the ruling party has 90 days to

nominate a replacement, who then completes his predecessor's term of office.

The opposition is woefully fragmented, though its main leaders have made progress in the past year towards forging a broad front. Mr Tsvangirai, much diminished by his five hapless years as prime minister in coalition with Mr Mugabe, who ran rings around him after the bloodily disputed election of 2008, is probably still Zanu-PF's chief opponent. But he has cancer and several of his ablest lieutenants have defected from his Movement for Democratic Change.

Ms Mujuru, for a decade Mr Mugabe's vice-president and long a prominent figure in Zanu-PF, might ally herself to Mr Tsvangirai's party. Simba Makoni, a decent former finance minister who defected from Zanu-PF, won 8% of the presidential vote in 2008. A respected banker and former industry minister, Nkosana Moyo, has set up a new group. It is vital that the opposition coalesces behind a new leader. No obvious chief contender has yet emerged.

Outsiders, in Africa and beyond, are offering to help. The two African bodies previously most involved, the African Union (AU) and the Southern African Development Community (SADC), a 15-country regional club led by South Africa, are sure to make high-minded noises, but their readiness in the past to whitewash Zimbabwe's rigged elections and to wink at the violence and deceit that kept Mr Mugabe in power for so long give no comfort to Zimbabwe's battered opposition or to its benighted citizens. Few trust them to give the real opposition, rather than Zanu-PF factions opposed to Mrs Mugabe, a fair deal.

Zimbabwe is bankrupt. It needs the IMF, the World Bank and an array of Western creditors to forgive debts and offer fresh loans. But that must be strictly conditional on political reform. Foreign aid agencies already feed many Zimbabweans who would otherwise starve—in some years, millions of them.

The most pressing requirement is for a properly supervised election. Given the failure of the AU and SADC to monitor past polls properly, it is essential that beefier bo-



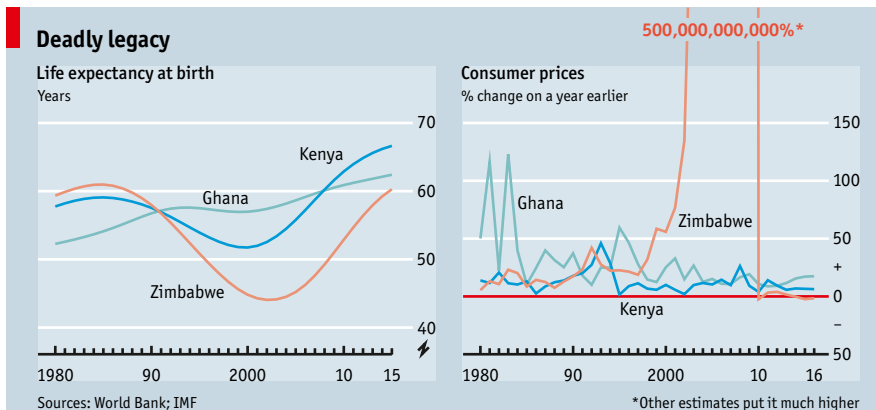
I want a job for life

dies, including the UN, the European Union and the Commonwealth (from which Zimbabwe withdrew in 2003 after its suspension the year before), supervise the next vote. American bodies that are experienced election-watchers such as the Carter Centre and the National Democratic Institute must be involved, too. The Elders, a group of former world leaders, including Kofi Annan, once head of the UN, and Jimmy Carter, a past American president, could advise. Olusegun Obasanjo, Nigeria's shrewd former president, has been suggested as a mediator.

Since Mr Mugabe expelled the Swedish head of an EU mission that was monitoring a presidential election in 2002, he has almost never again let in such intrusive bodies or such dignitaries, especially any that smack of past colonial rule. Old party stalwarts, including the coup leader, General Constantine Chiwenga, and Mr Mnangagwa himself, have opposed what they call neocolonial interference. Sometimes China is cited as a friend that, unlike Western powers, will dispense aid with no questions asked. But of late it has sounded less willing to bankroll Zimbabwe.

If a new government wants economic help, it must accept a measure of oversight. Outsiders will not dispatch the aid needed to set Zimbabwe on the path to recovery unless its new government is clearly representative and respects human rights.

Zimbabweans are resilient. Their country is rich not only in natural resources but also in talent, much of which would return home if the country were better governed. Zimbabwe's infrastructure is still better than in many other African countries. During most of his long tenure, Mr Mugabe and Zanu-PF did their best to ruin the place. Mr Mnangagwa may be the man to oversee the post-Mugabe transition. But as soon as possible a new generation must take over and make a completely fresh start. ■



Lebanese politics

The mysterious Mr Hariri

BEIRUT AND JERUSALEM

As Iran and Saudi Arabia tussle over Lebanon, the prime minister makes a move

SAAD HARIRI is an unlikely hero for Lebanon. Despite inheriting a powerful surname—not to mention a vast construction company, Saudi Oger—he often bemoaned his lot. He seemed to live in the shadow of his father, Rafik, a former prime minister, whose assassination in 2005 (probably at the behest of Syria) propelled Saad into politics. But during his own two turns as prime minister (from 2009 to 2011, and 2016 to the present) he accomplished little, as the power of Sunnis, like himself, waned. When Saudi Oger shut down this year, his countrymen had little sympathy.

But since his odd televised resignation on November 4th, perhaps under some form of duress in Saudi Arabia, Mr Hariri (pictured) has seen his popularity rise. Many Lebanese, including the country's president, Michel Aoun, believe he was held against his will in the kingdom. Across Lebanon's sectarian divide, politicians have championed his return. A website counts the days and hours he has been away. The Arabic hashtag #WeAreAllSaad has appeared on billboards in Beirut. Spectators at the Beirut marathon on November 12th sported banners that read "Running for you" and "We want our PM back".

Much mystery still surrounds the circumstances of Mr Hariri. His announcement surprised even his own staff—and appeared to have been penned by his Saudi patrons. Mr Hariri denounced Iran, the kingdom's arch-rival, and its powerful Lebanese ally, Hizbullah, which is part of his government. When, over a week later, Mr Hariri gave his first interview since his resignation, he appeared to fight back tears as he spoke of the support he was receiving back home.

As *The Economist* went to press Mr Hariri appeared to be on his way out of Saudi Arabia. But he is not heading back to Beirut. He will instead go to Paris, at the invitation of Emmanuel Macron, the French president, who made a surprise visit to Saudi Arabia on November 9th. Mr Macron has insisted that he is not offering Mr Hariri political exile. "We need a strong Lebanon with her territorial integrity respected," he said. "We need leaders who are free to make their own choices and speak freely."

Indeed, Mr Hariri has hinted that he might rescind his resignation. Mr Aoun has said he will not accept it until Mr Hariri returns to Beirut. Even then, parliament may nominate him again as prime minister.

Not for the first time Lebanon has be-

come the proxy battleground of outside powers, this time Saudi Arabia, the region's Sunni champion, and Iran's Shia regime. For decades, the Saudis poured money into the country only to see Hizbullah become the main political power broker and a potent fighting force. Mr Hariri has done little to curb the group at home or to stop it from supporting Iran's ambitions in the region. When an Iranian official boasted of his country's influence in Lebanon after meeting Mr Hariri in Beirut, the Saudis finally snapped, calling the prime minister to Riyadh.

Reluctant warriors

Without the figleaf of Mr Hariri as prime minister, Hizbullah's influence on Lebanon would be exposed—or so hoped the Saudis as they beat the drums of war. Its officials blamed Iran and Hizbullah for a missile fired at Riyadh from Yemen on November 4th. It was intercepted, but the Saudi government nevertheless called it an "act of war". On November 9th it told Saudis to leave Lebanon at once, raising concerns of an imminent descent into chaos, or even an attack. The Lebanese held their breath.

But if Saudi Arabia's plan was to lure Israel and America, which lists Hizbullah as a terrorist group, into a war in Lebanon, it miscalculated. Israel, though deeply concerned about Hizbullah's growing armory, appeared wary of being sucked

into another conflict in Lebanon. American and European officials publicly urged Mr Hariri to return to Beirut for the sake of Lebanon's stability. In private, they pressed Saudi Arabia to back down.

The advice was heeded, to the relief of many Lebanese. When Mr Hariri went before the cameras on November 12th he appeared to offer a way out of the crisis. He implied that he might withdraw his resignation if Saudi demands were met—namely that Lebanon commit to staying out of the region's conflicts. If it refused, the Gulf countries might impose sanctions.

Lebanon's economy is vulnerable to such pressure. As many as 400,000 Lebanese work in the Gulf, sending home a big share of the remittances that make up about 14% of their homeland's GDP. Were it so inclined, Saudi Arabia could ban the transfer of this money or expel the workers. It could also withdraw deposits from Lebanon's central bank, damaging confidence and making it even harder for the country to service its debt, which has reached more than 140% of GDP—one of the highest debt-to-GDP ratios in the world. Were the Gulf to impose sanctions, "all economic hell will break loose," says Randa Slim of the Middle East Institute.

The unexpected crisis comes as Lebanon had just begun to recover from years of political paralysis. Last month Mr Hariri's government passed the country's first budget since 2005. It has set a date for the first parliamentary elections in eight years. It was about to ask international donors for \$10bn-12bn in aid to cope with the burden of 1.5m Syrian refugees and to fix the country's decrepit infrastructure.

But whether the government is led by Mr Hariri or someone else, it is still Hizbullah that will call the shots. Lebanon will remain the region's punchbag. ■



Hi stranger. It's been a while



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German foreign policy

Taking the strain

BERLIN

American retreat and European disunity are forcing Germany to rethink its role

IT WAS a heart-warming moment in the freezing wind of the Alsatian mountains. On November 10th the presidents of Germany and France, Frank-Walter Steinmeier and Emmanuel Macron (pictured), shared a hug as they opened a French-German war memorial at Hartmannswillerkopf, where 30,000 soldiers died during months-long battles for control of the peak in 1915. Every generation had to be reminded anew, said Mr Steinmeier, why the task “to lead Europe into a hope-filled, better future” fell to Germany and France.

Mr Steinmeier's remarks underscored a commitment to European union, one of the twin pillars of German foreign policy since 1945, alongside participation in a multilateral world underwritten by America. But warm words cannot disguise the fact that these days both pillars are shaky. America under Donald Trump is retreating from its role as underwriter, in favour of a doctrine of national self-interest. Europe faces a number of simmering crises. East and west are divided over migration; north and south over the future of the euro zone. Separatism in Britain and Spain adds further instability.

These challenges are to the fore as Germany struggles to form a new government. Angela Merkel's Christian Democrats (CDU) and its sister party, the Christian Social Union (CSU), along with the Free Democrats (FDP) and the Greens were hoping this week to commit themselves to

forming a coalition, after weeks of difficult exploratory talks. But the parties no longer have an obvious example to follow. “German foreign policy was always reactive,” says Volker Perthes of swp, a think-tank. “That approach doesn't work as well as it used to. These days, people look to [Germany] for guidance.”

The reluctant senior hegemon

The question is what form this guidance will take. Germany has neither the intention nor the military and economic heft to fill the gap left by a disengaging America. Most experts say the priority of the new government should be European unity. A divided continent is an invitation to Russia, China and, at least on trade, the Trump administration, to play Europeans off against each other. “The election of Mr Trump has driven home the fact that Europe can no longer outsource its security across the Atlantic,” says Wolfgang Ischinger, who runs the annual Munich security conference. Being prepared to do more at the European level may also help safeguard the relationship with America. “Reducing Germany's trade surplus by raising domestic investment, and living up to its NATO commitments by spending more on defence—those are not unreasonable demands,” says Constanze Stelzenmüller of the Brookings Institution.

To strengthen Europe, closer co-operation with France is a priority for all parties

in the coalition talks. Over the weekend members of parliament from the CDU, FDP and Greens published a joint appeal to take up Mr Macron's recent suggestions for the future of Europe, including efforts to improve asylum policy and to create a “more crisis-proof, stable and democratic” euro zone. However, agreeing on what is necessary to achieve this will be tricky, particularly if, as still looks plausible, the FDP takes the finance ministry, and its leadership keeps the new government committed to balanced budgets.

Moving closer to France also carries risks. Eastern European nations, already wary of the EU's criticism of their domestic politics and German demands to do more for refugees, may feel excluded by a strengthened Paris-Berlin axis. Keeping the eastern neighbours on board will be essential. On November 13th 23 EU members, including Germany, Poland and the Baltic states, signed up to PESCO (an acronym for “permanent structured co-operation”), a mechanism for defence co-operation agreements that backers hope will be the embryo of a future defence union. France had wanted a smaller group; that Germany's eastern neighbours are included is an important signal, says Sophia Besch, a security expert at the Centre for European Reform, a London-based think-tank. But for PESCO to succeed, much more is needed, including financial commitments which German voters may still be unwilling to accept.

Germany's eastern neighbours would also welcome a more robust policy towards Russia. That has a good chance of happening under the new government. The CDU-SPD coalition condemned the occupation of Crimea and supported the EU's sanctions against Russia. But it did not go as far as to abandon the Nord Stream 2 pipeline project, which has long worried ►►

▶ Poland and the Baltic states, and drawn criticism from the EU for its potential to undermine the sanctions regime. And there were always those, particularly in the SPD but also in the CDU's business-oriented wing, who made no secret of preferring a more conciliatory stance towards Russia—they included the SPD's Mr Steinmeier, a former foreign minister and now president. In a visit to Moscow last month (the first by a German president for seven years), he vowed to work against the “alienation” of the two countries and looked on as a pleased Vladimir Putin announced a revival of economic relations.

But with the SPD gone from government, a “Jamaica” coalition (the parties' colours are those of the Jamaican flag) may be able to present a more united stance on Russia. A firmer line is likely if the Greens, who may take the helm of the foreign ministry and have long been critical of Russian authoritarianism and intervention in both

Ukraine and Syria, unite with the more hawkish faction in the CDU. A Jamaica government would be unlikely to advocate the unilateral softening of sanctions; it might even rethink Nord Stream 2, hopes Norbert Röttgen, a CDU MP who headed the previous Bundestag's foreign-affairs committee. That may be a hard sell for some in the FDP, whose leader, Christian Lindner, has criticised the sanctions. But unless the FDP takes the foreign ministry, which it has adamantly said it does not want, it may not be able to do much more than snipe from the sidelines.

There are signs that Germany is more willing to step up than it used to be. Defence spending, though still far below NATO's target of 2% of GDP, rose by a tenth in 2017. German troops are now engaged in several foreign missions without much domestic opposition. Mrs Merkel's new government should be able to build on this legacy. But it has a difficult road ahead. ■

Political extremes in France

The pot-bangers' lament

PARIS

The populist left and right offer more of a whimper than a bang

“**M**AKE the most noise possible,” urged Jean-Luc Mélenchon, a radical-left politician, before a crowd this autumn. Saucepan-banging protesters would make a nationwide ruckus, he said, referring to a centuries-old method of protest known as *les casserolades*. They would tell Emmanuel Macron that his economic reforms “ruin our life and keep us from dreaming, so we stop you from sleeping”.

In the event Mr Mélenchon disturbed nobody's repose. At the appointed hour, at two locations in central Paris, just a handful of sheepish supporters from his France Insoumise (Unsubmissive France) movement turned out. Other marches, against labour-law reforms, have been bigger, but achieved equally little. More nationwide protests were due on November 16th, involving unions and students, but looked unlikely to cause serious disruption.

For months Mr Mélenchon, despite having just 17 MPs, has in effect led opposition to Mr Macron, whom he calls a “president of the rich”. He tries to fill a void left by larger, poorly led, moderate parties. He condemns Mr Macron for cutting a wealth tax (it will apply only to property), even as housing benefit for the poor is trimmed. The president's popularity has sagged.

Yet the populist has not benefited: polls show his own support has also drooped a bit, from 19.6% at the election to 18%. He stirs core supporters, for example with a

half-hour monologue on current affairs each week on YouTube. Youngsters like his down-to-earth style, just as their British counterparts swoon over Jeremy Corbyn. They also like his ties to populist movements such as Podemos, in Spain, and an old association with Hugo Chávez.

But Mr Mélenchon has not broadened his appeal, despite casting himself as a patriot—in place of red flags and choruses of



Unsubmissive Mélenchon

the “Internationale”, his supporters wave the tricolour and sing “La Marseillaise”. To bolster his Eurosceptic reputation, he has campaigned to remove the EU flag from parliament, calling it “sectarian”. (He revives an old claim that its stars echo a symbol of the Virgin Mary.) That gains him coverage, but does not check Mr Macron. Philippe Marlière, a specialist in leftist politics at University College London, says Mr Mélenchon's “hubris” and refusal to make allies render him ineffective.

Even Mr Mélenchon has conceded that Mr Macron has outplayed him and “for now, it's he who has the advantage.” Still, it is better to underwhelm than collapse. Right-wing populists' prospects are much gloomier. “For Marine Le Pen, I think it is over,” says Laurent Bouvet of Versailles University. The leader of the National Front (FN) has shown no sign of recovering from the run-off election, when Mr Macron brushed her aside by 66% to 34%. Her preoccupation with withdrawal from the euro was misjudged and she failed to exploit anxiety over “identity or immigration”, he says.

Since then, her position has only worsened. A newcomer in parliament, she has made no impression, leading just eight MPs. Her party is beset by bickering. In September her deputy, Florian Philippot, who had crafted a strategy of appealing to working-class voters, quit to lead his own group. Ms Le Pen may even change the name of her 45-year-old party. This week members were asked, in a rather desperate questionnaire, which policies should be dumped and whether to rebrand.

Ms Le Pen herself is beleaguered. France's parliament this month removed her immunity from prosecution, letting investigative judges question her for tweeting graphic images of a murdered American journalist, James Foley. (Sharing violent images is illegal in France.) Earlier this year the European Parliament, where she also sat, lifted her immunity.

Her 27-year-old niece, Marion Maréchal-Le Pen (who is currently taking a break from politics), could eventually step in to reinvigorate the party, suggests Mr Bouvet. The FN will have to respond somehow, as it will soon face another rival. Next month the centre-right Les Républicains elects a new leader—almost certainly Laurent Wauquiez, from its right fringe. His focus on issues such as immigration could win back voters who had drifted to the FN.

Until recently, received wisdom was that populists on the extremes of left and right were resurgent. In the first round of the presidential election they won 47% of the vote. They could yet recover from their current collapse. But for now Mr Macron, and potentially the centre-right, look better placed. Mr Mélenchon and Ms Le Pen risk being left brandishing wooden spoons—good for banging pans, but little else. ■

Hungary's Jobbik

New-look nationalists

BUDAPEST

An extremist party tries to tone down its message

AS A firebrand leader of Hungary's nationalist Jobbik party, Gabor Vona once railed against "Gypsy crime" and "Israeli conquerors". He even attended parliament in the outfit of the Magyar Garda, Jobbik's now disbanded and, to many, deeply sinister, uniformed wing.

But as Hungary starts to gear up for an election due by next April, Mr Vona and Jobbik claim to have mellowed. They now declare that they want to move beyond the old left-right divide and instead try to build social consensus. "Our goal is to get the support of all constructive forces who want to build rather than destroy," says the new Mr Vona. The state and business leaders should work together to boost wages and the economy. There is no room for anti-Semitism or racism against Roma people, he says—although not all party supporters are likely to stick to that. Mr Vona even sent Hanukkah greetings last year to a Budapest rabbi.

Mr Vona, 39, is following the example of Marine Le Pen, the leader of France's National Front, reckons Tamas Boros, of Policy Solutions, a Budapest think-tank. "Jobbik have copy-pasted the [National Front]."

Jobbik won 21% of the vote in an election in 2014, making it the third-largest party in parliament. Its critics describe the party as neo-Nazi, though Jobbik's ideological underpinning was always extreme Hungarian nationalism, rather than any form of admiration for Hitler. But that too has a limited market.

Jobbik's leaders have since then realised that Hungarian society is not generally radical, says Mr Boros. "Most people are much more interested in financial matters, such as their wages and the economy." The party is now promoting a hazily defined EU-wide campaign to equalise pay rates across the continent and stem the mass exodus of young people to western Europe.

But not everyone manages to stay on message. Dora Duro, a Jobbik MP, recently said that the party would welcome homo-

sexuals' votes if they felt the party represented their interests—but later called for Budapest's Gay Pride parade, and gay and lesbian civil partnerships, to be banned. Laszlo Toroczka, one of the party's most hard-line radicals, remains its vice-president. As a village mayor, he passed by-laws against Muslim dress and public displays of gay affection, and during the refugee crisis of 2015-16 warned migrants to stay away.

Officials from the governing Fidesz party dismiss Jobbik's new line as posturing. "They are desperate. They have sold everything in the house and now it's empty," says one, pointing to a lack of concrete new policies on the part of Jobbik. Mr Vona will have a tough task convincing many voters that the party's transformation is real.

But there may indeed be a gap in the market. Hungary lacks a small-state conservative party; and many voters think the incessant campaign of Viktor Orban, the prime minister, against George Soros, a Hungarian-born philanthropist and financier, is batty. Mr Orban claims that Mr Soros plans to swamp Hungary with migrants with the backing of the EU. (How he might actually do this is unclear, and Mr Soros strongly denies having any such plan.) Hungary's government engages in "pointless conflicts", says Geza Jeszensky, a former foreign minister and ambassador. Tibor Navracscsics, a former Minister of Justice under Mr Orban, who is now European Commissioner for Education, Youth, Culture and Sport, has gone on record to deny that there is any migration plan at the European Commission, much to the rage of his former colleagues.

Yet, however Jobbik evolves, Mr Orban has some wind in his sails. The opposition is fragmented and demoralised. Helped by EU funds, the economy is in good shape, growing at a rate of 3.2% year-on-year. Although far too many Hungarians are still poor, a burgeoning middle class has pushed consumption up sharply. The government's relentless message that Hungary is under threat from external enemies shores up the base of Fidesz. Support for the ruling party is at its highest since January 2011, at 40%, according to Median, a pollster. Jobbik scores only 11%, and the Socialists are languishing at 7%. The only question, says Mr Boros, is who will come second next year. It may well be the new-look Jobbik. ■

Cyprus

Billionaires club

ATHENS

A new party for Russian exiles

HUNDREDS of Western-trained Cypriot lawyers and accountants earn a living by handling the affairs of Russian and Ukrainian offshore companies. The relationship has flourished since the island became a base for proto-capitalists from the former Soviet Union in the 1990s, thanks to a communist-era treaty on removing double taxation. A relaxed attitude to transactions involving cash-filled suitcases also helped.

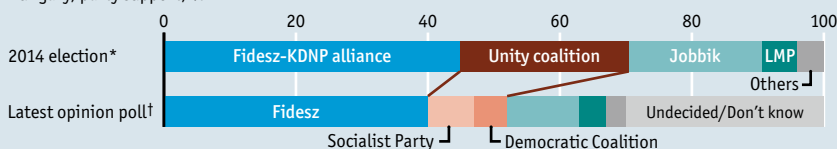
Nicosia, the island's capital, and Limassol, its largest port, are these days home to an estimated 50,000-60,000 citizens of the former Soviet Union. Limassol's once-seedy waterfront boasts smart blocks of flats, shopping malls and a gleaming marina for the billionaires' superyachts. The wealthiest Russian and Ukrainian families flit between Cyprus, London and Paris.

Although Russians are popular with Greek Cypriots as fellow members of the Eastern Orthodox church, a new party launched in September by two Russians holding Cypriot passports is raising eyebrows. Some 25,000 ex-Soviet citizens will be eligible to vote in a presidential election next February. The two founders (and main backers) of Ego o Politis (I the Citizen), a restaurateur and investor (who, somewhat inconveniently, cannot speak either Greek or English), and the co-founder of an online war-gaming company, dismiss suggestions that it will promote Russian interests. EOP's priorities are to fight graft and shrink the island's bloated bureaucracy, says Yiorgos Kountouris, a St Petersburg-trained orchestral conductor who is the party's vice-president. "Corruption is out of control, and education and culture here are at a very low level," he adds. "Our potential voters are Cypriots from anywhere who are dissatisfied with the old politicians."

Some islanders fret that despite its declared platform, EOP's emergence heralds yet more Russian intervention in Cypriot public life. The government is still paying back a €2.5bn (\$3.5bn) emergency loan granted by Russia in 2011. One Cypriot legal expert bemoans the problem of *reiderstvo* (corporate raiding), whereby Russian offshore companies illegally change ownership after a local lawyer presents forged documents to the island's company registrar. The practice is "not uncommon", he says, but the Cypriot authorities have yet to bring a single case of *reiderstvo* to court.

