

# The Economist

SEPTEMBER 23RD–29TH 2017

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How match-fixing poisons sport

Catalonia's destructive referendum

If tech firms were sewage works

# Does China play fair?





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an unworthy, timid ignorance obstructing  
our progress."

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## Politics



**Donald Trump's** first speech to the UN General Assembly excoriated Iran and North Korea for threatening world peace. The American president promised to "totally destroy" the regime of Kim Jong Un, whom he called "Rocket Man", if it attacked America or one of its allies. The North launched a missile on September 15th that travelled 3,700km, flying over Japan before falling into the sea. Mr Trump also emphasised the right of countries to protect their national sovereignty, which went down well with China and Russia.

Republicans in the Senate geared up for another attempt to disassemble **Obamacare**. This time they want to pass a measure as part of the budget process, thus avoiding a filibuster. The legislation would revoke Obamacare's mandate that people must have health insurance. It would also cut spending on Medicaid, the health-care programme for the hard-up.

**Seeking a reconciliation** Hamas said it was ready to dissolve a so-called shadow government that it had set up in the Gaza Strip. It is keen to hold the first elections in **Palestine** since 2006. Fatah, the party that runs the West Bank, welcomed the announcement. But more talks are needed to end the decade-old dispute between the two groups.

In a detailed opinion, **Kenya's** supreme court, which had previously nullified the result of the presidential election held on August 8th, criticised the country's election commis-

sion for announcing the result—a victory for the incumbent, Uhuru Kenyatta, over the main challenger, Raila Odinga—before the votes had been properly counted. But the court did not say there had been widespread rigging or that the president was culpable.

An **Egyptian** court sentenced 43 people to life in prison after a mass trial. Hundreds more were sentenced to between five and 15 years. Nearly 500 people were charged over violence that erupted after the military coup that toppled President Muhammad Morsi in 2013. Only 52 were acquitted. Amnesty International called the trial a "sham".

### Badly shaken



An earthquake of magnitude 7.1 shook central **Mexico**, destroying buildings and killing at least 230 people, on the anniversary of a devastating earthquake in 1985. The rising death toll included dozens buried beneath a school in Mexico City.

**Hurricane Maria** struck the Caribbean, the second category-five storm in the region within a month. Around 90% of the buildings in Dominica were damaged; the Virgin Islands were badly hit by flooding. The power was knocked out across the entire island of Puerto Rico.

**Guatemala's** congress backed off on its attempt to change the law to make punishment for corruption more lenient by replacing jail sentences with fines. President Jimmy Morales promised to return payments of \$7,000 a month he has received from

the army for his role as commander-in-chief. Previous presidents did not receive such payments. Thousands marched in Guatemala City calling for Mr Morales to resign and congress to clean house.

### The army's new front

Facing brickbats for not speaking out against the ethnic cleansing of Muslim **Rohingyas** by Myanmar's army, Aung San Suu Kyi, the country's de facto leader, said that human-rights violations would be punished, but suggested that the situation was not so bad since many Rohingyas had decided not to flee. Amnesty accused the Nobel peace laureate of "burying her head in the sand".

In **Pakistan**, the wife of Nawaz Sharif won a by-election for the parliamentary seat that he was forced to vacate when he stood down as prime minister. Mr Sharif was disqualified from office by the supreme court over allegations of impropriety, which he denies.

An election in **Macau** returned the pro-Beijing government to power, despite voter anger in the Chinese territory at the poor response to the strongest typhoon to hit the city in 50 years.

### Pouring oil on fire



The Spanish police arrested 14 regional officials in **Catalonia**, part of the national government's effort to gather evidence against a planned referendum for independence. The ballot is due to take place on October 1st, though Madrid has declared it illegal. Thousands protested in Barcelona against the arrests. Carles Puigdemont, Catalonia's

president, accused the government of suspending the region's autonomy and of declaring a de facto state of emergency.

The government of **Iceland** collapsed after the prime minister was accused of trying to cover up a letter written by his father supporting the civil rights of a notorious paedophile. That prompted the Bright Future party to leave the coalition government.

In **Italy**, Silvio Berlusconi, who was ousted as prime minister in 2011, made a formal return to the political stage. At a meeting of his party, Forza Italia, he presented himself as a pro-European moderate who could lead the centre-right back to power in an election, expected next March.

A **Russian** helicopter taking part in the Zapad 2017 war games close to the border with Estonia reportedly fired a missile by mistake near a group of spectators. The Russian government bars foreign observers from such exercises.

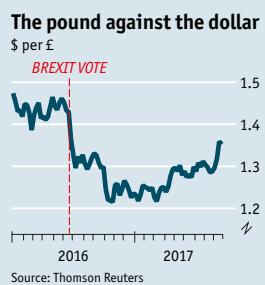
Police in **London** arrested several men in their investigation into a homemade bomb that partially exploded on an Underground train heading into the centre of the city. There were no fatalities, but 30 people were injured. The threat from international terrorism was briefly elevated to "critical", the highest level, for the second time this year.

**Britain's** foreign secretary, Boris Johnson, was criticised for repeating the bogus figure of £350m (\$475m) that the Leave campaign in last year's referendum had claimed Britain could save by departing the EU. Defending his position after a cabinet colleague said he was "back-seat driving" on Brexit, Mr Johnson gave a bumbling interview amid speculation he could resign. Ahead of her big set-piece speech on Brexit, Theresa May, the prime minister, slapped Mr Johnson down, saying that her government was "driven from the front".

## Business

The **Federal Reserve** confirmed that it is to unwind the \$4.2trn portfolio of Treasury bonds and mortgage-backed securities that it has accumulated since the financial crisis. The Fed will reduce its holdings very slowly, at first by \$10bn a month for three months, and then by a further \$10bn every quarter to a maximum of \$50bn a month. The announcement had been long heralded; markets were not that surprised.

### A rate rise this year?



The pound surged to its highest level against the dollar since the vote in Britain last year to leave the European Union, after a member of the Bank of England's Monetary Policy Committee said that the "moment was approaching" when interest rates would have to rise. The bank has kept rates low since the financial crisis. But Gertjan Vlieghe, one of the most dovish members of the MPC, thinks record low unemployment, rising wages and robust household spending all indicate that the economy has strengthened. He also pointed out the risks from uncertainty about the Brexit negotiations.

**Ukraine** returned to the international sovereign-bond market for the first time since restructuring its debt in 2015. It issued a 15-year note that raised \$3bn, which was said to be three times oversubscribed. Some observers worry that successfully tapping markets for credit will weaken Ukraine's resolve to follow through on the package of economic reforms it has agreed with the IMF.

**Portugal's** borrowing costs in the bond markets fell sharply when it regained an investment-grade standing from one of the big credit-rating agencies for the first time since the euro-zone crisis. Standard & Poor's raised its rating for Portuguese government bonds above junk status in part because of the economy's improving prospects.

**Toshiba's** board of directors approved the sale of its memory-chip business to a consortium led by **Bain Capital** and which includes Apple, for \$18bn. The agreement could be challenged in the courts by Western Digital, Toshiba's American chipmaking partner, which has sought to prevent the sale.

### Dial a friend

In a boost to its nascent smartphone business, **Google** struck a deal with **HTC** in which 2,000 people who work on R&D at the Taiwanese smartphone company will be transferred to Google. Some years ago HTC briefly challenged Apple's and Samsung's dominance in the market, but has since fallen way behind.

**Snap** removed **AlJazeera** from its app in Saudi Arabia at the request of the government.

The Saudis have accused Al Jazeera of broadcasting terrorist propaganda. Snap's decision to restrict access to Al Jazeera is the latest instance of a social-media firm censoring content in a country to comply with repressive media laws.

**John Chambers** decided to retire as chairman of Cisco. Mr Chambers was one of Silicon Valley's trailblazers in the 1990s, building Cisco's dominant position in the market for networking equipment during the internet's rapid expansion. For a brief time, Cisco surpassed Microsoft to become the world's most valuable company.

This year's run of big acquisitions in the defence and aerospace industry continued with **Northrop Grumman's** deal to buy **Orbital** for \$9.2bn. Orbital developed the Cygnus spacecraft that delivers cargo to the International Space Station.

Following lengthy negotiations, **Tata Steel** and **Thyssenkrupp** agreed to merge their European steelmaking businesses. The deal between the Indian and German companies is the latest example of consolidation in the steel industry, where profits have waned because of the glut in

cheap steel imports from China and elsewhere. To seal the merger, Tata Steel had to promise regulators in Britain that the pension rights of its workers there were secure.

Admitting it was a "mess of our own making", Michael O'Leary apologised for the abrupt cancellation of 2,100 **Ryanair** flights over the next six weeks. The budget airline's boss has belatedly tried to improve its image as the butt of jokes about shoddy service. The latest cancellations won't help. They became necessary in part because of a new holiday rota system that has left the airline short of pilots.

### Toys were us

**Toys "R" Us** filed for bankruptcy protection. The company's giant stores killed off many smaller toy retailers in the 1980s, but by the turn of the century it was under pressure from Walmart and Amazon. It was bought out by a private-equity consortium in 2005, and ran up debts that top \$5bn. Disappointed children will be pleased to hear that Toys "R" Us expects to keep nearly all its stores open over the Christmas shopping season.

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



# Does China play fair?

**Competition from China will only get fiercer. That calls for cool heads and wise policies**



**I**F DONALD TRUMP had slapped punitive tariffs on all Chinese exports to America, as he promised, he would have started a trade war. Fortunately, the president hesitated, partly because he wants China's help in thwarting North Korea's nuclear ambitions. But that is not the end of the story. Tensions over China's industrial might now threaten the architecture of the global economy. America's trade representative this week called China an "unprecedented" threat that cannot be tamed by existing trade rules. The European Union, worried by a spate of Chinese acquisitions, is drafting stricter rules on foreign investment. And, all the while, China's strategy for modernising its economy is adding further strain.

At the heart of these tensions is one simple, overwhelming fact: firms around the world face ever more intense competition from their Chinese rivals. China is not the first country to industrialise, but none has ever made the leap so rapidly and on such a monumental scale. Little more than a decade ago Chinese boom towns churned out zips, socks and cigarette lighters. Today the country is at the global frontier of new technology in everything from mobile payments to driverless cars.

Even as China's achievements inspire awe, there is growing concern that the world will be dominated by an economy that does not play fair. Businesses feel threatened. Governments that have seen Brexit and the election of Mr Trump, worry about the effects of job losses and shrinking technological leadership. Yet if the outcome is to be good, they must all think clearly about the real nature of China's challenge.

## Go, in three dimensions

Undoubtedly, China has form. It kept its currency cheap for years, boosting exporters; it finances its state-owned giants with cheap credit; and its cyber-spies steal secrets. Yet depictions of corporate China as just an undemocratic, state-run monster, thieving and cheating to get ahead, are crude and out of date. Home-grown innovation is flourishing (see page 17). The innovators are mainly private, not the many heads of a single creature called China Inc. To separate hype from reality, think of Chinese competition as having three dimensions: illegal, intense and unfair. Each needs a different response.

First, consider illegality. The best example is the blatant theft of intellectual property that makes for the most sensational headlines, such as the charges laid in 2014 against five Chinese military officers for hacking into American nuclear, solar and metals firms. The good news is such crimes are declining. An agreement with America in 2015 seemingly led to a marked drop in Chinese hacks of foreign companies and, as Chinese firms produce more of value, they are themselves demanding better intellectual-property protection at home.

The second dimension—intense but legal competition—is far more important. Chinese firms have proven that they can make good products for less. Consumer prices for televisions, adjusted for quality, fell by more than 90% in the 15 years after

China joined the World Trade Organisation (WTO). China's share of global exports has risen to 14%, the highest any country has reached since America in 1968. That may fall as China loses its grip on low-value industries such as textiles. But it is gaining a new reputation in high tech. If data are the new oil, China's tech industry has vast reserves in the information generated by the hundreds of millions of its people online—unprotected by privacy rules. Whether you make cars in Germany, semiconductors in America or robots in Japan, the chances are that in future some of your fiercest rivals will be Chinese.

Last, and hardest to deal with, is unfair competition: sharp practice that breaks no global rules. The government demands that firms give away technology as the cost of admission to China's vast market (see page 60). Foreign firms have been targeted in the biggest of China's anti-monopoly cases. The government restricts access to lucrative sectors, while financing assaults on those same industries abroad. Such behaviour is dangerous precisely because today's rules offer no redress.

## Don't get angry. Get even

Sorting Chinese competition into these categories helps calibrate the response. Blatant illegality is the most straightforward. Governments must prosecute and seek redress, whether through the courts or the WTO. Firms can better protect themselves against cyber-thieves—from China and elsewhere.

Though it is politically hard, the best response to intense competition is to welcome it. Consumers will gain from lower costs and faster innovation. Misguided attempts to hold back the tide would not only lose those potential gains but might also blow up the world trading system, with catastrophic results. Rather than try to stop the loss of jobs, governments should provide retraining and a decent safety net. Both companies and governments need to spend more on education and research. Six years ago Barack Obama said America faced a new "Sputnik moment" in China's rise. Since then not much extra has been devoted to research, training and infrastructure.

The hardest category is competition that is unfair, but not illegal. One approach is to coax China into behaving better by acting collectively. America, Europe and big Asian countries could jointly publish information about economic harm from China's policies—as they did by sharing details about overcapacity in the steel industry, nudging China into cutting its excesses. They should demand reciprocity, requiring China to give foreign companies the same access that its own firms enjoy in their markets. Governments need to review their policies for screening investments from China so that they can block genuine threats to national security (though only those). And they should also require that investors with state backing report this in full, and punish those hiding their true identity.

Much of the responsibility for putting this right falls on China. It may ask why it should hold itself back. After all, 19th-century Germany and America grew rich behind subsidies and tariff walls; Britain and Japan were bullies. Yet, having done so well out of the global commercial ecosystem, China should recognise that it has become one of its custodians. Abuse it—illegally or by overburdening it—and it will break. ■

## Online regulation

# Limited liability

The internet has grown up, and so must its biggest companies



**O**NCE the giants of the internet could do no wrong. Now they are a favourite target of politicians everywhere. Europe's finance ministers are discussing ways to increase taxes on digital services. Theresa May, Britain's prime minister, this week demanded that social-media platforms be able to take down terrorist material within two hours. In America Facebook's bosses must soon tell Congress what role users tied to Russia played in last year's presidential campaign.

Much of this is still political theatre. But not all. America's Senate is contemplating the Stop Enabling Sex Traffickers Act (SESTA), a bipartisan bill that seeks to deter sex trafficking by ensuring that the Communications Decency Act (CDA) does not protect online services, such as Backpage.com, notorious for making money with sex-trafficking ads (see page 54). Should the bill pass, a wave of lawsuits against social-media platforms is likely to follow.

SESTA highlights a growing problem with which many governments are grappling: how online firms should be held liable for illegal content that is published on their platforms. From October, Germany will require firms to take down hate speech and fake news within 24 hours, or face fines of up to €50m (\$60m). Yet the debate over SESTA is especially important. It could end up being the model for other areas, chilling free speech and innovation.

If the internet and some of the firms it has spawned have taken over the world, this is the result not simply of entrepreneurial brilliance but also of an implicit subsidy. In America and Europe online platforms have until now inhabited a parallel legal universe. Broadly speaking, relevant media laws—in particular the CDA—exempt them from liability for what their

users do or for the harm that their services can cause.

This made sense in the early days of the internet, when it was still a sideshow. Ruinous lawsuits might have crushed then-infant digital ventures. But today online firms have come to dominate entire industries. They can also no longer be considered neutral conduits for information, like telecoms carriers. Facebook's algorithms, for instance, determine what members see in their news feeds. The words and deeds of online ghouls have consequences in the real world.

SESTA has a worthy aim. Yet it is too broad. It greatly expands the definition of enabling sex trafficking, including ten actions, from advertising to transporting. It would also let state attorneys-general and civil claimants sue online platforms. A deluge of lawsuits is likely. In general, big tech firms can afford such programmes, but startups may face bankruptcy. Both will want to avoid trouble by erring on the side of safety, curbing free speech.

## Web-friendly

Rather than attempt to define precisely what material is banned—which invites arguments—the law should instead require firms only to follow a reasonable, transparent process by which they decide what to take down. That would cover sites like Backpage.com and limit potential lawsuits. It should take into account differences in size. Smaller firms could be held to a different standard, depending on their resources and business models. Widely accessible sites could be more tightly regulated than those with a restricted audience.

The drawback is that this turns online firms, especially big ones, into arbiters of acceptable speech. But it would be preferable to a series of all-controlling, SESTA-like laws, which could ultimately turn them into regulated utilities (see Schumpeter). To avoid that fate, they need to realise that, as the dominant actors of the digital age, they bear special responsibility. ■

## A crisis in Spain

# The Catalan question

It requires a better answer than an unconstitutional independence referendum



**S**PAIN has known tumultuous times: civil war in the 1930s, dictatorship until 1975, a failed coup in 1981, a financial and economic crash in 2008-13, and terrorism of the nationalist and jihadist sorts. Now it faces a constitutional crisis that threatens its unity. The Catalan government plans to hold a "binding" referendum on independence on October 1st. If a majority votes yes—regardless of the turnout—then Carles Puigdemont, the Catalan president, will unilaterally declare independence.

The Spanish constitutional court has declared the vote ille-

gal, and the conservative government of Mariano Rajoy has taken control of the region's finances to try to block the ballot. The Guardia Civil has raided Catalan government offices and a private delivery firm to seize posters and ballot papers, and arrested at least 12 officials. The Catalan government has called for "peaceful resistance".

The crisis is snowballing into a serious threat to Spain's democracy. Solving it sensitively matters to the rest of Europe. The precedent set in Catalonia will affect other would-be secessionists, from Scotland to the Donbas region of Ukraine.

Catalonia enjoys a standard of living higher than the average in both Spain and the European Union and more self-government than almost any other region in Europe, including ►



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► powers to protect the Catalan language. It is, to outward appearances, a lovely and successful place. Yet a majority of Catalans are unhappy with their lot, feeling that Spain takes too much of their money and fails to accord respect to their identity (see page 41). Mr Rajoy has been wrong to assume that time and economic recovery would cure Catalans' discontent.

The Spanish constitution, adopted by referendum in 1978—and backed almost unanimously in Catalonia—proclaims the country's "indissoluble unity". It vests sovereignty in the Spanish people as a whole, not in the inhabitants of its constituent parts. The Catalan government claims the right to self-determination. But international law recognises this only in cases of colonialism, foreign invasion or gross discrimination and abuse of human rights. These arguably do apply to the Kurds, who are planning to hold a disputed referendum on secession from Iraq on September 25th (see page 38).

Catalonia, however, hardly counts as colonised, occupied or oppressed. Many Spaniards worry that its secession could swiftly be followed by that of the Basque country. If the rule of law is to mean anything, the constitution should be upheld. Mr Puigdemont should thus step back from his reckless referendum. Opponents are unlikely to turn out, so any yes vote he obtains will be questionable, not just legally but politically.

That said, by playing cat-and-mouse with ballot boxes Mr Rajoy has needlessly given Mr Puigdemont a propaganda victory. A big majority of Mr Rajoy's voters in the rest of Spain support him in part because he refuses to yield to Catalan nationalism. But something important is wrong in Spain, and it is his duty to try to fix it.

Democracy requires consent as well as the rule of law. Constitutional change, especially the right to break away, should be difficult—but not impossible. In Scotland and Quebec, allowing people to have a say did not lead to breakaway. Mr Rajoy should be less defensive: he should now seek to negotiate a new settlement with Catalonia, while also offering to rewrite the constitution to allow referendums on secession, but only with a clear majority on a high turnout.

### Damage to Catalonia

Many Catalans want the right to decide, but polls suggest that only around 40% want independence. Most would probably be satisfied with a new deal that gave them clearer powers, let them keep more of their money and symbolically recognised their sense of nationhood. The tragedy is that neither Mr Puigdemont nor Mr Rajoy seems interested in putting such an offer on the table. ■

## Corruption in sport

# Fixing the fixers

### To make sports cleaner and more fun, legalise betting



**I**N 267AD Nicantinous and Demetrius, two teenage wrestlers, had reached the final bout in a prestigious competition in Egypt. Their fathers struck a deal. For the price of a donkey, Demetrius would "fall three times and yield". The signed contract is the earliest surviving record of a sporting competition being stitched up for financial gain.

Today, match-fixing is a vast global enterprise (see page 51). The pickings are rich. Around \$2trn is wagered on sport each year, mostly with online bookmakers who enable punters to evade national anti-gambling laws. Around one game in 100 is thought to be manipulated across a range of sports.

Modern fixing is a more subtle affair than that of Nicantinous and Demetrius. It often involves manipulating the odds in live betting while a match is under way. Arranging for a cricketer to score poorly, say, or a footballer to be sent off at a certain point, or a tennis player to lose a particular game, allows bettors to predict how odds will move and lock in a profit much as insider traders beat the stockmarket. Athletes troubled by conscience can always tell themselves that a few wild swipes of a bat or a run of double faults are victimless crimes.

If punters willing to place illegal bets were the only victims, fixing might not matter so much. But they are not. Much of the profits go to violent gangsters. Among those defrauded are corrupt athletes' innocent team-mates, legal bettors and ordinary fans, who pay to see a real contest, not a sham.

Sports administrators cannot be relied on to lead a clean-up. Some are themselves suspected of corruption—wit-

ness allegations of bribery in the choices of hosts for the football World Cup and Olympic games. And many seem to fear that revealing the scale of match-fixing would provoke a crisis of confidence. Little time or money is devoted to educating athletes about fixers' methods, or to monitoring wagers to spot the suspicious betting patterns. Some of the cases that have come to light were uncovered by police investigating racketeering, not sports officials going after fixers. The governing body for tennis, dogged by suspicions of match-fixing, does not employ enough officials to have one at every professional event.

As more games are televised, more is bet on minor competitions, where players earn less and are therefore easier to corrupt. And as new sports gain popularity, the fixers will move in. They are already active in competitive video-gaming. Women's cricket and football are likely to become targets, too.

### Say it ain't so

To squeeze the fixers, governments need to do two things. The first is to legalise gambling, which is banned in many countries. Fixers need deep, liquid betting markets to profit from their crooked bets. If honest punters turn to legal bookmakers, fixers will follow, and authorities will find it easier to spot them at their work. The second is to pass laws against match-fixing which recognise that the evidence may consist of statistical analysis. Many countries have no match-fixing laws at all. When one corrupt player is caught and banned, the money-men simply move on to the next.

Billions of people follow sport for the pleasure of seeing skilled athletes strive for victory and to share in the thrill of a fair competition. If the fixers are allowed to run the show, it will cease to be worth watching. ■

## British politics

# The likely lad

**Labour is on track to rule Britain. But who rules the Labour Party?**



wiped out and the prime minister struggling to unite her party around a single vision of Brexit (see *Bagehot*), the unthinkable image of a left-wing firebrand in 10 Downing Street is increasingly plausible. Bookmakers have him as favourite to be Britain's next prime minister. Labour need win only seven seats from the Tories to give Mr Corbyn the chance to form a ruling coalition. He will be received at next week's Labour Party conference as a prime minister in waiting.

There are two visions of a future Corbyn government. One, outlined in Labour's election manifesto earlier this year, is a programme that feels dated and left-wing by recent British standards but which would not raise eyebrows in much of western Europe, nor do the country catastrophic harm. The other, which can be pieced together from the recent statements and lifelong beliefs of Mr Corbyn and his inner circle, is a radical agenda that could cause grave and lasting damage to Britain's prosperity and security. The future of the Labour Party—and, quite probably, of the country—depends on which of these visions becomes reality.

### Good Corbyn, bad Corbyn

The manifesto launched this spring was insipid and backward-looking, dusting off tried and discarded ideas. But it would set Britain back years, not decades. The planned rise in corporation tax—a bad idea at a time when Brexit Britain needs to cling on to what business it can—would take the rate back only to its level in 2011. A proposed minimum wage of £10 (\$13.50) per hour would be among the steepest in Europe, but not drastically higher than that planned by the Tories. Abolishing tuition fees would damage universities and mainly benefit the well-off, while nationalising the railways and some utilities would make them less efficient and starve them of investment. These are bad ideas, but not the policies to turn a country to rubble. If Labour combined them with an approach to Brexit that was less self-harming than that of the Tories—some of whom are still gunning for the kamikaze “no deal” outcome—its prospectus could even be the less batty of the two.

But there is another plan for government, scattered among Mr Corbyn's own statements, which would do serious and lasting harm (see page 47). Since becoming leader, he has called for a maximum wage as well as a minimum one. He has proposed “people's quantitative easing”, under which the government would order the independent Bank of England to print money to fund public investments. Labour is committed to preserving Britain's nuclear weapons: Mr Corbyn is disarmingly clear about his desire to scrap them. Though the party's policy is to stay in NATO, Mr Corbyn has for decades called for it to disband; last year he refused to say whether, as prime min-

ister, he would defend a NATO ally under attack from Russia.

Labour's manifesto says that another independence referendum in Scotland is “unwanted and unnecessary”; Mr Corbyn has said it would be “fine”—which matters, because his most likely route to Downing Street would be with the support of the Scottish National Party. On Brexit, Labour is as hazy as the Tories. But its notional priority, access to the single market, is at odds with Mr Corbyn's lifelong scepticism of globalisation in general and of the EU in particular.

All leaders must compromise with their parties. But it is rare for a leader's personal views to contrast so strongly with those in his manifesto. Rarer still is the company Mr Corbyn keeps. Andrew Fisher, the main author of the manifesto, has previously argued for the nationalisation of all banks; Andrew Murray, a former Communist Party official who advised Mr Corbyn during the election, has defended the regime in North Korea. You can imagine how, surrounded by such people, Mr Corbyn would instinctively line up against America in a geopolitical emergency, and how he would see a financial crisis as Act One in the collapse of capitalism.

### Paint the door red

The constraints on such wild behaviour are loosening. The first of those is the party's MPs. Eight out of ten supported a motion of no confidence in their leader last year. Yet many wanted rid of Mr Corbyn mainly because they feared that he would lose them their jobs. With their majorities newly increased and power in sight, they have quietened down. Troublemakers can be threatened with deselection, and new parliamentary candidates vetted. Next week's conference is expected to reduce the power of Labour MPs and MEPs.

The party's bureaucratic straitjackets are also loosening. Corbynites are now just about in the majority on Labour's National Executive Committee, where their numbers will be strengthened by plans to appoint more trade unionists and ordinary members. The run-up to the conference has seen Corbynite candidates trouncing centrists in elections to committee chairmanships. Just as Tony Blair sidelined left-wing activists during the 1990s, Mr Corbyn is empowering them.

Labour's half-million-odd members are fired up as never before, campaigning on foot and online. Most favour a more radical programme. A recent survey found that their priority was to move the party further to the left. One snag for Mr Corbyn is that they are overwhelmingly pro-EU; if he were sincere about the party being ruled by its members, not elites, he might agree at next week's conference to advocate continued full membership of the single market. In practice, it seems that the views of ordinary members matter less than those of hardcore activists, who share Mr Corbyn's Euroscepticism.