The triumph of Orban

Hungary, party support, %



Sources: Hungarian National Election Office; Median

*National list result †Polled 20th-24th October

Charlemagne | She-wolf v sultan

Does Meral Aksener have a chance against Turkey's president?



TO STEP into the ring with Recep Tayyip Erdoğan, Turkey's bruiser of a president, takes courage and self-belief. Meral Aksener has plenty of both. At the launch of her new political party on October 25th, some of Mrs Aksener's supporters broke into chants of "Prime Minister Meral!" She replied: "No, not prime minister. President." A prominent nationalist and former cabinet minister, she has not yet declared her candidacy for elections that are due to be held in 2019. However, everyone assumes she will. "My friends really want me to run," she says, referring to colleagues from her newly unveiled, innocuously named İyi (Good) party. "I might have no other choice."

Those who challenge Mr Erdoğan tend to pay. The last to do so, Selahattin Demirtaş, joint leader of the pro-Kurdish Peoples' Democratic Party (HDP) and a candidate in the 2014 presidential election, was thrown in prison last year on spurious terrorism charges. Mrs Aksener herself got a taste of Mr Erdoğan's medicine this year when she campaigned against proposed amendments to the constitution giving the president sweeping new powers. In the run-up to a referendum on the changes, which passed only by the thinnest of margins, some of Mrs Aksener's rallies were banned, she was given practically no airtime on television, and the electricity was cut to a hotel where she was about to deliver a speech. She dared the authorities to go even further. "If you're strong enough, come and arrest me," she told one rally.

Mrs Aksener, known to her supporters as "Asena" after a mythical she-wolf, has shown a rebellious streak since her earliest days in politics. In 1997, when the army pressed the government to resign, Mrs Aksener refused to go quietly, accusing the generals of staging a coup. One threatened to impale her "on an oily stake". Last year, as a member of the Nationalist Movement Party (MHP), she led a mutiny against the group's ancient leader, Devlet Bahçeli, who had endorsed Mr Erdoğan's constitution. Mr Bahçeli survived and had Mrs Aksener and her supporters kicked out of the party. Without citing plausible evidence, pro-government newspapers accuse her of links to the Gulen movement, the Islamist sect believed to have led last year's failed coup.

On paper and in person, Mrs Aksener seems capable of appealing to a wide range of voters. She is devout and prays regularly, but does not wear the headscarf. She is a captivating perform-

er, peppering her speeches with wisecracks and jokes. As the name of her party suggests, she is determined to be all things to all people. (To hone her everywoman image, she flew economy class to her first rally.) Whereas the secular opposition refers to Mr Erdoğan as a dictator, Mrs Aksener avoids such bluntness so as not to alienate conservative voters. Instead she fulminates against the system he has created. She promises to restore the rule of law, on which Mr Erdoğan has trampled over the past year by locking up 60,000 civil servants, academics and soldiers, only a fraction of whom were directly involved in the coup, as well as over a hundred journalists and a dozen MPs. She says she wants to right the wrongs committed during the purges, but will continue rooting out Gulenists from the bureaucracy. "We need to thwart their dreams of running the state," she says. She also pledges to dismantle the new constitution, to reform education and to repair Turkey's relationship with its Western allies. To some of her fans, heartened by polls that suggest the Good Party can count on double-digit support, she is already Turkey's best hope of reversing the descent into absolute rule.

The generous view is that it is far too early to tell. The realistic one is that, as a contender for the presidency, Mrs Aksener faces virtually impossible odds. To have a shot at defeating the popular Mr Erdoğan, any candidate must win over the vast majority of secular and nationalist voters, a share of disaffected supporters of the president's own Justice and Development (AK) party, and many of the country's 15m or so Kurds. Mrs Aksener might do reasonably well with the first three groups, but stands next to no chance of wooing the last. She was interior minister at the height of the army's scorched-earth campaign against Kurdish insurgents in the south-east, and she continues to surround herself with ultranationalists. Liberals, who cringe at the far-right pageantry on display at Mrs Aksener's rallies, might vote for her as the lesser of two evils. Not so the Kurds. Unlike Mr Erdoğan, who offered them some language rights and launched peace talks with the PKK rebels (before responding to a spate of attacks by levelling their neighbourhoods with artillery fire), Mrs Aksener has always been a hardliner. There is no "Kurdish problem" in Turkey, she says. "To anyone who says they want group rights because they are different," she declares, "I openly say no."

Teeth or no teeth?

Mrs Aksener's best chance of making a difference will be at the parliamentary election, which will be held at the same time as the presidential one. By eating into AK's support, she and the Goods could deprive Mr Erdoğan of his majority. Some critics have argued that this counts for little, since the new constitution is expected to render parliament toothless. But no one knows exactly how the new system will work. An opposition-dominated parliament could act as something of a brake on the president.

The bigger issue is whether Mr Erdoğan, who relishes power as much as he fears relinquishing it, will allow a free election to take place. The referendum on the new constitution was held in a climate of repression and censorship, and prompted claims of extensive vote-rigging. The state of emergency, which allows Mr Erdoğan to rule by decree, looks set to last indefinitely. Some of Mrs Aksener's associates acknowledge the risk of new smear campaigns and even arrests as the election draws closer. She says that would betray weakness. "Tayyip Erdoğan won't let anyone say that he was scared of a woman," she says. But not being afraid of Mr Erdoğan might be Mrs Aksener's biggest draw. ■



Brexit

Decisions, decisions

Both sides in the negotiations have been inflexible. The truth is that, even as the clock ticks, many choices remain open

OVER 500 days have passed since the Brexit referendum in June 2016, and fewer than 500 days are left until Britain is due to leave the European Union. Yet progress in the Brexit negotiations has been agonisingly slow. It is still uncertain whether next month's European Council will agree even to begin the second phase of talks, on transitional arrangements and future trade relations. Frustrated Brexiteers are increasingly advocating walking away with no deal at all.

One explanation for the delays is ill-preparedness and the slow process since the referendum of learning precisely what leaving such a complex organisation entails. But another is excessive rigidity and a premature closing down of options. This has often made the talks between David Davis, the Brexit secretary, and Michel Barnier, the EU's chief Brexit negotiator, needlessly confrontational.

The EU 27 are by no means blameless in this. Pretending that Brexit was a problem for Britain alone and that they had more pressing matters to attend to has not helped. Insisting that the talks cannot move to a second phase until the divorce terms, including a large exit bill for Britain, are settled was always likely to lead to deadlock. Failure to progress to the second phase in December would be a blow to the EU as well as to Britain.

Even so, Britain is the bigger culprit. Since the election in June, Theresa May's

warring cabinet has made for a weak negotiating partner. The prime minister has remained fuzzy over her ultimate goals for the relationship. Setting out red lines in advance is seldom a wise course in any EU negotiation. And insisting that the referendum implies a "hard" Brexit that takes Britain out of the single market, the customs union and the jurisdiction of the European Court of Justice (ECJ) takes too many options off the table, while increasing the risk of damaging economic consequences.

Multiple-choice questions

The latest example of shutting off choices concerns Parliament. After the election a sensible government would have conceded that its loss of a Commons majority meant it had to pay more attention to MPs and grant a greater role to Parliament. A main motive for Brexit was, after all, to repatriate sovereignty from Brussels to Westminster. Yet the government has sought to sabotage all parliamentary attempts to have more say over the terms of exit. It was forced to legislate before triggering Article 50, Brexit's starting pistol, only by a Supreme Court ruling in January.

On November 14th Parliament began its detailed scrutiny of the EU withdrawal bill, a necessary piece of legislation for Brexit to proceed. MPs have suggested over 400 amendments to the bill, which many claim constitutes a power-grab by the executive. A day earlier, fearful of defeat by those de-

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manding parliamentary approval for the terms of Brexit, Mr Davis offered a preemptive concession by promising another bill, most likely next autumn, to give effect to whatever deal the government eventually negotiates in Brussels.

But he undid this apparently emollient gesture in two ways. The first was to announce his own amendment, naming March 29th 2019, two years after the invocation of Article 50, as Brexit day. The second was to insist that, were Parliament significantly to amend or even to reject the bill on the deal, the only option left, given the time constraints, would be to leave the EU with no deal at all.

There is no reason why MPs should be browbeaten into accepting this. That includes potential Tory anti-Brexit rebels, already under pressure from party colleagues who argue that, if their actions ever made the government fall, that would swiftly usher in a Labour government under the far-left Jeremy Corbyn. Parliament remains sovereign. Were it, for instance, to insist that it would be better to remain in the single market or customs union, the government might be forced to redraw its red lines. Mrs May has already accepted that Britain should stay in both during any transitional period.

As for rejecting the deal altogether, there is certainly a risk that, in accordance with the two-year deadline fixed by Article 50, this could lead to Brexit without any deal. But it would not have to. As John Kerr, a former British diplomat closely involved in drafting Article 50, pointed out at a recent event hosted by Open Britain, a pro-European lobby group, it allows the two-year deadline to be extended by unanimous agreement. MPs arguing against writing Brexit day into the bill are right that there is no reason to legislate against the possibility in advance. ▶▶

More controversially, Lord Kerr also claimed that Britain's invocation of Article 50 could be revoked at any point up to March 29th 2019. Most EU lawyers agree, although some say the article is unclear. Ultimately only the ECJ can decide on the matter. But Lord Kerr noted that many EU leaders have gone out of their way to say that Britain could still change its mind. Chuka Umunna, a pro-European Labour MP, said voters who backed Brexit in the referendum were, in effect, promised a shiny new car with all the trimmings; if what is on offer next year is just an old banger, they should not be made to buy it.

Any suggestion that Brexit might not happen is, of course, a red rag to Brexiters. This week the *Daily Telegraph* splashed under the headline "The Brexit mutineers" photos of 15 Tory MPs who had merely expressed their opposition to writing Brexit day into the withdrawal bill. As it happens,

there is little sign that public opinion has altered since the referendum. But that could change. The economy has slowed, even as it has picked up in the rest of Europe. Polls suggest most voters do not expect the government to get a good Brexit deal. And this week there were claims of Russian involvement in the referendum, through mass fake Twitter accounts. In her Mansion House speech on November 13th, Mrs May denounced Russian interference in the democratic process.

If the notion spreads that Brexit was won on false pretences or through foreign meddling, or if it becomes clearer that the terms of exit are highly damaging, there could yet be a case for a rethink. There is no good argument to narrow down the choices now. And, as a leading Tory MP once put it, "A democracy that cannot change its mind ceases to be a democracy." That MP was none other than Mr Davis. ■

Northern Ireland

Sleep paralysis

BELFAST

What happens when a government puts its feet up for a year?

"HOW good it will be to be part of a wonderful healing in this province," declared Ian Paisley, Northern Ireland's first minister, when the Stormont Assembly was reopened in 2007 after nearly five years of direct rule from Westminster. And how long ago that now seems. On November 15th Northern Ireland's annual budget was passed—but in London, not Belfast. It was the first time in more than a decade that politicians on the mainland had set the budget. Some in Northern Ireland described it as the first step on the road back to direct rule.

Westminster's reluctant intervention was caused by the fact that Northern Ireland has lacked a government of its own since January. Back then the late Martin McGuinness, Sinn Fein's leader in the Assembly, resigned from his post as deputy first minister in protest at the "crude and crass bigotry" shown towards his fellow republicans by the Democratic Unionist Party (DUP), with which Sinn Fein was sharing power. Without a republican deputy first minister in place, the devolved government was suspended. The two parties have spent the subsequent ten months in fruitless talks to get the Assembly back up and running.

Its collapse was the result of a slow poisoning of relations between the two sides. In 2015 Edwin Poots, a DUP minister, spoke of a "stench" from republicans, telling a Sinn Fein member: "We'll hold our noses

and do business with you." Things deteriorated with the arrival in 2016 of Arlene Foster as the DUP's leader and Northern Ireland's first minister. Her combative approach sparked complaints from republicans that she was not treating them as equals. Cuts to funding for a small Irish-language programme, against the backdrop of the loss of hundreds of millions of pounds in a mismanaged green-energy project known as the "cash for ash" affair, provoked McGuinness's resignation.

Talks to resuscitate the Assembly have made little progress. Successive deadlines set by James Brokenshire, the British government's man in Belfast, have been ignored (see timeline). Matters of culture and rights are at the heart of the dispute. Sinn Fein wants Northern Ireland to introduce

gay marriage, as the rest of the United Kingdom and Ireland already have; the DUP does not. The two also disagree on whether past abuses by the security services require more investigation. Most sensitive is the Irish language, whose status Sinn Fein wants to elevate via an Irish Language Act. Although Irish is the main language of just 0.24% of people in the province (behind English, Polish and Lithuanian), it has become a touchstone issue for republicans. The DUP, meanwhile, fears diluting the province's British identity.

These are hardly intractable problems. Yet the talks have been bitterly hostile, partly because they have been conducted amid two election campaigns. In the run-up to local polls in March, Mrs Foster compared republicans to "crocodiles", a remark which had the unintended effect of turbocharging the turnout among Catholics, bringing Sinn Fein to within 1,168 votes of the DUP.

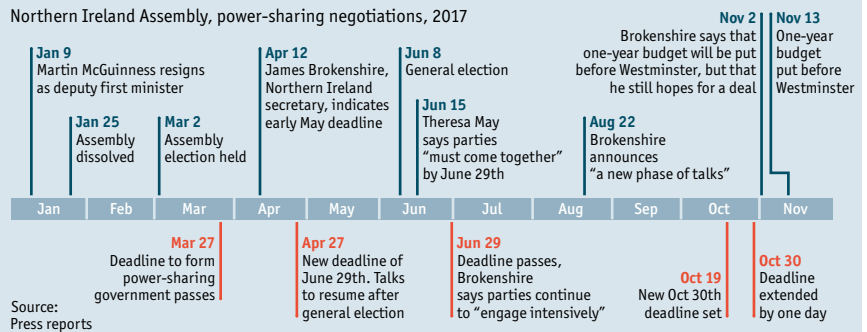
The following month, talks were suspended when Theresa May called a snap election to increase her majority in Westminster. When instead she lost it, she made a deal with the DUP, promising £1bn (\$1.3bn) of funding for Northern Ireland in return for the votes of its ten MPs. Republicans wonder how the government can be a neutral broker of the talks when it depends on the DUP for its own survival. Mrs May has done little to reassure them, visiting the province only once since becoming prime minister last year.

Northern Ireland is ticking along without its government. Most of its functions are being carried out by local civil servants under the supervision of Westminster. The economy has done relatively well, with the rate of output growth catching up with the rest of the UK and wages rising at a decent pace, in part because many workers are on the minimum wage, which went up in April. It has also been buoyed by the economy of the Irish Republic, which grew by 5% last year. About a third of Northern Ireland's exports go to the south.

But that also makes the province vulnerable to Brexit—which is being negotiated in the absence of its politicians. Perhaps nowhere in Britain will be affected by ►►

Ten months of talks

Northern Ireland Assembly, power-sharing negotiations, 2017





All talks and no action

▶ Brexit more than Northern Ireland, whose open border with the Republic is threatened by Mrs May's desire to leave the EU's single market and customs union. Yet a joint committee of ministers from the Scottish, Welsh, Northern Irish and UK governments has been meeting without its Northern Irish contingent, following the Assembly's suspension.

Few in Northern Ireland have much affection for their Assembly, which has become associated with waste and ineptitude. A public inquiry into the "cash for ash" episode opened on November 7th. Belfast radio phone-ins hear furious callers' complaints about the Assembly members still drawing salaries of £49,500 a year, though they have not sat since January. (This week Mr Brokenshire announced that those salaries were under review.) When asked in September if the Assembly might soon be restored, its standards watchdog, Douglas Bain, replied wearily: "Who knows? It's a long time since it did anything useful."

Majorities of both unionists and republicans nonetheless want to see it return. Yet the visceral determination of both main parties to prevent the other gaining advantage from a new arrangement may keep a deal out of reach. That is dangerous in many ways. Politics may no longer be a matter of life and death (though a bomb scare in Omagh on Remembrance Sunday was a reminder of the not-so-distant past). But Northern Ireland is about to be rattled hard. Membership of the EU underpins its open border with the Republic, its economy and the Good Friday Agreement which put an end to the Troubles. In little more than a year, that membership will be taken away. It is past time for Northern Ireland's leaders to go back to work. ■

Iran and Britain

Held to ransom

What lies behind Iran's imprisonment of a British citizen?

BEHIND the grimy frosted windows of an abandoned shopfront in the backstreets of central London lies a plush modern office, full of banks of computer screens monitoring Iran's internet output. The office is one of many Western media projects working to outwit the censors who seek to suppress all but the official discourse of Iran's Islamic Republic. Much of the funding comes from America's Near East Regional Democracy programme, which allocates about \$30m a year to promoting democracy and human rights in Iran.

The camouflage is well merited. Iran's secretive regime has long hounded the country's journalists. It is one of the world's worst abusers of press freedom. It restricts visas for foreign reporters and assigns "translators" to those who visit, to monitor their every word. Fearful of regular round-ups, many Iranian journalists have fled to Europe. But the regime has pursued them into exile. Earlier this year it ordered the seizure of the Iranian assets of 152 contributors to the BBC Persian service, which has an audience of 13m Iranians. This month Ahmad Mola Nissi, an Iranian-Arab activist, was shot dead on a street in The Hague. Fellow activists suspect the long arm of Iran.

For the guardians of Iran's revolution, Nazanin Zaghari-Ratcliffe, a dual British-Iranian citizen, made an easy catch. She was preparing to board a plane home from Tehran with her toddler after a holiday in April 2016 when goons from the Islamic Revolutionary Guards Corps nabbed her. She had previously worked for the BBC Persian Service and was employed in London for the charitable arm of the Thomson Reuters news organisation. Prosecutors charged her with spying and transferred her to the south-eastern city of Kerman.

They accused her of designing websites to support "the sedition", a reference to the mass demonstrations that erupted following rigged presidential elections in 2009. They also suspected her of previously training Iranian journalists abroad, including a group from Narenji, a website specialising in new technology, who had received heavy jail terms a year earlier. She was sentenced to five years in prison for working to overthrow the regime.

Remarks by Britain's foreign secretary, Boris Johnson, have made matters worse. On November 1st he incorrectly said that Ms Zaghari-Ratcliffe had been training foreign journalists on her recent trip.

Though he belatedly retracted his statement, it provided grounds for a new judge to consider a retrial in prison.

Ms Zaghari-Ratcliffe's case highlights the power struggle within Iran's clerical establishment. The president, Hassan Rouhani, wants to improve ties with Europe, particularly in the face of a hostile American president. But he looks powerless against the Revolutionary Guards and the judges who answer to the supreme leader, Ayatollah Ali Khamenei. Since 2015 Iran has detained at least 19 dual nationals with European passports. Most are accused of spying. "Going back to Iran is now out of the question," says an Iranian journalist in London.

Britain considers negotiating prisoner releases tantamount to paying ransom for hostages. Other governments have fewer scruples. Last year the Obama administration secured the release of Jason Rezaian, a correspondent for the *Washington Post* in Tehran, who had been sentenced for espionage and spent 18 months in detention. The same day, America delivered \$400m in cash which had been frozen in Iranian accounts. After Iran's deal with six world powers to limit its nuclear programme in return for the lifting of sanctions took effect in January 2016, Britain released all but £70m (\$90m) of the £728m in Iranian accounts it had frozen. When Mr Johnson heads to Iran later this year to plead for Ms Zaghari-Ratcliffe's release, the regime might be hoping that he takes the outstanding funds with him.



Zaghari-Ratcliffe, prisoner of Persia

Bagehot | Power to the people

British politics is being profoundly reshaped by populism



BRTAIN should have been better placed than any other country to fight off the populist fever that is spreading around the world. The House of Commons is one of the oldest representative institutions on Earth. The country's last violent revolution was in the middle of the 17th century. With politicians as different as Clement Attlee and Margaret Thatcher denouncing them as "a device for dictators and demagogues", Britain avoided nationwide referendums until 1975 and has only used them three times. The British erect statues to statesmen and women in Parliament rather than to "the people".

Yet British politics is currently being reshaped by populism. The essence of populism is the belief that society can be divided into two antagonistic classes—the people and the powerful. The people are presumed to have a single will. The powerful are presumed to be devious and corrupt: determined to feather their own nests and adept at using intermediary institutions (courts, media companies, political parties) to frustrate the people.

You can see evidence of this everywhere in British politics. The Brexiters' clinching argument is always the same: "The people have spoken." The *Daily Mail* has branded the judges of the High Court as "enemies of the people" and urged Theresa May to "crush the saboteurs". On November 15th the *Daily Telegraph* tried to out-*Mail* the *Mail* by printing photographs of the 15 Tory MPs who had indicated that they would vote against Mrs May's attempt to enshrine the date that Britain leaves the European Union into law and branding them "the Brexit mutineers".

Far from fighting off the virus of populism, Britain is becoming its most surprising victim. British politicians may look civilised compared with, say, Hungary's Viktor Orbán or America's Donald Trump. But Mr Orbán rules a country that has been scarred by communism and Mr Trump is hedged in by checks and balances galore. Americans will be rid of Mr Trump by 2021 or 2025. The Brexit referendum will continue to shape British politics for decades to come.

Britain has succumbed to the populist virus because it decided to apply the most powerful tool in the populist toolbox—the referendum—to the most profound question in British political economy—its relationship with its main political and economic partner. The subsequent debate pitted Britain's entire ruling class,

from the leaders of the three main political parties to the heads of multinational companies, against a ragbag army of rebels, troublemakers and mavericks. By voting Leave, the British not only elected to change their relationship with the European Union but also to reorder their political system.

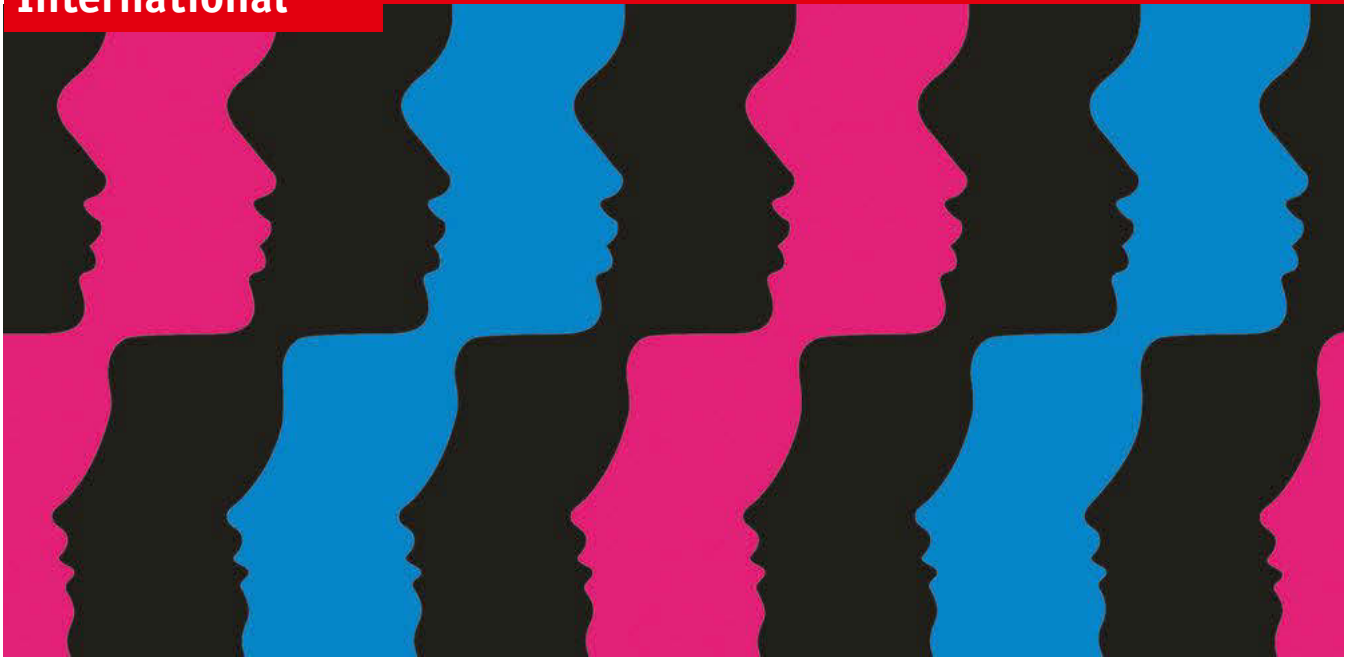
The most visible result of this reordering is the chaos of daily politics. Since the referendum two of Britain's three main parties have lost their leaders, Theresa May has fought a botched election, the cabinet has been paralysed by infighting and Jeremy Corbyn, Labour's hard-left leader, has become prime-minister-in-waiting. The less visible result is a constitutional revolution. Before the referendum, Parliament was sovereign (though, as Brexiters rightly pointed out, the EU kept encroaching on that sovereignty). Now, for the first time in Britain's long parliamentary history, most MPs feel obliged to vote for a policy that they oppose—in other words, to give in to a populist revolution. Three-quarters of MPs voted for Remain. Only two parties, with a combined total of nine MPs—the UK Independence Party with one and the Democratic Unionists with eight—supported Brexit. Still, the chances of Parliament scuppering the withdrawal are small.

Why did a traditionally cautious people decide to take such a radical step? Roy Jenkins, a former cabinet minister, once pronounced that the British voted to stay in the European Community (as it then was) because they "took the advice of people they were used to following". David Cameron, the unwitting Faust of Britain's populist revolution, chose to call the referendum at a time of maximum disillusionment with those "people they were used to following". Voters felt they had little in common with politicians who seemed to come with identikit backgrounds (a posh university and a spell in a think-tank) and identikit views (cosmopolitan liberalism). And they felt that politicians had messed up the government of the country. Both Labour and the Tories had claimed to know how to harness globalisation for the common good. But the financial crisis of 2008 had led to the deepest recession for decades, with real wages falling and productivity growth stalling. Many Britons used the referendum as an excuse to deliver a one-fingered salute to their supposed betters.

Here to stay

The strongest justification of the referendum is that it was a one-off vote to settle the vexed constitutional question of Britain's relationship with the EU: once Britain has reasserted its independence, the sovereignty of Parliament will be restored and populism contained. This is wishful thinking. If Britain withdraws from the EU, the economic shock will be profound. Those who will suffer most will be the very people who voted for Brexit as a cry of defiance (the depreciation of sterling since the referendum has already disproportionately hit the lowest-paid, by pushing up the price of food and fuel). Meanwhile, if Parliament somehow scuppers the process, there could be riots in the streets.

The biggest beneficiary of this turmoil is Mr Corbyn. He has always been a populist. A long-standing admirer of firebrands such as Fidel Castro and Hugo Chávez, he believes that Parliament is only one arena for the people's struggle against the powerful. His supporters have already toyed with de-selecting MPs who do not toe the hard-left party line and with engaging in direct action to bring down Mrs May's government. They have also built a personal cult around Mr Corbyn as the true voice of the people in a corrupt political world. It could be a very long time indeed before British politics returns to what was once regarded as normal. ■



Transgender identity

Found in transition

LONDON AND SAN FRANCISCO

As more people change gender, they are sparking a debate that enrages some and confuses many

A BEAUTIFUL man with high cheekbones, fluttering eyelashes and a galaxy of silver glitter in his hair strides into the room. He is wearing a wedding dress and dirty trainers. The gender-bending at this club night in east London is not new: Shakespeare's comedies are filled with cross-dressers; Gladys Bentley stomped the boards of 1920s Harlem in a tuxedo; Ziggy Stardust, David Bowie's ambiguous interstellar alias, landed in the 1970s. What is new, though, is that convention-defying statements of gender identity are moving from stage and dance floor to everyday life.

The word "gender" is used by prudes to avoid saying "sex", and restricted by purists (and, until recently, *The Economist's* style guide) to speaking about grammar. In the 1970s feminists described the restricted behaviour regarded as proper to men and women as "gender roles". But in recent years "gender identity" has come to mean how people feel or present themselves, as distinct from biological sex or sexual orientation. Growing numbers of young people describe themselves as "non-binary". Others say gender is a spectrum, or that they have no gender at all. Facebook offers users a list of over 70 gender identities, from "agender" to "two-spirit", as well as the option to write in their own.

New and old notions of gender identity collide most starkly in transgender people: those who do not identify with the sex on

their birth certificates. They may transition from a male identity to a female one, or vice versa, perhaps taking sex hormones and having surgery to make their bodies match how they feel and want to be seen. Some have become celebrities. Laverne Cox, the transgender star of "Orange is the New Black", appeared on the cover of *Time* in 2014. *Vanity Fair* profiled Caitlyn Jenner, formerly Bruce, an Olympic gold-medallist, the following year. Last December *National Geographic* put transgender children on its cover.

This growing prominence is in some ways surprising. Though clinics that treat gender dysphoria—distress caused by a mismatch between felt and perceived gender identity—report a soaring caseload, transgender people are still rare. The Williams Institute, a think-tank in Los Angeles, recently came up with an estimate of 1.4m Americans—0.6% of those aged 16-65. Moreover, young people say that gender matters less than it used to, which sits oddly with the spreading belief that gender dysphoria can be severe enough to justify the upheaval and risks of transitioning.

But transgender identities raise more general questions, and not only for those cultural conservatives who regard them as transgressing the natural, perhaps God-given, order. There is a tension between believing that it is possible to feel, act or look so much "like a woman" that you should

be acknowledged as one, and believing, as feminists do, that a woman can act in any way she wishes without casting doubt on her womanhood. A war of words has broken out between some transgender activists and women they call TERFS (trans-exclusionary radical feminists) about who should be let into women-only spaces, from domestic-violence refuges to women's literary and sports competitions.

Such questions are most urgent for people who question their gender identities. But they also illuminate the extent to which gender identity is a meaningful human characteristic. And they have made transgender rights an issue in America's culture wars, most recently in battles over who gets to use which public toilets.

Congratulations! It's a...

Some parents face a more visceral question: what to do with children who say they have been classified as the wrong sex? Should parents resist, telling them that whatever they think they could do if they switched sex, be it dress differently, play different games or hang around with different friends, they can also do without switching? Or should they support their children to transition? How to predict which children will later decide they are in the right body after all?

The answers to such questions depend on what it means to be male or female. The starting point is genetic. As well as 22 pairs of matched chromosomes, female humans have two X chromosomes. Males have one X and a smaller Y. From this follow hormonal differences that shape female and male bodies, with most of the work done in the womb and during puberty. By every physical criterion—chromosomes, genitals, blood hormones, appearance—most people can easily be classified ▶▶

▶ as one or the other.

Human females and males differ little in regard to most abilities and behaviour. The most marked difference, says Melissa Hines, a professor of psychology at Cambridge University, is in fact gender identity, though few notice, since deviations from the norm are so rare. Next most marked is sexual orientation, with all but a few percent of people mostly or exclusively attracted to the other sex. Differences less clearly linked with reproduction are even blurrier. The best-supported is that, allowed to choose between wheeled toys and dolls, boy toddlers choose the wheels slightly more often, and girls the dolls. (Since monkeys show similar preferences, this could be part of evolutionary history.)

But as many as 1% of people have a “disorder of sex development”. Most suffer only a minor genital anomaly, but doctors will struggle to classify a few as male or female. The genitalia of some such “intersex” people are a combination of male and female. Some XX people produce unusually high levels of androgens (male hormones) in the womb, and some XY ones do not respond to androgens in the usual way. They may be born with bodies that are more typical of XY or XX people, respectively. Their birth registrations may clash with their genes.

Lost in classification

Until recently intersex children usually received the surgery doctors thought most likely to produce a body typical for one sex or the other. Now many think doctors should wait until children can decide what to do themselves. In 2013 the UN special rapporteur on torture condemned gender-normalisation surgery for children. Eric Vilain, a medical geneticist in Washington, DC, is leading a longitudinal study on the treatment of intersex children. “Right now, we’re exploring a lot of diagnoses, without the appropriate research,” he says.

Intersex people are unusually likely to switch gender identity at some point, perhaps because those identities are less stable or they were misclassified in childhood. Their existence, and their varying gender expressions, show that biological sex is neither cleanly binary nor inseparable from gender identity. But most gender-dysphoric people have no known anomaly of hormones, physique or brain structure. Some neuroscientists think they have found atypicalities in such people’s brains; others are unconvinced.

Lacking an observable cause, trans people can find it hard to convince others of their felt identities. Something so inward is hard to demonstrate. It is also hard to explain. Danielle Castro, who works at the Centre of Excellence for Transgender Health in San Francisco, is a trans woman. Asked why she transitioned from the male identity on her birth certificate, she search-

es for words: “my own innate sense of self...I feel more comfortable; this is who I am.” It is harder to explain transgender identities to “cisgender” people (“cis” is the Latin prefix for “on this side of”) than to convince heterosexual people of the reality of homosexual desire, she says. “It’s easier to accept that ‘love is love.’”

Gender-dysphoric adults may be offered gender reassignment. The established protocol is to take cross-sex hormones and live in the target identity for a year or two. If psychiatrists agree, they may then be offered the delicate surgery whereby genitals are reshaped. Many trans people do only “top” surgery—breast reduction or enlargement. “Some of the most helpful surgeries are chest and facial because that is what people see,” says Colt Keo-Meier, a psychologist (and trans man).

Doctors naturally worry that a patient may regret such life-altering treatment. Not all the changes wrought by cross-sex hormones are reversible, and genital surgery may cause sterility. Conversely, some trans people find it frustrating to have to convince doctors to permit them to transition. This may feel like pandering to stereotypes. Sam Blanckensee, a 23-year-old Irish trans man, says he resented having to act hyper-masculine to get surgery. After having top surgery and no longer needing to convince anyone, he feels closer to non-binary. “In the eyes of my doctors I would have been seen as binary. I stuck with that idea because it was easier to get the right medicines and procedures.”

And yet trans people themselves can also fall back on gender stereotypes—provoking furious rows with feminists. In March Jenni Murray, the host of BBC Radio 4’s “Women’s Hour”, wrote of interviewing two trans women: India Willoughby, a television presenter, and Carol Stone, an Anglican vicar. Ms Willoughby endorsed workplaces requiring women to wear makeup, and said unshaven legs on wom-

en were “dirty”. The Rev Stone said her main concern after transitioning was what to wear to meet parishioners.

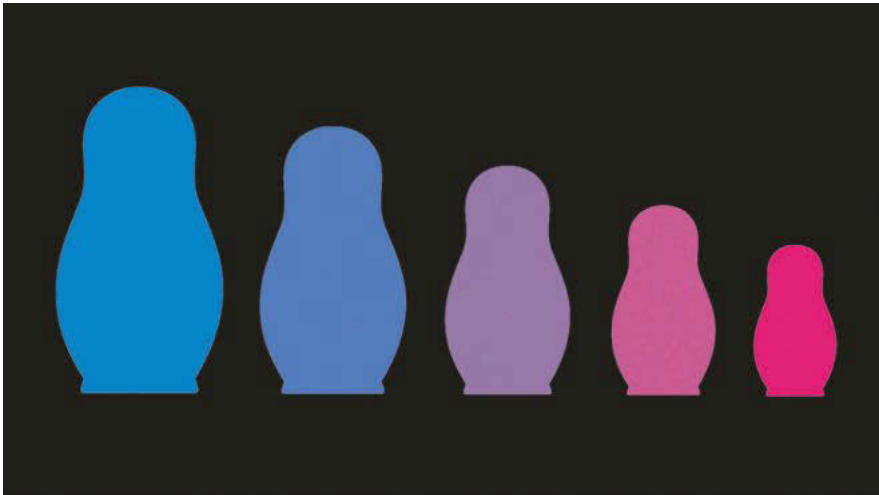
“Feeling like” a woman seems to imply feeling like wearing mascara, heels, hair extensions and stockings,” wrote Lionel Shriver, a novelist (who has written for this newspaper), last year in an essay titled “Gender—Good for Nothing” in *Prospect*, a British magazine. “The version of femininity offered up by Caitlyn Jenner is foreign to me—exaggeratedly coiffed, buffed and corseted.” That “version of femininity” riles many feminists. Simone de Beauvoir’s famous remark that “a woman is not born, but made” was intended as a criticism of the arduous feminine ideal that deformed women’s lives, not as a promise that attaining that ideal conferred womanhood.

But a woman who takes such a line now risks being called a TERF, as Ms Murray and Ms Shriver have been. Indeed, any exploration of transgender identities can be risky (as trans people know better than anyone). Rebecca Tuvel, a philosopher at Rhodes College in Memphis, was pilloried for her article, “In Defence of Transracialism”, published in March. It argued from a viewpoint sympathetic to transgender identities that Rachel Dolezal, a white woman who described herself as black, should be accepted in her chosen racial identity. More than a hundred academics called for its retraction, saying that it caused “harm” to trans people, for example by “dead-naming” a trans woman, that is, referring to her by her former male name. They omitted that the trans woman in question was Ms Jenner, who often talks about life as Bruce.

Attempts to make language more inclusive of trans people mean that in some quarters the very words “man” and “woman” are falling out of use. Some sexual-health clinics now talk about “people with prostates”, “people with vaginas” and so on. An article in the *Tab*, a student magazine, about stress and the menstrual cycle avoided the words “female” and “women”, noting that over a third of “students with uteruses” at Cambridge had missed periods. Such redefinitions can be merely a way of signalling political virtue. And they cause more trouble for women than for men, since it is women who more often need to organise and speak collectively, for example about maternal and contraceptive services, discrimination and harassment, and sexual violence.

Rows in America over which lavatories trans people should use, and whether trans women should be allowed into women-only events, have aligned some feminists with the conservatives they normally oppose in the culture wars. Though the issue may seem trivial, and the vitriol disproportionate, feminists value spaces where women are safe and not crowded out or interrupted, or forced to make nice ▶▶





or conform. But for trans women exclusion from the group qualified to enter such spaces strikes at their self-conception.

A crucial concept for those who work with trans people, says Ms Castro, is “gender-identity threat”—an attack on a trans person’s identity. As an example, she describes projects she works on to reduce the number of trans women who are HIV-positive. They may engage in risky sex to shore up their sense of femaleness, she says, in response to remarks or situations that threaten that sense, for example being treated in anti-HIV programmes designed for gay men—or excluded from women-only spaces. Cutting HIV transmission requires “gender affirmation”—reinforcing their identities in constructive ways, for example with support groups or counselling.

In the early days gender-reassignment clinics saw more males wishing to change sex than females. Many people thought this reflected a psychological difference between the sexes. The conventional wisdom now is that the reason was social. Parents were more bothered by “sissy” sons than “tomboy” daughters. And men who dressed and acted like women faced mockery, more so than the other way round.

In recent years the balance has shifted hugely. The British gender-dysphoria service now sees four times as many girls who are suffering as boys. This may be because constraints on male behaviour have loosened. It may also be because having a female body has become more onerous for children. Some girls seem unable to find a place for themselves in a sea of sparkly pink princess dresses, and then, after puberty, in a hypersexualised pop culture.

“If the mind cannot be changed to fit the body, then perhaps we should consider changing the body to fit the mind,” ran the press notice when America’s first gender-reassignment clinic, at Johns Hopkins Hospital in Baltimore, opened in 1965. That wording, which seemed so progressive at the time, would now be regarded by some activists as starting from a false premise.

The “gender-affirmative” approach takes lasting gender dysphoria to signal a cross-gender identity that needs no explanation. The Johns Hopkins clinic’s implication—that an attempt to change the body—should precede one to change the body—is seen as akin to discredited “conversion therapies” to turn gay people straight.

In 2015 Kenneth Zucker, a Canadian paediatrician specialising in gender dysphoria, was sacked and his clinic shut after a campaign by activists. His starting point had been to try to help gender-dysphoric children become more comfortable with their biological sex, and to wait and see if they changed their minds. In a BBC documentary last year, he drew an analogy: “A four-year-old might say that he’s a dog—do you go out and buy dog food?”

The comparison caused outrage. But Dr Zucker was making an important point: gender-dysphoric children are not all set for transgender adulthood. In the late 1960s and early 1970s Richard Green, a psychiatrist and sexologist then at UCLA, studied boys with markedly feminine identities. Some four-fifths of those followed to adulthood matured into gay or bisexual men. Only one was transgender. Studies in Canada and the Netherlands have since found rates of 12-39% for persistence of transgender identity into adulthood.

This is puzzling: gender identity is distinct from sexual orientation. Most gay people never doubt their gender identities. Plenty of trans people are homosexual; Professor Green estimates that a third of the post-surgery trans women he saw between 1995 and 2007 while working at Charing Cross Hospital in London, which had the world’s largest transgender treatment programme at the time, were attracted to women. Bruce Jenner was heterosexual; in *Vanity Fair* Caitlyn said she didn’t yet know where her sexual interests lay and that “if you have a list of ten reasons to transition, sex would be number ten.”

And yet much evidence suggests that gender dysphoria depends partly on a

society’s attitudes, not only towards gender nonconformity but towards homosexuality. The penalty for male homosexuality in Iran is death, for example, but the ayatollahs believe that a person can be “trapped” in the wrong body. Gay Iranian men are pressed to accept cross-sex hormones and gender-reassignment surgery. Though some flee the country to avoid changing sex, others find doing so allows them to live more comfortably.

The majority view among those who see them in clinical settings is that children with settled gender dysphoria should be given drugs that delay puberty, so they have more time to decide what to do before their bodies grow into what may be the wrong adult form. “We can’t identify with certainty which cases will persist,” says Polly Carmichael, the director of Britain’s national gender-identity service. “So we have to pace treatment carefully.” But little is known yet about the life courses of children who start such “puberty blockers”. Delaying puberty may be harmful, if many children who say they “feel like” the opposite sex are expressing what will, post-puberty, settle into an unconventional gender identity or same-sex attraction. It may short-circuit the process whereby some gender-identity issues would naturally have been resolved.

All this puts doctors in a quandary. Transitioning earlier means better physical results. Waiting means needless distress for children who will not change their minds. But what about the others? Will some of those whose identity switches have been reported in television shows and magazines end up feeling regret? Will they be able to find a way back? And some of those who do not regret transitioning might also have been content had they not done so, in which case they will, on balance, have been harmed. Professor Green cites “the medical consequences, the hormones, the risk of imperfect surgery and perhaps unwanted infertility.” As for the probability that some would otherwise have grown up cisgender and gay, he says: “I’ve been seeing transsexuals for 50 years. I can tell you that being a gay man or lesbian woman is one hell of a lot easier.”

Gender-mending

Most people are comfortable with their gender identities, perhaps without having any strong sense of being male or female. Ms Shriver writes: “I have no idea what it ‘feels like’ to be a woman—and I am one.” As traditional and legal constraints on men’s and women’s behaviour loosen, that group may grow and, with luck, the number of children who feel stifled by their gender roles will fall. But there will probably always be a few people whose felt identities are at odds with what the world sees, and who will need to do something about it if they are to be at ease. ■



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General Electric

The right mechanic?

NEW YORK

GE's newish boss unveils his strategy to revive a struggling American icon

“NUMBER one, cash is king...number two, communicate...number three, buy or bury the competition.” These rules were laid out by Jack Welch, a brash but brilliant former boss of General Electric (GE). The American industrial conglomerate, founded by Thomas Edison, has operations ranging from health care and aviation to lighting and energy. During Mr Welch’s tenure, from 1981 to 2001, his company’s market value rose from about \$15bn to over \$400bn. Today, it barely tops \$150bn. Having fallen by more than two-fifths this year, GE is the worst-performing stock in the Dow Jones Industrial Average, a composite index that has risen by nearly a fifth since January 1st.

Jeffrey Immelt, Mr Welch’s amiable successor, violated all three rules. To be fair, he did steer GE through a sharp downturn in aviation following the September 11th 2001 terrorist attacks and unwound its risky financial arm after the global financial crisis. But on his watch GE’s core power business deteriorated to the point where the firm now cannot generate enough cash to pay its promised dividend (see charts on next page). His reliance on multiple accounting standards and opaque long-term service contracts led financial analysts to complain about a lack of openness.

And rather than buying and burying the competition, Mr Immelt’s expensive

and ill-timed acquisitions of big energy companies, which coincided with low oil and gas prices, instead nearly buried GE. The firm spent \$10.1bn to acquire France’s Alstom, which sells power-generation kit, and \$7.4bn to win control of America’s Baker Hughes, an oilfield-services group. Neither is performing as well as hoped.

A new narrative

This is the mess inherited by John Flannery, a hard-nosed GE veteran who took over from Mr Immelt in August. He immediately began to unravel the tale told by his predecessor about GE’s good health. On October 20th the firm announced abysmal third-quarter results, which saw profits in its power division decline by half from the same quarter a year earlier. Weak global markets, stiff competition and a challenge from renewables are part of the explanation, but Russell Stokes, the new head of the power division, accepts that GE should have run this business better.

It is “clear from our current results that we need to make some major changes with urgency”, declared Mr Flannery. On November 13th, in front of scores of financial analysts and journalists gathered at the Wharton Forum in New York (the number-crunching boss holds an MBA from Wharton Business School), he unveiled his strategy to save GE. The plan has three

main components: slash costs, sharpen the culture and shrink to the core.

Take costs first. To his credit, Mr Flannery clearly understands that GE is bloated. Even before this week’s announcement, he had vowed to cut an additional \$1bn in annual spending, on top of the \$2bn annual cut Mr Immelt was forced to concede earlier this year. He also let it be known that he was grounding the firm’s fleet of jets. (It surfaced recently that Mr Immelt sometimes travelled with two jets, just in case one broke down.)

This week Mr Flannery took the painful decision to cut GE’s dividend by half, which will save over \$4bn. Only twice before in its 125-year history has the firm failed to pay its promised dividend. He will also save it money in coming years by borrowing \$6bn at today’s low interest rates to prepay the next few years’ worth of pension obligations. That will help, but the pension fund he inherited is currently underfunded by a staggering \$31bn.

The second pillar of Mr Flannery’s strategy is to transform GE’s culture. The firm has been celebrated for its superior management and capital discipline. But insiders describe a company adrift under Mr Immelt, who often talked in lofty terms about GE’s future and invested a lot in innovation but did not always hold people accountable or insist on tough targets. “Jeff was a visionary but he did not dig into the numbers the way John does,” says a senior GE executive. Mr Flannery promises to be disciplined and data-driven in his decisions. “Capital allocation is a contact sport, and I expect vigorous debate,” he says.

That is promising. So, too, is his vow this week to make GE’s books more transparent. “Complexity has hurt us,” he acknowledged. The firm has long used multiple ▶▶

▶ non-standard measures for reporting its financial performance, juggling various business assumptions and costs. This has made it harder to understand its true financial picture. For example, it has in the past favoured “industrial cash flow from operating activities” (CFOA), an abstraction that Mr Flannery is ditching in favour of the widely used measure of free cash flow. GE’s industrial CFOA is \$7bn; its equivalent free cash flow is only \$3bn.

The biggest cultural change will happen at the top. Mr Flannery plans to realign pay for top executives so that they are rewarded when the firm does better on free cash flow. He is also reforming the board of directors, an unwieldy collection of 18 grantees who failed to ask hard questions even as GE’s performance deteriorated. In October he put Ed Garden, chief investment officer of Triun Partners, an activist investment fund, on the board. This week he said the board would be cut to 12 members, and that three new directors with experience relevant to GE would soon replace oldies.

Small is beautiful

So far, so good. The problem arises with the third pillar of the strategy, which involves shrinking the firm. In October Mr Flannery promised to sell off assets worth \$20bn over the next two years. This week he made it clear that the company’s operations in transport (which make locomotives) and industrial lighting are up for sale. In addition, he indicated that the firm was willing to sell its majority stake in Baker Hughes, a separately traded entity born of the merger of GE’s oil and gas division and the old Baker Hughes oilfield-services business.

That sounds like a lot, but for a goliath like GE, which had total assets of \$365bn last year, it is underwhelming, and investors are unimpressed. GE’s shares fell by 12% in the two days following the plan’s unveiling—though it probably didn’t help that on November 14th a class-action law-

suit was announced against GE and its officers for allegedly misleading investors about the firm’s weakening performance, especially in power.

Analysts had been divided on the firm before this week, but now the bulls are deserting it in droves. One of them, Deane Dray of RBC Capital Markets, wrote that the plan “fell short of the sweeping reset of the business model/portfolio many had hoped for”. Joe Ritchie of Goldman Sachs, an investment bank, thinks GE should cut not \$3bn in annual costs by 2020, but \$4bn. He points out that the firm has spent \$10bn in restructuring over the past five years, with little to show for it in improved margins. He thinks that GE still has many assets that are earning sub-standard margins, and which could be run more profitably by more focused outsiders.

Scott Davis of Melius Research says it is not clear why a “bigger spin-off” was not part of the plan. He calculates that GE’s health-care and aerospace divisions alone are now worth close to today’s stockmarket value of the entire company. That suggests GE could release enormous trapped value through a more ambitious, but thoughtfully sequenced, series of spin-offs and divestments.