The most rapidly unravelling constraint on Mr Corbyn, however, is the opposition he faces. His cautious June manifesto was written as polls suggested that Labour could be wiped out. Now he stands with power in sight, facing a humiliated Conservative government. His room for manoeuvre expands by the week. June's experiment with diluted Corbynism was a success. Expect the next dose to be stronger. ■

### The hurricane season

There is no question that the British Virgin Islands are on the front line of climate change, alongside our neighbours in the Caribbean ("Paradise lost", September 16th). Irma was particularly ferocious, perhaps a sign of the increased intensity of such storms to come. Since Irma hit, the government of the BVI has worked tirelessly to provide food, shelter, water and power. Our tourism infrastructure will take time to rebuild, but we have made considerable strides towards returning to business as usual in the financial-services sector.

Britain has pledged short-term aid, which is welcome, but a longer-term reconstruction package will be required to rebuild the BVI in the wake of Irma, and now Maria, and we will be looking to work with Britain and other partners to achieve this as rapidly as possible. Patch and mend is not enough. The safety of our people and the sustainability of our economy demands investment in better buildings and more resilient critical infrastructure. There is a collective responsibility for all of us to heed warnings about the threat of climate change.

D. ORLANDO SMITH  
Premier and finance minister  
Road Town, British Virgin Islands

The Caribbean Community Climate Change Centre wishes to disassociate itself from the comments attributed to Ottis Joslyn in your article. His statement that "Caribbean governments speak a lot about climate change but their actions leave a lot to be desired" in no way represents the position of the CCCCC and is the personal opinion of Mr Joslyn.

KENRICK LESLIE  
Executive director  
Caribbean Community Climate Change Centre  
Belmopan, Belize

### Patrick Minford responds

You do the "Message from Minfordland" some wrong, though thank you for transmitting it (August 26th). The approach of Economists for Free

Trade, which I chair, does not rely solely on unilateral free trade. That is one of the routes for getting to free trade, but we have also supported the route of free-trade agreements that is likely to be chosen by Theresa May's government wherever others will co-operate.

Non-tariff barriers are a key element in our calculations and, no, we do not ignore quality. Rather, by using detailed quality-adjusted OECD prices we reach roughly the same estimates of non-tariff barriers that the researchers at the London School of Economics cite for their own work. As for the "gravity model", we have examined how well this fits data for Britain compared with our "classical model" and there are two conclusions: it fits less well, and in fact rather similar policy conclusions about British free trade follow from it.

Our suspicion is that the many gravity modellers from around the world evaluated a nonsensical Brexit straw man during the referendum, in order to oppose it. It would be instructive if they, including the Treasury, were to redo their calculations in the light of what we now know to be Brexit policy.

PATRICK MINFORD  
Professor of applied economics  
Cardiff University

### Claims of torture in Turkey

I totally reject your claims of a "brutal crackdown" and allegations of the use of torture in Turkey ("Bruised and battered", September 9th). Turkey is a party to the UN and Council of Europe conventions on the prevention of torture and ill-treatment. In 2003, we took a stand of zero tolerance against torture. Our success in this policy has been acknowledged by dignitaries from international organisations and people working in the field. All claims of torture and ill-treatment are investigated. And Turkey has abolished the statute of limitations for the offence of torture, one of the few countries to do so.

Even after last year's coup attempt, it was decreed that

any public official found guilty of torture shall be dismissed from public service. The Ministry of Justice established a specific unit to deal with claims of torture and ill-treatment. Moreover, we fully co-operate with the UN's Special Rapporteur on Torture and the European Committee for the Prevention of Torture. Therefore, *The Economist* is cherry-picking to distort Turkey's international co-operation efforts on the issues of torture and ill treatment.

Furthermore, the Fethullah Gulen Terrorist Organisation threatens the integrity of the Turkish state. It works in 150 countries behind a façade of tolerance, dialogue and charity, through schools, NGOs, lobbyists, media outlets and companies. What happened in Turkey more than a year ago is a dark reminder of what this organisation may be capable of doing. By publishing such an article you are contributing to its illegitimate endeavours.

ABDURRAHMAN BILGIC  
Ambassador of Turkey  
London

### On the case

"Gavel down" (September 9th) assessed the legal work of Richard Posner, but slightly misquoted his new book. You said that when reaching a judgment, Mr Posner assesses whether a sensible solution is blocked by some "case that judges must obey". But he did not use the word "case". He wrote "ukase", a Russian term that refers to edicts or pronouncements.

VIKRANT REDDY  
Washington, DC

### Myanmar's colonial past

Your article on Indian labour sent abroad in servitude forgot one other region of India where this applied: Burma ("100 years since servitude", September 2nd). Under the British, Burma was administered as a province of India until 1937. Your omission is understandable as it could be considered as an internal migration, but both involuntary servitude and opportunis-

tic migration had profound influences on the Burmese economy and on anti-sub-continent sentiment after Burmese independence in 1948, when Burma tried to reclaim its own economy through socialism.

Although involuntary servitude helped develop the world's greatest rice bowl in the Irrawaddy delta, strong ethno-nationalist sentiment prompted the expulsion of hundreds of thousands of Indians (and Chinese) in the early 1960s. Such anti-Indian sentiments affect negative attitudes towards the Rohingya today.

DAVID STEINBERG  
Professor emeritus of Asian studies  
Georgetown University  
Washington, DC

### A gem of a story



Reading about diamonds being readily available elsewhere in the cosmos ("A hard rain", August 26th) brought to mind Arthur C. Clarke's 2001 sci-fi series. Europa is discovered to have a mountain entirely made of diamonds originally from Jupiter's core and villains plot to mine it in order to destroy South Africa's economy back on Earth. By the year 3001, diamonds have become such a cheap building material that they are used to construct giant skyscrapers that act as elevators between Earth and space.

JAMES FOSTER  
Southampton ■

Letters are welcome and should be addressed to the Editor at: The Economist, The Adelphi Building, 1-11 John Adam Street, London WC2N 6HT. E-mail: letters@economist.com More letters are available at: Economist.com/letters

# Executive Focus



المركز الوطني للدراسات  
الاستراتيجية التنموية  
Center for Strategic Development

## JOB OPENINGS

The Center for Strategic Development (CSD), a newly established think tank in Riyadh, Saudi Arabia, is looking to hire professional economists as per the following opening positions to lead and inspire the economic vision and to support the Saudi Government with the delivery of the Saudi 2030 vision:

### Head of Research and Policy

#### Key responsibilities

- Lead and oversee the research function of the CSD.
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- Manage and supervise all levels of the policy/research team.
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  - Preferably a Ph. D. in economics with 15+ years of professional research experience.
  - Strong record of driving a team of analysts to produce a steady stream of world-class economic policy analysis products.
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#### Key responsibilities

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All interested applicants are requested to send their resumes to [careers@csd.gov.sa](mailto:careers@csd.gov.sa) and are also encouraged to visit the career website for more details at the following link: <https://csd.gov.sa/pages/Careers.aspx>

\*Please mention in the email subject the position title and the publication as the main job source.

\*Additional opening positions are also available at the career website.

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Supported by large project teams, you will supervise mission definition and feasibility studies, detailed design, development, verification and validation of new end-to-end satellite systems until the handover to operations. This will include supervising major procurements (for example of the ground segment and launch services) and cooperation with ESA and other partners, as well as the delivery of recurrent spacecraft and related support to our Operations and Services to Users Department.

You will be responsible for resource planning, cost control, knowledge and risk management within and across programmes and continuous improvement of programme management processes to meet quality and business objectives.

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**Application**

Applications to be submitted online via [www.ecb.europa.eu/careers/vacancies/html/index.en.html](http://www.ecb.europa.eu/careers/vacancies/html/index.en.html) by 4 October 2017. Female candidates are particularly encouraged to apply.



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## The next wave

SHEKOU

**A new generation of Chinese entrepreneurs will have a powerful impact on industries and consumers worldwide**

**N**EW era, new revolution. I am a MAKER, for the hearts of the dream." So goes a rallying cry carved in giant letters on the wall of a warehouse in Shekou, a seaside enclave near Hong Kong. Many of China's most promising entrepreneurs flocked there recently for a conference organised by TechCrunch, a technology publisher from Silicon Valley. Yet Baidu, Alibaba and Tencent—established Chinese internet giants collectively known as the BAT—were overshadowed by upstarts such as Didi Chuxing, a ride-hailing firm that chased America's Uber away from China, and Ofo, a bike-sharing startup that is going global.

They are part of a new wave of inventive young firms emerging from China. A few years ago, Chinese innovation meant copycats and counterfeits. The driving force is now an audacious, talented and globally minded generation of entrepreneurs. Investors are placing big bets on them. Around \$77bn of venture-capital (vc) investment poured into Chinese firms from 2014 to 2016, up from \$12bn between 2011 and 2013. Last year China led the world in financial-technology investments and is closing on America, the global pacesetter, in other sectors (see chart 1 on next page).

China's 89 unicorns (startups valued at \$1bn or more) are worth over \$350bn, by

one recent estimate, approaching the combined valuation of America's (see chart 2 on next page). And to victors go great spoils. There are 609 billionaires in China compared with 552 in America.

"Innovation moves faster here," insists Kai-Fu Lee, a former head of Google's Chinese operations who now runs Sinovention Ventures, a vc fund and accelerator in Beijing. Gone are the "c2c" (copy to China) and "jge" (just good enough) strategies of their parochial predecessors. China's nimble new innovators are using world-class technologies from supercomputing to gene editing. Having established themselves in the cut-throat mainland market, many are heading abroad.

There are three main reasons why China's determined entrepreneurs can expand their businesses rapidly. First, the economy, the world's second largest, is big enough to let firms attain huge scale just by succeeding at home. It helps that language and culture are more homogeneous than in Europe and physical infrastructure (such as roads and wireless broadband) is new and excellent, unlike in America.

Second, Chinese shoppers are voracious and venturesome, an advantage to innovators with clever products but unfamiliar brands. They are also unusually eager to embrace technology. China's pene-

tration rates for mobile phones and broadband internet are high, making it easy for startups to reach a vast market cheaply. And China is rapidly becoming cashless. The volume of mobile payments shot up almost fourfold last year, to \$8.6trn, compared with just \$112bn in America. This is why China breeds financial-technology startups so quickly and is home to many of the world's most valuable fintech firms. Ant Financial, spun out of Alibaba, may be worth more than \$60bn.

Third, state-dominated industries ranging from telecommunications and banking to health care are woefully inefficient and even hostile to consumers. This allows agile newcomers, with business models that put the customer first and deploy the latest technologies, to jump ahead of incumbents more easily in China than their counterparts in developed markets.

### Moving at China speed

The government's inability to run industries well is counterbalanced by a willingness to support new ventures, which in turn hastens innovation in areas such as transport. David Frey of KPMG, a consultancy, believes that it has played a useful role as a "market-maker", one reason why China is far ahead of America in both electric-vehicle (ev) registrations and the number of charging facilities. A recent announcement of an eventual ban on petrol engines (probably after 2030) could help to secure a long-term lead in the global ev market. But the most useful change was a decision to allow venture-backed startups without previous carmaking experience to enter a field previously dominated by inept firms cranking out subpar evs.

Consider Nio, a three-year-old automotive company. Its headquarters and research centre are tucked away in a huge complex of low-rise buildings in Shanghai's Jiading district, a cluster that aspires to become the Detroit of China. It is the brainchild of Li Bin, one of China's most formidable serial entrepreneurs. He made a fortune through BitAuto, a pioneering online platform for buying and selling cars. He also conceived and launched Mobike, Ofo's main rival in the booming bike-sharing market, and is still its chairman. Nio, backed by the country's most astute early-stage investors, including China's Hillhouse Capital and America's Sequoia Capital, is valued at around \$3bn.

Leaping to a whiteboard, Mr Li calculates that the impact China's cars have had on the planet over the past decade equals that of all cars in the previous 100 years. "From 2000 to 2017," he adds, sketching a declining curve, "there was diminishing happiness from owning a car." Traffic, pollution and accidents were to blame. So too, he adds, is a car industry locked into "a 100-year-old way of doing business".

### Driven by innovation

His solution has three pillars. The first is to combine cloud computing, artificial intelligence and sensing technologies to advance autonomous driving. This will not end traffic jams, he reckons, but it can bestow on erstwhile drivers the gift of free time in their cars. Nio has unveiled Eve, a concept vehicle that is in effect an AI-powered living room on wheels. The second pillar is to speed up electrification. To augment the roll-out of conventional chargers, he will offer rapid battery swapping in big cities. The third, and one in which he thinks startups have the edge, is to design cars specifically for the digital era.

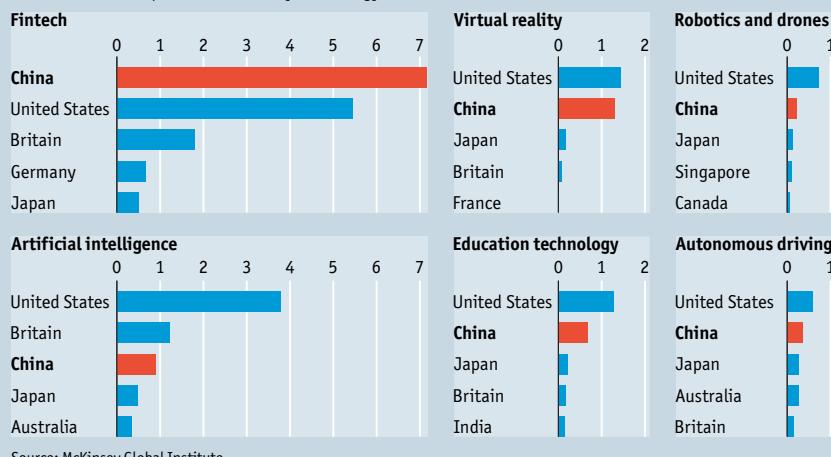
The firm has developed much of its technology in-house. It employs people from 40 countries, some poached from established carmakers including Ford and Volkswagen. Last November, Nio presented its first vehicle at a glitzy event at the Saatchi Gallery in London. The EP9, which holds the world speed record for EVs, is designed to wow critics and show off technological prowess, not for mass-market sales. That will come in time, says Mr Li.

Over the next decade, he sees sales rising to the millions, half outside China. Nio has an affiliate in Silicon Valley headed by Padmasree Warrior, a former chief technology officer of Cisco, which plans to raise funds as an independent entity this year. "We consider ourselves a global startup because we want to solve global problems," Mr Li reflects. As for rivals, he is confident that "Nio can do much better than Tesla."

Venturesome consumers also play a role in fostering innovation. The Chinese are keen to try new products and are more forgiving than Westerners if they are not

### A good place to startup

Chinese venture-capital investment by technology, 2016, \$bn



Source: McKinsey Global Institute

perfect. Deprived of consumer goods and luxuries for many years, they are eager to experiment. Wealthy Chinese are younger (typical Audi buyers in Germany are in their 50s; in China they are in their 30s), and hence more familiar with technology. Because the car is not a cherished cultural icon as it is in America, locals are not addicted to driving and are open to alternative forms of mobility such as ride-sharing.

That has been a boon to Didi. With a reported valuation of \$50bn, it is the world's most valuable startup after Uber. This is thanks to an injection earlier this year of \$5.5bn, the biggest-ever funding round for a young tech firm, by a group led by Japan's SoftBank. Didi's other investors include all the BAT companies, as well as Apple. Didi is far more than a smartphone app for hailing cars, explains Connie Chan of Andreessen Horowitz, an American VC firm. The willingness of local consumers to experiment has helped shape its business model.

Didi runs car pools, minibuses and buses in addition to taxis and luxury cars. It has services for the elderly and can send a driver to take you home in your own car. The firm provides about 20m rides a day in China, several times the number managed by Uber worldwide. Didi hopes to use AI to predict a customer's transport needs, be that for cars, public transport or bicycles. Its platform offers 200,000 EVs, a figure set to rise to 1m within a few years, and it plans to promote autonomous cars heavily.

"We're definitely going global," de-

clares Jean Liu, Didi's president. Her firm owns stakes in ride-hailing services worldwide, from India's Ola and South-East Asia's Grab to Brazil's 99 and America's Lyft. In July Didi and SoftBank ploughed \$2bn into Grab. In August the Chinese upstart invested in two Uber clones, Estonia's Taxify, which serves Europe and Africa, and Dubai's Careem, which operates in the Middle East. It does not lack ambition: "In the next five years, Didi will grow beyond a mobility service to become the world's leading automotive network operator and a leader in new transportation technologies," the firm claims.

Didi's success shows how local companies can cause global disruptions with sharing-economy services road-tested in China. The country's urbanites already use smartphones to rent umbrellas, mobile-phone chargers, basketballs and other necessities for a small fee. The firms behind such services are pioneering the use of micropayments and credit verification using analysis of social media.

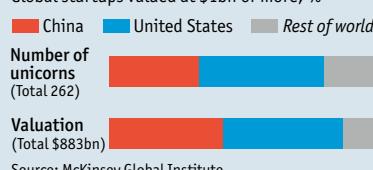
### Accelerating the business cycle

The battle of the bikes is the most closely fought of China's sharing-economy wars. Ofo and Mobike, rival bike-sharing unicorns worth about \$3bn each, have redesigned the humble two-wheeler to be an intelligent, cloud-connected device. China's big cities are awash with brightly coloured bikes from a rainbow of competitors. Because tracking technology removes the need for dedicated docks, they can be picked up and dropped off anywhere. This convenience creates new problems to solve. Ofo is pioneering a credit-scoring system that rewards well-behaved users and punishes naughty ones, such as those who park in the middle of roads.

Dai Wei, Ofo's boss, explains that his firm's rapid rise builds on the explosive growth in smartphones, mobile payments and the internet of things in China. Just ➤

### Believe in unicorns

Global startups valued at \$1bn or more, %



Source: McKinsey Global Institute



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► three years ago, Ofo's founders were poor students in Beijing, frustrated that their bikes were often stolen. They now control 8m bikes and provide over 25m rides a day in America, Singapore and Britain as well as China, and expect to operate in 200 cities in 20 countries by the end of the year.

Ofo is moving at China speed but the trail ahead could be bumpy. The mainland has dozens of bike-sharing startups. All are investing furiously. Almost all will be crushed. The chance of failing in China is far higher than in Silicon Valley, explains Xiang Bing, dean of Cheung Kong Graduate School of Business in Beijing. But because so many well-funded firms are chasing so many novel ideas so quickly, he predicts that the battle-hardened winners will become world-beaters.

The inefficiency of China's state-dominated economy is another powerful force boosting entrepreneurs. Young firms are using new technologies and novel business models to push aside state-run laggards. China's health industry, for instance, is antiquated and dysfunctional. Long queues are common at state hospitals and access to drugs is complicated by an opaque system of dispensation. AliHealth, an arm of Alibaba, is now a leading online pill-peddler. WeDoctor helps patients book medical appointments using smartphones. Venus Medtech has invented a retrievable heart valve intended for patients with high calcification in their arteries.

The best example of a local health-care disrupter with global potential, however, is iCarbonx, a health-data analytics firm from Shenzhen, a metropolis near Hong Kong. It is the brainchild of Wang Jun, who is a picture of the active health he wants to encourage with his startup. He formerly ran BGI, one of the world's leading genomics-research firms. The Chinese company was involved in the global race to decode the first human genome and at one time owned half the world's gene-sequencing equipment.

### Healthy competition

Asked why he left, Mr Wang confesses that he grew frustrated by the limits of academic research, even at privately run BGI. A breakthrough in genomics typically does not carry real-world implications. A better approach, he reckoned, would be to marry genomics with data on lifestyle, diet, gut bacteria, blood and so on to find stronger correlations and better treatments. This required entrepreneurship, he reasoned, because "commercial firms are designed for efficiency."

At iCarbonx he aims to build a predictive digital avatar of each of its customers. The company will start with the goal of 1m punters within a few years, he says, but expects to grow in time to 10m or 100m or beyond as its AI algorithms, supercomputing expertise and analytical methods im-

prove. Within six months of its founding in 2015, Mr Wang had secured enough funding from Tencent and others to become a unicorn—making iCarbonx the fastest firm in the world to do so.

To mine a deep seam of health data, iCarbonx has invested \$400m in building a global coalition of medical startups. SomaLogic will supply expertise in analysing human proteins. PatientsLikeMe, which curates an online network of some 500,000 people with chronic diseases, will share patient experiences. AOBiome will contribute its knowledge on the interaction of bacteria and human health.

### Fast-mover advantage

Western rivals like IBM and Google have similar goals but Mr Wang is undaunted. "We'll collect more and better data, and we'll do it more quickly," he insists. He just might. With Tencent as a partner, he can expect access to data collected by WeChat, its messaging-and-payments app with about 1bn users. It helps that Chinese consumers are more relaxed than Westerners about sharing personal data. The Chinese government's supportive stance on "precision medicine" is useful, too.

Other inefficient state-dominated industries are being upended. China's logistics sector was roughly equal to 15% of GDP in 2016, costlier even than in Brazil or India. Many of the lorries owned by individuals miss out on jobs because they lack information about potential new loads. This is changing fast. "Our target market is ten times as big as Didi's," calculates Richard Zhang, the finance chief of Huochebang, a logistics-technology unicorn. He estimates that the empty-load rate in China is 40%, well above the American level. Huochebang's online marketplace matches drivers with loads at no charge (though he expects this service to become the main earner once the firm starts levying fees). It also offers lorry sales and leasing, insurance and financial services. Mr Zhang vows to go global in the future.

Older firms often stuck with the familiar home market, but the best new ones are born global and have the world in their sights. Many have founders educated abroad; others are backed by foreign venture capitalists. Edward Tse, an expert on Chinese innovation, argues that local startups have world-class people and technology at their disposal: "They know much more about what is going on in Silicon Valley or Israel than do Europeans."

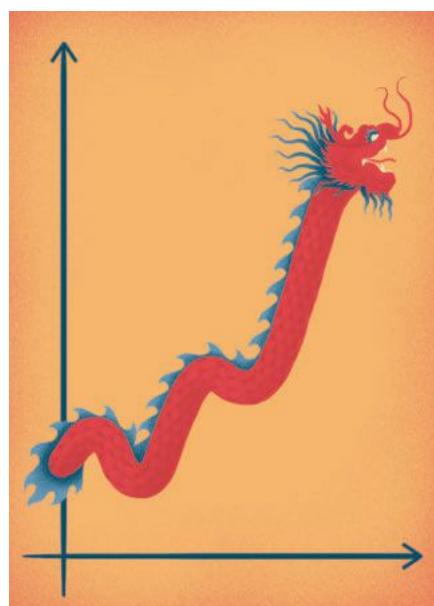
Mr Lee reckons the country's vast and growing market, its urban hyper-density and its legions of tech-hungry and free-spending young people provide a better proving ground for aspiring global entrepreneurs than do the stagnant markets of the developed world. He is convinced that China has the most industrious entrepreneurs and the boldest venture capitalists

anywhere. As a result, he insists, China's winners "will inherit a decent portion of the world market."

China's new entrepreneurs are clearly on the ascendancy but there are plenty of ways in which they could yet stumble. Outside factors such as a sharp recession or banking crisis could lead to a panicky venture-capital bust. The rule of law in China remains uncertain. Many new firms, such as those in online finance and the sharing economy, operate in grey areas that are vulnerable to regulatory whim. Even the popular bike-sharing firms could one day find their business models undermined by arbitrary new rules.

The high-octane nature of innovation in China may also make for a bumpy ride. The spectacular rise of some firms could be mirrored by the precipitous fall of others. Even so, there are good reasons to think that the best of the bunch will overcome such obstacles and in time enhance competition and provide better goods and services everywhere. A Chinese startup might even give the world that most elusive of inventions, the flying car.

Kuang-Chi Science already makes money by floating helium-filled blimps, chock-full of sensors and communications equipment, high above cities. Liu Ruopeng, its chairman, explains that this is an inexpensive "satellite for smart cities" that can monitor traffic and pollution while serving as a hub for the internet of things. It is perfecting advanced balloon technologies that it hopes will bring tourists and cargo to near-space at a fraction of the cost of rockets within a few years, and owns a majority stake in Martin Jetpack, a New Zealand firm that makes one-man flying machines. "Every individual should be able to fly cheaply, easily and safely!" insists Mr Liu. China's new wave of entrepreneurs has already taken flight. ■





## Politics in Pakistan

# Dynast v gynaecologist

LAHORE

### The country's foremost political family is under siege

**A**T a pre-election rally, a procession of cars and pick-up trucks squeezed through the narrow streets of Lahore. The crowd sweated, cheered, trod on each other's feet and rained rose petals on the parade. All that was missing was the candidate. Kulsoom Nawaz Sharif, the former first lady of Pakistan, was in London undergoing cancer treatment. She did not campaign at all, leaving that job to her more charismatic daughter, Maryam Nawaz.

She won anyway, but in a manner that augurs yet more political turmoil for her country. Her husband, Nawaz Sharif, was Pakistan's prime minister until July, when the Supreme Court sacked him—hence the by-election for his parliamentary seat on September 17th. Mr Sharif's supporters dismiss the ruling as politically motivated. (He was banned from office for failing to declare a salary to which he was entitled as a director of a family firm.)

Mr Sharif hoped that voters would elect his wife to his old seat by a huge margin, thus repudiating the Supreme Court's verdict. She won, but by a much smaller margin than Mr Sharif had managed in 2013. For Pakistan's most prominent political family, on its home turf, in a province governed by Mr Sharif's brother, that is a bad omen, less than a year before the next national elections.

Imran Khan, a former cricket star turned politician, is jubilant. His party's candidate, Yasmin Rashid, a gynaecologist,

came a creditable second after roundly condemning the Sharif family for their aloofness, their lack of respect for the army and their cronyism. "They believe that rules are made for everybody else apart from them," she sneered.

People are beginning to see Mr Khan as a plausible future prime minister. That is fairly new. Despite his fame and two decades in politics, his influence was marginal until 2013. That year his party, the Pakistan Movement for Justice (PTI), won the second-largest share of the national vote and control of one of Pakistan's four provinces, Khyber Pakhtunkhwa. Next year it will pose the only serious threat to Mr Sharif's Pakistan Muslim League-Nawaz (PML-N). The party of two former prime ministers from the Bhutto family, the PPP, has become irrelevant outside their home province of Sindh.

Mr Khan's message is simple. He is an honest, pious Muslim. He denounces the ruling party as corrupt stooges of Uncle Sam. He vows to clean up public life, to reject American aid that "enslaves" Pakistan, and to resist American pressure to fight against brother Muslims (ie, the Taliban). He appeals to Islamists, nationalists and voters who are fed up of being ruled by the same handful of families. "He'll clean up corruption on his first day in office!" gushes a rather optimistic supporter.