The intensity of the criticism from analysts might seem unfair. Mr Flannery has, after all, only just begun to wrestle with the problems he has inherited. His instincts appear to be sound, and his principles of curbing costs, cultural clarity and cutting to the core are surely the right ones. He is being punished for his reluctance to wield the knife more aggressively.

In the end, however, it is worth reflecting on another of Mr Welch’s musings: “Change before you have to.” Mr Immelt was a thoughtful man, but his failure to deal with emerging threats for years allowed them to come to a head. Mr Flannery is now changing GE because he must. Sensible though his plan is, he may come to regret that he did not make further-reaching changes before he had to. ■

Bytedance and Toutiao

Dancing to their own tune

BEIJING AND HONG KONG

A Chinese news app is making headlines

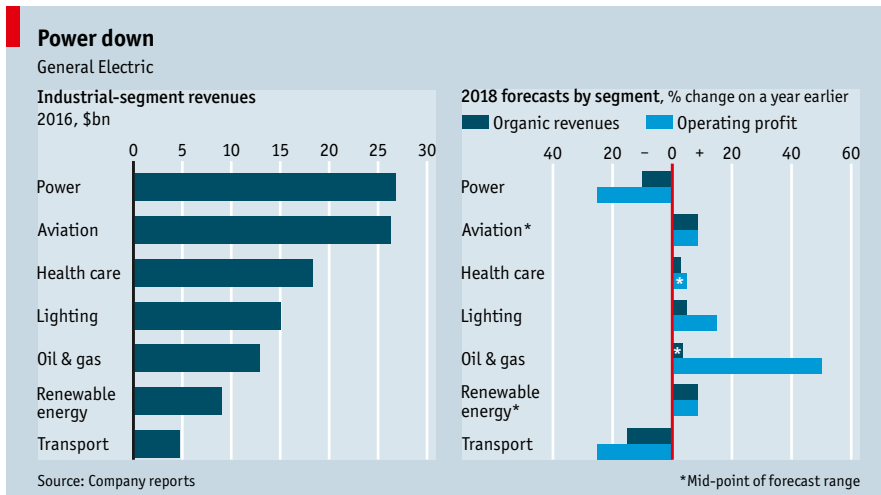
WHEN rumours swirled in August that Baidu, a Chinese online-search giant, was buying Toutiao, the scrappy news-aggregation platform reportedly quipped in response that reports had mistaken the buyer for the seller. The firm is proud with good reason. Toutiao’s growth since its launch in 2012 has been stellar: it says it has already drawn 700m users to the personalised newsfeeds on its smartphone app. Its valuation has shot up, to \$22bn in its latest funding round (see chart on next page).

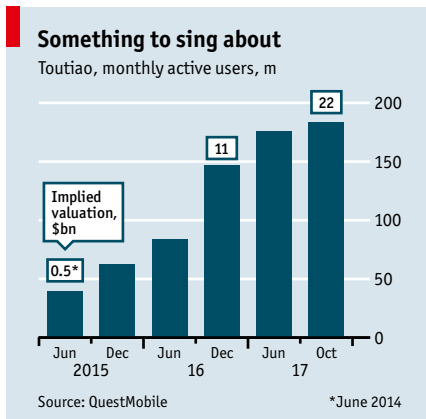
Toutiao’s parent company, Bytedance, is definitely a buyer now. This month it snapped up Musical.ly, a lip-syncing video platform that has captivated American teens, for a reported \$1bn. It looks like a good match. Musical.ly, based in Shanghai, is the first Chinese firm to build an app that has been so admired in the West; Bytedance, which has developed sophisticated artificial-intelligence (AI) technology to customise Toutiao’s newsfeeds, can provide it with winning algorithms.

Those algorithms are developed by an army of data scientists working from a vast former aviation museum in Beijing. Bytedance’s boffins showed off their prowess last year with a Toutiao bot that wrote hundreds of widely read short articles during the Rio Olympics. Bytedance’s code also powers four of the six most viewed short-video platforms in China.

News was the perfect place for the start-up to build its AI muscle. Toutiao sources its content from 4,000 partner sites, from China’s state-owned media titans to its buzziest blogs. Users’ newsfeeds are constantly updated based on what its machines have learnt about reading preferences, from things like taps, time spent on an article and location (where you spend the lunar new year is probably your hometown, for example). Toutiao claims to have a user figured out within 24 hours.

Its 120m daily readers spend an average of 74 minutes a day on the app—more than almost any other big social platform in or outside China, including Facebook and even WeChat, whose devotees use it for an average of 66 minutes. Half of that time is spent watching videos, many self-published through 800,000 accounts run by everyone from Shanghai celebrities to Henan pig-raisers. One is Brother Kun, who posts videos and articles about plant-related things like caring for your bonsai. He has 360,000 followers and earns over 10,000 yuan (\$1,500) a month from the ▶▶





platform under a deal in which Toutiao shares advertising revenue with content-creators (paid content is still in its infancy in China).

Some scoff at Toutiao's sometimes tawdry machine-generated mix; a Hong Kong-based analyst says the algorithm seems to cater to "the lowest common denominator". Yet that its appeal goes far beyond China's richest metropolises is one of the reasons it is thrilling investors, says Eric Zhang of General Atlantic, an American private-equity firm with a stake in Toutiao. Half of its users are in so-called third-tier cities and below, where most of China's untapped smartphone potential lies.

Some think its rise may be bad news for Baidu, one of the "BAT" tech trio, along with Alibaba and Tencent. Toutiao's news app uses its algorithms to fine-tune advertisers' posts to suit readers' interests, satisfying both. Toutiao reportedly hopes to make as much as 50bn yuan from ads next year. That is only 15bn yuan shy of what Baidu, China's biggest search engine, earned last year from advertisers.

Toutiao's ascent has already earned it the newest accolade in Chinese internet circles: a place in a fresh tech trinity, "TMD". Yet among its fellow new kids—Meituan-Dianping, an online services platform for everything from food delivery to cinema bookings, and Didi Chuxing, a ride-hailing firm—it stands alone in having no financial backing from BAT. Most upstarts join forces with BAT to gain access to users, algorithms and deep pockets. Toutiao's genius, says Bhavtosh Vajpayee of Sanford C. Bernstein, a research firm, was managing to build up the first two from a business that needed very little capital.

That is likely to change as Bytedance seeks new users through other types of entertainment. Before it bagged Musical.ly, it bought stakes in Indian and Indonesian news aggregators, as well as Flipagram, an American rival to Instagram; it was reported this month to have tried to buy Reddit, an American social-discussion site valued at close to \$2bn. Having come so far without BAT, investors think Toutiao has a good shot at continuing solo. ■

Mining

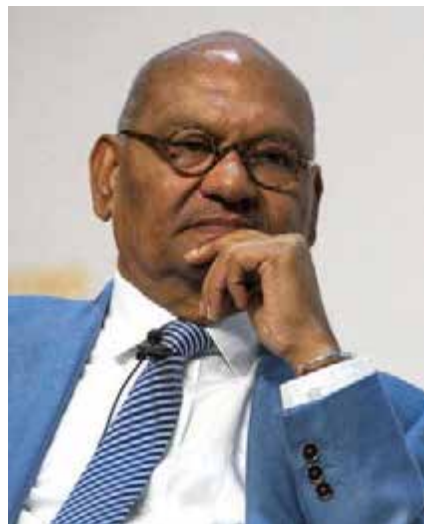
The sphinx of zinc

An Indian tycoon's raid on Anglo American is a riddle

THE floors in the Mayfair mansion where Anil Agarwal, an Indian tycoon, lives in London are made of chequered marble. But the former scrap-metal dealer, whose home was once owned by the Rothschild family, is much less black and white. On his startling purchase this year of 21% of the shares of Anglo American, one of the world's best-known mining groups, he is sphinx-like. The only thing that is clear is his ambition to be one of the world's biggest mining moguls. Anglo American is part of that vision.

Mr Agarwal, 63, has made most of his fortune betting on India—often with borrowed money. His sales pitch is simple. India, like China, is a country with galloping demand for raw materials. Unlike China, its metals consumption per person is still as much as 80% below the global average. His sprawling array of firms, which are listed as Vedanta Limited and Hindustan Zinc in India and Vedanta Resources in London, are mainly a play on Indian growth and urbanisation; they make most money selling zinc within India to turn into galvanised steel. Mr Agarwal pursues growth ambitiously. He speaks of undisclosed plans to invest a further \$8bn over the next several years, mostly to produce more oil, gas, zinc, aluminium and copper within India.

Often his transactions, such as the \$14.5bn acquisition of Cairn India, the country's largest private oil and gas company, are complex, and demonstrate little regard for minority shareholders. But he shows much more consideration for the



Agarwal contemplates his next move

disadvantaged: he has pledged three-quarters of his wealth, estimated by *Forbes* at \$3.2bn, to charity.

Of the world's biggest mining companies, few come closer to Vedanta for complexity than Anglo American, whose origins are in South Africa. As it struggled under heavy debt during the commodities slump in 2015-16, Mr Agarwal proposed to the London-listed company a merger with Hindustan Zinc, which is one of the world's lowest-cost zinc miners.

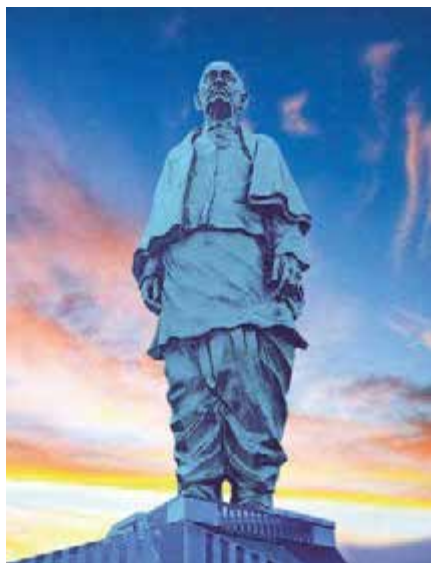
Anglo rejected the idea, but Mr Agarwal bided his time. He bought the Anglo shares in two stages with the proceeds of a bond. After three years he can either redeem the bond with cash and keep the shares, or repay it with the shares themselves. He describes this complex transaction as a "passive investment". Others see it as passive aggression. The second stage of the acquisition was timed an hour before Anglo launched its centenary celebrations in South Africa in September. It left a bitter taste in some mouths.

Since then, his interventions have been puzzling. Until recently, investors had been pushing Anglo to streamline its operations around core minerals such as diamonds, copper and platinum, while selling South African iron-ore and coal assets. But Mr Agarwal has argued against that. "I keep reminding them that this company is South African and they should not forget that," he says. When asked why, he is vague, insisting only that "origin is very important".

Despite a controversial mining charter in South Africa, which domestic firms dislike, Mr Agarwal is bullish on the country's mining industry. Besides his Anglo stake, he is investing \$1bn in one of his zinc mines, Gamsberg, in the Northern Cape, which will start producing next year. It used to be owned by Anglo.

Some see broader political or strategic interests at play between India and South Africa, noting that Mr Agarwal has travelled to South Africa with Narendra Modi, India's prime minister. But he denies this, and dismisses the notion that India is trying to replicate China's scramble for resources in Africa. He says Mr Modi is simply "sentimentally attached" to South Africa because of the legacy of Mahatma Gandhi.

He denies that he has any intention in the short run of resurrecting a merger with Anglo—though he has to be circumspect to avoid being required to launch a formal takeover attempt. Some argue that a deal would be hard to pull off anyway, because Anglo's shareholders would not want Vedanta's shares. But few doubt some of Anglo's assets are appealing to Mr Agarwal. If Anglo continues to underperform its peers, global miners will seek to swoop on its best assets. With a ringside seat on the share register, Mr Agarwal would be well-placed to join the fray. ■



Indian corporate philanthropy

Donate, or else

MUMBAI

Indian firms make the best of coerced do-goodery

CHARITY begins at home—or, if you are an Indian boss, in the boardroom. Since 2014 firms there by law must spend 2% of profits on corporate social responsibility (CSR), loosely defined as doing good in the community. After some griping, businesses are trying to make the best of their obligation, while keeping politicians happy by funding their pet projects.

The idea of compulsory charity had a mixed reception. Ratan Tata, who heads the charitable trusts that own much of Tata Group, India's biggest conglomerate, was among those likening it to another tax on business. In fact, the law is more a nudge than an edict. Only large companies—those with domestic profits consistently over 50m rupees (about \$780,000), or 5bn rupees in net assets, or turnover over 10bn rupees—are affected, and they can opt to give nothing, as long as they explain why.

In practice, most comply, at least in part. A study of listed firms by CRISIL, a credit-rating agency, found that over 1,100 firms had spent 83bn rupees on good causes in the 2015-16 financial year, up by 22% on the previous year. That is roughly the budget of a small government department, though tiny compared with the annual \$12bn that American firms spend on CSR.

As they sought to adapt to the measure, some Indian businesses discharged their obligation simply by writing a cheque to a local school or hospital. But that misses the point of the exercise, which is partly to encourage companies to innovate in how social programmes might be delivered, says

Allergan and the Mohawks

A patent ploy

An unusual legal tactic attracts political scrutiny

“BRAZEN” and “absurd”: Allergan certainly drew a reaction from American lawmakers when it transferred its patents for Restasis, a dry-eye drug, to the Saint Regis Mohawk Tribe in September. Last week a congressional committee held a hearing on the deal, which, if recognised as valid, risks undermining the American patent-review system.

As entities granted sovereign status, Native American tribes enjoy legal immunity and so, Allergan hopes, can ward off challenges to the patents by rival drugmakers. The tribe, which is based in New York state, wants to reduce its reliance on revenues from its local casino. It received \$14m when it acquired the patents, and will relicense them to Allergan for a yearly fee of \$15m.

Tribes are targeting other industries, too. The Mohawk tribe holds patents for SRC Labs, a tech firm, and says it expects to earn a “significant amount of money” by suing other firms for infringement. It has already sued Amazon and Microsoft. Another patent-holding company, owned by three Native American tribes, is suing Apple.

The Mohawk tribe argues that it should be treated the same as a state institution. State universities have used sovereign immunity to dismiss challenges brought to the Patent Trial and Appeal Board (PTAB), which conducts patent reviews. The universities' argument has not been tested in the courts,

where patents can also be challenged, says Rachel Sachs of Washington University in St Louis; in theory, immunity could be invoked there, too.

The tribe has asked the PTAB to dismiss challenges to the Restasis patents. A ruling is expected by April. If the regulators side with the tribe, a rise in review-dodging deals seems likely. The tribe has set up a patent office in anticipation of greater interest.

But tribes are different from states in two ways, says Michael Carrier of Rutgers Law School. The first is that state universities contribute to the research behind the patent. Regulators may treat tribes, which contribute nothing, differently. The second distinction is that, although states' sovereignty is built into the American constitution, tribal immunity can be modified by Congress; a Democratic senator has introduced a bill to prevent tribes from invoking immunity in administrative reviews. But abrogating tribal rights may prove a sensitive issue. And the bill would not prevent immunity from being invoked in court.

Either way, other firms may be deterred from following Allergan's lead by the heavy price it is paying for its gambit. Not only is the firm facing political ire—which could lead to awkward questions about the ever-rising price of Restasis—but its share price has fallen by a quarter since it struck the deal. The move to protect its dry-eye drug may end in tears.

Amit Tandon of iias, an adviser on corporate governance. Many hoped that private-sector rigour might thereby seep into government thinking.

A popular approach has been to use philanthropy to help the business. Banks and insurance companies fund financial-literacy campaigns, for example, perhaps in the hope of shaping the habits of future customers. Ashok Leyland, a truckmaker, provides driving lessons, helping to fill a shortage of truckers. Godrej, a consumer group, offers three-month training courses for beauticians around the country.

Other companies are trying to sidle up to the authorities through CSR programmes. Half a dozen firms fund cow shelters, a cause dear to the Hindu nationalist Bharatiya Janata Party of Narendra Modi, the prime minister. Although direct contributions to politicians are banned, trusts and charities affiliated with them are grateful recipients of corporate generosity. Some government pro-

grammes can also be funded directly; firms have donated, for example, to one that cleans up the river Ganges, which meanders through the constituency of Mr Modi.

State-owned companies, which cough up roughly a third of all CSR money, appear particularly susceptible to funding projects with a political flavour. According to *Mint*, a newspaper, four publicly owned oil groups have offered 1.2bn rupees to fund the “Statue of Unity”, a 182-metre-high monument to Sardar Patel, an independence hero, which will cost a whopping \$460m (and happens to be in Mr Modi's home state of Gujarat).

Fans of the law nonetheless think it will inspire companies to behave in a more enlightened way. “It has moved the conversation about CSR from the backroom to the boardroom,” says Richa Bajpai of Goodera, which helps firms to devise and monitor projects. Shareholders can only hope the largesse they are ultimately paying for will bring them dividends, too. ■

E-commerce

Briefs encounter

“Direct-to-consumer” startups are upending the consumer-goods industry

IN MANY ways, Tommy John, a startup based in Manhattan, resembles a tech company straight out of Silicon Valley. On its website the venture-backed firm touts its innovative materials and patented designs. When recruiting talent, it describes itself as “disruptive” and “revolutionary”. But Tommy John does not deal in computer hardware, software or any other kind of technology. It makes men’s underwear.

Following the example of successful e-commerce brands such as Warby Parker, a glasses firm, and Casper, a mattress-maker, a growing number of startups are reimagining everyday household items—from pants and socks to toothbrushes and cookware. These “direct-to-consumer” (DTC) companies bypass conventional retailers and bring their products straight to customers via their online stores. They began several years ago to catch the attention of venture-capital (VC) firms, which have poured in more than \$3bn since 2012. But the success of some DTC firms has attracted a lot of wannabes, making this a crowded market and leaving some wondering whether the boom has reached its limits.

The DTC business model first emerged in product areas dominated by slow-moving incumbents with hefty profit margins, such as spectacles and razor blades. In 2010 Gillette, the world’s largest razor-blade-maker, enjoyed 70% of the American market and gross margins as high as 60%. Since then, Dollar Shave Club and Harry’s, two subscription services that sell blades at a fraction of the price of big brands, have amassed more than 5m customers. Gillette’s market share has fallen to 54%.

Hubble Contacts, founded in 2016, wants to do the same to the \$8bn contact-lens industry, which is dominated by giants such as Johnson & Johnson and Bausch + Lomb. Lenses are well-suited to the DTC model, being a commoditised product that customers purchase on a regular basis, says Jesse Horwitz, one of Hubble’s founders. The startup is on track to generate \$20m in sales in 2017 and has attracted money from several VC firms.

Startups that cannot undercut incumbents on price must differentiate themselves in other ways. Casper won over many shoppers by getting rid of the worst bits of the bed-buying process, including choosing among dozens of similar products and haggling with pushy salesmen. Allbirds, a two-year-old San Francisco-based firm that makes all-wool trainers,



Tommy John’s got the consumer covered

has tweaked the design of its shoes 27 times based on feedback from customers.

Investors say branding and marketing are crucial if DTC startups are to make it. Sophie Bakalar of Collaborative Fund, a VC firm, says that brand is the first thing her team looks for in a consumer startup. Suitcases made by Away, a firm founded by two Warby Parker alumnae, have been featured in *Vogue* and endorsed by celebrities such as Karlie Kloss, a supermodel. But most customers learn about the brand on social media, where globe-trotting millennials share images of their bags, artfully displayed on hotel-room beds or rolling in front of iconic landmarks. Away’s social-

media team collects and redistributes these posts on its Instagram account, which boasts 140,000 followers. This year the firm expects to generate \$50m in sales.

For all the buzz surrounding such online brands, they face high hurdles. Investors worry about a glut of startups, which makes it difficult to stand out. “The challenge is rising above the noise,” says Kirsten Green of Forerunner Ventures, an early investor in companies like Bonobos, a clothing retailer. Some DTC firms insist on focusing on a single item in the bedroom, kitchen or bathroom, when they would do better to offer a stable of products.

Moreover, the giants of consumer goods and retailing, initially slow to respond to competition from these upstarts, have wised up. They are reacting in two ways. The first is to make it easier to buy their goods, both by expanding their own DTC distribution, as Procter & Gamble (which owns Gillette) does, and by working more closely with Amazon.

That may not be good news for the startups, but the big firms’ second tactic is what the founders of every new DTC firm, and their VC backers, dream of: spending big to acquire young rivals. Unilever, for instance, paid \$1bn for Dollar Shave Club in 2016; Walmart spent \$310m to acquire Bonobos in June; and this week P&G said it was buying Native, a DTC deodorant brand, for an undisclosed sum.

This spending spree explains why optimism still abounds, even as more startups jostle to carve out a niche. The consumer-goods business remains gripped by a “DTC revolution”, says Emily Heyward of Red Antler, a branding agency. A comforting thought for buyers of briefs. ■

Landing and take-off slots

Airport heist

MADRID

The rules on how slots are allocated need a shake-up

LAST year nearly 3.7bn passengers took to the sky on commercial jets. Few would have given much thought to exactly why their flight was scheduled at the time it was. Even fewer know about the tussles between regulators and airlines over how landing and take-off slots are allocated.

For the past 70 years the business of thrashing out timetables at international airports has been the job of the Slot Conference, a semi-annual meeting of airlines and airport co-ordinators run by the International Air Transport Association (IATA), an airline trade group. The 141st meeting, held last week in Madrid to set next summer’s schedule, attracted over 1,300 repre-

sentatives from 250 airlines and nearly 300 airports around the world. Sitting around tables (with one for each country’s airports) in a massive hall, airlines negotiate and reschedule their slots to maximise their network’s efficiency. It is like “speed dating for airlines”, says Lara Maughan, the conference organiser.

Although the advent of computers has speeded up the event, the way slots are allocated has changed little since the first conference in 1947. Instead of letting airports decide who would use their runways and when, the system was designed to have schedules hammered out by committees of airlines. In the 1960s, as growing ►►

▶ traffic started to fill up some airports, the committees became a way of parcelling out the most prized slots.

Since the 1970s, allocation has been steered in most countries by IATA's "Worldwide Slot Guidelines". These state that an airline can keep a given slot from the previous season as long as it used the slot 80% of the time. Any slots freed up under this "use it or lose it" rule are allocated to other applicants. Some places, including the European Union, insist that new entrants must receive half of these. Airlines then swap or adjust the timings among each other at the conference to try to maximise profits. Some countries, such as Britain, allow slots to be traded and sold.

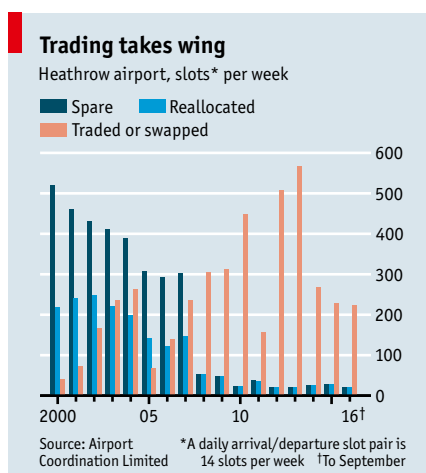
IATA claims the process is fair and open, particularly since the introduction of independent slot co-ordinators in the 1990s. They are supposed to ensure the guidelines are administered impartially, so that airports cannot stitch up deals with the local flag-carrier behind closed doors.

Even so, regulators across the world still think the system coddles incumbents. Britain's competition watchdog, for instance, has said it "creates rigid incumbent slot holdings", raising barriers to entry for newer and more efficient airlines. Others are fiercer in their criticism. "It's like the airlines have been given a grace-and-favour flat that they are allowed to mortgage, sell or swap," says Andrew Charlton, an aviation consultant and former head of government affairs at IATA. The slot guidelines are a "naked attempt to distort the market".

Much of the opposition stems from the fact that most airlines were given their slots for no charge. Airport landing and passenger charges for planes generally do not rise at busy times but fares do, notes Nicole Adler of the Hebrew University of Jerusalem. This means the airlines cream off the benefits from the scarcity value of prized slots, like those in the early mornings. The shortage of landing slots in Europe inflates the fares passengers pay by €2.1bn (\$2.5bn) a year, according to a recent study. Slot-holders also grab the proceeds of trading. Last year Air France-KLM, a legacy carrier, sold a single daily landing and take-off slot at London Heathrow, Europe's most congested airport, for \$75m.

IATA claims that the system is justified by airlines' investment in planes and marketing. Behind closed doors airline executives scoff at the idea. One compares the current system to a food-maker saying it has the right to display its products on a supermarket shelf for ever because it bought some TV adverts.