Others view Mr Khan as a hothead who will further inflame Pakistan's al-

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ready atrocious relations with India, Afghanistan and America. President Donald Trump clearly has little patience for what he views as Pakistani double-dealing. "We have been paying Pakistan billions and billions of dollars. At the same time, they are housing the very terrorists that we are fighting," he said last month. To the alarm of Pakistan's generals, he has promised to send extra troops to Afghanistan and beef up America's "strategic partnership" with India. His administration has suspended some military aid and is pondering whether to stop treating Pakistan as an ally.

### ISI shopped the Sharifs?

As prime minister, Mr Sharif favoured better relations with America and India, not least because isolation makes Pakistan poorer. He clashed furiously with Pakistan's military intelligence over its covert support for jihadist groups that kill Indians, Afghans and (occasionally) Americans. His supporters believe that the army—the most powerful institution in Pakistan—is behind Mr Sharif's recent misfortunes, and that it has secretly been supporting Mr Khan. Maryam Nawaz calls Mr Khan a "pawn". (She means "of the army", but dares not say so explicitly.) Mr Khan denies this, but his strident rhetoric delights those who want to keep Pakistan on a permanent war footing and thereby preserve military budgets.

Despite its fractiousness, Pakistan is doing well in some ways. Its economy is expected to grow by 5% this year. Poverty has halved in the past 15 years. Members of a new middle class are rushing out to buy their first fridges and motorbikes. But the near future looks dicey: the current-account deficit is at a four-decade high and the central bank is struggling to prevent a devaluation of the currency. Some economists think Pakistan will have to turn to the ➤

► IMF for help next year. The government, led for now by an ally of Mr Sharif, Shahid Khaqan Abbasi, is anxious to avoid such a humiliation before the election.

Political violence has ebbed on Mr Sharif's watch. Deaths from Pakistan's war against domestic jihadists fell by two-thirds, and are on track to be even lower this year. Since the Pakistani Taliban slaughtered 148 people, mostly children, at an army school in 2014, the army has cracked down vigorously on domestic militants. Yet it has barely tried to curb the groups that attack Pakistan's neighbours. Instead, it has encouraged some of them to enter politics. Two new extremist parties, one of which has links to the terrorists who killed 166 people in Mumbai in 2008, won 11% of the vote in Lahore. The army argues that "mainstreaming" such groups will

make them less violent. Others fear it will help them drum up money and support.

Mr Sharif's party still has a huge majority in parliament, and is more likely than not to win next year's elections. But the Sharif family's legal woes are not over. The National Accountability Bureau has summoned Mr Sharif, his daughter and two of his sons for questioning about their foreign assets. They refused to show up for a hearing on September 19th. Saroop Ijaz of Human Rights Watch says there is a "real danger" that if the Sharifs refuse to recognise the bureau's authority, it will lead to a constitutional deadlock. He adds that this is exactly the sort of excuse that the army has used in the past for overthrowing civilian governments. Mr Sharif has failed three times to complete a full term as prime minister; it is starting to look like a pattern. ■

lution of Karnataka, where Siddaganga is located, and an election beckons early next year. The state is the last big one to be held by Congress, after a series of BJP victories around the country in recent years.

For decades most Lingayats have voted as a block for the BJP. In Karnataka the party is led by B.S. Yeddyurappa, a Lingayat who presided over a scandal-prone government from 2008 to 2011. But the community now seems divided, with some mutts clamouring for minority-religion status and others content to be counted as a caste within Hinduism. In August a rally for the cause of not-Hinduism attracted nearly 200,000 marchers.

Only a decree from Mr Modi's government can officially elevate Lingayatism from a mere sect into a religion. But the BJP's ideology of Hindu nationalism obliges it to oppose any step that smacks of undermining Hindu solidarity. The grubby electoral stakes are also important. The BJP is keen to win over sceptical, mostly lower-caste Hindus from India's southern states, who often accuse Hindi-speaking northerners of cultural imperialism, to cement its grip on national politics. Congress, meanwhile, is the obvious beneficiary of divisions among the BJP's supporters in Karnataka.

Like many reformist movements within Hinduism, Lingayats bridle at the caste system. Similar impulses have underpinned the evolution of several religions with Indian origins, including Buddhism, Jainism and Sikhism. Basava implored followers to renounce "all the ties born of vanity and riches". A scholar of the faith, S.M. Jaamdar, likens Basava to Martin Luther, and his poetry to Luther's 95 theses calling for radical reforms to Catholicism, "but written 200 years earlier". Lingayats' near-heretical devotion to social justice is under constant threat, he says, paraphrasing another scholar: "Hinduism is an ocean and Lingayatism is an island; the ocean will always erode the island."

Such claims arouse violent passions. A like-minded colleague of Mr Jaamdar's, M.M. Kalburgi, was shot dead in 2015. So was another crusading Lingayat, the journalist Gauri Lankesh, who in August published an essay arguing that Lingayatism should be considered a distinct faith. She was assassinated less than a month later.

Ms Lankesh was also an atheist and a staunch left-winger, whose views had earned her enemies far and wide. There are any number of theories about the motive for her murder. But the debate about Basava and the meaning of Hinduism is no longer just an academic one. The walking god of Siddaganga, already a middle-aged holy man when India held its first election after independence, might not mind how the current government categorises his beliefs. But his young disciples have long careers as voters ahead of them. ■

## Defining Hinduism

### Sect drive

TUMKUR

**A medieval poet creates a headache for India's most powerful political party**

CALLED to evening prayer, 8,500 schoolboys shuffle in very long lines along a grand arcade built in the shadow of a granite plateau. Barefoot, each wears a white lungi, a red shoulder-cloth and three horizontal streaks of ash across his forehead. Slogans painted on the boulders above remind them that "Work is worship" and "One god has different names." These are quotes from Basava, a poet, philosopher and administrator who lived in the area in the 12th century.

The holy men who teach at the Siddaganga mutt (monastery), 70km from the IT hub of Bangalore, revere both the god Shiva and Basava, who was a monotheist. That makes them Lingayats. But does it make them Hindus too?

The creed has plenty of the trappings of Hinduism, but an unusual fixation on social justice. Its most esteemed adherent, Shivakumara Swami (pictured), the head of the mutt, is 110 years old. He spends most of his time lying quietly on a modern hospital bed in a granite temple at Siddaganga, but he is still known as "the walking god", after a lifetime spent travelling the surrounding countryside, teaching and soliciting alms on behalf of the poor.

On September 10th he and his designated successor received a minister from the local state government, M.B. Patil, a fellow Lingayat and member of the Congress Party. Mr Patil came away announcing that the great seer had agreed with him that Lingayatism should be declared its own religion, distinct from Hinduism. The same



**He has had 110 years to think about it**

evening an envoy from the Hindu-nationalist Bharatiya Janata Party (BJP) of India's prime minister, Narendra Modi, rushed to the mutt and persuaded its leaders to refrain from any such judgment. A steady stream of politicians has since made the pilgrimage. Delegates from both parties, all Lingayats, plead quietly for a moment of the swami's dwindling time.

Hinduism is an amorphous religion, with many schools and sects. The question of when an offshoot becomes its own faith keeps squads of anthropologists busy, but tends not to matter much to anyone else. But Lingayats account for 17% of the popu-

## Gay marriage in Australia

# Just don't call it a plebiscite

SYDNEY

To defuse a row within his party, the prime minister sparks a national furore

**T**HE question reads, "Should the law be changed to allow same-sex couples to marry?" Ballots asking it have been posted to Australia's 16m registered voters. They have until early November to return them; the result will be announced on November 15th. Rallies for and against are being held around the country. Earlier this month 30,000 supporters of gay marriage gathered outside Sydney's town hall, waving placards with slogans like, "It's a love story baby, just say yes."

One of those saying yes is Malcolm Turnbull, the prime minister. But many Australians criticise him for calling the vote at all. Opinion polls consistently show that most Australians support gay marriage. Proponents say a simple vote in parliament, which also has a majority in favour, would have saved money and avoided a divisive campaign.

But if there is relatively little debate among Australians, there is a great deal within Mr Turnbull's (conservative) Liberal Party and its coalition partner, the Nationals. In 2004 a Liberal government, led by John Howard, amended the previously ambiguous law on marriage to define it as "the union of a man and a woman to the exclusion of all others". Tony Abbott, a more recent Liberal prime minister, tried to duck demands that parliament reverse this change by proposing in 2015 that Australians vote in a non-binding plebiscite instead. Mr Turnbull, for his part, once supported a parliamentary vote. But to win

the support of conservative MPs for his campaign to supplant Mr Abbott two years ago, he accepted the idea of a plebiscite.

Other parties, naturally, have been reluctant to help the Liberals paper over these internal differences. The Senate, where Mr Turnbull's government lacks a majority, rejected a bill to hold a plebiscite. Mr Turnbull's answer in August was to conduct a postal "survey" instead—a step that did not require parliament's approval.

It is an unusual exercise. Voting is normally compulsory in Australia, and the results of referendums are binding. Neither condition applies to the "Australian Marriage Law Postal Survey". It is being conducted by the Australian Bureau of Statistics, not the body that oversees elections. Michael Kirby, a gay former High Court judge who supports gay marriage, says it is "just something we've never done in our constitutional arrangements". But the High Court dismissed legal challenges to the vote earlier this month.

Mr Turnbull says the right to marry is a "conservative ideal". He lists 13 countries where gay marriage is legal, including Australia's main English-speaking allies. Mr Howard, who lost power ten years ago, has re-emerged to lead the No campaign. Mr Abbott has joined him. They are painting gay marriage as merely the first item on a radically permissive agenda. One ad for the No campaign suggests that it is only a matter of time before schools start encouraging children to cross-dress.

Christine Forster, Mr Abbott's gay sister and a Liberal member of Sydney's city council, accuses her brother of playing "Machiavellian games" with an issue that has been an "awful roller-coaster ride". Gladys Berejiklian, the Liberal premier of New South Wales, the most populous state, calls gay marriage one of the most important human-rights issues "of our time". Australia is a "laggard", argues Frank

Bongiorno of the Australian National University, because its main political parties have "failed to translate long-standing consensus into change".

Several prominent business figures also support a Yes vote. Many worry that the government has mishandled the issue by drawing it out, allowing divisions within its ranks to overshadow pressing economic reforms. Mr Turnbull has promised prompt legislation if the Yes vote wins; he predicts it will "sail through" parliament. Although public opinion seems strongly in favour, the unprecedented method of voting makes turnout hard to predict. Some Yes campaigners worry that young voters have no idea how to use a letterbox. But if the No vote prevails, the opposition Labor party says it will still legalise gay marriage if it wins the next election, due in 2019. ■

## Gay-bashing in Indonesia

# Looking for shelter

JAKARTA

Anti-gay hysteria is on the rise

**U**NTIL a year ago, Mama Yuli could count on a steady stream of reporters and television crews to make their way to her small orange house in Jakarta's suburbs for a peek at what is thought to be Indonesia's only shelter for transgender women. Julianus Rettoblaut—Mama Yuli's full name—had made a splash as the first openly transgender woman to obtain a master's degree in Indonesia. She had also tried twice to become a member of the Human Rights Commission.

But the coverage came to an abrupt halt last year. That is unfortunate, as Mama Yuli needs the donations that came with it. The shelter is home to six transgender women, though many more come and go. On a recent day there were nine. It is far from luxurious: a leaky roof had forced several of them to sleep on the floor, and a broken toilet added to their indignities. "We often invite television to come and now they say 'No,'" Mama Yuli laments.

In early 2016 the Indonesia Broadcasting Commission banned television stations from screening images of "effeminate men" or of anyone campaigning for rights for gay or transgender people, to protect children from "deviant" influences. The pressure on gay and transgender Indonesians has only increased since. In May in Aceh province, which has used its special, semi-autonomous status to adopt some elements of sharia (Islamic law), the authorities publicly caned two men caught having sex with one another. Indonesia does not have a national law against sodomy, but ►



A party prompted by a feud within a party

► around the same time the police in Jakarta rounded up 140 or so men at a gay sauna, saying they may have broken the law on pornography. The police chief of the province of West Java, Anton Charliyan, has pledged to set up an anti-gay task force, charged with trawling through social media posts to detect gay events to raid.

Indonesia has a long-standing, indigenous transgender tradition. Men who identify as women are labelled *waria*, a fusion of the words for men and women. During the 1960s the governor of Jakarta, Ali Sadikin, founded an advocacy group for *waria*. *Waria* dancers were among the attractions at the annual Jakarta Fair. Until recently gay venues and gay activism were grudgingly tolerated in big cities.

A wave of anti-gay hysteria is now testing this tolerance. In July Map Boga Adiperkasa, a company that runs the local branches of Starbucks, disavowed the brand's support for gay rights after a huge Muslim group called for a boycott. Several politicians have proposed criminalising homosexuality. There is much talk of the insidious threat to the fabric of the nation.

The government of Joko Widodo, the reformist president, has joined in. Ministers have mused about banning gay student groups from universities, or attempting to weed out gay civil servants. The attorney-general's office has stated explicitly that it will not hire any gay or transgender staff. (Indonesia does not have a law protecting gay or transgender people from discrimination.)

Some see this moralising as bluster, designed to burnish the government's Islamic credentials at a time when it is taking on radical groups. In July Jokowi, as the president is known, issued a proclamation banning the Hizbut Tahrir Indonesia, which wants to replace the government with a caliphate. The authorities are also seeking the arrest of the head of the Islam Defenders Front, a vigilante group, on suspicion of breaking the law on pornography by sexting a woman who is not his wife.

It is little consolation to gay and transgender Indonesians that the government's outrage may be feigned. Conservative Muslim activists have been emboldened by their success in ousting Jakarta's governor earlier this year over supposedly blasphemous comments he made during his re-election campaign. The constitutional court is hearing a case that may result in sodomy becoming a crime. Governments in several provinces other than Aceh have already passed local laws to that effect.

Undeterred, Mama Yuli is pursuing a doctorate in part to inspire other *waria* to get an education. Many are renounced by their families as teenagers, and end up as beggars or sex workers. This, Mama Yuli says, hands ammunition to conservatives: "The most important thing is that they have to change their behaviour." ■



## Tajikistan

# Beardless and jobless

### A crackdown on observant Muslims intensifies

**T**HE young Tajik man does not want to leave home, despite his mother's assurance that he looks fine. The day before he had sported a curly black beard, just like his friends from the mosque. But the police had frogmarched him and other bearded young men to the barber shop, where their beards were shaved off. A few of the onlookers laughed, but, once out of the police's sight, many more grumbled.

Such scenes have become increasingly common in Tajikistan, a landlocked country of 9m bordering Afghanistan and China. In 2015 an official in one of the country's four regions reported forcibly removing the beards of 13,000 men. Con men have started selling certificates, complete with photographs and official-looking stamps, permitting holders to grow a beard. Initially, the Tajik government blamed the crusade against beards on local police, but it now admits that it instigated the practice to curb religious extremism.

Shaving beards is just one tool the government uses to suppress Islam, even though more or less the entire population is at least nominally Muslim. In 2015 it closed more than 160 headscarf shops. Last year it outlawed Arabic-sounding names. Earlier this year it prohibited the production, import or export of religious books without permission. Obtaining a permit to set up a religious organisation, publish a book on Islam or go on pilgrimage to Mecca is an arduous process.

In 2010 Tajikistan had 19 registered madrassas and hundreds of unregistered ones. The last was closed in 2016. Anyone providing unofficial religious teaching can be imprisoned for up to 12 years. Even studying in religious schools outside the

country is prohibited. Almost 3,000 young men attending religious schools in Afghanistan, Pakistan, Egypt and other countries have been coerced into coming home.

There are about 3,700 mosques in the country. They are heavily regulated by the government, down to the subject of the weekly sermon. Using loudspeakers to broadcast the call to prayer is no longer allowed. Children younger than 18 and women are not permitted to attend the mosque. People under 40 are not allowed to go on the hajj.

Tajikistan was unique among the former Soviet republics of Central Asia in allowing an Islamist opposition party, the Islamic Renaissance Party of Tajikistan (IRPT)—the result of a peace deal that ended a civil war in 1997. But Emomali Rahmon, the country's leader since 1992, was on the opposing side in the conflict and has gradually reneged on the deal. In 2015 he banned IRPT; since then, his campaign against the pious has intensified.

The repression, inevitably, has helped to radicalise devout Muslims. More than 2,000 Tajiks are reported to have joined Islamic State. The former commander of an elite police force, Gulmurod Khalimov, is their most prominent recruit. In a YouTube video he threatened to return to Tajikistan to establish sharia (Islamic law). (Earlier this month Russia claimed that he had been killed in an airstrike in Syria.)

A more effective means to curb radicalism might be to boost the economy. Unofficial estimates suggest unemployment is as high as 15%. In search of work, many young men travel abroad, where some become radicalised. But Mr Rahmon seems more concerned about beards than jobs. ■

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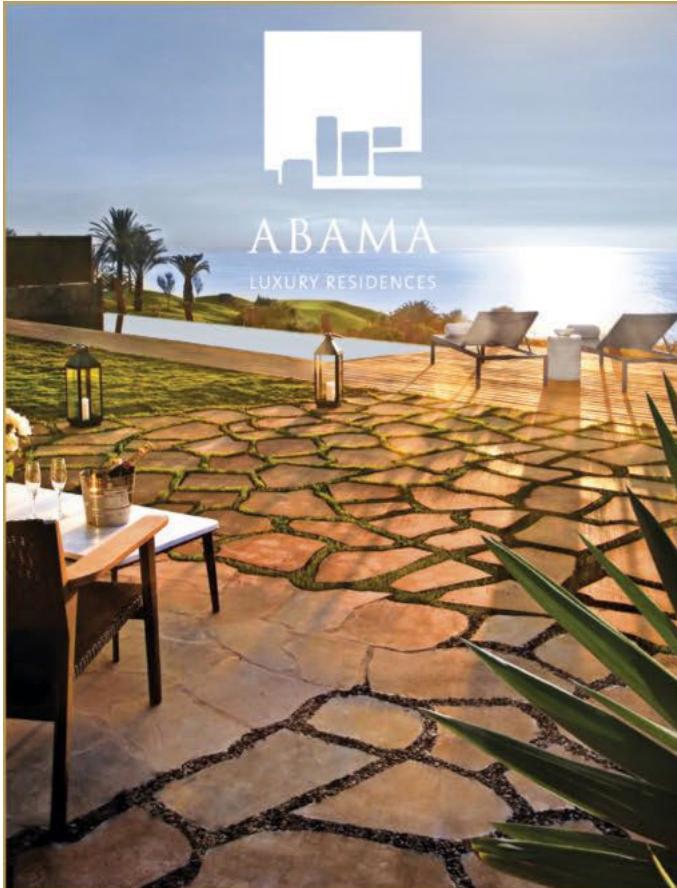
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# Banyan | A clean and pleasant land

New Zealanders are starting to have a problem with their self-image



**O**VER the rubbery chicken at your next tourism symposium, challenge fellow delegates to name the world's longest-running national tourism slogan. The answer—it was on the tip of your tongue—is “100% pure New Zealand”, Tourism New Zealand's catchphrase since 1999. Why mess with a good thing? The notion of a country blessed with pristine land, water and air appeals not only to visitors. It goes to the core of what the country means to New Zealanders themselves. So the slogan has the “authenticity” such gatherings always call for.

New Zealand, wonderfully far from anywhere, really does seem to have it all: glaciers and jagged peaks, charismatic fauna, vineyards, lusty rivers for fly-fishing or rafting, dive sites and thousands of miles of glorious coastline—not to mention the cosmopolitan, foodie cities of Auckland and Wellington. Its genius, and that of its marketing campaign, is to appeal to everyone, from scruffy backpackers to silver-haired oenophiles and even the superyacht set.

Chris Roberts of Tourism Industry Aotearoa, a lobby group, says that the cliché is true: a visitor comes for the scenery but goes home talking about the people. That includes Maoris, whose hospitality is the flipside of their legendary warrior spirit. Many visitors experience a Maori welcome up close—the biggest tourism operator on the South Island is the Ngai Tahu tribe.

The number of tourists has shot up in the past five years, from around 2.7m to 3.6m in the year ending in June. Tourism has pipped the dairy industry as the biggest export earner. International visitors bring in NZ\$14.5bn (\$10.5bn) a year, the equivalent of over NZ\$3,000 for each of New Zealand's 4.7m people.

In particular, the number of Chinese visitors has nearly doubled in the past five years, to more than 400,000. A growing proportion are “free independent travellers”, as distinct from package tourists who don't leave as many dollars in locals' pockets. For Chinese from cities where pollution obscures the sky, a big lure is stargazing in the Aoraki/Mount Cook region on South Island, part of the world's biggest “international dark sky reserve”. The tourism board still sees huge potential, claiming that 80m people are “actively” thinking about holidaying in New Zealand.

But there is a problem. New Zealanders are growing unsure about their country's 100% pure image. One issue comes from the

sheer numbers of tourists themselves. Another comes from the back end of a cow. Mr Roberts stresses that New Zealand sits way down the rankings of visitors relative to population and land area. But, he admits, some of the most popular tourist places are getting “hammered”.

The Tongariro Alpine Crossing, a day-long trek through spectacular scenery in New Zealand's oldest national park, gets 125,000 hikers a year. Especially when a spell of good weather follows bad, not only the trail but the roads up to it are heaving. It is hard to control such congestion, since free and unfettered access to national parks, which cover more than a tenth of the country, is enshrined in law. A NZ\$25m government grant to help local councils with such things as expanding packed carparks and public toilets will not go far.

## A pall on the wild

Meanwhile, for many New Zealanders, it is all a big adjustment. Locals who used to have their favourite wild places to themselves increasingly feel jostled. A particular gripe is about visitors who hire camper vans without loos, leading to lots of what Indians would call “open defecation”. Traffic jams in resorts such as Queenstown, once unheard of, are another cause for grumbling. Even having to wait in a queue at your local café is an unwelcome novelty. One of the most open societies on earth still prides itself on its welcome. But 20% of New Zealanders say there are too many visitors—up from 13% who said that in 2015.

New Zealand's pristine image has also boosted the dairy industry. Many Chinese consumers, in particular, choose Kiwi infant formula over domestic brands, which they fear will be contaminated. Over the past 15 or so years, sheep farms have been converted to dairy, and family farms snapped up by corporations—the so-called Queen Street farmers, named after Auckland's main commercial drag. The boom has made fortunes. But it is also alarming New Zealanders who worry about the environmental impact, which has shot up the national agenda before a general election on September 23rd.

One objection is fragile landscapes ravaged to make way for cows, such as in the Mackenzie district, a dry upland rich in endemic plant and animal species that has been completely changed by irrigation. Conservationists are appalled that a rare ecology has been destroyed.

Indeed, water gets to the heart of New Zealanders' concerns. Dairy cattle need a lot of it, and produce copious excrement and urine in return. This pollutes watercourses and fills lakes with algal blooms, despite new requirements to fence streams off from livestock. Some rivers have become too polluted to swim in.

Nitrates and microbes from faeces also seep into aquifers that supply drinking water in some places. The city of Christchurch, ravaged by an earthquake in 2011, lies to the north of the Canterbury Plains, where dryland farms have given way to heavily watered dairy operations. Christchurch draws its water untreated, which worries experts. Last year ago an outbreak of campylobacter in a suburb of Hastings on the North Island made 3,000 people sick and killed two or three. Some fear something much worse for Christchurch.

It has all struck a chord amid the election campaign. A larger-than-life sculpture made of manure that depicts the hapless environment minister, Nick Smith, defecating into a glass of water has been a hit. With images like that, it can't be long before visitors notice there's a problem in this pure, unsullied land. ■



## Fertility and migration

# Ups and downs

BEIJING

**In demographic terms, China's provinces are becoming ever more disparate**

IF DEMOGRAPHY is destiny, as Auguste Comte, a French philosopher, once said, then China has many destinies. As a result of 30 years of the now-relaxed one-child policy, the country has an exceptionally low overall fertility rate: 1.2 according to the census of 2010. (The fertility rate is the number of children an average woman can expect to bear during her lifetime. If it is less than 2.1 a population will shrink in the long run, unless immigration makes up for the dearth of babies.) What is almost never recognised, however, is that this is not a uniform problem. Just as China has richer and poorer regions, so it has areas of higher and lower fertility—or, to be more precise, of low and lower fertility.

As a whole, China has too few young adults relative to the size of older generations, meaning it will not have enough workers to support its pensioners (or children) properly in the future. But some areas will hit demographic trouble earlier and harder than others, with serious implications for economic growth and regional stability. Wang Feng, of the University of California, Irvine, dubs the problem “the Balkanisation of Chinese demography”.

The place with the lowest fertility is Beijing, where the rate was 0.71 in 2010. The highest rate that year was in Guangxi, a province in the south bordering Vietnam, where the fertility rate was 1.79. Both rates are below the replacement level. But Guangxi's fertility is two-and-a-half times

higher than Beijing's, which is a wider spread than the one separating the states with the highest and lowest fertility in Brazil, and only a little less than the equivalent gap in India.

The main reason is that, in practice, the one-child policy was never uniform. Ethnic minorities, such as Tibetans or Uighurs (the largest group in the western province of Xinjiang), were never subject to it. Minorities, who account for 8% of the population nationwide, were usually allowed two children in urban areas and three or four in rural ones. In addition, in most rural areas, everyone, including the majority Han group, was allowed two children.

### Degrees of dwindling

As a result China has four categories of fertility, not one (see map on next page):

1. Areas of ultra-low fertility (rates of less than 1). These are three mega-cities, Beijing, Shanghai and Tianjin, and three provinces in the north-east, sometimes called Manchuria, where the one-child policy was applied most strictly. They have a total population of 170m.

2. Areas where fertility is between 1 and 1.29. These include provinces on China's populous coastline, as well as the huge Sichuan basin in western China. They are overwhelmingly Han areas, so had few exceptions to the one-child policy. They were also the places where China's growth and urbanisation took off quickest after 1980,

so have relatively few rural dwellers. This is the largest category, with 600m people.

3. Provinces with fertility rates between 1.3 and 1.49. Many, such as Henan, Hunan and Anhui, are just inland from the coast. They, too, are populous (460m in total) and mostly Han but have fewer city-dwellers: more than half of the populations of Hunan and Anhui is rural. This group also includes several provinces with lots of members of minorities, such as Ningxia, in the north-west, which is a third Muslim.

4. Areas with rates above 1.5, which tend both to be more rural and to have big minority populations, such as Guangxi. These have a total population of 116m.

Since the one-child policy was in force so long, differences in fertility have become entrenched and their impact profound. To take one example, provinces with relatively low fertility tend to have an even bigger excess of boys over girls than is the norm. Nationally, the imbalance has ebbed somewhat since 2000, with the sex ratio at birth falling from 121 boys for every 100 girls in 2005 to 114 in 2015. But in the north-east there has been little or no improvement—a worry considering the high levels of crime associated with large numbers of unmarried men (called “bare branches” in China).

Fertility is not the only force pushing provincial demography in different directions. The migration of more than 245m workers from poor, rural areas to booming cities amplifies the difference in fertility in some places and counteracts it in others.

In the decade before 2010 the population of Chongqing, a large urban province in the west, fell by 2m (or 6%); in neighbouring Sichuan it fell by 3m. Births exceeded deaths in both places over the period, so the population should have grown. But this was offset by the outflow of migrants. Cai Yong of the University of North

► Carolina calculates that more than 10m people left Sichuan and nearby Hubei.

The combination of migration and varying fertility means that provinces are ageing at different speeds. The median age nationally rose from 25 in 1990 to 35 in 2010; it had increased to 37 by 2016. But the three north-eastern provinces all aged by even more than average. In Liaoning the median age reached 39.2 in 2010, about the same as Russia. In contrast, the median age in Tibet, the youngest province, is 27.8, about the same as India.

Ageing matters because pension provision is partly a provincial responsibility in China. The value of the basic state pension is fixed nationally, but provinces set their own contribution rates, administer the money collected and distribute the pensions. How heavy a burden this depends on a province's demography. As a rule, the lower the fertility rate, the faster the rise in the dependency ratio (the number of pensioners relative to the number of working people). In relatively fecund Guizhou and Yunnan, the ratio is still falling. In Beijing and Shanghai, it rose by more than four percentage points between 2010 and 2015, more than the national average.

Giant cities such as Beijing, Shanghai and Tianjin have ultra-low fertility and fast-rising dependency ratios yet are still able to attract young workers because China's highest-paying jobs are clustered there. As a result, their demographic profile is healthier than you would expect. The three cities, which have provincial-level status, are China's fastest-growing provinces by population, increasing by around 3% a year in 2000-10, thanks largely to migration. Since the migrants are mostly young, the cities' median ages rose much more slowly than the national average and

their dependency ratios remain relatively low. And since the cities are also rich, they have hospitals, social services and schools to cope with their demographic problems.

Provinces with high fertility and outward migration are the opposite. Take Hainan, a tropical island in the far south. It has high fertility (by Chinese standards) and stable dependency. It ought to be doing well. Yet it is one of China's poorest provinces (23rd out of 31) and is ageing fast, mainly because hundreds of thousands of workers from the freezing north-east are spending their retirement there. Its medical services are collapsing under the strain.

To see the convergence of all these trends, compare two regions, the north-east and Guangdong. The north-east is China's rust belt, a place of depleted coal mines and decayed steel mills. It has had low fertility for decades, falling below replacement levels as long ago as 1982, much earlier than elsewhere (and before the one-child policy even began). It also implemented the policy especially strictly because it is dominated by state-owned industries which decreed that people who had a second child would lose their jobs. "Who would risk it?" asks a former steel worker. The area's high wages used to attract migrants from elsewhere in China. But since 2000, when heavy industry ran into trouble, it has suffered a net outflow of over 2m people. Hotels near the Harbin Institute of Technology (in the region's largest city) are packed around graduation day with recruiters from southern firms.

Last year a series of articles in *China Business News*, a state-run newspaper, revealed the extent of the region's demographic problems. In China as a whole, it said, there were 2.9 people paying into provincial pension schemes for every person

drawing a pension. In Liaoning, there was only 1.8; in Jilin, 1.5; and in Heilongjiang, just 1.3. The region's share of China's young workers (20 to 39 years of age) fell from 10% in 1982 to 8% in 2010. Zhou Tianyong of the Central Party School in Beijing says the region's lack of young workers is his biggest worry. The national government has a grand policy to help the region called "the north-east revitalisation plan", but as one of the articles noted, the region's demographic crisis is never discussed.

Now compare that with Guangdong at the other end of the country, next to Hong Kong. On the face of it, China's largest province, with a population of 108m, also faces severe problems. Its fertility rate was reported to be 1 in 2010, more than in the north-east but still alarmingly low. Yet its population rose more quickly in 2000-10 than any other province except the three huge cities. Its median age is five years below that in the north-east. It has 9.7 workers per pensioner, three times the national average, which has helped it to stash more money in its pension fund than any other province.

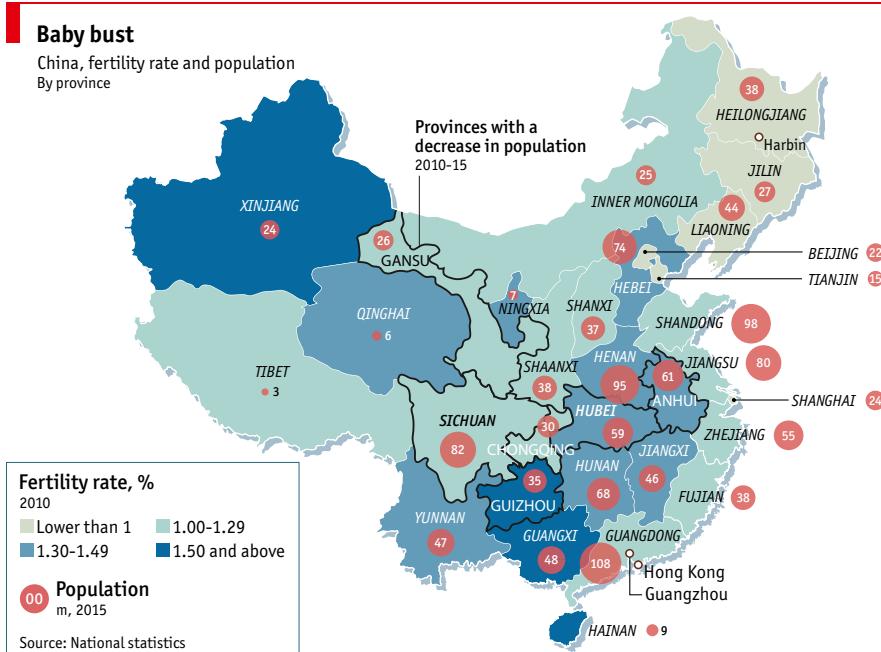
Whereas Beijing and Shanghai are attempting, misguidedly, to curb migration, Guangdong is trying to attract new arrivals. It has made it easier for their children to enrol in local schools (elsewhere the household-registration, or *hukou*, system, raises barriers to this). It also encourages everyone, including migrants, to join local social-insurance schemes. In mid-July, the province's capital, Guangzhou, said it would allow the children of better-off migrants who rent property the same access to schools as local home-owners. This is significant since almost all migrants rent, not own, their houses.

Unlike in Guangzhou, the national authorities have been slow to recognise the problems of demographic decline. As a result, low fertility, ageing, labour shortages and dependency have all taken on a provincial aspect. The three great cities look relatively healthy, as do Guangdong and Zhejiang, a nearby province that shares some of its features. But provinces with low fertility, declining or ageing populations, and rising dependency are in deep trouble. These include the north-east, Sichuan and Chongqing in the west and several provinces in the third category in terms of fertility, such as Anhui.

The result is a big problem for the national government. Even now, it is having to bail out some provincial pension funds. But the threat is also philosophical. The Communist Party has long sought to narrow economic differences and erase local political distinctions because it is terrified of regional challenges. It thinks the only way to keep China together is to impose strong central control. If it is right, its failure to deal with demographic problems is setting back that cause. ■

## Baby bust

China, fertility rate and population  
By province





## The Democrats

## Left, behind

DENVER, EMMAUS AND WASHINGTON, DC

**To rebuild from their lowest point in a century, Democrats are ditching centrist triangulation in favour of economic populism**

Nearly four years ago Bernie Sanders, the crotchety, democratic-socialist senator from Vermont who came surprisingly close to winning the Democratic presidential nomination last year, introduced a bill to provide universal government-run health care. It attracted no co-sponsors. On September 13th he introduced a similar bill. Sixteen Democratic senators—one-third of the party's Senate caucus—signed on as co-sponsors, including Cory Booker, Elizabeth Warren, Kirsten Gillibrand and Kamala Harris, all potential presidential candidates.

In the intervening four years Mr Sanders's proposal has grown no more feasible. In an interview with Vox, an online news outlet, Hillary Clinton, who defeated Mr Sanders for the nomination, raised the same objections she had last year: his plan is too vague, expensive and politically naive. But Democrats today are in no mood for caution; enraged and energised in opposition, they have taken a maximalist turn. Some single-payer supporters freely concede that the bill has little chance of passing soon, but believe it is better to take a bold position and get pushed, by circumstance or negotiation, back towards the centre than to start there. That is a sound mobilisation strategy. But the goal of party politics is not mobilisation; it is victory, and the party's centrist wing, quiet as it is now, worries that full-throated progressiv-

ism may prove a hard sell at the ballot box.

Party leaders downplay fears of a split, eagerly claiming progressive activists as partners. A wave of demonstrations last spring helped block Republican efforts to repeal the Affordable Care Act (efforts that have resumed, see next story). Mr Trump's ending of an Obama-era programme that allowed undocumented immigrants to work if they were brought to America as children also sparked demonstrations—less widespread and rowdy than those targeting health-care repeal, but only because Mr Trump appears eager to find a legislative solution that lets those immigrants remain. Emily's List, a political-action committee that helps pro-choice women candidates, says that in the 2015-16 election cycle 920 women interested in running contacted them. Since Mr Trump's election more than 17,000 have, from all 50 states.

Many of the activists themselves are warming up for a fight. Ezra Levin, co-founder of Indivisible, an umbrella group for local activists, believes “progressives should target Democrats and make sure they have spine...It's important that there is a force external to the party making sure all of our elected officials are standing up for what's right.” Activists in Pennsylvania's rust belt—a bellwether region in a bellwether state—express similar criticism. Jane Palmer, who heads an Indivisible group in Berks County, complains that the state party is

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“passive, old and not agile enough...We don't want to take orders from them. We have more power as outsiders.” For some, the bruises from last year's Democratic primary remain sore. Jude-Laure Denis of POWER Northeast, a faith-based progressive group active in Pennsylvania, explains, “In 2016 the party decided it knew better than the people. When you do that, you break your base.”

This is a familiar complaint from backers of Mr Sanders (like Ms Denis). Some of them believe the contest was rigged in Mrs Clinton's favour. It was not—Mr Sanders lost because he received less support—but e-mails from the Democratic National Committee (DNC) hacked by WikiLeaks revealed party insiders speaking of the upstart candidate with contempt. One former state-party chairman calls him “a uniquely destructive force”, more interested in tearing the party down—he is, after all, not even a Democrat—than helping to build it.

### The new New Deal

Yet despite his loss and the snarls of the party faithful, Mr Sanders's influence may prove more lasting than Mrs Clinton's. Many Democrats now support a \$15 minimum wage, another priority of Mr Sanders that Mrs Clinton hesitated to embrace. Not all Democrats back free in-state university education, as he does, but anyone who wants the base's support will have to do something about rising university costs. The “Better Deal” agenda released by Charles Schumer, the Senate minority leader, supports a higher minimum wage, a trillion-dollar infrastructure and job-creation package, paid family and sick leave and expanded regulatory power to break up monopolies and block corporate mergers deemed too big. The era of Democrats ➤

▶ co-opting Republican attacks on “big government” is over; Democrats today back government activism on a scale unseen since the New Deal.

Those who worry, like Mrs Clinton, that these policies might not pass a Republican-dominated Congress miss the point, says Tom Steyer, an investor and liberal philanthropist. “It’s crucial for Democrats to stand up for ideals, even if they’re not achievable...If there’s nothing you’re willing to stand for, what’s the point?” Republicans have long taken this approach, backing policies such as outlawing all abortion, less as practical goals to work towards than as ways to rally the faithful and frame debate. That approach has moved the centre of American politics ever rightward; progressives see marking out similar positions on the left as a way to push back and stake their own claim.

Boldness rallies people more than pragmatism. “People want to be inspired,” says Naomi Winch, president of the East Penn Democratic Club, an activist group. “Candidates have to lift people up...They have to be brave.” It also shifts the debate away from social issues: a boon for Democrats in Republican states. Stephanie Taylor, who heads the Progressive Change Campaign Committee (PCCC), which supports progressive candidates and causes, says that if you have a Democrat running in such a state as a “corporate-friendly Republican-lite, the only distinction becomes social issues. Then it becomes a race entirely about abortion and guns...instead, if they’re presenting an alternative vision about what government should be doing for working people, then you have a real choice.”

Democrats have long shied away from full-throated leftism, fearing it could scare away centrist voters, changing the calculation. But political polarisation has made such voters scarce. Research by Corwin Smidt of Michigan State University shows that between 2000 and 2012 an average of just 6.2% of voters pulled the lever for a different political party in two successive presidential elections, with the lowest recorded share (5.2%) coming in 2012—less than half the average rate (12%) between 1952 and 1980. Turning out the party faithful thus seems a surer road to victory than appealing to the vanishing centre.

Such talk makes centrists nervous. Will Marshall, a longtime advocate for pro-business, conservative Democrats, has started an advocacy group that will eventually sprout political-action committees aimed at supporting “a pragmatic wing [of the Democrats] that can be successful in middle America.” Mr Marshall favourably cites John Hickenlooper, Denver’s former mayor now serving as Colorado’s governor, as the sort of pro-business Democrat who can win centrist states while not alienating progressives. Mr Hickenlooper’s apprenticeship and job-training pro-



grammes are laudable; he sees them as “the essence of Democratic policy, which is providing opportunity for everyone. That’s what we should be talking about.”

Plenty of Democrats have begun testing “opportunity” phrases. Tim Ryan, a congressman from Ohio who challenged Nancy Pelosi for the Democratic House leadership, says that Democrats must be “the party of growth and opportunity”. Matt Bennett of Third Way, a centrist think-tank, uses the phrase “opportunity to earn”—meaning that Democrats should focus less on addressing inequality of outcomes through redistribution than on making sure the playing field is as level as possible, not tilted in favour of big companies or people born lucky.

### Equal opportunists

This pitch could appeal to both populists and moderates. It offers a unifying, forward-looking story, which Mr Obama also provided as a candidate, rather than Mrs Clinton’s scores of targeted micro-policies that never quite cohered into a whole. It also offers cross-racial appeal. Non-whites, who comprise an increasing share of Americans, overwhelmingly vote Democratic. Democrats want to keep it that way, so calls to abandon “identity politics”—to downplay immigration and racial-justice concerns, for instance—will fall on deaf ears. But equal opportunity is a malleable and forward-looking rubric that could have wider appeal, and it provides a tidy contrast with the revanchist undertones of “Make America Great Again”.

That only goes so far, however. In much of the country the party’s brand is toxic. Democrats hold few congressional seats outside big cities, and control no state-houses in the South; they hold just three away from the coasts. Ms Taylor of the

PCCC ran focus groups in Maine and South Carolina. She laments: “Issue by issue, people would hear our candidates and love them, but when they heard they were Democrats they would just shut down.” As the Democrats have grown into a party dominated by urban professionals and ethnic minorities—two groups of people whose futures look brighter than their pasts—the party’s ability to speak to people who are left behind has waned. In 2016, according to Nate Silver of FiveThirtyEight, a website providing quantitative analysis of sport and politics, Mrs Clinton improved on Mr Obama’s strong performance in America’s 50 most-educated counties, but collapsed in the 50 least.

In three special House elections held this year to replace congressmen nominated to Mr Trump’s cabinet, Democrats ran candidates suited to their districts: a buttoned-down striver in Atlanta’s richer suburbs, a quirky populist folk-singer in Montana and a pro-gun veteran in Kansas. They outperformed expectations in districts long abandoned to Republicans, but still lost—largely because Republicans successfully tied them to reviled national figures such as Ms Pelosi, with whom they had little in common other than party identification. This suggests that detoxifying the party will be hard.

But Democrats disagree about how much they should compromise. John Bel Edwards, for instance, is a pro-life, pro-gun Democrat serving as governor of deeply Republican Louisiana—the only Democratic governor in the Deep South. A candidate who sounded and voted like a coastal liberal would not win there. The Republicans’ rightward drift on abortion, pursuing policies that restrict access to birth control as well, leaves the centre wide open for Democrats. And indeed, even some prominent steadfast supporters of abortion say privately that, while they would prefer pro-choice candidates, winning a congressional majority is more important. Ben Ray Luján, a congressman from New Mexico who heads the Democratic Congressional Campaign Committee (DCCC), set off a firestorm when he vowed not to withhold funding from candidates who oppose abortion choice. Support for it has long been in the party’s platform. Some Democrats argue that such compromise betrays the party’s values and produces a weaker, less stable coalition.

Democrats are so united in their loathing of the president that they can afford some divisions over policy. In fact, their chances for victory in 2018 and 2020 may well depend on whether they can reject the energising thrill of purity-seeking and appeal to the country as a whole. That is how Mr Obama won power. Mr Trump, of course, took another path. But it will do America no good if Democrats take the wrong lesson from the wrong president. ■

**Obamacare repeal**

# Not dead yet

WASHINGTON, DC

## Republicans seek to turn health reform over to the states

AFTER Republicans failed to agree on a replacement for the Affordable Care Act earlier this year, the cause of Obamacare repeal looked dead. Yet a revival was always possible before September 30th, when a budget measure allowing a health bill to pass the Senate with only 51 votes, rather than 60, expires. The ticking clock has spurred four Republican senators, led by Bill Cassidy of Louisiana and Lindsey Graham of South Carolina, to have one last stab at getting a bill passed.

Messrs Cassidy and Graham are not brimming with new policy ideas. Instead of reforming Obamacare themselves, they want to pass the baton to state governments. Like past Republican bills, their proposal would limit the federal government's role in Medicaid (health insurance for the poor) to providing a fixed grant to the states for each person enrolled. The new bill extends that approach to the individual market, in which 17m people who do not get health insurance from some other source buy it for themselves. From 2020, the federal funds that currently subsidise poorer buyers would instead be divvied up among states in proportion to the distribution of Americans earning between 50% and 138% of the federal poverty line. States could spend this cash on health care mostly as they saw fit. They could also opt out of many of Obamacare's regulations, such as those preventing insurers from charging more to those who are unhealthy.

Federalism of this kind is often desirable. Widespread experimentation with health policy would surely lead to innovation, including in ways Democrats might like: states could decide to provide universal taxpayer-funded coverage, for example. Yet there are three clear downsides to the Cassidy-Graham plan.

First, states might not be up to the task. Each would have two years to decide what its health-care system should look like, and to find the money to top up the federal grant if necessary. By 2026 almost every state faces a cut compared with what it can expect under current law, according to the Centre for Budget and Policy Priorities, a left-leaning think-tank. The more a state's residents have enrolled in Obamacare's programmes, the harder it will be to maintain the status quo, especially in places in poor fiscal shape, such as Illinois or New Jersey. Any state keeping Obamacare's regulations in place would risk acting as a magnet for Americans with chronic health

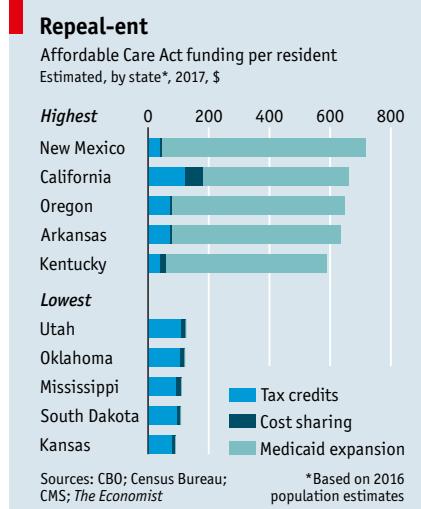
conditions, further raising costs. States' record here is not good: before Obamacare, many ran "high-risk pools" to care for the sick, but they were badly underfunded.

Second, the bill would concentrate risks. Were a state to face a fresh drug epidemic or outbreak of disease, it would get no additional money. By contrast, Obamacare's subsidies rise and fall automatically in proportion to local health costs.

Mr Graham argues that the spread of money across states would nevertheless be fairer, because California, New York, Massachusetts and Maryland currently receive 40% of all funding. This criticism makes little sense. California and New York get a lot of money in part because they are large. For the same reason, Florida and Texas each get more cash than either Massachusetts or Maryland, which Mr Graham has picked for their Democratic politics. The states which miss out on cash are those that have not expanded Medicaid or enrolled as many people in the individual market. According to our calculations, New Mexico, a state whose residents are in relatively poor health, gets the most Obamacare funding per head (see chart).

The final problem with the bill is that it does too little to fix the immediate problems ailing Obamacare's markets: rising premiums and a lack of insurers. In fact, it would probably make these problems worse, by scrapping a requirement that people buy health insurance or pay a fine, thereby allowing healthy people to flee the market. States would have to deal with the fallout at the same time as constructing their own systems in time for 2020.

Senator Cassidy says his bill does not preclude a bipartisan attempt to shore up the individual market. But an effort to find such a compromise collapsed on September 20th. Insurers must sign contracts governing premiums in the individual market by September 27th. Unfortunately, that deadline seems to lack the power to motivate Congress to act. ■

**POTUS at the UN**

# Wolf hall

NEW YORK

## In which the president threatens to "totally destroy" another country

IT IS not known whether President Donald Trump has seen "Wolf Warriors 2", the nationalist action film breaking Chinese box-office records with its depiction of a former People's Liberation Army (PLA) commando battling warlords and evil American mercenaries in Africa. But in his first speech to the United Nations General Assembly, on September 19th, Mr Trump took a decidedly "Wolf Warrior" line on the UN's proper role.

To the usual action-flick staples—car chases, fist-fights, exploding tanks—that Chinese movie adds a fortifying dose of international law, as lantern-jawed PLA officers wait for the UN Security Council to approve their use of force, after asserting a legal right to self-defence. The final scenes show the hero delivering compatriots to Chinese peacekeepers in UN blue helmets (earlier, a Chinese-American doctor has tried summoning Marines from an American consulate but hears an answering-machine, for the Yanks have fled). The film offers no opinions about African rulers causing mayhem, let alone the human rights of locals. "Wolf Warriors 2" is about China looking after its own, with the UN there to offer legal blessing.

Echoing countries such as China or Russia, with their talk of non-interference in the affairs of sovereign nations, Mr Trump said that America does not expect "diverse countries to share the same cultures, traditions or even systems of government". Instead he praised the work of "responsible" countries that fight terrorism or other menaces, recalling fruitful talks with Muslim rulers brought together by Saudi Arabia.

Mr Trump made headlines by using bellicose, action-hero language to send a rather conventional message of deterrence to North Korea, branding that country's dictator, Kim Jong Un, a "Rocket Man" bent on a "suicide mission". Should America be forced to defend itself or its allies, he added, "we will have no choice but to totally destroy North Korea."

The president poured scorn on the deal brokered by Barack Obama's government and other world powers to freeze Iran's nuclear-weapons programme in exchange for easing international sanctions. The nuclear deal was an "embarrassment to the United States", and the world had not "heard the last of it", Mr Trump thundered.

Yet look behind the headlines about his swaggering rhetoric, and at other moments Mr Trump sounded like a conventional Re-



Eisenhower's heir

▶ publican. He left his options open when it came to scrapping the Iran deal (though he scolded the Iranians for locking up political opponents). He called for cost-saving UN reforms, but did not threaten to leave the world body. He rebuked the leftist regime in Venezuela, promising "further action" if the government there headed further down the path to authoritarian rule. How all that squares with America First nationalism and scrupulous respect for the sovereignty of such non-democracies as Saudi Arabia is less clear.

By way of answer Mr Trump offered the outlines of a Trump doctrine, in which nationalism, or patriotism as he prefers to call it, is a benign organising principle for the world. Just as he won office by heeding "forgotten" Americans, so he urged others to build strong economies, societies and families, not waiting for global bureaucracies to save them. "We are calling for a great reawakening of nations," he said.

The tension between respecting national sovereignty and honouring universal rights has thrummed like an electric charge through the UN since its founding in 1945. Mr Trump either does not sense that tension, or does not want to. "America stands with every person living under a brutal regime," he declared, adding: "Our respect for sovereignty is also a call for action. All people deserve a government that cares for their safety, their interests and their well-being, including their prosperity." He left unexplained who should decide which governments are brutal. Mr Trump further claimed that the UN was founded as a forum for strong, proudly self-interested nations. In fact America helped create the world body to curb the horrors of nationalism. But that is a history lesson. Action-movie swagger is much more fun. ■

## Newark's rebound

# Baraka and roll

NEWARK

### A mayor who alarmed business turns out to be its friend

**W**HEN Ras Baraka was elected Newark's mayor in 2014, the business world was worried. He had brokered peace between the Crips and the Bloods, two fierce rival gangs, and is Newark royalty—his father, Amir Baraka, was a famous activist poet. But he was no fan of corporate America. Mr Baraka once compared the business community's relationship to Newarkers to that of a master and slave. In office he has proved more pragmatic than expected, and his rhetoric might nowadays be mistaken for a management consultant's. "We can't get to where we want to be unless everyone takes accountability and is at the table," says the former school principal.

Large swathes of the 26-square-mile city were wrecked during the 1967 unrest sparked by the police beating of a black cab driver. For years, Newark was one of the country's most dangerous cities and one of its poorest. The former industrial powerhouse has endured decades of disinvestment, but this is changing.

Prudential, a Fortune 500 company founded in Newark in 1875, lent the city an expert to help it balance its books. Mr Baraka inherited a \$93m deficit in 2014, but has piled up surpluses in the past two budgets. Prudential once walled itself off from the city's streets with skywalks. But it built a new downtown office tower in 2015 and its staff now buy lunch in local restaurants. Panasonic, which moved its

North American headquarters to Newark in 2013, donated \$350,000 for police body cameras. Audible, a subsidiary of Amazon, is paying a year's rent for employees living in the recently renovated Hayne building. Local universities have supplied criminologists to improve policing.

About \$2 billion-worth of construction is under way, including in the city's long-neglected Wards (neighbourhoods). The area destroyed in the rebellion, as Newarkers call the 1967 unrest, is being redeveloped. It is now home to part of Rutgers University's campus, new apartments and the first supermarket built in the area in decades. The city intends to transform a boarded-up Victorian mansion, once owned by the first black woman in Newark to become a millionaire, into space for startups.

Of course not all this is Mr Baraka's doing. Low unemployment and low violent crime are national phenomena. Newark's proximity to New York helps. The current mayor benefits from groundwork done by his predecessor, Cory Booker. But Mr Baraka deserves the credit he is getting. Success is creating a new problem for Newark: nowadays Mr Baraka must spend time reassuring people that redevelopment will not come at Newarkers' expense. To head off gentrification, the city may soon mandate that 20% of large housing be set aside for low- and moderate-income households.

## Fixing homelessness

# Reno way

RENO, NEVADA

### Anti-vagrancy laws are not the best way to reduce homelessness

**O**N A sunny morning, downtown Reno is mostly empty, save for a handful of tourists. Two women speaking Spanish ogle diamonds in one of many pawn shops; a Chinese couple snaps photos under the city's archway with its inscription, "The biggest little city in the world". Residents avoid the area for fear that it is unsafe, says Boyd Cox, an affable veteran who owns a large antique shop downtown. Mr Cox sometimes finds homeless people sleeping under the overhang at the entrance. "When I recently asked one friend—a retired fireman—to stop by the store for a visit, he shook his head and said:

'No, no, I don't go downtown.'