Legacy carriers have another reason to like the system: it in effect freezes new airlines out of their hubs. In 2012 the European Commission estimated that less than 1% of slots at Heathrow, Paris Charles de Gaulle and Paris Orly were being distributed each year under the EU's new-en-



trant rule. The situation has not improved since, because incumbents do everything they can to meet the 80% rule. Some use smaller planes and more frequent flights than necessary. Others resort to "ghost" flights: the loss-making flying of empty or near-empty aircraft in and out of major airports, for the sole purpose of holding on to precious slots there.

British Airways (BA) has argued that allowing more selling of spare slots could aid new entrants. But allowing trading reduces the number of returned slots handed out to new entrants free. Sales to date have allowed the strong to get stronger. The share of slots at Heathrow owned by BA's parent has risen from 36% in 1999 to 54%.

Even so, in 2011 the European Commission proposed new rules rolling out slot trading across the EU. These included measures to force carriers to use their existing capacity better, such as raising the "use it or lose it" level from 80% to 85%. But the changes were put on ice in 2012, partly due to lobbying by airlines.

Other countries are trying more radical

solutions. In 2008 America's aviation regulator proposed auctioning slots at New York's airports. This would reduce the rent airlines gain from their slots' scarcity value. But the idea was dropped after airlines challenged it in court. Last year China experimented with a slot auction at Guangzhou and a slot lottery at Shanghai.

Sky's limit

IATA claims that auctions do not help new entrants, which may not be able to afford big upfront slot fees. A better idea, says Ms Adler, is congestion pricing for runways—where airlines are charged more to use slots at busy times. London's Gatwick airport, which has made steps in this direction since 2010, as the changes have encouraged airlines to make fuller use of their slots and to release underused ones to new entrants. Unlike auctions, no upfront fees are payable, reducing barriers to entry.

One idea is to put the money raised from congestion pricing in a central pot, outside the control of airports, to fund improvements in aviation infrastructure. Without expansion beyond that already planned, 19 of Europe's biggest airports will by 2035 be as congested as Heathrow today, which operates at full capacity, says Olivier Jankovec of ACI Europe, a trade group. Although greens and locals oppose building new runways, there are other ways to increase capacity, says David O'Brien of Ryanair, a big budget airline. Limits on aircraft movement at Paris Orly, for instance, mean it runs at just 60% of runway capacity. Improved transport links to secondary airports could help, too.

Airlines want governments to pick up the cost of such measures. But in an era of record airline profits, the industry faces increasing pressure to pay its share. The slot system is a good place to start. ■



Schumpeter | A deal that Donald dislikes

AT&T's bid for Time Warner is either worryingly vague or amazingly Machiavellian



THE proposed takeover of Time Warner by AT&T is one of the most important deals of the decade. It would create America's sixth-largest firm by pre-tax profits, one that delivers internet and media services to hundreds of millions of people. It has become a political football after the Department of Justice indicated that it might block the deal or impose penal conditions. Some worry that the DOJ is being directed by President Donald Trump, who hates CNN, a news channel that Time Warner owns.

That the nominally independent antitrust apparatus is under a cloud is depressing. But revisiting the deal this week, a year after it was announced, Schumpeter was struck by another remarkable thing: how waffly AT&T's rationale for it is. Over \$100bn is being spent, based on vague reasoning and figures.

America's media and telecoms industry has long had episodic deal frenzies, reflecting a combustible mix of technological change, juicy profits and ambitious moguls and managers. A long-standing dilemma is whether it makes sense to combine "pipe" companies that connect customers by mobile or fixed lines, and "content" firms that make and bundle packages of TV shows and web content. Most firms have been inconsistent and made several U-turns over the years, flitting between "vertical" integration (owning pipes and content) and horizontal scale (having a high market share in either one or the other).

Today there is disorder under heaven again, sparked by the rise of Netflix and Amazon Prime, and the media ambitions of other tech firms such as Apple. No one is sure how to react. Rupert Murdoch tried to bulk up in the traditional content business in 2014, by bidding for Time Warner, but has recently been in talks to exit it by selling his firm, 21st Century Fox, to Walt Disney. The talks are now reported to be inactive. T-Mobile and Sprint, two wireless operators that have had an interminable courtship, abandoned a proposed merger on November 4th.

Until a year ago AT&T was a rare model of consistency: it sought an oligopoly by buying other pipe firms. In some ways it succeeded. It has over 150m customers, equivalent to one in two Americans (Verizon, T-Mobile, Sprint and Comcast are the other big pipe firms). Weak competition means telecoms prices in America are at least 50% higher than in other rich countries. AT&T has a healthy return on capital of 17%, excluding goodwill.

Unfortunately, things are less impressive if you include the premium that AT&T has paid over book value to buy its empire. Including goodwill, its return on capital is a poor 9%. It extracts vast profits from its users but has given away much of the gains to the owners of the assets that it bought, not its own shareholders.

Enter the Time Warner bid, announced in October 2016. AT&T's new goal is to be a vertically integrated firm that owns pipes and world-class content. Beyond that, its justification has been fluid. It has said that doing everything under one roof will make it more nimble at serving customers. This month Randall Stephenson, AT&T's boss, put weight on how the combined firm could track what customers watch, using these data to sell advertising, as Facebook and Google do.

AT&T's logic is weak in three ways. First, if you think the traditional media industry is about to be disrupted, why buy a traditional media firm? Perhaps half of Time Warner's profits come not from making brilliant series such as "Game of Thrones", or running clusters of creative excellence, such as HBO, but from a much grittier game of bundling TV shows into packages and selling them at ever more inflated prices to a dwindling number of cable TV customers. Over the past three years such price rises have boosted profits by about 14%—without them Time Warner would be almost stagnant. This is the bubbling earnings stream that Netflix and Silicon Valley firms are keen to divert.

Second, the numbers do not add up. At the offer price of \$108 per share, AT&T will make a lowly return on capital of 5.5% on the deal. If it hits its cost-cutting targets, this will rise to about 6%. Even if you think the new firm will make the same advertising profits per customer as Facebook, the return would still be a subpar 8%.

AT&T could boost returns by using its muscle in the pipes business to force clients to buy Time Warner's content rather than that of rivals. If Time Warner's market share rose from 20% to 35%, the deal's return would rise to a decent 11%. But this approach would run up against the third problem: regulation. Even if the deal is allowed, regulators would demand that AT&T ran Time Warner without discriminating against other pipe or content firms. This would make it harder for AT&T to extract benefits that other firms could not. A vertical deal between Comcast and NBCUniversal, in 2011, had similar conditions.

Curb your enthusiasm

Perhaps AT&T thinks that it can outwit regulators by agreeing to such terms and then dancing around them once the deal is completed. Plenty of powerful American firms manipulate their regulators. But there is another explanation: that AT&T cannot bear being a stagnant cash cow. Its compensation scheme is a licence to pursue bad deals. Executives are rewarded based on earnings-per-share growth, which can be flattered by largely debt-financed deals such as Time Warner. They are also measured against a return-on-capital hurdle, but at 7.25% this is almost negligently low. About 70% of firms in the S&P 500 index beat this yardstick. With a market value of \$208bn, AT&T may be too large for disenchanted fund managers or activist funds to take on.

America's antitrust regulators—assuming they are free of political interference—face a conundrum. The only way the deal appears to make financial sense is if AT&T abuses its position. For AT&T shareholders it is a dilemma, too. The company says it is prepared to fight the government in court. Shareholders should have a long, hard think about whether a protracted legal battle to complete a mega-deal with pedestrian returns is worth it. ■



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Japan

The slow-grilled economy

What five years of Abenomics has and has not achieved

IN TOKYO'S Iidabashi district, north of the Imperial Palace, young salarymen and women gather after work to enjoy grilled chicken and a drink at Torikizoku, a chain of budget restaurants. They tap out their orders on touch-screen terminals, which the company has installed on many tables in an effort to economise on waiters, whose wages are hard to contain. Last month the company was forced to raise its price by over 6%, to ¥298 (about \$2.60) plus tax, for two skewers of locally reared chicken yakitori. It was the firm's first price increase in 28 years.

Chicken skewers are not commonly seen as a macroeconomic indicator. But Torikizoku's decision exemplifies the underlying logic of "Abenomics", a campaign to revive Japan's economy, named after Shinzo Abe, its prime minister. His economic strategy aimed to stimulate spending and investment through vigorous monetary easing. That would create jobs, driving up wages. Higher wages, in turn, would push up prices. Success would be measured by the defeat of deflation, which had depressed prices for the best part of 20 years, and the fulfilment of a new inflation target of 2%.

Mr Abe's experiment began even before he won power. Five years ago, on November 16th 2012, his predecessor dissolved Japan's parliament, prompting an election Mr Abe was sure to win. The yen immediately began to fall and the stock-

market started to rise in anticipation of the expansionary policies his victory would bring. Those expectations were, if anything, exceeded in April 2013 when Haruhiko Kuroda, the Bank of Japan's new governor, greatly expanded the scale and scope of the central bank's asset purchases. Five years later, Japan's currency is now about 30% cheaper in dollar terms than it was in November 2012 and the Nikkei 225 stockmarket index is up by more than 150%.

That has provided some of the intended stimulus to the economy. Japan's GDP has now risen for seven quarters in a row, its longest spell of uninterrupted growth for 16 years. The expansion of nominal GDP, which makes no adjustment for inflation, is even more striking. It was almost

11% higher in the third quarter of 2017 than it was five years earlier (see chart), the fastest pace of growth for over two decades.

Exports contributed a big chunk of that increase. Thanks to the currency drop, every dollar spent on Japanese goods translated into a higher yen amount. But private investment has also gathered momentum, growing by more than 18% in nominal terms over the past five years and by almost 15% at constant prices. Torikizoku, for example, plans to add 80 new restaurants from August 2017 to September 2018.

Abenomics has also created more jobs than even its proponents could have hoped. Employment has increased by more than 2.7m in the past five years, even as Japan's working-age population has shrunk by over 4m. As a consequence, unemployment is below 3% and Japan has over 1.5 job openings for every applicant.

But despite this progress, Abenomics has fallen short of the most prominent target that it set for itself: 2% inflation. Consumer prices (excluding fresh food) rose by only 0.7% in the year to September. If energy prices are excluded from the calculation, inflation was even weaker.

Why has inflation lagged behind—and does it matter? One reason is that wages have not risen as fast as expected. The pay of workers in cyclical, insecure positions, such as yakitori waiters, has risen fairly quickly. But the same is not true of Japan's "core" workers, who account for the bulk of the country's wage income.

These permanent workers cannot be readily fired, but nor can they easily quit, without enormous loss of status. As a result, their bargaining power does not ebb and flow as the labour market softens or strengthens. Their wage settlements mostly just keep pace with the cost of living. Mr Abe's team had hoped that workers would be "forward-looking", demanding more



► generous wages in anticipation of the higher inflation promised by the central bank. But pay deals have instead reflected price pressures in the here and now. The government, it turns out, expected far too much of expectations.

Another cause of slow wage growth is more encouraging: Japan has found more labour than it knew it had. Large numbers of women and elderly men have been drawn into the labour market. And the number of foreign workers exceeded 1m for the first time last year. Torikizoku, for example, has filled many of its positions with immigrants from Vietnam.

Moreover, where the cost of labour has risen, some firms have found ways to make better use of it, raising productivity rather than prices. Firms have invested in labour-saving technologies, such as Torikizoku's touchscreen terminals. Small companies, which face particularly severe labour shortages, plan to increase their software spending by over 22% this fiscal year, which ends in March 2018, according to the Tankan, a business survey.

The failure to raise inflation is also, of course, good news for Japan's consumers, who must sometimes wonder why their government is trying to make everything

more expensive. Even Torikizoku's long-delayed price rise has been criticised by some of the chain's stingier customers. But among the skewer-eaters in Iidabashi on a recent Monday evening, the sentiment was more forgiving. One pair of students felt the previous ¥280 price was unsustainable. They had worried that the restaurant would have to close branches if it had kept its price so low.

Their anxiety may illustrate another obstacle in the fight against deflation: the lugubrious disposition of many Japanese. They worry if prices are rising. And they worry if they are not. ■

Buttonwood | Passive aggressive

Criticism of index-tracking funds is ill-directed

INDEX funds were devised in the 1970s as a way of giving investors cheap, diversified portfolios. But they have only become very popular in the past decade. Last year more money flowed into "passive" funds (those tracking a benchmark like the S&P 500) than into "active" funds that try to pick the best stocks.

In any other industry, this would be universally welcomed as a sign that innovation was coming up with cheaper products to the benefit of ordinary citizens. But the rise of index funds has provoked some fierce criticism.

Two stand out. One argues that passive investing is, in the phrase of analysts at Sanford C. Bernstein, "worse than Marxism". A key role of the financial markets is to allocate capital to the most efficient companies. But index funds do not do this: they simply buy all the stocks that qualify for inclusion in a benchmark. Nor can index funds sell their stocks if they dislike the actions of the management. The long-term result will be bad for capitalism, opponents argue.

A second argument is that index funds pose a threat to competition. The asset-management industry used to be remarkably diverse. It was hard for any active manager to keep gaining market share; eventually, their performance took a hit. But passive managers benefit from economies of scale. The more funds they manage, the lower their fees can become, and the more attractive the product.

Since passive managers like BlackRock and Vanguard own the shares of every company in an industry, the fear is that they might play a role reminiscent of the monopoly "trusts" of the late 19th century. Studies have argued that the concentrated ownership of shares is associated with higher fares in the airline industry and fees in the banking sector.



These criticisms cannot surely both be true. They require index funds simultaneously to be uncritical sheep-like investors and ruthless top-hatted capitalists devoted to gouging consumers. Furthermore, passive investors, in the form of mutual funds and exchange-traded funds, own only 12.4% of the American equity market. It seems remarkable that they can have such a big impact on the corporate sector with such a small stake.

It is worth examining the criticisms in detail. The Marxist criticism implicitly assumes that the investment community is divided into two—passive investors and active managers devoted to combating corporate excess and ferreting out exciting new bets. But a lot of "active" investors run portfolios that cling closely to a benchmark index for fear of getting fired if they underperform. So they, too, own shares in the biggest firms. A few "activist" investors do try to change corporate strategy but most fund managers don't have the time to campaign. They may be active but they are not activist.

When it comes to voting at annual general meetings, moreover, passive managers

can and do get involved. In one 12-month period, BlackRock says it voted in support of proposals from activists 39% of the time, compared with 33% of occasions where it backed existing management.

As for the studies that found evidence of anti-competitiveness caused by passive money, they have been challenged. A recent academic paper* found "no relationship between common ownership and prices in the airline industry"; another** from the Federal Reserve on the banking industry found some results that were consistent with an anti-competitive effect but "the sign of the effect is not robust, and implied magnitudes of the effects that are found are small."

Even if you concede the potential for a small group of fund managers to exert baleful influence on a few sectors through their cross-holdings, passive managers are surely the least likely participants in such a conspiracy. The point of their existence is that they hold the market weight in every industry; they have no reason to favour the success of one over any other. If a conspiracy were to occur, it would surely be driven by active managers buying very large stakes in a particular industry, and hoping to benefit accordingly.

There is an element of *reductio ad absurdum* about the anti-passive arguments. Yes, if the market was 100% owned by index funds, that would be a problem. And if there were no crime, policemen would be out of work. But we are nowhere near that point. Stop worrying and enjoy the low fees.

* "Common ownership does not have anti-competitive effects in the airline industry" by Patrick Dennis, Kristopher Gerardi and Carola Schenone

** "Testing for competitive effects of common ownership" by Jacob Gramlich and Serafin Grundl

Trade deals

Repair job

America damaged the Trans-Pacific Partnership. Others are fixing it

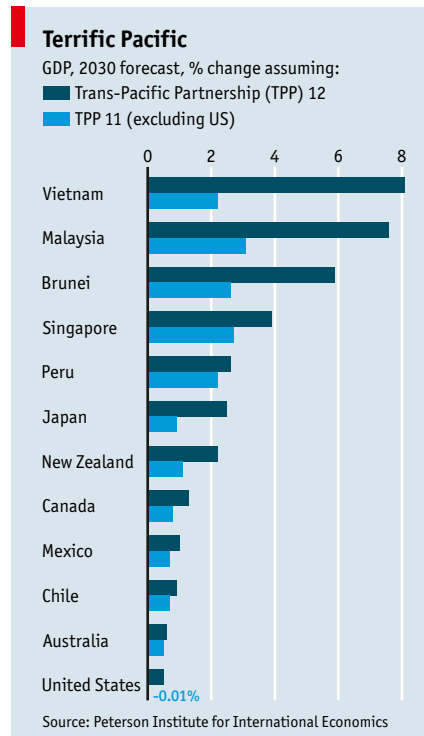
REVIVING the original Trans-Pacific Partnership (TPP), a trade deal between 12 countries around the Pacific Rim, is technically impossible. To go into force, members making up at least 85% of their combined GDP had to ratify it. Three days into his presidency, Donald Trump announced that America was out. With 60% of members' GDP gone, that deal was doomed.

But on November 11th, another began to rise in its place, crowned with a tongue-twisting new name: the Comprehensive and Progressive Agreement for the Trans-Pacific Partnership (CPTPP). Ministers from its 11 members issued a joint statement saying that they had agreed on its core elements, and that it demonstrated their "firm commitment to open markets". The political symbolism was powerful. As America retreats, others will lead instead.

The CPTPP is still far from finished, however. This inconvenient truth is unsurprising. Resuscitating the deal without its biggest member was always going to be hard. Without America, uncomfortable concessions made in the old TPP can seem less worthwhile. But any attempt at a full renegotiation risked the entire deal unravelling. If countries used the opportunity to grab new concessions in their pet areas, others could make counterclaims and talks could descend into a protectionist mess.

The few unresolved areas reflect these challenges. Malaysia wants more time to adjust to rules governing its state-owned enterprises. Brunei wants a more lenient approach to its coal industry. And Vietnam, which stood to gain most from extra access to the American clothing market, wants more time before it could face sanctions for violating the pact's labour laws.

Trade ministers from Mexico and Canada had a particularly tricky task, given their involvement in trade negotiations with the Americans about the North American Free Trade Agreement (NAFTA). Anything Mexico and Canada conceded in the TPP could then be unusable as a bargaining chip in separate talks with Mr Trump. The talks took a dramatic turn on November 10th when it seemed as though agreement had been reached, only for the Canadians to backtrack. (According to Wendy Cutler, an American negotiator of the TPP, such tactics are not unusual.) The Canucks want better access to the Japanese vehicle market and worry that a CPTPP agreement on cars will complicate the politics of NAFTA negotiations; they



also want more freedom to force companies to develop Canadian cultural content.

For their part, Japanese negotiators were keen to create an incentive for America to join the CPTPP in the future. Some of the original rules could benefit America even outside the pact, blunting its incentive to rejoin. But ditching too many of them might cause the benefits of the original to be lost.

Aside from the areas still under discussion, the ministerial statement listed 20 carve-outs from the original pact. Rules that gave special treatment to express shipments, a sop to American companies like DHL and Federal Express, will be suspended. So will protection for intellectual property, also fought for fiercely by American negotiators. (If America did want to rejoin, then in theory it could negotiate these clauses back into force.) Contentious rules allowing investors to take governments to court have been narrowed in scope. States can force investors to sign agreements waiving their right to sue under the CPTPP.

Despite these difficulties, so far the CPTPP looks impressively similar to its parent. It seems the new deal will preserve the market access agreed upon in the TPP. And although differences remain, they do not seem like show-stoppers. America's absence reduces the economic gains from the agreement but does not eliminate them (see chart). Giving up on the pact would squander years of talks as well as the opportunity to upgrade existing trade deals and spur economic reforms. The plan is to finalise a CPTPP deal in the first quarter of 2018. Even if America has rejected its own rules, others still see value in them. ■

Oil

Guns v money

Fuelled by Middle East tension, the oil market has got ahead of itself

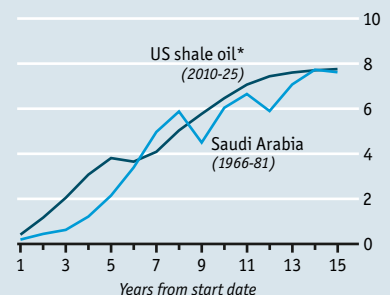
ONLY one thing spooks the oil market as much as hot-headed despots in the Middle East, and that is hot-headed hedge-fund managers. For the second time this year, record speculative bets on rising oil prices in American and European futures have made the market vulnerable to a sell-off. "You don't want to be the last man standing," says Ole Hansen of Saxo Bank.

On November 15th, the widely traded Brent crude futures benchmark, which had hit a two-year high of \$64 a barrel on November 7th, fell below \$62. America's West Texas Intermediate also fell. The declines coincided with a sharp drop across global metals markets, owing to concern about slowing demand in China, which has clobbered prices of nickel and other metals that had hit multi-year highs. (In a sign of investor nervousness after a sharp rally this year in global stock and bond markets, high-yield corporate bonds also weakened significantly this week.)

The reversal in the oil markets put a swift end to talk of crude shooting above \$70 a barrel, which had gained strength after the detention in Saudi Arabia of dozens of princes and other members of the elite, and increasing tension between the Gulf states and Iran over Yemen and Lebanon. The International Energy Agency (IEA), which forecasts supply and demand, said on November 14th that it doubted \$60 a barrel had become a new floor for oil. It did note, however, that geopolitical risk had become a salient factor in the market. Since Iraq seized back Kirkuk from Kurdish forces in October, shipments of Iraqi oil have fallen sharply. Mr Hansen says such tensions have added a \$10 risk premium to a barrel of crude recently, but these can ▶▶

You can be sure of shale

Oil production, barrels per day, m



Source: International Energy Agency

*US figures are projected from 2016 onwards

Global wealth

Millennials' missing millions

Global wealth has risen. Surprise: it's not evenly distributed

BUOYANT financial markets meant that global wealth rose by 6.4% in the 12 months to June, the fastest pace since 2012. And the ranks of the rich expanded again, with 2.3m new millionaires added to the total, according to the Credit Suisse Research Institute's global wealth report.

The report underlines the sharp divide between the wealthy and the rest. If the world's wealth were divided equally, each household would have \$56,540. Instead, the top 1% own more than half of all global wealth. The median wealth per household is just \$3,582; if you own more than that, you are in the richest 50% of the world's population.

America continues to dominate the ranks of millionaires with 43% of the global total. Both Japan and Britain had fewer dollar millionaires than they did in June 2016, thanks to declines in the yen and sterling. Emerging economies have been catching up in the millionaire stakes; they now have 8.4% of the global total, up from 2.7% in 2000.

In the 12 months covered by the report, the biggest proportionate gains in wealth occurred in Poland, Israel and South Africa, thanks to a combination of stockmarket and currency gains. Egypt is by far the biggest loser, having lost almost half its wealth in dollar terms. Switzerland is still the country with the highest mean and median wealth per person.

There is a wide generational gap: millennials (those who reached adulthood in the current millennium) have a

lot of catching up to do in the wealth stakes. Americans currently aged between 30 and 39 years of age are calculated to have amassed 46% less wealth on average in 2017 than the equivalent cohort had gathered in 2007.

Higher student debts and the difficulty of getting on the housing ladder have made it harder for millennials to build a nest-egg. That disparity might come back to bite the baby-boomer generation, who are fast moving into retirement. When baby-boomers want to cash in their assets, they may find millennials can't afford to buy them at current prices.



Early contender for the 2047 list

▶ evaporate as quickly as they build.

Geopolitics aside, the two factors behind the volatility are familiar. Ever since prices crashed below \$30 a barrel in early 2016, they have been most influenced by the strength of shale production in America; and the level of global inventories targeted by OPEC, the producers' cartel, and non-OPEC sovereign producers like Russia.

Those bullish on oil prices say shale production is moderating as cash-strapped American producers tighten their belts. Wall Street has become less willing to supply equity to finance their expansion, un-

less they can produce oil profitably.

But the bears note that last week there was a rise in the rig count calculated by Baker Hughes, an oil-service provider, indicating that higher prices and more hedging activity is encouraging producers to ramp up again. And the IEA forecast this week that shale-oil production by 2025 will exceed that of even the biggest oilfield in Saudi Arabia (see chart on previous page). If true, that is a glaring long-term sell signal.

As for inventories, bears say the data suggest stocks of crude and petroleum products in America are still excessive. That puts pressure on OPEC and non-OPEC producers, which meet in Vienna on November 30th, to extend supply cuts that were due to expire in March 2018. As usual before the meeting, those participating—especially Russia—are arguing over the pros and cons. It may take bigger cuts than anticipated, or a genuine geopolitical crisis, to make the hedge funds bullish again. ■

ABP

Size matters

Europe's largest pension fund shows the pros and cons of being big

EUROPE'S largest pension fund, a scheme for Dutch public-sector workers called ABP, is much feted abroad for its efforts in "sustainable" investing. At home, however, where it provides pensions to one in six families and manages nearly one-third of pension wealth, it is suffering a crisis of confidence.

By international standards, Dutch pensions are extremely generous overall, offering 96% of career-average salaries (adjusted for inflation), compared with an OECD mean of 63%. And they are solid. Thanks to mandatory, tax-deductible saving, the Dutch have stored up a collective pension pot of nearly €1.4trn (\$1.6trn), roughly double GDP. Mercer, a consultancy, marks the country as second only to Denmark in a global ranking of schemes.

Yet Dutch people's faith in their pensions has sunk as low as their trust in banks and insurers. In March a political party for older voters, 50+, won four seats in the Dutch parliament, largely thanks to its promise to "stop the pension raid". ABP's own members mark it at just 5.9 out of 10.

The discontent stems from unmet expectations. Marc Heemskerk, from Mercer, says that, in members' eyes, funds like ABP overpromised and now "face a gigantic trust crisis". ABP has not raised pensions in line with inflation in any year since 2008, so recipients have lost out by a cumulative 12%; more real-terms declines may be in the offing. It has raised premiums, most recently in January, from 18.8% to 21.1% of pensionable wages. Members find this hard to swallow when ABP's assets have grown from under €300bn to over €400bn in the past five years.

Blame the "coverage ratios"—the relationship between assets and future liabilities—demanded by the Dutch regulator. By this metric ABP has been naughty for years. Michael Deinema from TPRA, a pensions rating agency, says the fund was slow to respond to changing conditions after the financial crisis of 2008. So its ratio dipped to 83% in 2009. Over the past year it has been 100%—exemplary by international standards, but not by those of the Netherlands, where the average is 105% and the regulator requires 128% to allow pensions to be fully indexed to inflation. ABP points to other factors, notably longer lifespans. Although the retired have lost 12% from inflation-indexing, they are also living far longer, says one manager.

The fund is trying to rebuild trust. Mr ▶▶

Internship: Applications are invited for a Marjorie Deane internship in our New York bureau. The award is designed to provide work experience for a promising journalist or would-be journalist, who will spend three to six months at *The Economist* writing about economics, business and finance. Applicants are asked to write a covering letter and an article of no more than 500 words, suitable for publication in *The Economist*. Applications should be sent by December 14th to deaneinternny@economist.com.

► Heemskerck thinks offering more choice would help. Denmark has a similar system but members get more say: over how to invest premiums; how much they contribute; and the type of payout they get. ABP is experimenting with a “personal piggy bank” so members can see their savings stack up online—though, since it is a collective scheme, the piggies are not actually personal. In future they may be. The new Dutch government is expected to embark on occupational-pension reform. Saving will remain mandatory, but the system will gradually shift from a “defined-benefit” model to a “defined-contribution” one.

ABP is not the only Dutch pension fund under fire. That it receives the most attention is a drawback of its sheer heft. But size has its benefits. APG, the investment arm, has kept running costs down to just €80 per person, well below the Dutch average. ABP is also big enough to diversify into alternative investments and to get respect from companies as a large shareholder.

Corien Wortmann-Kool, the chairwoman, stresses that the fund is “active rather than activist”. But it has become a critical voice on numerous corporate issues. In 2015 it committed to shift its approach to responsible and sustainable investing, from a nice-to-have option to a core criterion. It is now reassessing every investment and expects that the number of companies in its portfolio will fall by as much as 30% by 2020. By then it has also vowed to cut the carbon footprint of its equity portfolio by 25%; and to invest an extra €4bn in sustainable energy.

If so, ABP’s global fan club will swell—last month an international ranking placed it in the leading 25 “responsible and sustainable” investors. Its members, however, will worry less about the rankings and more about the payouts. ■

Accounting and banks

Stage fright

Timelier loan-loss provisions may make earnings and lending choppier

IN THE first quarter of 2018 thousands of banks will look a little less profitable. A new international accounting standard, IFRS 9, will oblige lenders in more than 120 countries, including the European Union’s members, to increase provisions for credit losses. In America, which has its own standard-setter, IFRS 9 will not be applied—but by 2019 banks there will also have to follow a slightly different regime.

The new rule has its roots in the financial crisis of 2007-08, in the wake of which the leaders of the G20 countries declared that accounting standards needed an overhaul. Among their other shortcomings, banks had done too little, too late, to recognise losses on wobbly assets. Under existing standards they make provisions only when losses are incurred, even if they see trouble coming. IFRS 9, which comes into force on January 1st, obliges them to provide for expected losses instead.

Under IFRS 9 bank loans are classified in one of three “stages”. When a loan is made—stage one—banks must make a provision equivalent to the expected loss on it over the next 12 months, however small. There it stays unless things change: if credit risk increases but the loan is still good (suppose, when a bank has lent money to a house-builder, that the property market takes a tumble), it shifts to stage two. The bank must increase the provision, to the expected loss over the life of the loan; its pro-

fits take a one-off hit. If the loan goes bad, it passes to stage three. The provision is the same as in stage two, but from then on the bank books less interest revenue, in proportion to the expected loss on the loan. (In the American rule, banks must recognise lifetime expected losses from the off.)

In theory, the change makes sense. The old rule flattered performing loans. On the one hand, interest rates reflected a borrower’s credit risk; on the other, provisions did not. So loans to riskier borrowers meant higher revenues but no corresponding provisions; and no provision was made when creditworthiness declined, as long as borrowers kept servicing their loans. Banks’ profits and capital positions were thus, in effect, overstated until loans went awry. Timelier provisions might not have prevented the crisis, but troubles might have been admitted to sooner.

In practice, banks will increase their loan-loss provisions—in the EU, by 13% on average, according to a report published in July by the European Banking Authority (EBA), a supervisor. The EBA estimates that their average ratio of common equity to risk-weighted assets, a key measure of capital strength, will drop by 0.45 percentage points (ratios are typically in low double figures). Banks with bigger stocks of duff loans than average will take bigger hits.

For regulatory purposes, the impact will be softer. In calculating common-equity ratios and other gauges, the standard will be phased in over five years, in much the same way as post-crisis capital standards known as Basel 3. However, reckons Manus Costello of Autonomous Research, markets are likely to look at the full impact from the off, as they have with Basel 3.

Not everyone is convinced that IFRS 9 is an improvement. Quarterly calculations of the 12-month expected losses on a wide variety of sound assets worth trillions of euros will involve a lot of informed guesswork. That will give big banks a fair amount of discretion in modelling. Natasha Landell-Mills of Sarasin & Partners, an asset manager, worries that rather than making provisions that are too little, too late, banks will instead do “too much, too late”. For long-term investors, she says, “ups and downs are not helpful.”

The EBA reported that 72% of banks indeed expect the new standard to make profits more volatile. When recessions bite and a lot of loans are moved from stage one to stage two, provisions may rise sharply, in a “cliff effect”. That could in turn cause banks to curb lending and worsen the economic downturn. That said, the cliff may not be vertiginous. Mr Costello notes that according to the EBA, under IFRS 9 stage-three loans will account for 78% of provisions and stage 2 for just 14%. So most provisions will be more or less as they are now. Will banks provide any more prudently? For the answer, wait for the next crisis. ■

Competition

What explains the remarkable strength of corporate profits and the sluggish growth of real wages in recent years? One explanation is that industries are getting less competitive. Work by *The Economist* found that two-thirds of American industries were more concentrated in the hands of a few firms in 2012 than in 1997. Research by AXA Investment Managers Rosenberg Equities into the language used in American annual reports points in the same direction. Sherlock Holmes famously talked of the significance of the dog that did not bark in the night. It may be similarly important that companies refer to rivals much less than they did; usage of the word “competition” in annual reports has declined by three-quarters since the turn of the century. Business is less cut-throat than it used to be.

Frequency of words in annual reports of US companies, per 10,000 words



Free exchange | The grow-nothings

There are better motivations for tax reform than boosting growth

IF MAKING America great again is the aim, you could do worse than bring back the economic growth rates of the late 1990s. President Donald Trump's team reckons that the Republican tax plan making its way through Congress will do just that. "We are creating a model that creates economic growth in this country," says Gary Cohn, the director of Mr Trump's National Economic Council. Kevin Hassett, who runs the Council of Economic Advisers, reckons the bill should push growth above 4% per year.

Such heights are not beyond the realm of possibility, but if America reaches them tax reform will have little to do with it. That is not because of the specifics of the plan. Rather, it reflects an underappreciated reality: tax reform can accomplish many things, but raising long-run growth is not generally among them.

Most assessments of the Republican tax proposals, like most analyses of most tax plans, conclude their effects on growth will be small. The Penn Wharton Budget Model, a non-partisan public-policy initiative, projects that GDP in 2027 will be between 0.4% and 0.9% higher as a result of the bill.

Nonsense, say the adherents of the supply-side school of thinking. Economic growth can be broken down into changes in the supply of labour and in labour productivity. Supply-siders reckon that lower tax rates on labour income should raise its supply; lower taxes on capital income should, by increasing saving and investment, nurture innovations which will eventually boost productivity.

The actual economics, alas, are less straightforward (see table). Tax cuts that boost income from employment raise the cost of time off; this "substitution effect" implies that people should work more when tax rates drop. But there is an offsetting "income effect": as earnings rise, demand for most amenities, including leisure, also goes up.

Although theory suggests cuts to marginal tax rates should favour the substitution effect, the evidence is more ambiguous. In summarising the literature on the subject, the Congressional Research Service, the legislature's public-policy group, notes that in practice neither labour-force participation nor hours worked move much in response to tax changes. Among high-income men, the effects on labour supply are non-existent.

Reported labour income does rise in response to income-tax cuts, thanks mostly to reductions in tax avoidance. That certainly matters; effort spent eluding Uncle Sam represents an economic loss. It is just not large enough to have a detectable effect on long-run growth.

The evidence is similarly ambiguous about the effects of tax cuts on income from capital. In practice, savings rates respond lit-

tle, if at all, to tax changes. American savings rates have fallen over the past 40 years despite a decline in the effective rate of tax on capital income. Domestic savings are not the only source of investable funds; Republicans claim their plan will attract a growth-boosting wave of money from abroad. But such flows tend to occur slowly and incompletely: a blessing, perhaps, for the Trump administration, given the massive trade deficits that would result from a rapid, large-scale influx of capital.

Tax reform might affect firms' investment decisions. But firms' ability to deduct the cost of new investments from their tax bill mutes the incentivising effects of changes in the corporate-tax rate. And as Larry Summers of Harvard University has pointed out, cuts to corporate tax do not simply reward hungry innovators, but also increase the return on profits earned by behemoths with market power.

Given evidence that rising industrial concentration in America is undermining competition, there is good reason to worry that rate cuts will pad the wallets of oligopolists and their shareholders. (Awkwardly, CEOs convened by the *Wall Street Journal* this week to attend a discussion with Mr Cohn mostly declined to raise their hands when asked whether they would make new capital investments if the Republican tax plan were passed.)

All told, a cut in the corporate-tax rate of ten percentage points would raise long-run output by only 0.15%, according to an analysis by the Congressional Research Service. National income would rise still less, since much of the gain in GDP would flow to foreign investors.

As with income taxes, cuts in corporate-tax rates make avoidance less worthwhile; just imagine freeing up the time and talent spent cooking up clever tax-limiting strategies like the "Dutch sandwich" or the "double Irish". Yet such costs scarcely register in long-run growth figures.

A some-zero game

In other respects, however, changes to tax make a world of difference. They can affect growth a lot in the short run, especially after a recession, when there is spare capacity around waiting to be activated by increased demand. That counts for less at the moment. America has less slack than it did earlier in the recovery, and the Federal Reserve, fearing inflation, might offset the stimulative effect of tax cuts with higher interest rates.

The budget implications are much bigger. The implacable resistance to government borrowing displayed by Republicans in the immediate aftermath of the Great Recession, when bigger deficits might have done a lot of good, has crumbled. GOP leaders acknowledge that their bill will increase government debt by \$1.5trn, or about 8% of current GDP, over the next ten years.

Most striking of all are the distributional consequences. According to an analysis by the Tax Policy Centre, the bill introduced in the House of Representatives will reduce the tax burden of the top 0.1% of earners by an average of \$278,000 by 2027, compared with an average cut of \$10 for the bottom 20% of earners.

The Republican tax plan would eliminate inefficiencies in the tax code. That should help the American economy run a little more smoothly. Yet with this reform, as any, distributional and budgetary consequences are not secondary effects to be subordinated to a broader growth dividend. They are the main event. It is long past time tax debates reflected that. ■

Not much to write home about

US tax and GDP

	Average top marginal tax rate on labour income, %	Real average annual GDP growth, %
1950-70	84.8	3.86
1971-86	51.8	2.94
1987-2010	36.4	2.85
1987-92	33.3	2.31
1993-2002	39.5	3.68
2003-07	35.0	2.79

Source: "Tax rates and economic growth", Jane Gravelle and Donald Marples, Congressional Research Service, 2014



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Surgery

Renaissance

A new generation of surgical robots is about to enter the operating theatre

ROBOTS have been giving surgeons a helping hand for years. In 2016 there were about 4,000 of them scattered around the world's hospitals, and they took part in 750,000 operations. Most of those procedures were on prostate glands and uteruses. But robots also helped surgeons operate on kidneys, colons, hearts and other organs. Almost all of these machines were, however, the products of a single company. Intuitive Surgical, of Sunnyvale, California, has dominated the surgical-robot market since its device, da Vinci, was cleared for use by the American Food and Drug Administration in 2000.

That, though, is likely to change soon, for two reasons. One is that the continual miniaturisation of electronics means that smarter circuits can be fitted into smaller and more versatile robotic arms than those possessed by Intuitive's invention. This expands the range of procedures surgical robots can be involved in, and thus the size of the market. The other is that surgical robotics is, as it were, about to go generic. Many of Intuitive's patents have recently expired. Others are about to do so. As a result, both hopeful startups and established health-care companies are planning to enter their own machines into the field.

Though the word "robot" suggests a machine that can do its work automatically, both da Vinci and its putative competi-

tors are controlled by human surgeons. They are ways of helping a surgeon wield his instruments more precisely than if he were holding them directly. Da Vinci itself has four arms, three of which carry tiny surgical instruments and one of which sports a camera. The surgeon controls these with a console fitted with joysticks and pedals, with the system filtering out any tremors and accidental movements made by its operator. That, combined with the fact that the system uses keyhole surgery (whereby instruments enter the patient's body through small holes instead of large cuts, making procedures less invasive), reduces risks and speeds up recovery. But at more than \$2m for the equipment, plus up to \$170,000 a year for maintenance, da Vinci is expensive. If a new generation of surgical robots can make things cheaper, then the benefits of robot-assisted surgery will spread.

Arms and the man

This summer Cambridge Medical Robotics (CMR), a British company, unveiled Versius, a robot that it hopes to start selling next year (a picture of the machine can be seen above). Unlike da Vinci, in which the arms are all attached to a single cart, Versius sports a set of independent arms, each with its own base. These arms are small and light enough to be moved around an

operating table as a surgeon pleases, or from one operating theatre to another as the demands of a hospital dictate. This way, the hospital need not dedicate a specific theatre to robotic surgery, and the number of arms can be tailored to the procedure at hand.

Unlike a da Vinci arm, which is like that of an industrial robot, a Versius arm is built like a human one. It has three joints, corresponding to the shoulder, the elbow and the wrist. This means, according to Martin Frost, CMR's chief executive, that surgeons will be able to use angles and movements they are already familiar with, instead of having to learn a robot-friendly version of a procedure from scratch. The company has yet to decide how much the arms will cost, but Mr Frost expects that operations which employ Versius will work out to be only a few hundred dollars more expensive than those conducted by humans alone. With da Vinci, the difference can amount to thousands.

Versius will compete with da Vinci on its own turf—abdominal and thoracic surgery. Others, though, want to expand robotics into new areas. Medical Micro-instruments (MMI), based near Pisa, in Italy, has recently shown off a robot intended for reconstructive microsurgery, a delicate process in which a surgeon repairs damaged blood vessels and nerves while looking through a microscope. This robot allows the surgeon to control a pair of miniature robotic wrists, 3mm across, that have surgical instruments at their tips.

MMI's device does away with the control console. Instead, the surgeon sits next to the patient and manipulates the instruments with a pair of joysticks that capture his movements and scale them down appropriately. That means he can move as if ►►

▶ the vessels really were as big as they appear through the microscope.

Such a robot could even be used for operating on babies. “In their case,” observes Giuseppe Prisco, MMI’s boss, “even ordinary procedures are microsurgery.” The company is now doing preclinical tests. Dr Prisco reckons the market for robotic microsurgery to be worth \$2.5bn a year.

A third new firm hoping to build a surgical robot is Auris Robotics. This is the brainchild of Frederic Moll, one of the founders of Intuitive Surgical (though he left more than ten years ago). Auris remains silent about when its robots will reach the market, but the firm’s patent applications give some clues as to what they might look like when they do. Auris appears to be developing a system of flexible arms with cameras and surgical instruments attached, which could enter a patient’s body through his mouth.

That tallies with an announcement the firm made earlier this year, saying that the robot will first be used to remove lung tumours. Lung cancer is the world’s deadliest sort, killing 1.7m people a year. What makes it so deadly, Auris notes, is that it is rarely stopped early. Opening someone’s thorax and removing parts of his lung is risky and traumatic. It is not always worthwhile if the tumour is still small, because small tumours do not necessarily grow big. If they do, though, they are usually lethal if left *in situ*—but much harder to remove than when they were small. Auris’s design could ease this dilemma by passing surgical instruments from the mouth into the trachea and thence to the precise point inside the affected lung where they are needed, in order to cut away only as much tissue as required.

Auris, CMR and MMI are all startups. But two giants of the medical industry are also joining the quest to build a better surgical robot. One is Medtronic, the world’s largest maker of medical equipment. The other is Johnson & Johnson, which has teamed up with Google’s life-science division, Verily, to form a joint venture called Verb Surgical.

Like Auris, Medtronic is keeping quiet about the design of its robot. But it has said that it plans to begin using it on patients in 2018. Also like Auris, though, some information can be deduced from other sources. In particular, Medtronic has licensed MIRO, a robot developed by Germany’s space agency for the remote control of mechanical arms in space. MIRO is made of lightweight, independent arms. These, presumably, could be fixed directly onto the operating table.

A robot based on MIRO would let surgeons rely on touch as well as sight, since MIRO’s instruments are equipped with force sensors that relay feedback to the joysticks used to operate them, and thus to the operator’s hands. The lack of such haptic

feedback (the ability to feel the softness of tissues, and the resistance they offer to the surgeon’s movements) has long been a criticism of da Vinci. Surgeons often rely on touch, for example, to discern healthy from tumorous tissue.

Verb Surgical was formed in 2015 and demonstrated its latest prototype to investors earlier this year. Scott Huennekens, the firm’s boss, says the machine will be particularly suitable for gynaecological, urological, abdominal and thoracic surgery.

Robot, teach thyself

Verb wants not just to build surgical machines, but to get its robots to learn from one another. The firm plans to connect all the machines it sells to the internet. Each bot will record data about, and videos of, every procedure it performs. These will be fed to machine-learning algorithms for analysis, to tease out what works best.

Mr Huennekens compares this to the way Google’s driverless-car division col-

lects data on its vehicles’ journeys in order to improve their performance. A couple of years after its launch, and after processing enough images, the system could start helping surgeons to tell sick tissue from healthy, to decide where nerves and blood vessels are, and to plan procedures accordingly. Later, when the algorithms have swallowed many more years’ worth of data, the robots may be able to help surgeons make complex decisions such as how to deal with unexpected situations, what the best way is to position the robotic arms, and where and how to cut.

As for Intuitive, it, too, has noticed the size of the lung-cancer market. In collaboration with Fosun Pharma, a Chinese firm, it has announced a new system for taking biopsies of early-stage lung cancers in order to determine how threatening they are. It has also announced the launch of the da Vinci X, a lower-cost version of its workhorse. Robots may already be in many theatres, but a bigger part awaits. ■

Personalised medicine

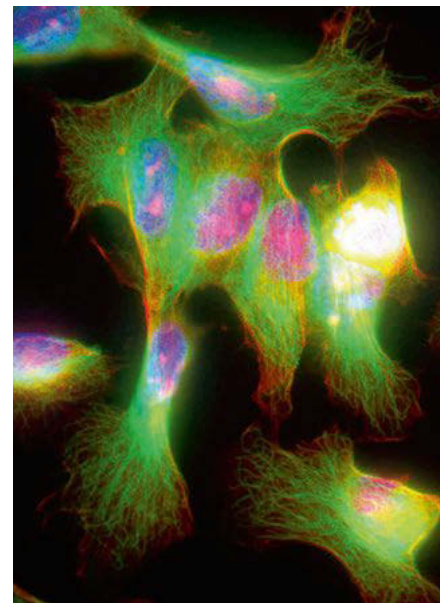
Test-tube tumours

Growing cancers in a dish provide scientists with accurate models to work from

ALMOST half a century after Richard Nixon declared war on cancer, there has been plenty of progress. But there is still no cure. One reason is that “cancer” is an umbrella term that covers many different diseases. Although the fundamental mechanism is always the same—the uncontrolled proliferation of cells—the details vary enormously. Leukaemia is not the same as colon cancer. Even within a particular type of cancer, one patient’s disease will differ from another’s. Different mutations, for instance, will affect different genes within a tumour. The result is that cancer can be frustratingly difficult to treat.

Medicine, though, is getting better at accounting for these differences. In a paper just published in *Nature Medicine*, a team led by Meritxell Huch, a biologist at the Gurdon Institute, a cancer-research centre at the University of Cambridge, describes a technique that could, one day, help doctors design bespoke treatments for their patients, tailored to the precise characteristics of the cancers they are suffering from.

Dr Huch and her colleagues work with “organoids”, tiny replicas of full-sized organs that can be grown in the lab. The ability to build organ-like structures outside a living body, from retinas to kidneys and even brain tissue, holds a great deal of promise for medical research. But Dr Huch’s twist was to grow not organs, but the tu-



Giving up their secrets

mours that afflict them.

She and her team took cancerous cells from eight patients suffering from liver cancer. That is the fifth most frequent cancer in men around the world and the eighth most frequent in women. But its high mortality rate makes it the second most common cause of cancer deaths ▶▶

▶ worldwide, behind only lung cancer. By immersing the cells in a specially developed culture medium designed to promote the survival of cancerous cells but not healthy ones, the researchers were able to persuade their samples to grow into tiny “tumouroids” about 0.5mm across.

Cancerous cells can already be cultured in test tubes, where they are available for poking and prodding by researchers. But, says Dr Huch, when researchers extract such tissue they often bring healthy cells along with it. That can complicate genetic analysis of the tumours, by mixing healthy DNA with the mutated sort. Because tumouroids contain only cancerous cells, analysing them should be easier.

A more significant benefit is that tumouroids replicate the structure of the tumours from which they are derived in a way that ordinary cell cultures do not. Cells in a living organism are often not symmetrical. The cells that make the intestines, for instance, need to know which side faces into the intestine and which side faces the rest of the body. That, in turn, means different genes are expressed in different parts of a cell. In a conventional cell culture, much of this structure is lost. But Dr Huch’s tumouroids preserve it, making them a much more faithful reproduction of the cancer from which they are derived.

Having copies of a tumour in a dish makes it easier to conduct experiments on them. By comparing the genomes of their tumouroids to those of healthy tissue, the team discovered unusually high levels of activity among some genes in the tumour cells. Nineteen of the 30 most over-active genes were already associated with a poor prognosis, but 11 were new genes for which such a link had not been suspected. They also used the tumouroids to test 29 sorts of anti-cancer drugs, some of which are still in development. For one, an inhibitor of a type of protein vital for tumour growth, the researchers have managed to publish the first evidence suggesting that it might indeed be effective.