Although homelessness is hard to measure, available statistics suggest that Reno's homeless population is on the rise even as America's homeless population as a whole is declining. In 2011, 879 people lived on Reno's streets, in shelters and in transitional housing. By January 2017 that number had increased to 1,106, meaning about 32 of every 10,000 residents is homeless (the national rate is 18 per 10,000 people). To burnish downtown Reno's reputation, the city council is considering several new ordinances, one of which would ban people from lying or sleeping on private or public property without permission. Such policies are increasingly common. According to the National Law Centre on Homelessness & Poverty, 18% of the 187 American cities it surveyed in 2016 imposed citywide bans on sleeping in public, a significant increase since 2006.

In 2012 Apple announced that it would open a data centre in Reno's arid outskirts. Tesla and Google have since followed. The ➤

► infusion of wealth has transformed parts of the city; the Midtown area south of the Truckee river now boasts trendy restaurants, artisanal chocolate makers, and a renovated art-deco post-office building.

As the city's fortunes have risen, so too have its rents, occupancy rates and house prices. Since 2012 the median price of a home has doubled; the average rental price jumped 17% between 2014 and 2016. In January the Reno Area Alliance for the Homeless counted nearly 4,000 people living in weekly motels, up from 2,560 in 2011. Those who cannot afford motels have moved into shelters or onto the street.

If the proposed ordinance to ban sleeping outside passes, Reno's police officers will be directed to try persuading those living on the streets to move to shelters. If

they have no space, the homeless living on the street will be left alone. But if they do, anyone living outside who refuses to move in after a warning might be arrested.

An arrest record makes it harder for a homeless person to find employment or housing in the future. Many studies suggest there are cheaper ways to tackle the problem. The Central Florida Commission on Homelessness, a charity, found that the average costs associated with the incarceration and hospitalisation of a chronically homeless person are about triple what it would cost to provide a chronically homeless person with housing. Between 2007 and 2015, New Orleans reduced its homelessness rate by 85%, primarily by providing housing. Reno's city government should take a look. ■

tant bacteria in their gut. These drug-resistant bacteria can then spread into the environment in the soil or the water, and can even infect animals that are sold for human consumption. Any resulting infections are often far removed from the food that caused them, which is why it takes some detective work to trace them back. Each year salmonella causes around 1.2m cases of food poisoning, of which 19,000 result in hospitalisation and 380 in death, according to the Centres for Disease Control and Prevention. The death rate is highest among children under five. Most of these illnesses are caused by antibiotic-resistant bacteria, and most of that bacteria comes from industrially produced chicken.

One villain in Ms McKenna's account is Thomas Jukes, a British biologist, who in 1948 tested different supplements, including one with antibiotics, in the diets of chickens. When he ended his experiment all the chickens that received supplements had gained at least a little weight, but the ones ingesting antibiotic leftovers had gained by far the most. This was the start of the use of antibiotics to promote growth. Mr Jukes realised the bacteria in the chicken's gut would develop resistance, but would not concede the harm this could do, a view he stuck to until he died in 1999. Concern about antibiotic-resistant bacteria in humans has grown since.

After a particularly nasty outbreak of food poisoning from salmonella in chicken in 2013, regulators and consumers have become more aware of the dangers of bingeing on antibiotics-infused drumsticks. In 2014 Jim Perdue, chairman of Perdue farms, one of the largest poultry companies, announced that his company would not use antibiotics in its hatcheries any more. Walmart, the world's biggest supermarket chain, McDonald's, the world's biggest fast-food chain, Kentucky Fried Chicken, Chick-fil-A and many others are stopping or phasing out. In January this year the Food and Drug Administration came into line with the EU, which had banned the use of antibiotics for growth promotion in livestock farming 12 years ago. The drugs are allowed for medicinal use, but only under the supervision of a veterinarian.

Mr Harris says he would have gone broke had he started his farming experiment in the 1970s, but consumer demand has been shifting. His grass-fed beef costs 30% more than grain-fed beef at Whole Foods, a posh supermarket; his pork costs 40% more than the mainstream variety and the price of his chicken is 200% higher. He is not making any money with the chicken, which is subsidised by the cattle. But he is hopeful that chicken will again be seen as a special Sunday treat. Last year Americans ate more than 92lb of chicken compared with 28lb in 1960. As prices are likely to rise thanks to the new regulations, less will be more. ■

## Industrial farming

# Jukes hazard

CHICAGO

## How antibiotics changed the way America eats

**WILL HARRIS** is one of the heroes of "Big Chicken", a new book by Maryn McKenna that looks at the widespread use of antibiotics in poultry farming. After finishing his studies at the University of Georgia's School of Agriculture in 1976, Mr Harris deployed all the instruments in his new toolkit to increase his farm's profits: chemical fertilisers, pesticides, land tillage, antibiotics, hormones. They did wonders for cost-savings, he says, but made him increasingly uncomfortable. White Oak Pastures, his farm in western Georgia, has come full circle over 150 years. Transformed into an industrialised, commodified and centralised agricultural operation, the farm has now reverted to ways that his grandfather might recognise. With its verdant 3,000 acres grazed by rabbits, sheep, pigs, goats, turkeys, ducks, geese, guinea hens, bees and chickens, it is now a textbook example of multi-species, pasture-based organic farming.

Few farmers in America dare to take such a radical step away from industrial farming methods. Ms McKenna shows how, for decades, the demand for "meat for the price of bread" has overridden other concerns. Around 15,400 tonnes a year, a whopping 80% of all antibiotics sold, go to farmers. Chicken farmers use even more than those who raise cattle or pigs. Only a small percentage of the drugs are used to cure illnesses. Their main function is to make the broilers fatten up more quickly or to act as a prophylactic against the cramped conditions in which they are raised. A chicken's weight at slaughter to-

day is twice what it was 70 years ago, and it achieves such heft in half the time.

After the deprivations of the second world war, the new wonder drugs were welcomed by farmers, who could sell bigger birds much more cheaply to consumers hungry for affordable protein. The downsides were not immediately obvious. Even so, some scientists warned about the practice right from the beginning.

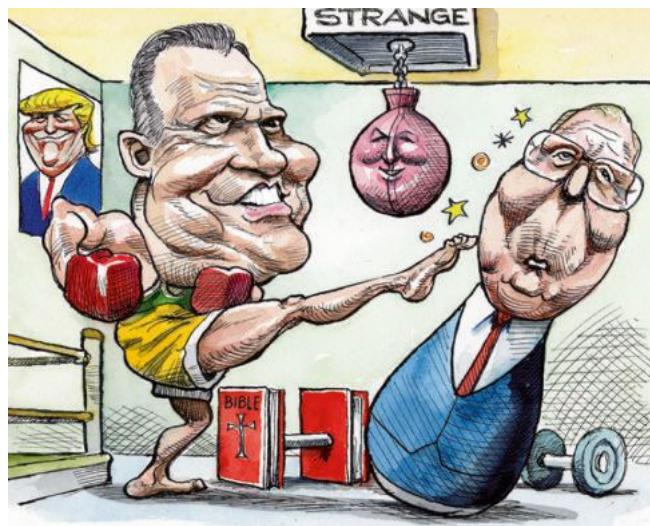
Animals receive antibiotics in their feed and water, which creates antibiotic-resis-



Clucking hell

# Lexington | Moore's law

**Alabama's Senate primary drives a wedge between Donald Trump and his closest supporters**



THE first time Roy Moore lost an election, for a seat on the Alabama circuit bench, he quit the law to become a professional kickboxer. Now stumping for the Senate seat vacated by Jeff Sessions, the attorney-general, the former chief justice of Alabama is limbering up for a more ambitious fight. "Put on the whole armour of God that you may be able to stand against the wiles of the devil!" he tells a crowd in Huntsville, northern Alabama, in the words of the apostle Paul. "For we wrestle not against flesh and blood but...against the rulers of the darkness of this world!"

This takes Republican dissatisfaction with Mitch McConnell to a new level. The party's leader in the Senate is hated by Mr Moore for having put his wiles—and millions of dollars from conservative donors—behind his rival for the Republican Senate ticket, Luther Strange. It is easy to see why. Mr Strange, who is keeping the Senate seat warm at the behest of Alabama's former governor, Robert Bentley, is a former lobbyist with a reputation for flexibility. Mr Moore is a religious zealot, with little grasp of secular issues besides his trademark eagerness to be uncompromising.

A supporter of Donald Trump, who won a huge majority in Alabama last year, Mr Moore duly rails against illegal immigration, though in a recent interview he failed to recognise the name of Barack Obama's biggest immigration reform, the recently condemned Deferred Action for Childhood Arrivals programme. Also prone to making racially insensitive and Islamophobic remarks, he makes the reactionary Mr Sessions seem moderate. He is the favourite to win the primary vote, which will be held on September 26th, ahead of an election in December.

As one of the first Senate races to be held since Mr Trump's election, the contest is attracting a lot of attention. It illustrates the widening gulf between Republican leaders and foot-soldiers, which Mr Trump exploited in his populist campaign. It indicates, too, the dilemma this has presented the president with, now that he needs the support of both sides: the base for validation and votes, the leaders to govern. It is also a test of the president's authority—because, to the dismay of the Moore camp and his own populist advisers, he has endorsed Mr Strange.

Even so, Mr Moore's rise is mainly illustrative of two local quirks: Alabamans' unusual evangelical fervour and how badly they have been served by one-party Republican rule. A theocrat

who believes his interpretation of scripture takes precedence over any court or law, Mr Moore is known for his several losing clashes with federal authority. Thus his refusal, as a circuit judge and then as Alabama's chief justice, to remove the inscriptions of the Ten Commandments he placed in his courthouses, even after federal judges found them to contravene the First Amendment. He was sacked as a result; then, after he returned as chief justice, again removed, for having ordered Alabama's judges to ignore a Supreme Court ruling legalising gay marriage. In a state where almost a third of the population is white, evangelical and conservative, these rows have given him the support of around 150,000 voters, roughly his tally in a preliminary round of the primary, in which he bested nine other candidates.

Normally, that would not be enough to win the Senate ticket, and Mr Moore's peculiarities make it hard for him to expand his appeal. He is assisted by two other recent scandals: the conviction for corruption of the Republican Speaker of Alabama's state-house, and a sex scandal that did for the former Republican governor. This has left Alabaman conservatives even more fed up with politicians than they were before, depressing turnout, which helps Mr Moore. It has probably also won him new voters, on the basis that he is, even if a bit wacko, a man of principle.

By aping Mr Trump, Mr Moore is meanwhile trying to cast his net wider. He presents himself as a reluctant politician, for whom the pursuit of power is a sacrifice. He has not discouraged the racists for whom his perorations on antebellum America are appealing ("Show me the place in the Bible where slavery is condemned!" one rally-goer said triumphantly). He also displays Mr Trump's pantomime contempt for journalists, apparently in earnest. After his speech, Lexington approached and asked Mr Moore to name three policies he hoped to pursue in Washington, D.C. In response, he leaned menacingly forwards, growled, "Get out of my face", and had your columnist ejected from the rally.

### Pray for something better

The fact that Mr Trump has not returned the compliment is awkward for Mr Moore. His team suggests the president was suckered into making a bad call by Mr McConnell. But Mr Trump's endorsement of Mr Strange, which he announced at a time when he and Mr McConnell were barely speaking, is merely the latest evidence of a growing preference for pragmatic functionaries over the populist ideologues who helped get him elected, including Stephen Bannon, Mr Trump's former chief strategist. "Big Luther", tweeted the president, in announcing his intention to stump for Mr Strange in Huntsville, "gets things done." (Mr Moore, by contrast, says a fellow Alabaman evangelical, would be marginalised in the Senate "like Lucifer avoids the cross".)

The ideologues are not taking this lying down, with Mr Bannon, the right-wing nationalist Breitbart News outfit that he runs and other populist outfits backing Mr Moore. Victory for the theocrat would be a fillip for them, perhaps leading to a string of primary challenges to sitting Republicans next year. Even so, it is hard to see this as a battle for the soul of the Republican Party, for that might imply an impending renewal. Whoever wins the primary, Mr Moore or Mr Strange, will have won a bad-tempered contest in which both candidates offered a list of Trumpian pledges, to curb immigration, cut spending and so forth, that already seem unachievable. That will not inspire Alabama's demoralised conservatives—even if, the exigencies of tribalism suggest, they will probably send their candidate to the Senate anyhow. ■



Mexico

## The shaking earth

MEXICO CITY

**Amid the tragedy of another quake, Mexicans can find some small consolations**

THE timing seemed supernatural. At 1.14pm on September 19th, just a couple of hours after Mexicans had completed an evacuation drill marking the 32nd anniversary of an earthquake that devastated the capital, the ground shook once again. The second big quake to hit the country in a fortnight killed at least 230 people, injured several hundred and left many more without homes.

In Mexico City, the site of around half the deaths, it caused terror and heartbreak. It was “the strongest that I can remember”, said Susana Bustamante, an employee of a telecoms firm. “Some people really panicked.” Around 40 buildings collapsed in the capital. They included the Enrique Rebsamen primary school, where 21 children and four adults were killed. At least one trapped child was alive on the following day, but other people were still missing. According to Eduardo Corona of the government’s civil protection agency, the building had collapsed on top of the children and was “very compact...like a pancake”.

Throughout the night rescue workers and volunteers combed the ruins of buildings across the city in a search for survivors. At least 52 people were pulled alive from the rubble.

Towns and cities in four states near the capital were also hit. In Morelos 69 people were confirmed dead, 16 of them in the town of Jojutla, which suffered much destruction. In Cuernavaca, the state capital,

a ten-storey building came down; the Cortés Palace, one of the earliest Spanish colonial buildings in Mexico, was damaged, and the murals by Diego Rivera it contains were fractured.

Several of the buildings that fell in the capital were in Condesa and Roma, trendy districts full of bars and restaurants where many foreigners live. They are built on the friable dried-up bed of the lake that surrounded the Aztec capital of Tenochtitlan and suffered damage in 1985.

Tens of thousands of residents milled about in Mexico City’s streets, ordered not to return to their homes or offices because of fears of further damage. Gas leaks caused some fires and much fear. Officials

said that 40% of Mexico City and 60% of Morelos lacked electricity immediately after the quake.

The earthquake that struck southern Mexico on September 7th, killing at least 90 people in the states of Oaxaca and Chiapas, was one of the strongest ever recorded in the country, with a magnitude of 8.1. But its epicentre was 120km (75 miles) out at sea. The latest one was less strong, at 7.1, but deadlier, centred on the border of Morelos and Puebla states, only about 120km south of the capital.

The first quake, which shook Mexico City but did little damage there, bred a certain complacency. That has been brutally dispelled. President Enrique Peña Nieto, who had set out to visit areas damaged on September 7th, returned to the capital and declared an emergency. It is “a severe test and very painful for our country”, he said.

The earthquakes come with the national mood at a low ebb. Mexicans are fed up with corruption and violence, and the economy is sluggish. Across the border, Donald Trump regularly insults and threatens Mexico, though he has now offered American help. Mr Peña is deeply unpopular. Now nature has delivered a body blow.

There were two crumbs of comfort. Disasters bring out the best in Mexicans. Within minutes, ordinary people clutching buckets to collect rubble dashed to help. Thousands laboured alongside rescue workers. They directed traffic and donated food and water. Though in smaller towns there were fears of looting, Mexicans showed that they are not the “bad hombres” of Mr Trump’s imagination.

The second consolation lay in the contrast with the devastating quake of 1985. On that occasion some 400 buildings crumpled, including whole city blocks. Estimates of the death toll range from 6,500 to 20,000. That the damage was far less ex- ➤

### Also in this section

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37 A ministerial massacre in Peru

37 Venezuela’s war on cuteness

Bello is away

### Treacherous ground

Mexico, deadliest earthquakes

Date	Epicentre	Magnitude	Deaths
Sep 19th 1985	Michoacán	8.1	6,500+
Jan 3rd 1920	Veracruz	7.8	648
Aug 28th 1973	Veracruz	6.2	600
Jun 3rd 1932	Jalisco	8.1	400
Oct 24th 1980	Oaxaca	6.4	300
Sep 19th 2017	Puebla	7.1	230*
Sep 7th 2017	Chiapas	8.1	98
Jul 6th 1964	Guerrero	7.4	78
Jul 28th 1957	Guerrero	7.9	65

Source: Significant Earthquake Database, NOAA

\*At midnight local time, September 21st 2017

▶tensive this time owes much to stricter building codes introduced in the decades since. In recent years giant, 50-storey-plus office towers have sprouted along Reforma, Mexico City's grandest avenue. This week they swayed but did not buckle. The damage was mainly confined to pre-1985 buildings. That suggests there is more to be done to promote the retrofitting with seismic protection of older buildings, as Chile has done. In particular, questions will be asked as to why the Rebsamen school gave way.

In 1985 the government's reaction was one of heartless inaction and shameful denial. This time there was no cover-up, as television channels offered rolling coverage of the destruction and the rescue efforts. And this time police, troops and fire-fighters were quickly mobilised, working alongside citizens rather than trying to obstruct them. Regular drills mean Mexicans know what to do; alarms give some warning of earthquakes, though not when they are centred as close as this week's was.

The mishandled response to the 1985 earthquake contributed to the fading of the authoritarian political system of the Institutional Revolutionary Party (PRI), which ruled Mexico for more than seven decades until 2000. Mr Peña restored the PRI to power, but in a democracy with a vigorous civil society whose origins date to the grassroots response to the earlier earthquake. Amid the sadness and the destruction, Mexicans should also reflect on how far they have come in the past 32 years. ■



**Janot, the fastest gun in the tropics**

testimony from Joesley and Wesley Batista and on tapes recorded by Joesley Batista. Their family controls JBS, the world's largest meat producer. Brazil's congress refused to forward those accusations to the supreme court, the only one that can try the president. It is unlikely to vote differently on the second set of charges. Mr Temer became president in August 2016, when his predecessor, Dilma Rousseff of the PT, was impeached on unrelated charges. Most analysts expect him to remain in office until the end of his term in December 2018.

Mr Janot's parting shots leave Brazil in an uncertain state. The allegations against Mr Temer are grave, but to some non-partisan observers they do not look rock-solid. The prosecutor has deepened suspicions about the president's conduct while leaving room for doubt. People who feel threatened by the broader Lava Jato (Car Wash) corruption probes are seizing on what they claim are weaknesses in Mr Janot's case to call into question the entire process. Now Brazilians wonder whether Mr Janot's successor, Raquel Dodge (pronounced "dodgy" in Brazil), will pursue it with the same zeal. The anti-corruption crusade is thus at a turning point.

Lava Jato began in 2014 by uncovering a bribery network made up of executives from Petrobras, the state-controlled oil company; the biggest construction companies; and scores of officials and politicians. It has been an immensely successful assault on Brazil's culture of impunity. So far, 107 people have been convicted of 165 crimes and sentenced to a total of 1,634 years in prison. Among the most famous felons are Luiz Inácio Lula da Silva, a popular former president from the PT, Eduardo Cunha, the former PMDB speaker of the lower house of congress, and Marcelo Odebrecht, once head of the country's biggest construction firm. Brazilians applaud

the house-cleaning: 85% want it to continue, according to a recent poll. Sérgio Moro, the judge who handles investigations and trials of most suspects who are not sitting politicians, is a national hero.

Most Lava Jato prosecutions are based on careful detective work. Investigators traced Mr Cunha's Swiss bank accounts. Mr Moro, who convicted Lula, had a document attesting to the acquisition of an apartment by his wife, who has since died. (Lula is appealing; his supporters say he is the victim of a witch hunt.)

Mr Janot's salvos against the president have been controversial. His deal with the Batista brothers, who admitted to paying \$185m in bribes to hundreds of politicians, looked generous. They were given immunity from prosecution in exchange for confessions that implicated Mr Temer. Embarrassingly, Mr Janot's office withdrew the brothers' immunity after it became known that they had not made full confessions. Their testimony incriminating Mr Temer is still valid, Mr Janot insists.

The latest set of charges relies heavily on plea-bargain testimony of people who had dealings with the mega-gang. Critics say it offers too little corroborating evidence against Mr Temer in the form of intercepted communications or bank records. Plea-bargain testimony should open lines of inquiry, not provide the main evidence for their conclusions, they contend.

Mr Janot's foes have pounced. Mr Temer accuses him of bearing a grudge against him and calls the latest allegations "fantastical". Gilmar Mendes, a supreme-court justice friendly to Mr Temer, calls Mr Janot "the most incompetent" chief prosecutor in history. Some people hope to capitalise on such criticisms to undermine the broader Lava Jato process.

The legislature, more than half of whose 513 members are under investigation, is looking for ways to tame it. A cross-party committee led by an ally of Mr Temer is considering measures to limit the use of plea bargaining, for example by setting a minimum jail sentence for people who admit guilt in exchange for testimony against others. Mr Mendes also favours restricting the use of plea bargaining. "The ethos of a country can't be the fight against corruption," he told the *Wall Street Journal*.

A let-up in that fight would be politically toxic. Brazilians' support for democracy over other forms of government dropped to a third last year from more than half in 2015, according to a poll. A few want a return to military rule. This month a serving general, Antonio Hamilton Mourão, promised a "military intervention" should the judiciary fail to "solve the political problem". The army's commander contradicted him, but he has not been disciplined.

Ms Dodge must reassure Brazilians that the Lava Jato inquiries, including into Mr Temer's activities, will continue unim ↗

## Corruption in Brazil

# Parting shots

SÃO PAULO

## The chief prosecutor leaves at a pivotal moment for the fight against corruption

LIKE a sheriff in one last gunfight, Rodrigo Janot hoped to end his career in a blaze of glory. On September 14th, three days before the end of his term as Brazil's chief prosecutor, he accused the country's president, Michel Temer, of obstructing justice and of racketeering. In a 245-page document, Mr Janot alleges that Mr Temer was the ringleader of a "mega-gang" made up of politicians from his Party of the Brazilian Democratic Movement (PMDB), the left-wing Workers' Party (PT) and others. It extracted bribes worth at least 587m reais (\$188m) from companies in return for public contracts and favours. Mr Temer also allegedly paid to silence potential witnesses.

This is the second volley Mr Janot has fired at the president. In June he accused Mr Temer of negotiating bribes and obstructing justice. The charge was based on

peded. Mr Temer chose her from a shortlist over a candidate who is more popular with prosecutors. That prompted speculation that she might go easy on him. At her swearing-in on September 18th she tried to seem less confrontational than Mr Janot. She promised to fight crimes against the environment and indigenous people as well as corruption, and called for "harmony between institutions".

But Ms Dodge, unlike Mr Janot, is a specialist in criminal law. She has reportedly appointed seasoned investigators to the Lava Jato team of the prosecutor's office. "There is nothing in her cv to suggest she is interested in putting the brakes on Lava Jato," says Thomaz Favaro of Control Risks, a consultancy. The new prosecutor, Brazilians hope, will turn out to be a sharpshooter rather than a gunslinger. ■

#### The politics of Peru

## Ministerial massacre

LIMA

**The president has suffered a blow, but may recover from it**

PEDRO PABLO KUCZYNSKI has been Peru's president for little more than a year, but already he has lost or reassigned 15 ministers. The biggest cull came on September 15th, when his government lost a vote of confidence in congress. That led to the resignation of the prime minister, Fernando Zavala, who was also finance minister, along with the rest of the 19-member cabinet. Mr Kuczynski reappointed most of them two days later. But Mr Zavala is gone, as are Marilú Martens, the education minister, whom the opposition accuses of mishandling a teachers' strike, and three others. To many Peruvians the president, who has four years to go in office, already looks like a lame duck.

The source of his problems is his incomplete victory in last year's presidential election. He narrowly won the popular vote in the second round against Keiko Fujimori, the daughter of a former president, Alberto Fujimori, who is in jail for human-rights crimes. But her party, Fuerza Popular (Popular Force), holds 71 of the 130 seats in congress. It has exploited to the full its power to make life difficult for Mr Kuczynski.

The quarrel is partly ideological. Mr Kuczynski, a former banker and World Bank official, is a socially liberal pragmatist whose main goals are to bring more workers into the formal labour market, improve public services and infrastructure and encourage economic growth. Ms Fujimori is aligned with conservative Catholic and evangelical Christians. Her party complains that the government is pro-abortion,

#### Venezuela

## The war on cuteness

#### The government thinks its hungry citizens should lap up lapin

VENEZUELA has a hunger crisis, with 12% of children suffering from acute malnutrition. But the country's socialist president, Nicolás Maduro, has a cunning plan. Under Plan Conejo (Plan Rabbit), poor settlements are to receive cages containing baby rabbits which, when fattened up, will provide the protein and calories many people lack. Freddy Bernal, the urban agriculture minister, recently delivered the first consignment of bunnies to 15 communities.

It makes more sense than some of Mr Maduro's other ideas. They "will breed like rabbits", he predicted. While shops run out of bread, butter and other staples because of price controls and scarce foreign exchange, the rabbits will reproduce, oblivious of market forces. The "imperialist" United States, which is waging "economic war" on Venezuela, will only be able to watch and fume.

But the hutch-based solution that Mr Maduro has hatched has run into a hitch, as Mr Bernal discovered when he visited the beneficiaries. "People were naming the rabbits and taking them to bed," he told Mr Maduro in a cabinet meeting broadcast on state television. Some had put bows on them, Mr Bernal complained. "People must understand that a rabbit is not a pet, but two-and-a-half kilos of meat with high protein and low cholesterol." Re-educating them is not easy. "We've been taught that rabbits are cute," Mr Bernal lamented.

The government has launched a campaign to persuade them that the love of bunny is, if not the root of all evil, at least contrary to the spirit of chavismo. Government websites and social media spread the word that rabbit meat is tasty and nutritious. The opposition, as ever, is sceptical. "Do you think we Venezuelans are stupid?" asked Henrique Capriles, the governor of Miranda state, who narrowly lost the presidential election in 2013 to Mr Maduro. He was equally rude about an earlier plan to install vertical chicken coops in the cramped apartments of poor city-dwellers. The failure of that plan to alleviate hunger suggests to many Venezuelans that this one, too, is hare-brained.



On second thought, hold the onion sauce

too gay-friendly and has paid too little attention to people outside Lima. It has blocked or slowed down economic legislation and serially censured the government's technocratic ministers.

The ministerial massacre leaves Mr Kuczynski looking enfeebled. Just 22% of Peruvians support him, a drop of 41 percentage points since he took office, according to a recent poll. Mr Zavala's resignation is only the fourth by a prime minister after a confidence vote in Peru's modern history.

Yet Mr Kuczynski's position may be stronger than it looks. The new prime minister, Mercedes Aráoz, is well-liked. She was the top vote-getter among congressional candidates for Mr Kuczynski's party, Peruanos por el Cambio (Peruvians for Change), and briefly ran for president in 2011. Most opposition parties, including Fuerza Popular, have welcomed Ms Aráoz and the new health and education ministers, who are more conservative than their predecessors. Even Ms Fujimori sounded

mollified. The government still has "time to make things right", she tweeted.

Mr Kuczynski may benefit from divisions within Fuerza Popular. Ms Fujimori's brother, Kenji, a congressman, backed Mr Zavala in the confidence vote; some members of the party have called for him to be expelled. Ms Fujimori, who is only a little more popular than the president, hopes to run again in 2021. Her war against Mr Kuczynski risks coming across as self-serving; she may now become less aggressive.

The economy could also boost the president. GDP expanded by 2.4% in the year to the end of June. The government predicts growth of 4% next year, thanks partly to higher prices for copper, the biggest export. It plans to increase spending next year by 10% without increasing tax rates. Such largesse tends to make voters happy. "Fresh air is blowing...through the world economy," declared Mr Kuczynski in his first meeting with his new cabinet on September 18th. He, too, needs a second wind. ■



### The future of Kurdistan

## In a terrible state

ERBIL

**Western officials are trying to avert another war in Iraq**

AS THE jihadists of the so-called Islamic State (is) retreat, the Arab and Kurdish forces allied against it in Iraq are turning their arms towards each other. Rather than celebrate victory, Masoud Barzani, the president of Iraqi Kurdistan, called a referendum on independence for September 25th, not just in his constitutionally recognised autonomous zone but in the vast tracts that his forces seized from is. Protesting against this threat to Iraq's integrity, Haider al-Abadi, the country's president, gathered his commanders at Makhmour, opposite the Kurdish frontlines. If the referendum went ahead, Kurdistan "might disappear", he warned. Hoping to prevent their allies from sparring, Western mediators have stepped in. But as *The Economist* went to press, Mr Barzani remained committed to his referendum.

Kurdistan is far from ready for statehood. The government is steeped in debt; its coffers are empty. The Peshmerga, its vaunted fighting force, is split between multiple family-led factions. Mr Barzani, for his part, has made a mockery of the political system. He has twice extended his rule. In 2015 he shut parliament after it tried to limit his powers and questioned how he spends oil revenues. Instead of dealing with the region's ills ahead of parliamentary and presidential elections planned for November, he has used the referendum to distract the public and rouse nationalist

fervour. Rallies across Kurdistan have featured fireworks and fiery rhetoric. "Whatever it takes [to gain independence]," says a normally cool-headed official at a rally. A toll of half a million dead, he suggests, could be acceptable.

Neighbours all around the enclave are uniting against the Kurds. Iraqi politicians speak of closing its airspace. Fearing that the referendum will stir separatist sentiments among their own Kurds, Turkey and Iran have mulled closing their borders with Iraqi Kurdistan. Turkey is conducting military exercises on the frontier. It could turn off the tap of the territory's only pipeline, blocking its oil exports. Western pow-

ers are also threatening to withhold aid to Kurdistan if Mr Barzani rejects their proposals. They are offering Messrs Barzani and Abadi a room in the American embassy in Baghdad to negotiate a deal under their auspices. Mr Abadi might endorse a process that buys him time. Mr Barzani is still hoping for a path to independence.

Many Kurds, for now at least, would prefer that their leaders focus on improving Kurdistan, rather than seceding. Even in the Kurdish capital, Erbil, the referendum has left many nonplussed. As the threat of a siege mounts—Kurdistan imports almost everything—people are stockpiling basics. Flights out of Erbil are packed. But many are feeling squeezed financially. The referendum is "a luxury only the rich like Barzani can afford", complains a teacher, who moonlights as a taxi driver because of cuts to salaries. Beyond Mr Barzani's strongholds the campaign for independence has begun belatedly, if at all. In a straw poll in the main market of Sulaymaniyah, in the east, your correspondent could not find one Kurd who said he would vote.

In the Nineveh Plains, where an earth-en wall splits the Arab- and Kurdish-ruled areas, other minorities view the referendum as an impossible loyalty test. "Each side is forcing us to choose when we should just abstain," says a priest at St Joseph's, a towering Chaldean church that serves displaced Christians in Erbil. Mr Abadi is planning a conference for Christians to air their grievances at the end of the month. Mr Barzani is urging priests not to go. The tensions are also affecting Kurds beyond Kurdistan. Under Saddam Hussein, Baghdad was Iraq's largest Kurdish city. Many Kurds have since drifted north, but hundreds still hold positions in the government and the army. Their loyalty has been questioned and jobs put at risk.

### Also in this section

39 Saudi Arabia's crackdown

39 To go or not to go in Togo

40 Rocket man and rhino horn



If violence does flare, Kirkuk may be where it starts. Its Kurds, Turkomans and Arabs have largely avoided Iraq's identity wars. But battle-hardened Shia Arab militias have massed at the edge of the province. They will march in on September 23rd (two days ahead of the referendum) says a commander, en route to attacking Hawija, which is controlled by is. The province's Kurdish governor insists that a trench and three-metre-high earthen wall, erected with Western assistance to keep is out, will serve to repel the militias. Nevertheless, he has summoned Peshmerga reinforcements. The fighting could quickly spread along the region's ethnic faultlines into Syria, where Arab and Kurdish forces are also competing to take land from is.

Even if the referendum passes, Mr Barzani is not obligated to declare independence. A deal might better serve his interests. Right now, he risks ignominy if the exuberance of statehood that he has stoked should dissipate, and his people flee a failed and besieged state. With an accord, he could boast of at last bringing evasive Iraqi officials to the table. He might yet win their agreement to restore the old subsidy for the Kurds that was cut when they began independently selling Kirkuk's plentiful oil. And he might add the Peshmerga to the Iraqi government's payroll, as was done for the Shia militias. He would thus alleviate Kurdish fears of being marginalised, having served their purpose in fighting is.

Come the election in November, Western powers are likely to turn a blind eye if the ballot is again postponed. If so, Mr Barzani could thus secure his position as Kurdistan's pre-eminent warlord, and prolong his one-man rule. ■

#### Politics in Saudi Arabia

## The prickly prince

CAIRO

**Muhammad bin Salman cracks down on his perceived opponents**

THESE are jittery times in Saudi Arabia, an absolute monarchy that prefers to script its political changes many years in advance. Over the past two weeks, police have arrested dozens of public figures who seem to have little in common. The most prominent is Salman al-Ouda, a popular cleric who dispenses religious advice to his 14m followers on Twitter. But the list also reportedly includes writers, human-rights activists and even officials from the justice ministry. On September 11th Mr Ouda's brother, Khalid, criticised his arrest on Twitter: "It has revealed the size of the demagoguery we enjoy." The authorities soon rounded him up, too.



Prince Muhammad spots a critic

The kingdom's motives, as ever, are opaque. The arrests came ahead of September 15th, when a loose coalition of activists had called for protests to demand more political freedom. The appointed date came and went quietly—in part because of a heavy police presence on city streets. Saudi officials hinted that it was a foreign plot organised by the banned Muslim Brotherhood; one commentator called the arrests a "campaign to cleanse state institutions". Social media were abuzz with rumours that King Salman, 81, was planning to abdicate.

Until this summer, the king's designated successor was Muhammad bin Nayef, a respected ex-interior minister. But in June the king upended the order of succession and installed his own son, Muhammad bin Salman (or MBS, as he is called), as heir. Just 32, he assumed his first big public role in 2015, when he became defence minister. Since then he has overseen a ruinous war in neighbouring Yemen and organised a boycott of Qatar, which Saudi Arabia accuses of supporting terrorists and being too cosy with Iran. The boycott has caused economic pain across the Gulf, but so far has not forced the gas-rich emirate to make any concessions. Most of the detainees either opposed the effort or kept silent. The interior ministry has urged Saudis to report fellow citizens who share such "extremist ideas" online.

MBS has a wide-ranging agenda to reform his country. He wants to reduce its dependence on oil, cut generous handouts and sell off part of Saudi Aramco, the state-owned energy giant, to create a sovereign wealth fund (see page 53). He also wants to loosen the strictures on Saudi culture—opening cinemas, for example, in a kingdom where they are banned. These are controversial changes. They have forced pampered Saudis to tighten their belts and

infuriated religious conservatives. One of the men arrested this month, Essam al-Zamil, had written critically about the Aramco plan.

For all his ambition, MBS has been noticeably vague on one issue: politics. Political parties are banned in Saudi Arabia and speech is restricted. He has shown no interest in changing that. Mr Ouda is hardly the kingdom's most traditional voice; dozens of other clerics pose a bigger threat to the crown prince's cultural reforms. Yet they remain free. "The only difference they have is that they believe in total obedience to the ruler, and see that as a religious duty," says Jamal Khashoggi, a veteran Saudi journalist. Mr Ouda does not. He was a leader of the *Sahwa* (awakening) in the 1990s, an Islamist movement that pushed for political changes. Decades later, he wrote a book that praised the Arab revolutions of 2011 (it was banned).

Some of the detainees will probably be released. And the crackdown may not be necessary: apart from some grousing on social media, there has been little dissent over the crown prince's policies. "Nobody is challenging him. The Saudi newspapers are full of praise for his efforts," says Mr Khashoggi, who fears he too might be arrested if he returns from America. "It's just another impulsive action." ■

#### Protests in Togo

## To go or not to go

LOMÉ

**That is the question for the president**

ASSOUGEY, a technician from Lomé, the capital of Togo, was arrested on September 7th. His crime: participating in one of the anti-government protests that have rocked the country in recent weeks. A policeman beat him with the butt of his gun, he says. His left leg is covered in bruises. Like many of his fellow protesters, Assougey says he joined the demonstrations because the same corrupt people have been in power for too long.

Faure Gnassingbé, Togo's president, has ruled the small west African country for 12 years. In 2002 his late predecessor and father, Gnassingbé Eyadéma, lowered the legal age limit for a president to make way for his son. Eyadéma had seized power in a military coup in 1967. Fifty years later, the family has been in power longer than any other African regime.

Despite Mr Gnassingbé's best efforts to quash the protests, they continue. Initially centred around Lomé, they have spread to other parts of the country, including Sokodé, Togo's second city and a traditional

► stronghold of the Union for the Republic (UNIR), the ruling party. The government cuts the internet to stifle criticism. At least three people have been killed. The police in Lomé threw tear gas into people's houses, "creating terror", says one witness.

A bill that would limit presidents to two terms was drawn up to appease the opposition. When UNIR said it would rush this through the National Assembly, where it holds 62 of 91 seats, the protests stopped temporarily. But it was soon revealed that the two-term restriction would not apply retroactively, allowing Mr Gnassingbé, who is already in his third term, to run again in 2020 and 2025. The measure failed to gain the necessary supermajority after the opposition boycotted the vote, so UNIR has decided to put it to a referendum.

Mr Gnassingbé's opponents have long sought term limits and other reforms. Now they want him gone. But the opposition is divided. More than a dozen parties were behind the recent protests. Jean-Pierre Fabre, the leader of the National Alliance for Change (ANC), the main opposition party, has been complaining about the regime for decades, to little effect. Mr Fabre, who came second in the election of 2015, is from the south, whereas the ruling class has traditionally come from the north.

Togolese politics hinge on tribal loyalties. Mr Gnassingbé's Kabyé tribe, from the north, are a minority, but they punch well above their weight. After grabbing power, his father increased the size of the army and filled the top jobs with fellow Kabyé officers. His son has done the same and packed state institutions, such as the constitutional court, with cronies. The southern Ewe and Mina tribes, taken together, are far more numerous than the Kabyé, but they have been kept out of power since Sylvanus Olympio, a former president and an Ewe, was murdered in 1963. (Eyadéma

claimed that he pulled the trigger himself.)

The political alignment may be changing, though. Tikpi Atchadam, the charismatic leader of the Pan African National Party, has teamed up with Mr Fabre. Hailing from the north, Mr Atchadam has stoked protests in the region, which suffers from a lack of investment, but until now has remained loyal to Mr Gnassingbé.

Some of the opposition look to the Gambia, which saw off attempts by Yahya Jammeh, its longtime dictator, to cling to power after losing an election last year. Jeff Smith of Vanguard Africa, a consultancy that advised Adama Barrow, the Gambia's current president, says: "Behind the scenes many Togolese and Gambian activists are collaborating, sharing lessons learned."

Pressure from the Economic Communi-

ty of West African States (ECOWAS), a 15-country regional group, was crucial to the Gambia's success. It stationed troops on the Gambian border and threatened to invade unless Mr Jammeh gave up power. But ECOWAS has been slow to respond to the crisis in Togo, which aspires to be a hub for business in west Africa. Marcel Alain de Souza, the president of ECOWAS, visited Lomé on September 13th to encourage Mr Gnassingbé and the opposition to hold talks. Mr de Souza is married to the sister of Mr Gnassingbé, who currently holds the rotating chairmanship of the group.

Tensions are mounting. The opposition, at least, plans to keep the pressure on Mr Gnassingbé. But Togo has a history of violent political repression. A nine-year-old boy was killed during the latest protests. ■

### North Korea and Africa

## Rhino horn for Rocket Man

### North Korean diplomats are finding that Africa is a smugglers' paradise

**T**HE face that stares from Kim Jong Su's passport shows a rather woebegone man in suit and tie. In fact, Mr Kim is a taekwondo master and, allegedly, a North Korean spy. In 2015 he was detained in Maputo, the capital of Mozambique, along with a counsellor in North Korea's embassy in South Africa after their vehicle was stopped by police. Inside was almost \$100,000 in cash and 4.5 kilos of rhino horn. They were released after the North Korean ambassador to South Africa intervened. In 2016, Mr Kim slipped out of South Africa.

This and other such stories are contained in a new report published by the Global Initiative Against Transnational Organised Crime, a Geneva-based lobby. The author, Julian Rademeyer, found that North Koreans were implicated in 18 of the 29 rhino-horn- and ivory-smuggling cases involving diplomats since 1986. How much of this shadowy commerce is for personal gain, and how much is to meet the North Korean regime's thirst for hard currency, is impossible to say. The two motives overlap.

North Korean diplomats earn pitiful salaries: in the mid-1990s, embassy staff in Zambia went fishing in a nearby river to catch food for their national-day reception. Meanwhile, two departments in Pyongyang—Bureaus 38 and 39—exist to amass hard currency. Diplomats and other North Koreans abroad are expected to pay most of what they earn, licitly or illicitly, to the regime as "loyalty money". Estimates of its annual income from illegal trade in a wide range of commodities, from arms to counterfeit \$100 bills, range as high as \$1bn.

The report quotes a defector who worked for Bureau 38 as saying that while he was posted to China, he often brokered meetings between local organised criminals and North Korean diplomats in Africa. They arrived bringing gold, ivory and rhino horn for sale. A trade official in Zimbabwe was making so much that "in 2013 and 2014, he paid loyalty money of \$200,000," said the defector.

After decolonisation, many African leaders saw Kim Il Sung, North Korea's founding despot and the grandfather of its current leader, Kim Jong Un (aka "Rocket Man"), as a natural ally. Even today, groups devoted to the study of his Juche ideology exist in at least seven African countries. North Korea has embassies in ten sub-Saharan countries. Keen to win votes at the UN, and perhaps to buy uranium for its nuclear programme, the regime has funded the construction of power stations and the training of special forces in Africa, provided interest-free loans to governments and sold them arms.

Mr Rademeyer, an expert on the trading of ivory and rhino horn, acknowledges that diplomatic immunity can stymie the police. But, he says, "few African countries with long-standing ties to Pyongyang have demonstrated a willingness to act pre-emptively and decisively. Some routinely turn a blind eye to the activities of the diplomats and embassies on their soil." His report warns that things could get worse as America cajoles China into tighter economic sanctions on North Korea. As legal revenue sources dry up, the Kim regime will rely ever more on dark money, he says.



They're not flagging



Spain

## The clash in Catalonia

BARCELONA

### The discontents and divisions behind an illegal referendum

EACH year Sergi Rubió has joined the huge demonstrations that Catalans have held since 2010 on September 11th, their national day, to demand independence from Spain. This year several hundred thousand people thronged the streets of Barcelona in warm sunshine. It was a festive, family affair with giant puppets and human castles. But there was a change, said Mr Rubió, a manager in his mid-30s from Vilafranca del Penedès, in cava country: "Now we have politicians who are standing up and fighting for their ideals."

Days before, the Generalitat, as the Catalan government is known, had rammed through the Catalan parliament a law mandating a "binding" referendum on independence and another requiring a unilateral declaration of independence within 48 hours in the event of a "Yes" vote. "We have a single objective: to be able to decide on our future...and that prevails over everything else," said Carles Puigdemont, the Catalan president.

With that, he set Catalonia, one of Spain's most populous and richest regions, on a collision course with the conservative government of Mariano Rajoy in Madrid. For months Mr Rajoy has been warning that the referendum cannot take place because it violates Spain's constitution. The prime minister has pledged to act "with firmness and proportionality" to stop any vote happening.

The situation is getting steadily nastier. Acting on a government petition, Spain's constitutional court has suspended Catalonia's referendum law. Madrid has taken temporary charge of Catalonia's finances, in an attempt to prevent spending on the referendum. The attorney-general has begun proceedings against Mr Puigdemont and his cabinet for misappropriation of public funds, a charge that carries a potential prison sentence. The police have seized campaign materials, and have orders to do the same with ballot boxes as they are deployed. On September 20th, acting on the orders of a judge, the Guardia Civil raided offices of the Generalitat, arresting 14 officials involved in organising the referen-

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dum. This was an "aggression", said Mr Puigdemont, and a de facto suspension of Catalonia's autonomy.

Nevertheless, more than 700 mayors (out of 948 in the Catalonia region) say they will defy a legal warning not to assist the holding of the vote. "I'm not scared of being arrested," Mr Puigdemont said recently. "We haven't committed any crime." Indeed, he is visibly enjoying the battle he has unleashed. He appears to want to provoke Mr Rajoy into a heavy-handed overreaction. "If there is penal action, that will prompt solidarity," warns Miquel Iceta, leader of the Catalan Socialist Party, which does not support the referendum.

Mr Puigdemont claims a mandate for pursuing independence, but it is a debatable one. His coalition of nationalists and republicans won only 39.5% in a regional election in 2015 that it had claimed was "plebiscitary". His narrow majority in the parliament comes from an alliance with an anti-capitalist outfit, which won 8.2% and also supports independence.

Surveys by the Generalitat's own pollster show that support for independence, while double that in 2008, has never amounted to a majority and is drifting gently down (see chart 1). Some recent polls, though (see chart 2), predict a majority for independence on October 1st, though many No voters will stay away, making the size of the turnout crucial, assuming the poll goes ahead.

### Generalitat dissatisfaction

That so many Catalans want a referendum is the result of three main grievances. The first is the bad blood left by an attempt by Mr Iceta's party to change Catalonia's statute of autonomy to give preferential status to the Catalan language, and to note formally that the Catalan parliament has de-

### Also in this section

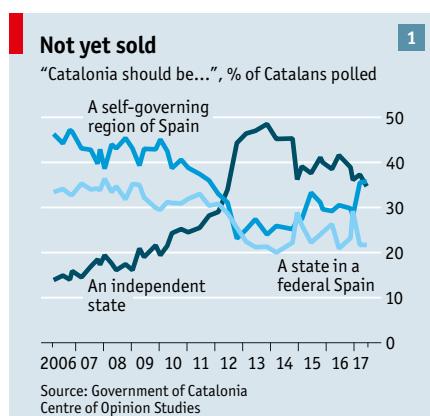
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fined the region as "a nation". This rather modest reform was approved by referendum in Catalonia, and by the Spanish parliament in 2006. But Mr Rajoy's People's Party (PP) campaigned against it, and in 2010 the constitutional court overturned these and other clauses. "For Catalan society, that was an insult," says Ferran Mascarell, a former Socialist who is now the Generalitat's delegate in Madrid.

The second factor is the recession and the austerity that followed the bursting of Spain's property bubble in 2009. The mood was inflamed by the nationalists' claim that the Spanish state "robs" them. The gap between what Catalans pay in taxes and what they get back in services is €8bn-10bn a year. Angel de la Fuente, a public-finance specialist, argues that it is normal for Catalonia, and other richer regions such as Madrid, to be net contributors. But as part of a review begun earlier this year, the size of the gap may be reduced. Catalan governments, for their part, have spent much on things like subsidised local media and foreign "embassies".

Catalans also complain that they get less than their due in public investment. In that they are partly right, says Mr de la Fuente. Spanish governments have followed an investment policy that, he says, has "probably been too redistributive at the expense of efficiency", partly because of EU funding mechanisms.

The third, less tangible, gripe concerns identity. According to Mr Mascarell, society is fed up with "permanent and stupid quarrels against the Catalan language". Catalan governments have educated two generations of youngsters in the historically questionable notion that Catalonia is an ancient nation-state oppressed by Spain.

Behind the support for the referendum lies a sense of insecurity. Catalans like to see themselves as a highly advanced part of a backward country. This is no longer as true as it was. The rest of Spain has caught up. In 1962 income per person in Catalonia was 50% above the national average; now Catalonia's is only 19% higher, according to Mr de la Fuente.

In that sense, Catalan nationalism reflects the fear of loss of relative status, also embodied by Italy's Northern League and other right-wing populist movements. This fear has been exacerbated by the way that governments in Madrid have washed their hands of Catalonia. Barcelona hosts almost no institutions of the Spanish state. "Spain is more like [decentralised] Germany, but it has tried to be like [centralised] France," says Jordi Alberich of the Cercle d'Economia, a business think-tank. "Spain has to try to win over Catalans again," admits Xavier García Albiol, who heads the PP in the region. "If we don't generate a narrative that seduces, Catalonia is lost."

In 2014 the Generalitat supported an informal referendum on independence in



Sources: (A) Opinomètre; (B) NC Report; (C) Government of Catalonia Centre of Opinion Studies; (D) SocioMétrica

which it claimed 1.86m people voted Yes. If it manages to get as many to vote on October 1st it will claim victory. But the courts are likely to strip Mr Puigdemont and his colleagues of their jobs nonetheless, possibly even before the referendum takes place. One way or another, at a minimum Catalonia is almost certainly headed for a fresh regional election. "Whatever happens, October 1st is the end of a chapter, though not of the book," says Mr Alberich. "The next chapter has to be to find a third way." That is a job for politicians, not courts, and in today's poisonous atmosphere, it will be hard. ■

## Germany

# Merkel aims for a fourth

SCHWERIN

**A placid election campaign belies Germany's tensions**

IN A muggy sports hall in Schwerin, in the north-eastern German state of Mecklenburg-West Pomerania, Angela Merkel is holding the 53rd of her 59 election rallies. It is a now-familiar routine. There is the thumping music as she arrives, the black-red-yellow "Kanzlerin" ("chancelloress") placards and the folksy chitchat with dignitaries on the dais. She starts with bread-and-butter concerns like jobs and social spending, then the usual joke about children not looking up from their phones at dinner, then a sweep through law and order (there "can, must and will" be no repeat of the immigrant influx of 2015) and some reflections on global instability. The election is not yet decided, she concludes, before bustling out to a standing ovation.

If the chancellor is going through the motions, that is because the election on September 24th will almost certainly return her to power. Polls give Mrs Merkel's CDU, together with the Christian Social Union (CSU), its Bavarian sister, a double-digit lead over Martin Schulz's unhappy

indistinct Social Democrats (SPD), with whom they have governed in a "grand coalition" since 2013. International turbulence has only heightened Germans' temperamental preference for stability and predictability. Jobs, exports and confidence are up. So much for Mrs Merkel's prediction, when she announced her run for a fourth term as chancellor last November, that this would be her hardest election.

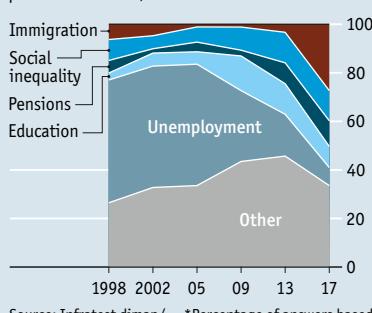
Yet bubbles of dissatisfaction have appeared on the otherwise smooth German millpond. Immigration has soared to first place in rankings of voters' concerns (see chart), despite the success of efforts to integrate the new arrivals. Furious hecklers pop up at Mrs Merkel's rallies. Outside her event in Schwerin protesters chant "Get lost!" and brandish signs reading "Merkel must go". Such scenes are the work of a small, noisy minority organised by the right-wing Alternative for Germany party, AfD, but seem symbolic of wider tensions. Headlines in *Der Spiegel* and *Die Zeit*, two liberal weeklies, declare: "It's getting angry!" and "Anger, Fear, Frustration".

Second place among voters' concerns now goes to social inequality. Not all have benefited from the boom: in Mecklenburg-West Pomerania, for example, food-bank use rose by a third last year. A rare wobble in Mrs Merkel's campaign came at a live discussion with voters when she was confronted by Petra Vogel, a low-paid cleaner facing a hard-up retirement. To applause, another audience member chipped in, calling the chancellor's waffling answer "shameless". In the less rich parts of Germany—like Ms Vogel's native Ruhr valley in the west and especially parts of the former communist east like Schwerin—the AfD is expected to do well.

It might even come third overall, sending to the Bundestag the best part of 100 MPs, out of 630. The election is also likely to see the return of the pro-market Free Democrats (FDP), who fell below the required 5% threshold last time. They have been revived with a conservative edge under a new leader, Christian Lindner. This will both tip Germany's federal legislature ►

## Changing priorities

Germany's largest pre-election political concerns, %\*



Source: Infratest dimap/  
*Berliner Morgenpost*

\*Percentage of answers based  
on top 15 for 2017

► to the right and increase the number of groups there from four to a record six, complicating coalition talks. Polls suggest the CDU/CSU will lack the numbers to achieve a majority with the FDP, their traditional partner.

If so, Mrs Merkel will have two options. The first is another deal with the SPD. But if that party performs as badly as polls suggest, and especially if it falls below its record-low vote share of 23% in 2009, its leaders may struggle to persuade the base to endorse another round of government with her; all the more so if the AfD comes third, making it the largest opposition force in the event of a new grand coalition.

The second option would be a three-way coalition with the FDP and the Green Party (known as "Jamaica", as the parties' colours match that country's flag). But these two smaller parties have big differences on subjects like refugees, the environment and Europe. Two days after the German election, Emmanuel Macron of France will present ambitious proposals for euro-zone reform, driving a wedge between the federalist Greens and Mr Lindner, who has dismissed such ideas. Jamaica is "barely conceivable", insists Mr Lindner, while Cem Özdemir, his Green counterpart, adds that the two parties are "like cat and dog".

Coalition talks could be fraught, and last well into December. Meanwhile CDU minds will turn to the post-Merkel era; the chancellor is expected to stand down before the next election, in 2021. As soon as the polls close, the jockeying for position will begin. Germany's tranquil election will have a scrappy aftermath. ■

#### Sweden, NATO and Russia

## A funny kind of neutrality

#### Should Sweden join NATO?

**S**WEDEN'S Aurora-17 drill, which continues until the end of September, is the biggest war game that the supposedly neutral country has carried out for 23 years. Not only does it involve 19,000 of Sweden's armed forces (about half of them), including its Home Guard, but also more than 1,500 troops from Finland, Denmark, Estonia, Latvia, Lithuania, France, Norway and America. All except Finland are members of NATO, the big western alliance.