The ability to grow accurate replicas of real tumours should help the hunt for better cancer drugs more generally. Compared with treatments for other diseases, many cancer drugs fail to make it past even the early stages of clinical trials, partly because of the difficulty of producing accurate models of the disease on which to do preliminary testing. Dr Huch hopes her tumouroids might have direct clinical applications, too. The goal, she says, would be to take a patient with liver cancer, grow copies of his tumour in a lab, and then test several different drug candidates at once to find the most effective. Because tumouroids faithfully replicate the cancers from which they are derived, a drug that works in the test tube should work in the patient as well. As any general will tell you, knowing your enemy is half the battle. ■

Contacting extraterrestrials

Nanoo nanoo

Earth invites the inhabitants of a distant planet to chat

IN 2029 the inhabitants, if any, of the planet GJ 273b will receive a message that will change their lives forever. Encoded in radio signals emanating from an innocuous-looking blue-green planet 12.4 light-years away, will be tutorials in mathematics and physics, followed by a burst of music. The import of the message, however, will be clear: “Let’s talk.”

Or so Douglas Vakoch hopes. For on November 16th Messaging Extraterrestrial Intelligence (METI), the group that he heads, and the organisers of Sónar, a music festival in Barcelona, announced they had sent a series of missives towards Luyten’s star, the red dwarf around which GJ 273b orbits.

“Sónar Calling GJ 273b”, as the initiative is called, sent its message in mid-October from a radar antenna at Ramfjordmoen, in Norway. The antenna, run by EISCAT, a scientific organisation based at the Swedish Institute of Space Physics in Kiruna, is usually used to study Earth’s atmosphere. But EISCAT has form when it comes to messaging extraterrestrials. On June 12th 2008 the organisation beamed a 30-second advertisement for Doritos tortilla chips towards the constellation Ursa Major.

Dr Vakoch’s data were encoded in binary and sent on two frequencies, with a pulse in one frequency standing for “1” and the other for “0”. They include a count from one to five, mathematical operations like addition and multiplication, simple trigonometry and a description of electromagnetic waves. There is also a clock that counts the seconds that have passed since the transmissions

began. That is the science.

The art comes courtesy of music from luminaries such as Jean-Michel Jarre. What GJ 273b’s inhabitants will make of the ten-second pieces, composed specially for the transmission, is unclear. But without them no message would have been sent, for Sónar is the one bankrolling the project in order to mark its 25th anniversary next year.

Nor is that the only anniversary. This week’s announcement coincides with the 43rd anniversary of the Arecibo message, a brief pictorial guide to humanity and the solar system, sent in 1974 from a giant radio telescope in Puerto Rico towards Messier 13, a cluster of stars some 25,000 light years away.

METI’s message is simpler than the Arecibo broadcast, and should, its senders hope, prove easier for its putative audience to decipher. The team hope to send more transmissions to the planet in April 2018, including a time when Earth will be listening for their reply: the northern hemisphere’s summer solstice in 2043. The team plans to send a similar message to thousands of other stars, in the hope of boosting the chances that at least one will find an audience.

Critics of such schemes argue that alerting the cosmos to humanity’s existence is a risky business. Dr Vakoch is not worried. He points out that it is in any case too late to keep quiet. An alien civilisation just a few hundred years more advanced than Earth’s would have the technology to detect the radio and television signals that human beings have inadvertently sent into space for decades.



Rendez-vous



The digital world

Reality check

An illuminating memoir about virtual reality reflects on the hubris of Silicon Valley

WHAT is virtual reality (VR)? Over 21 chapters and three appendices, Jaron Lanier, a tech pioneer, puts forward 52 definitions. Some are geeky: “a media technology for which measurement is more important than display”. Others are poetic: “the technology of noticing experience itself”. And a few are terrifying: “a training simulator for information-age warfare”. VR is all of these things and more besides. Yet at a time when the malign influence of social media is grabbing headlines, it is the last of these that seems most urgent.

Mr Lanier is a Silicon Valley grandee. In 1984 he started the first VR firm, VPL Research, which sold early headsets and accessories, and is widely credited with popularising the term “virtual reality”. He has seen the tech industry go from being a bunch of start-ups run by counterculture idealists to global companies. He now works at Microsoft.

Mr Lanier is also a critic of his industry. His first book, “You Are Not a Gadget” (2010), argued that the web was creating “digital serfs”—users who gave up their data and privacy for no monetary reward or say in the system. “Who Owns the Future” (2013) railed against the monopolistic power of big tech firms. His new book is a memoir about virtual reality and a history of how the utopian thinking of Silicon Valley has brought dysfunction and division.

Dawn of the New Everything. By Jaron Lanier. *Henry Holt*; 351 pages; \$30. *Bodley Head*; £20

It will be essential reading, not just for VR-watchers but for anyone interested in how society came to be how it is, and what it might yet become.

Many books about the early days of Silicon Valley play up the hippie-meets-techie culture that shaped it. Few define that better than the dreadlocked Mr Lanier, who was raised in El Paso and educated across the border in Ciudad Juárez. After his mother died, Mr Lanier and his father moved to New Mexico and lived in tents for over two years before moving into a DRY geodesic dome. Mr Lanier skipped the end of high school and went straight to university, but did not graduate. After drifting in semi-poverty and trying various careers, he found himself in Silicon Valley.

This was not an uncommon trajectory in the Bay Area in the 1980s. Mr Lanier describes one associate as a “hippie physicist musician”, another as a Wyoming rancher and rock lyricist. In those days techie culture was a subset of hippie culture. The first advice Mr Lanier was given when he moved there was: “Don’t trust the suits.”

Silicon Valley believed everything would improve once coders were in

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charge. “We better find a way to constrain people more or the world will never get more efficient,” he remembers being told. “We’re creating a kind of power that is much more important than money.” Software, like air or sex, was meant to be “free”.

Today the world’s three most valuable companies are tech firms. The web is less wild and more structured. But the shortcomings of techie ideology have been exposed. The obsession with “free” nearly destroyed the music industry and continues to wreak havoc on the media. Tech firms still believe that they do not need to follow the rules—witness Uber’s bruising battles with municipal authorities around the world. And the biggest, most influential firms resist any regulation that would make them responsible for the content on their platforms. Web platforms care more about the amount of time their users spend on their sites than the quality of the experience or what they consume.

Mr Lanier remains optimistic that things can be fixed, perhaps by instituting a system of small payments to users for their data or by ensuring that artists and writers are recognised and paid for their work. Human beings, not algorithms, should be at the centre of the internet economy, he says. These ideas will be familiar to anyone who has read his previous books. The business models of big tech firms are, however, too successful and too lucrative to change, so Mr Lanier’s views are unlikely to prevail.

What does this mean for VR? Virtual reality will never be as widespread as the smartphone, but it will be influential. Its promise is to make experiences in computer-generated environments feel as visceral as those in the real world. It has philanthropic potential and may improve medi- ▶▶

cine and aid education. But it can also be dangerous if virtual worlds are designed to manipulate users. Mr Lanier worries that VR may go down the same route as social networks, becoming, as in another of his definitions, “the ultimate way to capture someone inside an advertisement”.

But that is not a given. Although VR has flourished of late, and headsets are now available for a few hundred dollars, the industry is still in its infancy. VR is unlikely to be widely adopted for some time. Meanwhile, Western democracies are debating the merits and dangers of tech, and the need for big companies to police their platforms better. When VR goes mainstream, that debate will have intensified—and perhaps ended well.

By the time VR matures, it will be used by people who have grown up with smartphones and social media. They, Mr Lanier argues, will be more sophisticated than today’s internet users, for whom it was a new technology. The next generation will see through the manipulation. It is not much of a hope to cling to, but it is something.

Perhaps the most fitting of Mr Lanier’s 52 definitions of VR is that it is “a preview of what reality might be like when technology gets better”. Technology is improving. Whether reality does too depends on the technologists in charge and the power of society to shape their vision. ■

History of Iran

The revenge of the clergy

Iran: A Modern History. By Abbas Amanat. Yale University Press; 1,000 pages; \$40. To be published in Britain in January; £30

ABBAS AMANAT is an authority on Iranian culture and political history. In his new book he presents the past five centuries of Iran’s history in its Persian, Shia context. At 1,000 pages, it is not for the faint-hearted. But Mr Amanat is a skilful narrator whose use of sources and anecdotes is illuminating. His book should be read by anyone who is curious about the history of political philosophy and ideas.

It is especially strong on cultural, literary and intellectual history and the role this has played in Iran’s interpretations of political and clerical authority. Mr Amanat dips into the lives and works of key figures, from those who articulated the country’s responses to European imperialism, such as Mirza Malkom Khan, a prominent modernist who died in 1908, to the ideologues of the Islamic revolution of 1979. These include Jalal Al-e Ahmad and the left-leaning zealots and poets who used a mix of Marxism, Islamism, the Shia tropes of martyr-

dom and Frantz Fanon’s third-worldism to give Iran’s Islamic revolution its distinctive characteristics.

It is Mr Amanat’s ability to draw out the bigger themes in Iran’s history as a Shia powerhouse state that sets the book apart. He begins with the creation of the Safavid state in the early 16th century. He explains the competing tensions within Persian Shiism of temporal and spiritual legitimacy, intertwined with messianic revivalism, mysticism and dissent. Put simply, in a battle between God and the crown, who wins what, and why?

Until 1979, the state had the upper hand. The clergy were there to preach, educate and sit in judgment on the nation’s souls. A politically active clergy was, and still is for many leading Shia thinkers, a heretical innovation. Mr Amanat excels at establishing, through events and through the thought of its leading philosophers, how Persian Shia political philosophy creates this natural separation of mosque and state, as long as the state allows freedom and safety of Shia religious practice.

Mr Amanat highlights another important point in Iran’s politico-religious make-up when he traces the cyclical nature of divine revelation in “Twelver” Shia thought, through the 12 imams (descendants of Prophet Muhammad), and the 12th imam’s “occultation” in 874. This facet of Shia philosophy offers Persian political culture the potential for millenarian trends to appear at times of political and social crisis. President Mahmoud Ahmadinejad’s conviction that the 12th imam was poised to return to daily life in Iran meant that, among other less innocent actions, he would lay an extra place for the 12th imam at his weekly cabinet briefings. Ayatollah Khomeini came to be known as an imam, which constituted a break with the notion of a quietist, apolitical clergy. This was heretical among local Shia communities and yet also had precedent in Iran’s modern history, as Mr Amanat illustrates.

The exploration of this central tension lends Mr Amanat’s account of the Islamic revolution a deep historical resonance. The book traces this tension through Iran’s turbulent engagements with Western imperialism into its later entanglements with 20th-century superpowers. Central to the debate surrounding the constitutional revolution that began in 1905 was the place of Shiism in Iranian political life. Would the clergy retain their control over *sharia* law and its role in shaping private life, or would they be subsumed by the advance of secular Western political ideas?

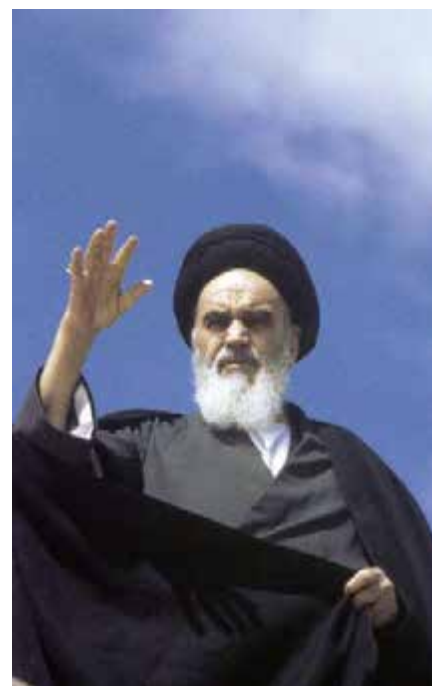
That question came to dominate the nation’s political discourse, often under the shadow of real and imagined threats from the West. Ayatollah Khomeini’s controversial doctrine of *velayat-e faqih*, the “guardianship of the jurist”, and its application as the ideological and constitutional blue-

print for the Islamic revolution, was the first time in Iran’s Shia history that the clergy had explicitly articulated a theory of government. Before that they always preferred to remain scholarly and juristic.

Derided under the Pahlavi monarchs and sidelined in the dash to achieve Western modernity after the discovery of oil, the clergy launched the Islamic revolution as an act of revenge. Their bid for power challenged the very soul of Shia orthodoxy. It was not a complete triumph, for the 1979 revolution and its aftermath crushed the clergy’s centuries-old independence from the state.

Despite the book’s extraordinary range and detail, the reader is left wondering about the ultimate place of Islam and politics in Iran, and how this might develop. A legitimate question is whether the Islamic republic of Iran has been the harbinger of the destruction of the Iranian clergy, both in the minds of the Iranian people and as a political force. Have the clergy become so crippled by association with the horrors of the Islamic republic—with its mass purges, its political prisoners raped and tortured, and the children who were forced to walk over minefields during the Iran-Iraq war—that they have lost all moral authority with Iranians? Might there be an upsurge in orthodox clerical opposition to the Islamic republic as this uneasy experiment in Shia political activism comes to an end of sorts?

Mr Amanat does not address these questions, but perhaps he does not need to. He ends with the disputed elections of 2009 in which Mr Ahmadinejad controversially returned to power amid repression and violence. The writing might, one assumes, be on the wall. ■



The upper hand

The Baltic Sea

Head north and farther

Icebreaker: a Voyage Far North. By Horatio Clare. *Chatto and Windus; 213 pages; £14.99*

“ICEBREAKER” by Horatio Clare, a British nonfiction writer, is an encounter with the void. It describes ten winter days on a Finnish icebreaker, one of a fleet that works at perilously close quarters with ice-trapped cargo ships in the Bay of Bothnia at the northern limit of the Baltic Sea. It is a silent region, almost empty of birds and animals, tideless and still. He writes of seeing silence, and the ship itself seems to him no more than “the tip of a pencil line trailing off into empty space”.

By the end of the journey, the “shuddering emptiness” has got to Mr Clare. He describes a nightmare in which he foresees a world populated solely by humans and machines: “no bird...no flourish of being in landscape, no iteration of spirit in form”. It is the culmination of a steady drumbeat through the book about pollution, warming seas and human rapacity. All the world’s ships at sea today, he says, measured as one nation, constitute the seventh most polluting country there is. His shipmates are themselves implicated. One of them tells him that icebreakers alone can consume 100 tonnes of fuel every 24 hours, against the 1.5 tonnes a year that might be consumed by the average Finnish family house. And yet, says Mr Clare, the world remains largely unperturbed—“better our great-grandchildren run out of planet than our children should lack for whatever we can grab.”

But for all that, Mr Clare’s book is surprisingly lighthearted, even playful. The voyage is a homage to a dear friend, a man of “ludic dash and charisma”, whose untimely death coincided with the birth of Mr Clare’s son. In that moment, he was seized with the sense that “some blaze-bright light of will and life” had passed from one to the other. That light fills his writing. Mr Clare is intoxicated by elemental extremes, dizzied, brought close to laughter. His dead mineral world—all crystalline ice and hard metal—stirs and quickens. Ice “sidles aboard, rinds the rails with icicles...is all but alive”. While down below, in the engine room, there grow “vines of copper piping and sprouting thermometers, the fuel pumps budded with bolts and flowering stopcocks”.

As for his fellow seafarers, around whom Mr Clare weaves much Finnish history, literature and politics, these “gentle, inward men” become, in a sense, his witnesses to the human spirit. He loves them for their jokes and stories, for their



Ice trap

courage and even for their Finnish silences: “relaxed silences, companionable...unhappy, charged and thoughtful silences, even lyrical silences”. Mr Clare is a great enjoyer—of people, landscape, and above all of language. With the flick of a phrase, he can transform even his nightmare into something positive—a healthy scourge, he suggests hopefully, a kind of sauna cleansing the pores of the mind. He writes that his journey has broken open from within him both a heaven and a horror. But the reader can have no real doubt as to which side he leans. ■

Performance art

In demand

How performance art joined the mainstream

BY THE late 1990s, the small and marginal world of performance art seemed stunted by nostalgia and self-parody. “I would go to [New York’s] Lower East Side and see these scruffy works that felt like a repeat of the 1970s,” says RoseLee Goldberg, a South African-born curator and art historian in New York. “I was seeing works by visual artists like Shirin Neshat, Gillian Wearing and Steve McQueen, and I was wondering why aren’t we seeing this kind of power or beauty in performance? Why are we still doing monologues?”

As a former director of the Royal College of Art in London who went on to shape New York’s performance-art scene in the 1970s, Ms Goldberg was well-placed to diagnose artistic torpor. She worked with artists such as Laurie Anderson, Philip Glass, Robert Longo, Meredith Monk

and Cindy Sherman as a curator at the Kitchen, a renowned downtown venue. But New York in 2000 seemed to have little interest in art that couldn’t be bought or sold, and experimental artists were increasingly decamping to Berlin, London and Shanghai. To revive the performance scene in New York, Ms Goldberg launched Performa, a biennial of performance art, in 2005. “I just thought, how can we have things bubble up from the bottom?”

Ms Goldberg injected fresh energy into the field by coaxing visual artists to create unique three-dimensional experiences. The resulting performances, which have included Rashid Johnson reimagining “Dutchman”, a racially fraught play, in an East Village bathhouse, and Ms Neshat envisioning a theatrical trial in Iran, have helped transform what has long been the most challenging, least audience-friendly art-form into must-see events.

As Performa 17, the biennial’s seventh edition, splashes out in venues across the city (until November 19th), many credit Ms Goldberg with bringing the medium into the mainstream. “Performa was my education,” says Jenny Schlenzka, the new artistic director of Performance Space 122, one of the city’s oldest performance-art venues. Before she became a performance curator at the Museum of Modern Art (MoMA), Ms Schlenzka studiously attended every Performa event. This exposed her to works by pioneers such as Marina Abramovic and Joan Jonas, and introduced her to international artists and up-and-comers, such as Adam Pendleton, whose work she has gone on to commission herself.

“Now you’ll have a hard time finding a contemporary-art institution that does not engage in performance art,” says Ms Schlenzka, nodding to more recent programming at MoMA, Tate Modern and the Whitney in New York, among other places. The Shed, a centre for performance and experimental art, will open in New York in 2019. “I do believe Performa played a role in that.”

Part of the festival’s appeal is the way it illustrates the possibilities of performance. This year Ms Goldberg commissioned a piece from William Kentridge, a South African artist best known for his politically potent charcoal drawings, prints and animations. For “Ursonate”, performed in the grand vaults of a decommissioned church in Harlem, the artist read sonorously and with dramatic verve a nonsensical 1932 sound poem by Kurt Schwitters, a Dadaist artist, against a projected backdrop of his own animated drawings.

What began somewhat uncomfortably, as viewers suddenly worried that they were destined for an hour of gobbledygook, soon morphed into a sly meditation on human fallibility and senseless destruction (complete with images of soldiers and bomb explosions). In these uncertain and ▶▶

often absurd times, Mr Kentridge's performance felt strangely moving and incisive.

Other works came up short, but still managed to provoke. Ms Goldberg commissioned several this year from Barbara Kruger, an American artist known for her visually arresting posters that combine black-and-white advertising imagery with hard-edged aphorisms in white Futura font ("I shop therefore I am", "Your comfort is my silence").

In addition to covering a school bus and a skate park with her trademark slogans ("Don't be a jerk", "Truth is fiction"), Ms Kruger has created her first-ever "live" per-

formance. "Untitled (The Drop)" involves charging ticket-buyers \$5 to wait in a queue that snakes around the block. Attendees ultimately inch into a shop, where they can buy T-shirts, skateboards, sweatshirts and a hat emblazoned with anti-consumer slogans ("Want it. Buy it. Forget it."). The performance concludes with a purchase. This may be a clever commentary on the parallels between the art world and consumer culture, but even devoted fans of Ms Kruger's may chafe at a gag that comes at their expense.

For all her work as a curator and producer, Ms Goldberg's main accomplish-

ment may have been to reinsert performance into the history of art. Her singular scholarship is the subject of her book, "Performance Art: From Futurism to the Present", which first came out in 1979 and is now in its third edition. "The most interesting times were when artists from different disciplines came together and thought through different ideas," she says, referring to the Russian Constructivists, the Dadaists, Futurists, Bauhaus and the New York "happenings" of the 1960s. "That's what I'm trying to do now, to bring different artists together to really argue and debate what it is we all do." ■

Johnson | Right and wrong on bearing arms

The strange wording of America's Second Amendment guarantees confusion and bitter division

JUST weeks after the deadliest mass shooting in American history, in Las Vegas, America faced its fifth-worst attack, in Sutherland Springs, Texas, on November 5th. Both assailants were armed with military-style rifles. Why does American law let people buy such weapons?

The answer is the Second Amendment to the constitution, which reads: "A well regulated Militia, being necessary to the security of a free State, the right of the people to keep and bear Arms, shall not be infringed." (Commas were used differently in the 18th century, but these do not affect meaning.) Gun-rights advocates insist the second half of that sentence is absolute.

Those in favour of tighter regulation insist that the framers used the first clause to tie gun-rights to the need for a militia. Since no American state has the sort of militia that existed in the 1780s (consisting of all able-bodied men, subject to call-up at any time and expected to bring their own weapons), this would make wider curbs on guns legal.

What is that clause doing there? In the 1960s Paul Grice, a philosopher, wrote his seminal works on the unspoken rules of language, how often people observe them, and what they do when they break them. He codified these into several maxims of conversation now famous among linguists. One is the "maxim of relevance": if someone randomly veers off-topic they break that maxim. The other is the "maxim of quantity": speakers should say enough, but not too much.

These maxims can be broken. But because the maxims are so widely understood and observed, Grice argued, breaking them is significant. When you hear a speaker break them, your first instinct is to look for new meaning. For example, imagine a man arriving home, and his wife asking: "Where were you?" If he replies: "I



am not cheating on you," she would be right to be worried. Perhaps the information was supposed to be reassuring. But by breaking the maxim of relevance it sends an entirely different message.

Or take the maxim of quantity. Information should only be included for a reason. So what is the militia clause there for? Antonin Scalia tried to explain it in the Supreme Court's opinion in *DC v Heller*, which in 2008 upheld an individual right to own and carry guns for hunting, self-defence or, really, for any reason. Like Grice, Scalia thought that the clause should be relevant. In fact, he insisted that it was. England's Stuart kings had disarmed those likely to be disloyal. So an arms-keeping citizenry ready to muster as a militia, even against its own rulers, was indeed "necessary for the security of a free state". Scalia said that prefatory clauses can announce a law's purpose—but cannot restrict it.

Why have them, then? The writers of

the constitution could have included all manner of philosophical navel-gazing in the prefatory clause: "The right of self-defence being inalienable..." and so forth. Some state constitutions did mention self-defence in their gun-rights clauses. The federal constitution does not. This makes the prefatory clause a rather odd bit of throat-clearing. If the framers meant to include self-defence, it violates the maxim of quantity by saying both too little (it did not mention self-defence) and too much (by not being needed at all).

A linguist at San Diego State University, Jeffrey Kaplan, argues that the prefatory clause is false. America, despite having no more militias, remains "a free state", as do many other countries. He says that in parallel constructions like "Today being St Patrick's Day, I will buy drinks for everyone in the bar," if it turns out today is not in fact St Patrick's Day, the promise in the main clause needs "repair": a chance to cancel the offer or negotiate something else with the patrons. He put the St Patrick's Day problem to 50 experimental subjects—80% said that if the presupposition was false, the offer was no longer operative.

In a second experiment, he invented a statute: "Water being an abundant resource, property owners shall have an unrestricted right to irrigate their property as they see fit." If, a century later, water is now scarce, is the law still in effect? Of those who replied, 81% said no.

It is hard to believe the framers would be happy with the result of their work. America remains bitterly divided over guns, thanks to a bizarrely worded amendment that is introduced by a statement about militias that is superfluous (if Scalia and gun advocates are right), and was arguably never true at all. At the very least, it has not stood the test of time.

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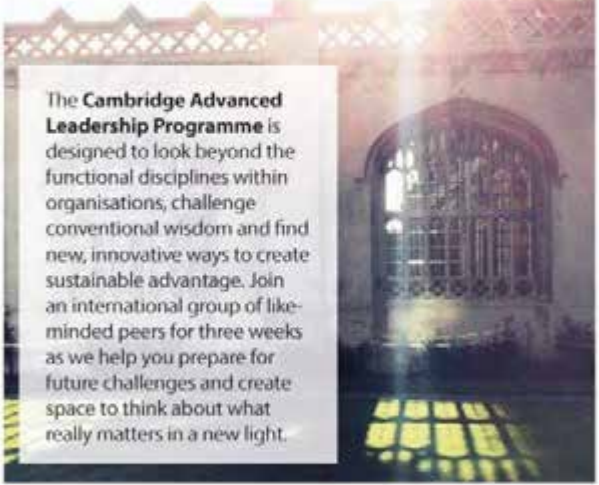
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The Junior Implementation Manager will focus on the implementation of development projects and financial interventions for the private sector. The ideal candidate will have an advanced university degree in development, finance, economics or business along with strong technical skills and at least 1 to 2 years' experience of working in a financial or development environment.