The size of the exercise and its main focus, the defence of Gotland, an island in the Baltic Sea some 350km (220 miles) from the Russian enclave of Kaliningrad, is a reflection of how insecure Sweden feels. Vladimir Putin, having gobbled up Crimea



Russia

## Arms and the man

MOSCOW

#### The capital unveils a monument to Mikhail Kalashnikov

**T**HE streets of Moscow feature many monuments to great figures from Russia's past: Tolstoy, Pushkin and Tchaikovsky, to name but a few. This week, a new national hero joined their ranks: Mikhail Kalashnikov, eponymous inventor of the rifle. His nine-metre-tall likeness, clad in a bomber jacket and cradling an AK-47, towers over the Garden Ring Road, one of the capital's main thoroughways. "He's so kind, he's holding it carefully, like a baby," remarked Natalia Khrustaleva-Popova, a retired factory worker who came to see the sculpture. At the opening ceremony, a lone protester was promptly detained, while a priest sprinkled the bronze behemoth with holy water.

The AK-47—"AK" for Avtomat Kalashnikova, or Kalashnikov's automatic, and "47" for the year the prototypes were completed—has become one of the world's most popular and lethal weapons, believed to account for one-fifth of all firearms. Kalashnikov, the son of Siberian peasants, began sketching designs while recovering from a shrapnel wound in 1941 and hearing soldiers complain about superior German rifles. He called his invention a defensive weapon,

but its lightness and reliability made it the gun of choice for rebels, terrorists and, especially, child soldiers. In his later years Kalashnikov was racked with guilt; he wrote to the Orthodox Patriarch of his "unbearable spiritual pain". At the unveiling, Russia's culture minister, Vladimir Medinsky, presented him as the "manifestation of the best qualities of the Russian man", and his rifle as a "true cultural brand of Russia".

The new monument embodies Russia's martial mood. As Vladimir Putin has flexed his muscles on the world stage since returning to the presidency in 2012, he has promoted the adulation of men in uniform. Confidence in the army is at its highest level since Mr Putin came to power 17 years ago. While just 39% of Russians fully trusted the army in 2012, some 60% say they do today (trust in Mr Putin has risen over the same period, from 51% to 74%). During Mr Putin's first two terms in power, Russians saw economic growth as his main achievement. With oil prices low and belts tighter, they now point to the increased capabilities of the armed forces. "Either you're strong," said Sergei Mikhailov, a lawyer, gazing up at Kalashnikov, "or you're nobody."

and attacked Ukraine, is flexing his muscles near the Baltics and Scandinavia. Russia's massive Zapad-17 military exercise, which finished this week, involved sending 100,000 troops to Belarus and the Baltic to practise repelling the "Western Coalition". Foreign observers were banned, as they never are from NATO exercises. (Perhaps luckily: a Russian helicopter reportedly fired missiles at spectators by mis-

take, though the government denies this.)

There have been plenty of other causes for disquiet. In March 2013 Russia sent two Tupolev Tu-22M3 bombers, escorted by four Sukhoi Su-27 jet fighters, across the Gulf of Finland to within 40km of Gotland. The planes only veered off after carrying out what NATO analysts believed was a dummy nuclear attack on targets in Sweden. After many years of static or de-



► clinching defence spending, Sweden had to rely on Danish F-16s, part of NATO's Baltic air-policing operation, to respond. In 2014 a Russian submarine penetrated the Stockholm archipelago, departing without being found. Since then Russia has stepped up the frequency of menacing, no-notice military drills in the region.

Small wonder many Swedes think they should end 200 years of neutrality by joining NATO. If they did, any Russian attack on Sweden would be treated as an attack on America and its 28 NATO allies. All the main Swedish opposition parties want to join, apart from the ultra-nationalist Sweden Democrats, who like many European populists have a curious fondness for Mr Putin. Polls suggest that a plurality of Swedes favour NATO membership. A Pew survey earlier this year found 47% in support of membership and 39% against. But for now the Social Democratic-Green coalition government, in office since 2014, wants to get as close as possible to NATO without actually joining it.

Peter Hultqvist, Sweden's defence minister, is the author of a policy that tries to square the contradictions in the country's security policy. Part of the "Hultqvist doctrine", as it is known, is to improve Sweden's neglected capacity for self-defence. Military spending is rising—by about 5% annually in real terms over the next three years—and conscription is being reintroduced next year. The other part is building closer defence co-operation with its non-NATO neighbour, Finland, as well as with America and Baltic littoral states in NATO. All of which Aurora-17 is meant to demonstrate. Both Sweden and Finland also entered into a "host country support agreement" with NATO, which allows alliance forces to move through their territory and pre-position kit by invitation.

Mr Hultqvist himself is suspected of hankering after NATO membership. But for now the government has ruled it out. There is still a good deal of anti-Americanism on the Swedish left (which Donald Trump does little to dispel). There is also a fear, expressed by the foreign minister, Margot Wallstrom, of provoking Mr Putin

(who has promised to "eliminate the threat" were Sweden to join NATO). Many observers doubt that Finland, where popular support for NATO is lower, would be ready to make a joint decision in favour of membership—something Swedish NATO boosters see as crucial.

There are good reasons why NATO itself might be keen for Sweden (and Finland) to join its fold. Defence of its Baltic members would be much harder without guaranteed access to Swedish ground and airspace. As a member, Sweden would be far more integrated with NATO's command-and-control systems. Interoperability of its forces with those of the alliance would improve, making them more effective in a fight.

Sweden's NATO question is being fudged for now, but it will loom large in next year's general election. If the Swedes do eventually make the jump, Mr Putin will have only himself to blame. ■

### The Czech Republic

## A scandal in Bohemia

PRAGUE

**The probable next prime minister faces many critics**

ANDREJ BABIS says the political establishment is conspiring to keep him from power. A billionaire agro-industrialist and media mogul, Mr Babis is the frontrunner to become the Czech Republic's prime minister after next month's general election. However, on September 6th parliament voted to strip him of immunity from prosecution as an MP, amid fraud allegations from the police. "You won't frighten me. You won't stop me. You won't get rid of me," the self-styled outsider bel-



Babis and his billionaire baggage

lowed from the dais before losing his immunity by 123 votes to just four.

Meanwhile, audio recordings of him speaking coarsely about how, for instance, he might use his newspapers to attack rivals, have been posted anonymously online. There is even a phone app to help shoppers avoid foods produced by Agrofert, Mr Babis's conglomerate, which has 250 companies and 33,000 employees.

Rivals have taken more formal steps to curb the tycoon's influence. In January he was obliged to place Agrofert in a trust after parliament banned cabinet officials (he was finance minister at the time) from owning media or more than a quarter of any firm bidding for state contracts or EU subsidies. In May Bohuslav Sobotka, the Social Democratic prime minister whose coalition includes Mr Babis's ANO party, forced him to quit his ministerial job, citing separate claims of tax fraud. However, the latest controversy, an alleged subsidy fraud, highlights more specific concerns about how Mr Babis uses political power.

At issue is a 50m koruna (€2m) EU subsidy that helped develop a lakeside resort outside Prague. Police allege that in 2007 Mr Babis spun off a subsidiary from Agrofert to gain access to funds earmarked for small businesses. That firm developed the Capi Hnizdo (Stork's Nest) hotel while temporarily owned by Mr Babis's two adult children and his now brother-in-law, before returning to the Agrofert fold in 2013. Prosecutors have not so far filed charges. Mr Babis denies all wrongdoing and insists the case is an attempt to derail his campaign. In a country where frustration with the governing class is high, this has worked. Polls show ANO far ahead of the Social Democrats.

The Capi Hnizdo deal prompted the European Commission to request an audit in 2016. In an example of Mr Babis's many potential conflicts of interest, such auditing was the responsibility of the Czech finance ministry, which Mr Babis ran at the time. Lukas Wagenknecht, a former deputy finance minister under Mr Babis, says the scandal fits a pattern. After leaving the ministry, Mr Wagenknecht became chairman of an NGO that has been looking into Agrofert. As well as the scale of the EU subsidies received, the data also show that many Agrofert subsidiaries have been donors to Mr Babis's ANO party. Between 2012 and 2016 a group of 14 firms under the Agrofert umbrella that drew nearly 1.4bn koruna in EU subsidies donated about 31m koruna to ANO.

This cycle of cash between public institutions, EU programmes, a private agribusiness and a political party means "the eventual impact of European funds is to promote a single party," Mr Wagenknecht concludes. But doing anything about all this is unlikely to get any easier if and when Mr Babis becomes prime minister. ■

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### Is achieving work-life balance in Japan a fantasy?

From the outside, Japan does not seem like a good place to work. Too often, companies are in the news for the wrong reasons. But things may be set to change.

Meet with business leaders at **Japan Summit 2017** on October 26th in Tokyo to discuss how Japan's corporate chiefs are rethinking company cultures to boost productivity and improve staff well-being.

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# Charlemagne | Going postal

**What an obscure battle over employment law reveals about Europe's neuroses**



AS SUMMERS go, Marek Miesikowski's wasn't bad: a fortnight in Aix-en-Provence, a hop across to Corsica, then winding down in Marseille for a few weeks. Mr Miesikowski, a student from Poland, was hauling ventilation pipes across construction sites rather than sunning himself on the Riviera, but he is not complaining. Two months working in France earned him enough to support an entire year of his physiotherapy studies in Poznan.

Like almost half a million of his compatriots, Mr Miesikowski was taking advantage of the European Union's rules on "posted workers", designed to govern pay and benefits when a citizen from one European country takes temporary work in another. The Polish agency that employed him arranged his work with French clients, covered his transport and housing costs and organised a three-week language course before he left. Posted workers pay social security at home rather than in their country of work. Their employers are obliged to pay them only the basic minimum wage in the host country, rather than the often higher "sectoral" wage. By most estimates they make up less than 1% of the EU labour force (far more Europeans choose to work abroad permanently). The rules covering their employment are complex, arcane and tedious. Yet they have become the subject of a bitter row among Europe's leaders.

To simplify a little, a coalition of wealthy EU countries, led by France, believes the current rules encourage "social dumping" (cheap foreign workers undercutting local ones), and wants to tighten the conditions of posted work. "Equal pay for equal work in the same place" is their mantra. The poorer countries of eastern Europe retort that these pious words are a cover for old-fashioned protectionism. On joining the EU they had to open up to western European goods and capital; why should their service providers now be locked out of high-wage markets?

On inspection, most "east-west" conflicts inside the EU turn out to be rather more variegated. But this one cleaves the continent more or less in two, and has been inflamed by the odd decision of Emmanuel Macron, France's new president, to place reform of posted work at the heart of his EU policy. Last month, during a tour of eastern Europe, he called the rules "a betrayal of the fundamental aspects of the spirit of European legislation". He scuppered a proposal to revise the law in June, and insiders say

his approach has made striking a compromise harder. (Some in Britain not yet reconciled to Brexit wonder if common cause can be made with Mr Macron to limit immigration by EU workers. Fat chance: in 2015 Britain registered barely 50,000 posted workers, so little relief would be available that way.)

Rows over social standards have a long history inside the EU, but were bound to intensify when the club expanded to ten poorer countries in the 2000s. Incomes in the east and west have not converged as quickly as some hoped, and the incentives for workers like Mr Miesikowski are no puzzle: France's minimum wage is three times as high as Poland's. Some sectors are highly exposed. By one estimate, posted workers account for one-third of the labour force on construction sites in Belgium (where labour taxes are eye-watering). Kris Peeters, the deputy prime minister, says that Belgian workers have been locked out of local jobs and that smaller firms, which cannot easily hire posted workers, struggle to compete. But legitimately employed posted workers are greatly outnumbered by the unregistered or fraudulent sort. If social dumping is a problem, attacking posted workers does not look like much of a solution.

So why all the fuss? Some argue that voters aghast at seeing their legal protections supposedly undercut by foreigners will be tempted by political extremism. "Some parties are very anti-European, and one reason is that so far we have no solution for the posting of workers," says Mr Peeters. Mr Macron shares this view. He has pinned the blame for Britain's vote to leave the EU on "workers from eastern Europe who came to take British jobs". Rich countries that choose to erect barriers to cheaper workers from foreign countries might simply end up importing more of their goods or offshoring production, points out Bruegel, a Brussels-based think-tank. But a manufacturing plant in a faraway country is less visible than foreign workers on local construction sites or meat-processing lines.

## Single market for me but not for thee

For the easterners, threats to the posted-worker regime get at a niggle that has worried them for years. Mr Macron's tough line reminds some of the "Polish plumber" panic that helped turn French voters against a proposed EU constitution in a referendum in 2005. Some accuse the president of making scapegoats of foreign workers to help smooth the passage of a contentious labour reform he is pushing at home. Why else would a newly minted head of state with a long to-do list devote so much energy to an issue that should be the preserve of middle-ranking ministers?

The EU's governments are hoping to reach a compromise in October. Two French proposals remain as sticking-points: to reduce the time limit for posting to 12 months, and to include lorry drivers in the new legislation. Mr Macron has the backing of Germany, Italy and others. Poland remains an implacable foe, but its irascible government has few friends in the EU; Mr Macron's diplomatic efforts with more conciliatory governments, like those of Slovakia and the Czech Republic, may bear fruit.

Any changes to the law will be symbolic, not least because the average posted worker toils for well under a year. But having dedicated himself to this obscure fight, Mr Macron needs a win as he prepares for the bigger battle to come, over reform of the euro zone. His calls for a "Europe that protects" resonate with those who blame an excess of Anglo-American deregulatory zeal for fueling populism in the EU. But they risk alienating those Europeans who consider themselves workers, not aggressors. ■



## The Labour Party

# One more heave

**Also in this section**

**50 Bagehot: Songbirds and vipers**

SHIPLEY

**Six months ago the opposition was in a battle for survival. Now it has its sights set on Downing Street**

IT IS standing room only in the Shipley & District Social Club, a working men's club in a commuter town near Bradford. Over 200 Labour activists have crammed into a backroom more used to 18th birthday parties than political rallies. They have gathered on a drizzly Sunday morning to plot the unseating of Philip Davies, the local Conservative MP, who sits on an unsteady majority of 4,681. Against a backdrop of red balloons, Owen Jones, a left-wing activist and journalist, is pumping up the crowd. "Are we going to hear those magic words: 'Shipley: Labour gain?'" he asks. The cheers suggest the crowd think they will.

No general election is due in Britain for five years. But the unexpected losses sustained by the Conservative Party in a snap election in June, which Theresa May had called hoping for a landslide, have left the prime minister leading a minority government that could topple at any moment. When asked how long it will last, one Labour front-bencher replies: "Who knows? It's a bit like having a frail, elderly relative who you know is going to die."

Energised by the result, Labour resembles a different party to the ragbag institution that had its last rites read many times after electing its left-wing leader, Jeremy Corbyn, two years ago. Fresh from win-

ning its biggest share of the vote since 2001—40%—a party that was braced for its third consecutive summer of infighting is instead plotting its path to Downing Street. It needs another 64 seats to win a majority, which is a tall order. But flipping just seven Tory seats would be enough to bring down the government and give Mr Corbyn a shot at forming a ruling coalition. The accidental leader who was expected to become an amusing footnote in the Labour Party's history, if not the cause of its demise, is now favourite to be the next prime minister.

The next election campaign is already under way. Momentum, a left-wing grassroots organisation founded to support Mr Corbyn's leadership, is touring seats where Conservative MPs are vulnerable. Those attending its events, who range from middle-aged veterans to political newbies, are given tips on how to canvass and then sent out to spread the new—if rather retro—gospel of the Labour Party.

On St John's Avenue in Putney, in south-west London, a Momentum battalion is out on patrol. As in Shipley, half the 200-odd people there have never campaigned before. Participants bond by moaning about media coverage of the Labour leader, which they say focuses on trivia such as his sometimes bedraggled appearance. "You never expected Nelson

Mandela or Gandhi to dress smartly," says one retired teacher. St John's Avenue, where houses change hands for £3m (\$4m), is "not natural Labour territory", admits one of the canvassers. But by the next election it might be. Once a fairly solid Tory seat, Putney came within 1,554 votes of turning Labour in June.

In places like it-rich, educated, socially liberal, keen on the European Union—Labour is on the march. But the forces behind Labour's progress in these areas are pushing it into retreat elsewhere. If the party has a soft underbelly, then Ashfield is its navel. The former mining constituency has been held by Labour since its creation in 1955, barring a two-year blip in the 1970s. Today Gloria de Piero, a plain-spoken former television journalist, clings on with a majority of just 441. Seven out of ten voters in Ashfield opted for Brexit. "I'm not surprised people in my constituency want to turn the clock back," says Ms de Piero. People miss what the area used to offer: "Secure jobs, with high status and very well paid." Ashfield comes 604th out of Britain's 650 constituencies when it comes to sending people to university. In some towns in the area, you struggle to find a bus home after 5.30pm on a weekend.

To have a chance of forming a government, Labour has to win places like Putney ➤

► while hanging on to seats such as Ashfield. This is not a new dilemma: Labour has been gaining ground in cosmopolitan, urban areas since 2005, while the Conservatives have done the same in declining towns and rural areas, points out Will Jennings of the University of Southampton. But Brexit has made the equation trickier. Of the seats on Labour's hit list, the most winnable 64—the number needed for the party to gain a majority—are a near-even mix of those that voted to leave the EU and those that voted to remain (see map).

Finding a position that satisfies both camps is proving difficult. Labour's policy amounts to hard Brexit with a human face: Britain would leave the single market and customs union but, the party insists, in a way that limited damage to businesses, and only after a generous transition period. The free movement of people to and from the EU would end, but what would replace it is left unsaid, beyond a pledge not to "scapegoat migrants".

### Divide and conquer

There is a logic to this approach. As long as Labour offers a slightly milder form of Brexit than the Conservatives, moderate voters have nowhere else to go. (Their unwillingness to turn to the Liberal Democrats was proved in the recent election.) Some shudder at this argument, which reminds them of the party's neglect under Tony Blair of its working-class core voters, who subsequently left the party in droves. Between 1997 and 2010 the party lost 5m of them, the bulk of whom simply stopped voting. If Labour does nothing to appeal to Europhiles, they too could ditch the party.

This may be a price worth paying. "Working-class abstention would be far more dangerous than losing university towns and London," argues Matthew Goodwin of the University of Kent, whose research focuses on populism among working-class voters. In June the Tories won a plurality of working-class votes for the first time since Margaret Thatcher was in office, according to YouGov, a polling company. Pledging to deliver Brexit, albeit with softened edges, placates these voters, who mainly backed Leave. They might prefer the full-fat Brexit offered by the Tories, but it would not be enough to tempt them away, believes John McTernan, a former adviser to Mr Blair who now works for PSB Research, another pollster. "The north hates the Tories more than it hates the EU," he says bullishly.

If voters are split by Brexit, they are divided again over Labour's leader. When Lloyd Russell-Moyle first went canvassing in Brighton Kemptown this year, he found that the name Jeremy Corbyn elicited the same amount of bile as that of Labour's previous leader. But it also provoked rare excitement. He ran out of Labour posters in 30 minutes. "In 2015 no one came running

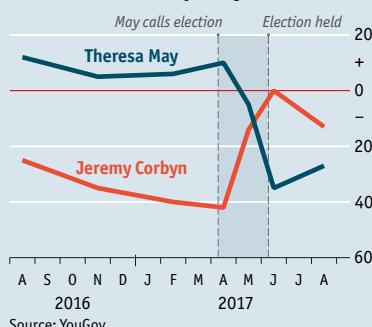
out their house chanting 'Oh, Ed Miliband,'" says Mr Russell-Moyle, who ended up winning the marginal south-coast seat from the Tories with a 9,868 majority.

Mr Corbyn has become an unlikely icon. His name rings out at music festivals, where his 68-year-old face appears on t-shirts mocked up in the style of Barack Obama's "Hope" posters. Last year 18 couples in England and Wales named their baby boy Corbyn. A raucous online hit squad of supporters spreads his message on social media, revelling in the oddly laddish tone that surrounds a politician with an interest in municipal manhole covers. Since the election Mr Corbyn has zoomed past Mrs May in popularity (see chart). The under-25s now back Labour over the Tories by nearly three to one.

Ask Mr Corbyn's fans why they like him and the same word comes up repeatedly: principled. This has served him well as he engages in the ideological gymnastics required of any politician. This year Mr Corbyn and his team have become more skilled in triangulation, as well as the more brutal side of politics. In the run-up to the election, terrorist attacks in Manchester and London, in which 30 people were murdered, threatened to damage the chances of Mr Corbyn, who is seen as weak on security. But he quickly affirmed his support for the police's shoot-to-kill policy—on which he had previously sent mixed messages—and Labour deftly turned the story

### Reds move ahead

Britain, net favourability rating, %



into a question of public spending on the police, which has been cut under the Tories. "It was ruthless," says one Labour critic, admiringly.

Mr Corbyn has also overcome the awkward contrast between some of his own views and those of his party. He is a former vice-chairman of the Campaign for Nuclear Disarmament who has long campaigned to scrap Britain's Trident nuclear weapons. Yet his manifesto promised to keep them. Six years ago Mr Corbyn labelled NATO a "danger to world peace", but his party is committed to staying in the alliance. ("Jeremy has been on a journey," explained the shadow foreign secretary.)

Cries of hypocrisy do not stick. "He compromised, like any other politician—on free movement, on Trident, shoot-to-kill—but he never looked compromised," says one Labour MP. Labour's policymaking process, in which the big decisions are taken at the party's annual conference, creates a firewall between the leader and any controversial policies. The promise to maintain Trident was passed by members, allies of Mr Corbyn are quick to point out. He is simply doing their bidding.

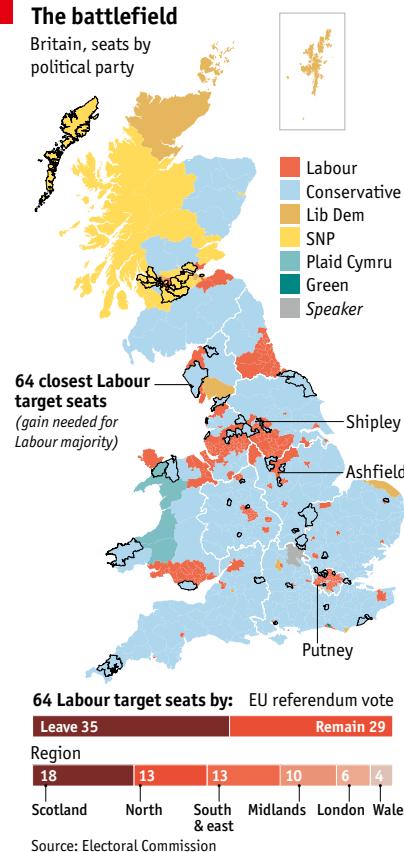
### Preparing for government

Nor do voters seem much perturbed by Mr Corbyn's exotic positions on foreign policy, an area which seems to be regarded by Labour MPs as a sandpit they are happy to let Mr Corbyn play in as long as it does not become an issue of the doorstep. The Labour leader's passion for Latin America—he speaks fluent Spanish and has a cat called *el Gato*—includes defending the legacy of Hugo Chávez. But Venezuelan affairs come far down the list of British voters' priorities, as does Mr Corbyn's close relationship with Sinn Fein in the 1980s, which seems to have been forgiven, or simply ignored, especially by young voters.

Voters' acceptance of a far-left candidate is also due to an unspoken element of Labour's radicalism: its moderation. Andrew Fisher, the main author of Mr Corbyn's manifesto, wrote a pamphlet in 2014 that suggested nationalising all banks and introducing capital controls. By compar-

### The battlefield

Britain, seats by political party



son the manifesto itself was rather tepid. "It contains a seed of radicalism," says one Labour adviser, almost apologetically. "It's the first step."

For the first time in a generation, Labour proposed bringing utilities such as gas, water and electricity, as well as the railways, back under public ownership. University tuition fees would be scrapped. It pledged to increase the number of workers' co-operatives and set up a National Investment Bank to pump £250bn into small businesses and research and development. Beyond that, Mr Corbyn's published vision for Britain reads like that of his predecessor, Mr Miliband, only with the handbrake taken off. Aides from the Miliband era recall painstakingly moving money around to free up £2.5bn of extra funding for the NHS. Mr Corbyn promises an extra £30bn by, among other things, raising income tax for the top 5% of earners.

Brexit, coupled with seven years of austerity, may have washed away voters' squeamishness about public spending by a Labour government. "If you are going to piss away £250bn by leaving the single market, another £11bn on [abolishing] tuition fees doesn't matter," says Tom Baldwin, a former adviser to Mr Miliband. "It's another round of drinks on the Titanic." Considering that Mr Fisher, the man behind the manifesto, once labelled Mr Miliband's cabinet "the most abject collection of absolute shite", the overlap in policies—from a crackdown on companies that are late to pay their suppliers, to a higher minimum wage—is remarkable.

Where Mr Corbyn's policies do differ is in their clarity. During its latest term in government, in 2005–10, Labour was addicted to technocratic, targeted solutions. Policies such as tax credits—wage top-ups for the low-paid—were effective but incomprehensible. In contrast, Mr Corbyn proposes "bright, primary-colour policies", says Marcus Roberts of YouGov. Ideas such as scrapping tuition fees and providing free lunches for primary school pupils are clear and understandable, even if they make wonks wail at the thought of spraying money at the middle class. The tactic is working. Some 28% of Labour voters cite the party's policies as the main reason for backing it, according to YouGov. For the Conservatives, the number is just 10%.

Critics argue that the programme is still dated, harking back to a 1970s Britain. Yet a planned hike in corporation tax, to 26%, would put it back to near where it was at the start of David Cameron's tenure, in 2010. Tuition fees were introduced only in 1998. The privatisation of the railways began only in 1994. "People can be very ahistorical about these things," says Mr Miliband. Most of Labour's policies would not look out of place in the programme of a typical centre-left party in northern Europe. "It's unradical in the grand scheme of



**Coming to the boil**

history," says Mr Russell-Moyle, the Brighton MP. "But it's radical in the here and now of British politics."

Can Labour go the distance? It sits just above the Conservatives in most polls, which put the two parties on a little over 40% each. A summer of bungling and bickering from the government has allowed a slight air of hubris to permeate the opposition. After two years of criticism from within the party, Mr Corbyn's supporters have been on a summer-long victory lap. This attitude worries some observers. "There is a dangerous internal narrative, that Labour's qualified success at the election was more down to its strengths than the Conservatives' weaknesses," says Andrew Harrop, general secretary of the Fabian Society, a Labour-aligned think-tank.

#### The last push

Winning the additional 64 seats required to form a majority government will be difficult. Although Labour's vote share in June was 11 percentage points higher than in 2010, this resulted in a mere four extra seats. The party is piling up votes where it is already dominant, points out Stephen Kinnock, a Labour MP.