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 Further information and detailed Terms of Reference are available at:
www.common-fund.org

The Economist

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Municipality of Lima - Perú

TENDER NOTICE

MUNICIPAL SOLID WASTE: COLLECTION AND MANAGEMENT FOR THE METROPOLITAN CITY OF LIMA, PERU

The Private Investment Promotion Office of the Metropolitan Municipality of Lima (GPIP), through the COMMITTEE OF MUNICIPAL SOLID WASTE MANAGEMENT, announces the call to interested firms for the Tender Process "Municipal Solid Waste: Collection and Management for the Metropolitan City of Lima - Peru."

The Project's Bidding documents are available at no charge in the Private Investment Promotion Office's website: <http://www.munlima.gob.pe/component/k2/12-obras/concurso-de-limpieza-publica>

The Bidding documents include a brief description of the tender process, stages of the Competition, prequalification requirements, applicable selection criteria and proposals submission dates.

Bidding Participation Fee: A non-refundable fee of US\$ 1,000.00 (One Thousand and 00/100 Dollars of the United States of America), including taxes, must be deposited in the bank account indicated below:

Bank: Banco de Credito de Peru

Account Number: N° 193-1769969-1-82

Beneficiary Name: FID MML CTA PAGADORA FOMPRI

Swift Code: BCLPPEPL

Currency: US\$ Dollars

For further information please contact:

E-mail: concursoimpiezamml@munlima.gob.pe / Phone: (+511) 632-1030, annex: 1061

Lima - Peru, November 2017

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The Economist November 18th 2017

SPECIFIC PROCUREMENT NOTICE

	Islamic Republic of Iran Esfahan Power Transmission Project Power Sector Project No: IRN106 - Bid No: 960/1006	
ESFAHAN REGIONAL ELECTRIC COMPANY (EREC)		Islamic Development Bank

This invitation for bids follows the general procurement notice for this project that appeared in the Economist weekly newspaper July 6th 2013 (first issue) and July 20th 2013 (second issue) and in The Economist Digital Edition July 13 2013 and July 20 2013.

The Esfahan Regional Electric Company (EREC) has received financing from the Islamic Development Bank toward the cost of the Esfahan Power Transmission Project, and it intends to apply part of the proceeds toward payments under the EPC contract for Construction of Transmission Lines connected to Five High Voltage substations (Harand, Faradonbeh, Hosnijeh, Semiromand Lenjan). EREC now invites sealed bids from eligible bidders for Detail Design, Procurement, Construction, Test and Commissioning of Transmission Lines including: 400 kV OHTL totally about 33 km, 230 kV OHTL totally about 79 km and 63 kV OHTL totally about 153 km. The construction period is about 11 months.

Bidding will be conducted through the international competitive bidding procedures as specified in "the Guidelines for Procurement of Goods and Works under Islamic Development Bank Financing, May 2009, Amended February 2012", and is open to all eligible bidders as defined in the guidelines. All the contractors are eligible, except the Boycott Regulations of the Organization of the Islamic Conference, the League of Arab States and the African Union and the other provisions of the Para 1.7 of the Guidelines for Procurement of Goods and Works Under Islamic Development Bank Financing, May 2009.

Interested eligible bidders may obtain further information from and inspect the bidding documents from EREC at the address below during office hours from 9:00 a.m. to 14:00 p.m. of local time. A complete set of bidding documents in English may be purchased by interested bidders on the submission of a written application to the address below and upon payment of a nonrefundable fee of 5,000,000 Iranian Rials. The method of payment will be depositing of aforementioned nonrefundable fee to EREC Bank's account number as follows: Chaharbagh Bala branch office of Bank Melli Iran, branch code: 3010, Address: Chaharbagh Bala Ave., Esfahan, Iran, Account Num. (Sheba Code) as: IR4201 7000 0002 1750 9021 6009 with username payment 100005, payable from all Iranian banks.

The document will be sent by e-mail or can be picked up directly against submission of written application and a copy of payment receipt to below address or email.

All bids must be accompanied by a bid security of 23,760,000,000 Iranian Rials or an equivalent amount in a freely convertible currency, and be delivered to the address below by **12:00 noon on 22 January 2018**. They will be opened immediately thereafter, in the presence of bidder's representatives, who choose to attend, at the address below. Late bids will be rejected and returned unopened.

Esfahan Regional Electric Co.: Chahar bagh bala Avenue. Esfahan, Iran

ZIP Code: 8173751387

Tel.: + 98 31 36244001-9 - Fax: + 98 31 36244022

E-mail: ldb_projects@erec.co.ir - Website: <http://www.erec.co.ir>

Economic data

% change on year ago

	Gross domestic product			Industrial production	Consumer prices		Unemployment rate, %	Current-account balance		Budget balance	Interest rates, %	Currency units, per \$	
	latest	qtr* 2017 [†]	2017 [†]		latest	latest		2017 [†]	latest 12 months, \$bn			% of GDP 2017 [†]	% of GDP 2017 [†]
United States	+2.3 Q3	+3.0	+2.2	+1.6 Sep	+2.0 Oct	+2.0	4.1 Oct	-460.9 Q2	-2.5	-3.5	2.38	-	-
China	+6.8 Q3	+7.0	+6.8	+6.2 Oct	+1.9 Oct	+1.6	4.0 Q3 [§]	+118.2 Q3	+1.4	-4.3	3.95 ^{§§}	6.63	6.85
Japan	+1.7 Q3	+1.4	+1.5	+2.6 Sep	+0.7 Sep	+0.5	2.8 Sep	+194.4 Sep	+3.6	-4.5	0.05	113	109
Britain	+1.5 Q3	+1.6	+1.5	+2.6 Sep	+3.0 Oct	+2.7	4.3 Aug ^{††}	-128.9 Q2	-3.8	-3.3	1.38	0.76	0.81
Canada	+3.7 Q2	+4.5	+2.9	+5.6 Aug	+1.6 Sep	+1.6	6.3 Oct	-45.0 Q2	-2.9	-1.7	1.95	1.28	1.35
Euro area	+2.5 Q3	+2.5	+2.2	+3.3 Sep	+1.4 Oct	+1.5	8.9 Sep	+376.4 Aug	+3.1	-1.3	0.37	0.85	0.93
Austria	+2.6 Q2	+0.4	+2.5	+4.0 Aug	+2.4 Sep	+2.0	5.6 Sep	+6.1 Q2	+2.2	-1.0	0.55	0.85	0.93
Belgium	+1.7 Q3	+1.2	+1.7	+5.0 Aug	+2.0 Oct	+2.2	7.1 Sep	-5.3 Jun	-0.4	-2.0	0.62	0.85	0.93
France	+2.2 Q3	+1.9	+1.7	+3.2 Sep	+1.1 Oct	+1.1	9.7 Sep	-26.0 Sep	-1.2	-2.9	0.76	0.85	0.93
Germany	+2.8 Q3	+3.3	+2.2	+3.5 Sep	+1.6 Oct	+1.7	3.6 Sep [†]	+278.1 Sep	+7.1	+0.6	0.37	0.85	0.93
Greece	+0.7 Q2	+2.2	+1.0	+2.4 Sep	+0.7 Oct	+1.2	20.6 Aug	-1.3 Aug	-1.3	-1.4	5.11	0.85	0.93
Italy	+1.8 Q3	+1.9	+1.5	+2.4 Sep	+1.0 Oct	+1.3	11.1 Sep	+51.2 Aug	+2.3	-2.3	1.83	0.85	0.93
Netherlands	+3.0 Q3	+1.8	+2.9	+5.2 Sep	+1.3 Oct	+1.3	5.7 Sep	+76.0 Q2	+9.6	+0.6	0.49	0.85	0.93
Spain	+3.1 Q3	+3.2	+3.1	+0.3 Sep	+1.6 Oct	+2.0	16.7 Sep	+23.1 Aug	+1.3	-3.3	1.52	0.85	0.93
Czech Republic	+3.4 Q2	+2.0	+4.5	+4.4 Sep	+2.9 Oct	+2.4	2.7 Sep [†]	+1.7 Q2	+0.9	-0.1	1.74	21.7	25.2
Denmark	+1.9 Q2	-1.2	+2.4	+1.2 Sep	+1.5 Oct	+1.2	4.4 Sep	+27.0 Sep	+8.1	-0.6	0.47	6.31	6.94
Norway	+3.2 Q3	+3.0	+1.8	+10.5 Sep	+1.2 Oct	+2.0	4.1 Aug ^{††}	+16.6 Q2	+5.4	+4.2	1.63	8.26	8.45
Poland	+4.6 Q2	+4.5	+4.3	+4.3 Sep	+2.1 Oct	+1.9	6.6 Oct [§]	-0.4 Sep	-0.4	-2.0	3.43	3.60	4.13
Russia	+1.8 Q3	na	+1.8	+0.8 Sep	+2.7 Oct	+3.9	5.0 Sep [§]	+36.9 Q3	+2.4	-2.1	8.13	60.3	64.8
Sweden	+3.0 Q2	+5.2	+3.1	+4.5 Sep	+1.7 Oct	+1.8	6.2 Sep [§]	+22.5 Q2	+4.6	+0.9	0.79	8.45	9.19
Switzerland	+0.3 Q2	+1.1	+0.8	+2.9 Q2	+0.7 Oct	+0.5	3.1 Oct	+68.9 Q2	+9.9	+0.7	-0.06	0.99	1.00
Turkey	+5.1 Q2	na	+5.0	+13.4 Sep	+11.9 Oct	+10.8	10.6 Aug [§]	-39.3 Sep	-4.7	-2.1	12.39	3.89	3.29
Australia	+1.8 Q2	+3.3	+2.4	+0.8 Q2	+1.8 Q3	+2.0	5.4 Oct	-21.8 Q2	-1.3	-1.7	2.59	1.32	1.33
Hong Kong	+3.6 Q3	+2.0	+3.1	+0.4 Q2	+1.5 Sep	+1.6	3.1 Sep ^{††}	+15.2 Q2	+5.6	+1.7	1.73	7.81	7.76
India	+5.7 Q2	+4.1	+6.6	+3.8 Sep	+3.6 Oct	+3.5	5.0 2015	-29.2 Q2	-1.4	-3.2	7.02	65.2	67.7
Indonesia	+5.1 Q3	na	+5.1	+7.8 Sep	+3.6 Oct	+3.9	5.5 Q3 [§]	-13.3 Q3	-1.6	-2.8	6.63	13,535	13,363
Malaysia	+5.8 Q2	na	+5.5	+4.7 Sep	+4.3 Sep	+3.9	3.4 Sep [§]	+8.1 Q2	+2.5	-3.0	4.04	4.17	4.34
Pakistan	+5.7 2017**	na	+5.7	+8.5 Aug	+3.8 Oct	+3.9	5.9 2015	-14.1 Q3	-4.5	-5.9	7.93 ^{†††}	105	105
Philippines	+6.9 Q3	+7.0	+6.6	-3.8 Sep	+3.5 Oct	+3.2	5.6 Q3 [§]	-0.8 Jun	+0.3	-2.7	5.32	51.0	49.2
Singapore	+4.6 Q3	+6.3	+2.9	+14.6 Sep	+0.4 Sep	+0.6	2.1 Q3	+59.0 Q2	+19.6	-1.0	2.14	1.36	1.42
South Korea	+3.6 Q3	+5.8	+2.9	+8.4 Sep	+1.8 Oct	+2.0	3.2 Oct [§]	+87.3 Sep	+4.3	+0.8	2.57	1,112	1,171
Taiwan	+3.1 Q3	+7.4	+2.2	+5.2 Sep	-0.3 Oct	+0.6	3.7 Sep	+70.7 Q2	+13.2	-0.1	1.02	30.1	31.9
Thailand	+3.7 Q2	+5.4	+3.5	+4.2 Sep	+0.9 Oct	+0.7	1.2 Sep [§]	+46.9 Q3	+11.6	-2.5	2.36	33.0	35.4
Argentina	+2.7 Q2	+2.8	+2.7	-2.5 Oct	+22.9 Oct	+25.1	8.7 Q2 [§]	-19.7 Q2	-3.7	-6.3	6.76	17.6	15.5
Brazil	+0.3 Q2	+1.0	+0.7	+2.5 Sep	+2.7 Oct	+3.4	12.4 Sep [§]	-12.6 Sep	-1.0	-8.0	9.30	3.30	3.46
Chile	+0.9 Q2	+3.0	+1.4	+1.0 Sep	+1.9 Oct	+2.1	6.7 Sep ^{§††}	-5.6 Q2	-1.7	-2.8	4.43	633	670
Colombia	+2.0 Q3	+3.2	+1.7	-1.9 Sep	+4.0 Oct	+4.3	9.2 Sep [§]	-12.4 Q2	-3.8	-3.3	6.79	3,027	3,112
Mexico	+1.6 Q3	-0.8	+2.1	-1.2 Sep	+6.4 Oct	+5.9	3.3 Sep	-17.6 Q2	-1.9	-1.9	7.35	19.2	20.4
Venezuela	-8.8 Q4~	-6.2	-9.3	+0.8 Sep	na	+720	7.3 Apr [§]	-17.8 Q3~	-1.2	-19.5	8.24	10.1	10.0
Egypt	+4.9 Q2	na	+4.1	+15.6 Sep	+30.8 Oct	+26.7	12.0 Q2 [§]	-15.6 Q2	-6.6	-10.8	na	17.7	15.8
Israel	+4.0 Q2	+2.4	+3.4	-0.7 Aug	+0.2 Oct	+0.4	4.1 Sep	+10.7 Q2	+3.5	-1.9	1.73	3.54	3.84
Saudi Arabia	+1.7 2016	na	-0.7	na	-0.1 Sep	-0.3	5.6 2016	+7.6 Q2	+2.5	-7.2	3.68	3.75	3.75
South Africa	+1.1 Q2	+2.5	+1.1	-0.6 Sep	+5.1 Sep	+4.7	27.7 Q3 [§]	-7.9 Q2	-0.5	-3.3	9.42	14.4	14.2

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 Nov 15th	% change on		
		one week	in local currency	in \$ terms
United States (DJIA)	23,271.3	-1.2	+17.8	+17.8
China (SSEA)	3,563.4	-0.4	+9.7	+14.9
Japan (Nikkei 225)	22,028.3	-3.9	+15.2	+18.9
Britain (FTSE 100)	7,372.6	-2.1	+3.2	+10.0
Canada (S&P TSX)	15,878.5	-1.4	+3.9	+9.0
Euro area (FTSE Euro 100)	1,216.0	-2.9	+9.3	+22.3
Euro area (EURO STOXX 50)	3,545.7	-3.0	+7.8	+20.6
Austria (ATX)	3,339.5	-2.1	+27.5	+42.7
Belgium (Bel 20)	3,963.8	-3.0	+9.9	+23.0
France (CAC 40)	5,301.3	-3.1	+9.0	+22.0
Germany (DAX)*	12,976.4	-3.0	+13.0	+26.5
Greece (Athex Comp)	718.8	-3.1	+11.7	+24.9
Italy (FTSE/MIB)	22,158.9	-2.9	+15.2	+28.9
Netherlands (AEX)	538.5	-2.9	+11.4	+24.7
Spain (Madrid SE)	1,012.8	-2.1	+7.3	+20.1
Czech Republic (PX)	1,052.9	-0.1	+14.2	+34.8
Denmark (OMXCXB)	898.7	-4.3	+12.5	+25.8
Hungary (BUX)	38,615.1	-3.8	+20.7	+33.5
Norway (OSEAX)	881.5	-3.1	+15.3	+20.1
Poland (WIG)	62,345.9	-3.5	+20.5	+39.7
Russia (RTS, \$ terms)	1,116.5	-2.9	-3.1	-3.1
Sweden (OMXS30)	1,627.0	-2.2	+7.2	+15.3
Switzerland (SMI)	9,089.6	-1.9	+10.6	+13.6
Turkey (BIST)	107,716.5	-3.7	+37.9	+24.7
Australia (All Ord.)	6,012.3	-1.3	+5.1	+11.2
Hong Kong (Hang Seng)	28,851.7	-0.2	+31.1	+30.2
India (BSE)	32,760.4	-1.4	+23.0	+28.0
Indonesia (JSX)	5,972.3	-1.3	+12.8	+12.2
Malaysia (KLSE)	1,723.0	-1.2	+4.9	+12.8
Pakistan (KSE)	40,662.8	-1.4	-14.9	-15.8
Singapore (STI)	3,368.7	-1.5	+16.9	+24.5
South Korea (KOSPI)	2,518.3	-1.3	+24.3	+34.9
Taiwan (TWI)	10,630.7	-1.7	+14.9	+22.8
Thailand (SET)	1,690.3	-1.4	+9.5	+18.8
Argentina (MERV)	26,312.7	-6.3	+55.5	+40.3
Brazil (BVSP)	70,826.6	-4.8	+17.6	+15.5
Chile (IGPA)	26,588.2	-3.6	+28.2	+35.7
Colombia (IGBC)	10,693.7	-0.3	+5.8	+4.9
Mexico (IPC)	47,688.8	-2.3	+4.5	+12.1
Venezuela (IBC)	660.7	-6.1	-97.9	na
Egypt (EGX 30)	14,025.1	-1.3	+13.6	+16.7
Israel (TA-125)	1,283.8	-1.1	+0.5	+9.4
Saudi Arabia (Tadawul)	6,912.4	-0.3	-4.5	-4.5
South Africa (JSE AS)	59,185.2	-1.5	+16.8	+10.9

Natural gas

Global natural-gas production is set to increase by 46% in the years to 2040, according to the International Energy Agency. Oversupply in the market is likely to continue as 140bn cubic metres of liquefaction capacity that is under construction comes onstream, mostly in America and Australia. Conventional gas currently makes up 80% of global gas production; unconventional sources, such as shale, should account for more than half of the addition to output. America's natural-gas output should increase by 41% over the forecast period; shale production should grow by 80%. The rise in shale production from 2008-23 is likely to represent the biggest jump by a single source in the history of gas markets.



Source: International Energy Agency

Other markets

	Index Nov 15th	% change on		
		one week	in local currency	in \$ terms
United States (S&P 500)	2,564.6	-1.1	+14.6	+14.6
United States (NAScomp)	6,706.2	-1.2	+24.6	+24.6
China (SSEB, \$ terms)	350.0	nil	+2.4	+2.4
Japan (Topix)	1,744.0	-4.0	+14.8	+18.5
Europe (FTSEurofirst 300)	1,503.6	-3.1	+5.3	+17.8
World, dev'd (MSCI)	2,031.9	-0.9	+16.0	+16.0
Emerging markets (MSCI)	1,118.3	-1.4	+29.7	+29.7
World, all (MSCI)	495.5	-1.0	+17.5	+17.5
World bonds (Citigroup)	937.6	+0.1	+6.1	+6.1
EMBI+ (JPMorgan)	823.0	nil	+6.6	+6.6
Hedge funds (HFRX)	1,259.7 [§]	-0.4	+4.7	+4.7
Volatility, US (VIX)	12.7	+9.8	+14.0 (levels)	
CDSs, Eur (iTRAXX) [†]	52.7	+2.1	-27.0	-18.3
CDSs, N Am (CDX) [†]	57.4	+4.2	-15.3	-15.3
Carbon trading (EU ETS) €	7.7	-0.3	+16.9	+30.8

Sources: IHS Markit; Thomson Reuters. *Total return index. [†]Credit-default-swap spreads, basis points. [§]Nov 13th.

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The Economist commodity-price index

2005=100

	Nov 7th	Nov 14th*	% change on	
			one month	one year
Dollar Index				
All Items	146.6	147.4	-0.3	+5.3
Food	151.5	150.1	-0.3	-2.5
Industrials				
All	141.6	144.7	-0.4	+15.2
Nfa [†]	132.5	132.9	+2.9	+3.5
Metals	145.5	149.7	-1.6	+20.4
Sterling Index				
All items	203.0	204.4	+0.1	-0.6
Euro Index				
All items	157.5	156.0	-0.3	-3.9
Gold				
\$ per oz	1,274.5	1,279.3	-0.3	+4.4
West Texas Intermediate				
\$ per barrel	57.2	57.2	+10.2	+24.8

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

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Making waves

Terry Laughlin, a swimming coach, died on October 20th, aged 66

SWIMMERS, especially keen ones, tend to treat water as the enemy. Pound it with your arms and thrash it with your legs; to go farther and faster, try harder. Another adversary is bodily weakness, signalled by pain and tiredness.

That effort-intensive approach can work well in land-based sports. But it fails in water, which is 800 times denser than air. Friction is the human swimmer's true foe. Friction is the human swimmer's true foe. Friction is the human swimmer's true foe. Evolution is partly to blame, for putting breathing holes and muscles in the wrong place. But much of the effort expended in propulsion is wasted too: nobbly limbs tend to create extra commotion. The harder you try, the worse it gets.

The surest sign of such failure, Terry Laughlin reckoned, was bubbles, though he found the froth created by other swimmers a useful guide when overtaking them. A far better approach was total immersion. Not staying in the water for ever, much as he might have liked to had he been born with gills or a blowhole, but mental immersion in the art (more than a science, he said) of slipping through it.

Since he coined the term in 1989, "Total Immersion" has become a bestselling book, a much-watched series of videos, a coaching business and a catchphrase

among hydrophiles the world over. It turned even the most timid novices into smooth, confident strokemakers, and honed the technique of champions. Armed with its breathing and concentration techniques, swimmers could leave their heated pools and, like him, embark on even the most daunting open-water swims, in cold, choppy seas across long distances.

Strokes and folks

The idea was easily expressed. Swim silently. Worry less about the power of your engine, and more about the sleekness of your fuselage. Reducing friction is a far more efficient way of increasing speed and endurance than increasing muscle-power. Aim to glide through the water, concentrating on balance, fluidity and relaxation, delaying exhaustion by using just the muscles you need, and only when you need them. Thread your hand through an imaginary slot in the water, he said, treating it like the prow of a ship. Once in the right position a finely judged flick of arm and leg sends you sliding forward, rotating your body for the next stroke in a motion as fluid as the water itself. And each stroke, whether the first or the ten thousandth, should be the same.

Putting it into practice, though, was

hard, with the job mostly done by the mind not the body. It was a lifetime's work. Before prostate cancer claimed him, Mr Laughlin was swimming better than he had ever done before, winning championships and setting records. The secret, he reckoned, was the *Kaizen* principles at the heart of Japanese manufacturing: continuous incremental improvement "through cleverness, patience and diligence".

The starting point is unconscious incompetence—when a swimmer does not even realise what is amiss. Next comes conscious incompetence, when you spot what is wrong and try to stop doing it. Then comes conscious competence, when you do the right thing but only with effort, and finally unconscious competence: the mental equivalent of automatic pilot. An added bonus of this stage is that the brain switches from the energy-thirsty cerebral cortex to the much thriftier cerebellum.

Mr Laughlin spent the first half of his life in unconscious incompetence, which he initially blamed on his physique. He was just born with heavy legs, he reckoned. They dragged behind him, low in the water, slowing him down unless he made prodigious, exhausting kicks. It did not stop him being an acclaimed swimming coach, but he was under no illusions about his own prowess: "terminal mediocrity", he called it later. As a swimming-mad teenager on Long Island, he had been too slow to win a place even in his undistinguished high-school team. He was never going to be the best swimmer in the pool, he reckoned, so would have to settle for being the hardest-working.

It was only in mid-career that the light began to dawn. Balance came first: swimming "downhill", with his head low, shifted the body's centre of gravity, lifting the legs. After that, the insights mushroomed.

He did not run his business for money (his wife Alice struggled to keep the books in order) but his unselfconscious enthusiasm drew a cultlike following. Some other swimming gurus were snuffy, or even jealous. Total Immersion might suit beginners or dilettantes, but it lacked oomph. Success at the highest level demands raw effort, not pretty wiggles. His advice was indeed easy to caricature, but he disarmed his critics by agreeing with them. More muscle and faster propulsion were great. For most swimmers, though, the biggest gains would come not from extreme fitness but intense concentration.

The real gulf was that his approach's mental focus and discipline owed more to dance, tai chi and yoga than to the sweaty world of weights and circuits. It might sound "airy-fairy", but the ultimate aim was to achieve "communion" with the water, he said. Humans will never be able to swim as efficiently as dolphins, but at least they can try. ■



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