One route back to power goes through Scotland. It provided an electoral life-jacket in 2010, when Labour won 41 of 59 seats there, even as it was hammered south of the border. The rise of the Scottish National Party changed all that. Labour now has just seven Scottish seats, behind both the SNP and the Tories. Rebuilding this base will be a slog. But Labour made gains in Scotland earlier this year, and now eyes 20 Scottish seats where it is fewer than 4,000 votes away from victory.

In England, some in the party fear that Mr Corbyn's appeal is too narrow, particularly in the post-industrial towns across the midlands and parts of the north where Labour is already struggling to hold seats.

Mr Corbyn still repels a lot of voters: the party itself is more popular than its leader, according to YouGov. An unknown number of people voted for Labour in June only because they were confident he would not become prime minister. The Conservatives are holding their own, despite running a dreadful election campaign and leading a kneecapped government. All this means that plenty of Labour MPs retain some scepticism about the Corbyn project.

But Labour's leadership is getting better at sidelining potential saboteurs. The threat of deselection, in which the local Labour Party kicks out its MP, has been levelled at Corbyn-sceptic MPs. Momentum has nearly 30,000 members, an anorak's understanding of the party rule-book and a low opinion of the Labour MPs who tried to oust Mr Corbyn in 2016. In return for delivering hundreds of people to campaign at the weekend, it wants grassroots members to have a bigger say in how the party is run.

Next week's party conference, in Brighton, is expected to approve a plan to add more local members to the party's National Executive Committee, along with more trade unionists. It is also likely to reduce the number of MPs needed to approve leadership candidates, which will reduce the power of MPs to block a radical successor to Mr Corbyn. Local parties will be given a freer rein to select prospective MPs than they were in the previous election, providing the chance to place Corbyn-supporters as candidates. Slowly but surely, Mr Corbyn is taking control of the party. If he does not lead Labour into government, the next person to try to do so will probably be someone like him.

For now, peace has broken out as both left and right of the party find themselves closer to power than they had expected. "When you are on the up, and you can smell power—and decay on the other side—it brings unity," says Mr McTernan. The MPs who tried to remove Mr Corbyn last year did so in the belief that he was destroying the party, endangering their jobs and condemning Britain to a generation of Tory rule. June's election proved that view wrong. One strident critic of the Labour leader says that he would not have won his seat without distancing himself from Mr Corbyn, but admits that he would have lost without the extra votes that Mr Corbyn brought in. For MPs on the party's right, Mr Corbyn resembles Homer Simpson's description of alcohol: the cause of, and solution to, all of life's problems.

It is certainly hard to imagine that the backroom of the Shipley & District Social Club would be ram-packed on a damp Sunday morning without him. "This is bigger than anything during the campaign," says Richard Dunbar, a local councillor, nodding to the packed room. "Even on election day." When the next election comes, Labour will be out to win. ■

# Bagehot | Angry birds

The Conservatives are dangerously divided over Brexit



**O**N SEPTEMBER 19th Toys "R" Us, one of the biggest players in America's toy market, filed for bankruptcy. At about the same time Tories "R" Us, one of the biggest players in Britain's political market, was doing everything possible to prove that it is heading in the same direction. Voters dislike nothing more than a party at war with itself. The Tories went to war over the most important problem facing the country—one that is largely of their own making.

Boris Johnson, the foreign secretary, ignited the conflict with a lengthy article on Brexit in the *Daily Telegraph*, a week before Theresa May was due to give a big speech on the same subject in Florence. Amber Rudd, the home secretary, accused him of "back-seat driving". Sir David Norgrove, Britain's chief statistician, criticised his "clear misuse of official statistics" in reviving the claim that Brexit would give Britain a windfall of £350m (\$475m) a week to spend on the National Health Service. In Mr Johnson's defence Jacob Rees-Mogg, a backbench Tory, suggested that he should be given a knighthood. As *The Economist* went to press Mr Johnson was preparing to demonstrate his loyalty to Mrs May by sitting in the front row for her speech, having proclaimed, poetically, that the cabinet was a "nest of singing birds", as if voters cannot discriminate between trilling nightingales and hissing vipers.

What does this soap opera tell us, other than that Britain is ruled by an incestuous clique of frenemies who delight in turning even the most serious issues into melodramas? The most obvious thing is that Britain's prime minister is as weak as it is possible to be while still residing in Downing Street. Mr Johnson challenged her authority on the most fraught issue in British politics at a peculiarly sensitive time but still kept his job. Sir Vince Cable, the Liberal Democrats' sharp-tongued leader, compared Mrs May to a headmistress "barricaded in her own office" for fear of unruly pupils. This does not bode well for negotiations which, if they are to succeed, will require Mrs May to persuade her party to sign off on all sorts of concessions and trade-offs.

Still, in exposing Mrs May's weakness, Mr Johnson has revealed his own. Not so long ago he was the Conservatives' leader-in-waiting. His success in getting himself elected mayor of London—a left-leaning and multicultural city—proved that he possessed "the Heineken factor", refreshing parts that other To-

ries could not reach. Part Bertie Wooster and part Jack the Lad, he went down well at both Tory fetes and in city boozers. Today he is reviled by liberals and distrusted by many party loyalists. As mayor, he was frequently hailed as a hero when cycling through the city. Now he is subject to abuse. A recent poll of Tory activists about who should be the next leader gave him less than 8% of the vote, well behind his fellow Wooster imitator, Mr Rees-Mogg. The result is an impasse. The leader of the government is too weak to impose her authority; the leader of the hard-Brexit faction of her party is too weak to depose her; and Jeremy Corbyn, the hard-left leader of the Labour Party, gets ever stronger.

Even more worryingly, the Johnson affair reveals how poorly Britain's preparations for Brexit are going. Mr Johnson's critics such as Kenneth Clarke, a liberal Tory grandee, argue that the foreign secretary should have obeyed the rules of collective cabinet responsibility: ministers ought to air their views within the cabinet and then defend the collective line. But it turns out that Mrs May has never engaged in a big cabinet debate to determine the line. Instead she has limited discussion to various subcommittees, from which Mr Johnson was pointedly excluded. He was driven to write his article because he thought that the government was slouching towards a "soft Brexit" on the basis of subterfuge rather than open argument.

The foreign secretary has highlighted the fissure at the heart of Tory and British politics. Brexit involves a trade-off between what technocrats call "control" (meaning sovereignty) and "access" (meaning freedom to trade with the EU). Soft Brexiteers such as Philip Hammond, the chancellor, and Ms Rudd favour access over control and a long transition rather than a cliff-edge Brexit. They want Britain to "shadow" the single market by obeying most of its rules, including those against striking independent trade deals, for as long as possible. They have the support of most business leaders, who fear disruption more than anything else.

Hard Brexiteers such as Mr Johnson think this would make a mockery of Britain's decision to leave the EU in the first place. They want a relatively short transition—Mr Johnson has suggested six to 12 months. They point to the fact that Canada has a comprehensive trade deal with the EU without being a member of the single market and insist that "no deal would be better than a bad deal" on the ground that the worst that can happen is that Britain will revert to World Trade Organisation rules. The central argument in Mr Johnson's magnum opus was that Brexit is an opportunity to be seized, but that most of those in charge of implementing it see it as a bomb to be defused.

## The great betrayal

Mr Johnson's talk of optimism betrayed also suggests the beginning of something darker: the stab-in-the-back theory of Brexit. Brexiteers are already hard at work explaining why their glorious idea has failed to bear fruit. Brexit was implemented by its enemies rather than its friends. Mrs May was too naive to take on EU officials whose only concern was to see Britain humiliated. Mr Johnson's intervention this week has positioned him to revive his leadership ambitions as the tribune of this stabbed-in-the-back faction. The Tories' agonies over Brexit not only make it more likely that the next prime minister will be a hard-leftist who blames Britain's problems on the machinations of international capital. They also make it more likely that the prime minister after that will be a rightist who blames the country's problems on the machinations of closet Remoaners and Eurocrats. ■

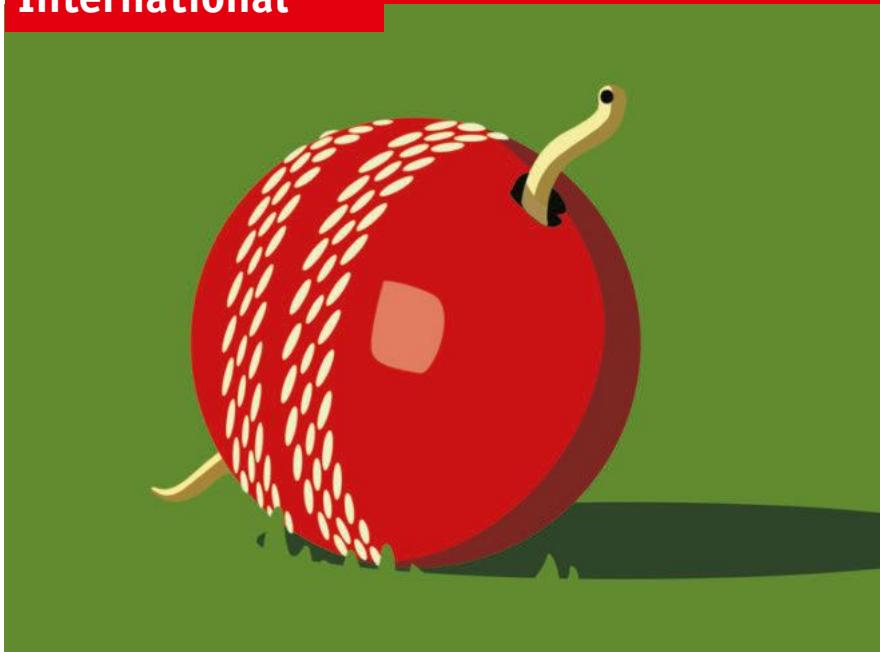
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**Corruption in sport (1)**

## Play up, play up

**Match-fixing is more common than ever. Regulators need to up their game**

IN 2008 Lou Vincent, a former New Zealand international cricketer, was playing in a now-defunct Indian Twenty20 cricket league. A man claiming to represent a cricket-bat manufacturer invited him to a hotel room. But instead of being shown bats he was offered a prostitute and a wad of cash.

He left, and now says he told his captain, Chris Cairns, what had happened—and that, rather than encouraging him to report what was clearly a match-fixer's opening gambit, Mr Cairns tried to recruit him to fix on his behalf instead. (Mr Cairns denies this, and won £90,000, or \$122,000, in libel damages after suing a cricket official for accusing him of match-fixing.) In 2013 rumours and odd patterns of gambling made the authorities suspect Mr Vincent, who had moved to England. The following year he admitted to 18 charges of fixing and was banned from cricket for life.

What makes Mr Vincent's story unusual is that he was caught. Those responsible for tackling match-fixing believe it is more prevalent than ever. Yet it mostly remains undiscovered. Each new case makes big news, like that of Khalid Latif, a Pakistani cricketer who had played in international matches. On September 20th the Pakistani Cricket Board banned him from the game for five years for "spot-fixing"—taking money to play to order for part of a match, rather than determine the overall outcome—after an investigation into corruption in a

national league.

In a recent survey of more than 600 European athletes in 13 sports by Vassilis Barkoukis of Aristotle University in Thessaloniki, a third said they believed that they had played in fixed matches. A fifth said they were aware of a fixed match involving their team in the previous year. Sportradar, a firm that uses statistical techniques to spot dodgy bets, identified 1,006 contests that it thinks were probably manipulated during 2015 and 2016, and 451 in the first eight months of 2017, the highest rate since it began tracking sports betting in 2008 (its database has also grown).

### Winning isn't everything...

About four matches in 1,000 raise red flags in Sportradar's system. But around one in 100 are probably fixed, says Ian Smith, the first integrity commissioner for "eSports"—competitive video-gaming (see box on next page). Regulators are slowly turning to analyses of betting patterns as evidence. Sportradar's reports have been used successfully in just 24 prosecutions since 2013. But 13 sports have signed up in recent years to receive its reports. In a landmark case last year the Albanian football champions, KS Skenderbeu, were banned from the Champions League based solely on Sportradar's betting analyses.

The growth in match-fixing has been fuelled by the vast amount wagered on

sport—around \$2 trillion a year, according to the International Centre for Sport Security (icss), a think-tank. It estimates that criminal groups launder \$140bn by match-fixing and illegal betting each year.

Corruption is most common at the second-tier level: in small football leagues, domestic cricket tournaments and so on. This is the sweet spot where enough money is staked for corruptors to clean up—and players earn little enough to be easily tempted. In tennis, for example, only the top 160 men and 150 women make enough in prize money to cover their costs. "The whole sport is structured in a way that begs corruption. There are too many tournaments and too many players," says Mr Smith. The problem is so notorious that tennis players are routinely accused on social media of throwing matches.

Players are recruited by fixers in a manner that Ronnie Flanagan, the chairman of the International Cricket Council's anti-corruption unit, describes as "grooming". Nchimunya Mweetwa, a Zambian footballer who was signed to a Finnish club in 2007 and found guilty of fixing in 2011, said that men who he thought were football agents befriended him, gave him gifts and only later threatened violence if he did not fix for them. Another device is the "honey trap"—a woman paid to strike up an acquaintance with a player and introduce him to fixers, or even to have an affair with him, meaning photographs can be taken and used as blackmail if he rebuffs them.

Even in team sports, fixers usually need to enlist just a single athlete. Betting activity is centred on a few outcomes. In football, for example, 95% of the total staked goes on the match result, the margin of victory and the number of goals. A fixer who knows that a player will be sent off, and approximately when, can use this knowledge to ➤

▶ predict the way odds will move. Placing bets both before and after makes it possible to lock in a profit.

Players can manipulate betting markets in other ways. A bowler might agree to bowl no-balls at a particular point in a cricket match, or a tennis player to lose a particular game. Such things often happen by chance, making them easy to conceal and allowing players to rationalise their actions as victimless crimes, rather than frauds against fans, punters and their unsuspecting team-mates. A one-off fix of a single game within a tennis match can be "virtually impossible" to spot, says Mark Harrison of the Tennis Integrity Unit (TIU), the sport's anti-corruption body. But a player who has started fixing can be blackmailed to continue, and suspicious patterns may emerge.

Making matters worse is a betting-industry "arms race", says Tom Mace from Sportradar, with bookmakers taking bets on ever more matches, including at semi-professional, amateur and youth level. It is also hard to persuade players to be clean when there are so many questions about the probity of sports administrators, for example over the choice of World Cup and Olympics hosts. And teams' financial interests are more enmeshed with bookmakers than they used to be. Until 2002 no Premier League football club had a bookmaker as a shirt sponsor; now nine do.

#### ...It's the only thing

Most sports spend a minuscule fraction of revenue on anti-corruption measures such as educating players and officials about fixers' methods, or on monitoring betting patterns and sending officials to tournaments. The TIU had just five staff as recently as last year; it now has 11—still not enough for a presence at every professional event. Its budget for 2017 is \$3.2m. It should be at least \$10m, Mr Smith believes. Tennis authorities do not always realise how incriminating strange betting patterns can be, says Dan Weston, a sports and betting analyst. The TIU does not employ a full-time betting analyst.

Many countries have no specific law against match-fixing. In 2012 three Swiss footballers were acquitted largely because a national law against sporting fraud had yet to be passed. At worst a perpetrator will be fined a few thousand dollars or, occasionally, sent to prison for a few months. One notorious Singaporean match-fixer, Wilson Raj Perumal, who has confessed to fixing dozens of matches, had contact with officials and players in at least 38 countries (including Mr Mweetwa in Finland). He was convicted several times, apparently without much deterrent effect. A proposed Convention on the Manipulation of Sports Competitions would set anti-fixing standards across the 47 members of the Council of Europe. But it risks being blocked by

just one, Malta, which worries about the impact on its remote-gambling industry.

Worldwide, only about 15% of sports betting is legal, says the Icss. It is illegal in most American states, and in many Asian countries, including China (except for a state monopoly) and India (except for on horse-racing). Illegality makes it harder to reveal fixing by following the money. "If you create a black market you make everything twice as hard—monitoring, regulating, licensing, customer protection," says Alex Inglot from Sportradar.

Growing interest in women's cricket and football will result in more match-fixing, warns Mr Barkoukis. The Women's Cricket World Cup final, in July, had £78m traded on Betfair, a record for any women's event with the sports-betting exchange,

and 860% more than the previous final, in 2013. More televised games and few players earning big sums will make women cricketers a target, says Clare Connor, the director of England Women's Cricket.

Regulators will need to up their game. One woman cricketer recalls an anti-fixing talk at the Women's World Cup in 2014, which had clearly been copied wholesale from one for male players. "He warned us that attractive men might approach us in the hotel bar and ask for a drink, with the aim of trying to inveigle an invitation to a player's bedroom," she says. "If that happened we were supposed to excuse ourselves, go to the toilet, look in the mirror and ask ourselves: 'Am I really that good-looking?'" No fixer would have such a poor grasp of human nature. ■

#### Corruption in sport (2)

## For the win

#### Match-fixing goes digital

**C**OMPETITIVE video-gaming, collectively known as eSports, is surging in popularity, packing out stadiums from Germany to South Korea, and attracting a global audience of almost 400m. The industry is worth \$700m annually, according to Newzoo, a market-intelligence firm, a figure expected to rise to \$1.5bn by 2020. And where there is money in sport, so there is corruption and betting—already an estimated \$40bn annually, 90% of it illegal.

The first eSports-fixing scandal was in 2010, when South Korean players threw professional matches for financial gain. Last year Lee "Life" Seung-hyun, one of the biggest names in eSports, was convicted for his part in a series of fixes in Starcraft 2, a science-fiction strategy game. He was banned for life from eSports in South Korea. The case was

uncovered by a police investigation into illegal gambling that stumbled across eSports-fixing, rather than eSports organisers attempting to ensure clean play.

Fixing in eSports is a mix of old and new. Players can be paid to underperform in time-honoured fashion. Or they can be paid in "skins"—decorative frills that have no bearing on gameplay. These can be cashed out, like casino chips. Gambling with skins happens on unregulated sites, making it easier for fixers to avoid detection. In 2014 several players on Counterstrike, a shooter game, used skins to bet against themselves and deliberately lost, making more than the prize money. There are new ways to tilt the outcome, too, says David Forrest of the University of Liverpool, such as strategically timed internet glitches.

eSports has no governing body. But in 2015 the biggest games formed the eSports Integrity Coalition to crack down on fixing. Gambling firms have started to certify hardware and software before competitions, in the hope of rooting out technological malfeasance. Raising awareness among players is also essential—though hard, says Ian Smith, the coalition's head. They can "go from playing in their parents' basement to playing in a \$5m tournament in six months".

Traditional sports still offer higher returns to fixers. But perhaps not for long. By 2020 the total bet on eSports is expected to exceed \$150bn a year. "eSports betting is increasingly attractive to the kind of people that eSports does not want attracted to it," says Mr Smith. Regulators in football, cricket, tennis and the like know how that feels.





### Inside Saudi Aramco

## Behind the veil

DHAHRAN

**The world's biggest oil company has a good story to tell, if it can disentangle its image from that of the kingdom**

IF SAUDI ARAMCO is a state within a state in Saudi Arabia, then the blandly named Oil Supply Planning and Scheduling (OSPAS) is its deep state. To enter it, you pass tight security at Aramco's suburban-style headquarters in Dhahran, in the east of the kingdom. The transition is eye-opening. Suddenly, English is the common tongue even among Saudi "Aramcons", as its workers are known. Female employees, their faces uncovered, lead meetings of male colleagues. The crisp banter is common to engineers everywhere. A toilet break is called a "pressure-relief" exercise.

Deep within, OSPAS is even further removed from the kingdom outside. The few executives with clearance to enter call it the "nerve centre" of the world's largest oil company. Using 100,000 sensors and data points on wells, pipelines, plants and terminals, it directs every drop of oil and cubic foot of gas that comes out of the kingdom (10% of the world's oil supply), monitors it on giant screens as it heads to ports and power stations, and tracks oil tankers as they load. Well managers in the desert outback wait daily for OSPAS to tell them what to do. "It's not just pretty graphics," an executive says, purring appreciatively over the 70-metre web of data flashing on the wall.

Because Aramco has all its "upstream" oil-and-gas operations in one country, it says it can justify investing big sums—and a

lot of computer capacity—on such technology, because it helps cut costs. "ExxonMobil operates in 40-plus countries. It just can't do that," the executive adds, before apologising lest he appear to bad-mouth a client and partner, one of Aramco's American founding former shareholders.

Such comparisons will become more pertinent as Aramco opens itself up for an initial public offering (IPO). Until recently it was just as cloistered from outside scrutiny as the kingdom itself, giving it more of a mystique than a good reputation. This week it invited *The Economist* for a visit. It only partially lifted its veil; its finances remain off-limits to everyone except the government, its only shareholder. Affable ex-

ecutives dodge almost every attempt to wheedle out useful ways of comparing the firm with its listed peers (it has no peers, they dissemble).

But despite the hermeticism, Aramco has a good tale to tell. Even as its rivals have retrenched owing to low prices, it has stuck to long-term plans, investing heavily in technology, training and the future of oil. Its long-term approach may help explain one mystery. For decades, Saudi Arabia's declared oil reserves have confounded the industry; since 1989 they have remained suspiciously constant at around 260bn barrels—a dozen times those of Aramco's nearest listed rival (see chart). As if to rub it in, Aramco says the kingdom has a whopping 400bn further barrels of resources that could one day become reserves.

These reserves are under audit ahead of the IPO, and executives are loth to discuss the process. However, they argue that whereas other companies have to go far to find new reserves, Aramco can keep them constant simply by better stewardship of its existing fields. Amin Nasser, the chief executive, says the company's recovery rates—the share of oil recouped from what is available in a field—average about 50%, but rise as high as 70%, compared with a global average of about 33%. It does this by maintaining the pressure of its wells over the long term through gas re-injection and other means. Raising recovery rates on average to 70% would add 80bn barrels to reserves, an executive says. That is four times ExxonMobil's latest total.

Unlike big listed companies, which scrapped growth plans when the price of oil slumped in 2014-16, Aramco has also been able to keep on investing because of its low costs, Mr Nasser says. Increasing natural-gas output is now the main focus, but it has also raised oil production in ►

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### Lock, stock and barrels

Proven hydrocarbon reserves  
Barrels of oil equivalent, bn



► some areas. This is visible at the vast Shaybah field in Saudi Arabia's blisteringly hot Empty Quarter, where Aramco last year upped oil output by 250,000 barrels a day (b/d) to 1m b/d, inaugurated a facility to process natural-gas liquids (pictured on previous page) and laid 650km of new pipelines across a mountain range of red sand dunes. (Aramco also set out to repopulate the surrounding desert with oryx, gazelle and ostrich hunted almost to extinction. They are now reproducing, although the first ostrich eggs to fertilise sadly cooked in the heat.)

Its second focus is technology. Whereas some of its peers admit that they squandered the chance to invest in big data during the oil boom before 2014, Aramco has no such regrets. Last year it inaugurated its home-grown "TeraPowers" technology, which uses 1tn pixel-like computational cells to simulate the flow of hydrocarbons through 500m years of geological time, enabling it to model oilfields in granular detail. From Dhahran it can remotely direct drilling of horizontal wells in Shaybah, steering a drill-bit through miles of rock to within a few feet of its target. (Royal Dutch Shell recently boasted of using similar remote-drilling technology in Argentina.) To train young employees in understanding the subsurface, Aramco has a 3D virtual-reality "cave" in Dhahran, which shows the filigree of wells 1,500 metres below the surface of Shaybah, as if from a submarine.

Third, as Saudi Arabia's most attractive employer, Aramco has less difficulty than its Western peers in attracting millennial recruits (born between around 1980 and 1996) who are turning away from the oil and gas industry. It has kept up spending on international scholarships during the slump. It plans to raise the share of women in the workforce from 25% to 40%. Its chief engineer and head of human resources are both female. Saudi labour laws still apply, however: female Aramcons may not stay overnight at an oilfield.

Aramcons pride themselves on a Westernised culture handed down from their American forefathers before nationalisation in 1980. This makes them confident they can handle the listing. "From the way [Aramco] was built, from the beginning I would say it was ready for an IPO," Mr Nasser says. The main change, he adds, will be issuing quarterly results.

But that underplays the challenges ahead. For one thing, Aramco is not master of its destiny. The future of the IPO, such as the decision on where and when to list, is in the hands of the government shareholder, represented by Muhammad bin Salman, the crown prince. Domestic political tension and external frictions with Qatar risk delaying the IPO until 2019—and further muddying the waters.

The potential valuation is also contentious. MBS, as the crown prince is known,

has said he believes Aramco is worth \$2trn, though many analysts think that is over-ambitious. To improve its chances, the kingdom is leaning toward a listing on the New York Stock Exchange rather than in London, because America has deeper pools of capital. However, that would expose Aramco to legal risks it would prefer to avoid. In order to bring in Chinese investors, the kingdom is also considering issuing some shares in Hong Kong.

However strong Aramco may be upstream, its lower-margin refining and petrochemicals divisions will drag down the valuation. Aramco has some intriguing plans to mitigate this, hoping in the next few years to build a plant with new technology to turn crude oil directly into petrochemicals—in essence, leap-frogging refineries. But this is untested.

In sum, the IPO is more for the kingdom's benefit than Aramco's. It could have drawbacks—exposing the firm to investors with short time horizons or to activists hostile to fossil fuels. But the Aramcons appear determined to make the most of it. Executives argue that oil's future is bright, even if electric cars and cleaner fuels emerge. Low costs mean there is no danger Saudi oil will become a "sunset industry", says Mohammed al-Qahtani, head of its upstream division. A listing will make Aramco "the envy of the rest of the world". ■

#### Platform regulation

## America's turn

#### Big technology firms are newly in the hot seat at home

**A**NTITRUST, privacy, hate speech— whenever the European Union tries to rein in tech giants, Americans accuse it of protectionism. That argument has always been simplistic, but now it is harder to make; scarcely a week passes in Washington when companies like Apple and Google are not in politicians' crosshairs.

The latest target is Facebook. Earlier this month the firm revealed that 470 accounts that appeared to be controlled from Russia had bought advertisements worth a total of \$100,000 on the social network between June 2015 and May 2017. Alex Stamos, Facebook's chief security officer, said they aimed at "amplifying divisive social and political messages".

This was the first time Facebook had acknowledged that Russia may have used the social network, leading the team of Robert Mueller, the special counsel investigating possible links between Donald Trump's presidential campaign and the Russian government, to issue a search war-



Jane Doe and friend

rant to get further details. Now the Senate's intelligence committee has asked Facebook executives to testify at a public hearing. Some in Washington want to force Facebook to disclose who is behind political advertisements.

Another initiative reached the hearing stage on September 19th. The Stop Enabling Sex Traffickers Act (SESTA) is aimed at stopping online services from hosting sex-trafficking advertisements—in particular Backpage.com, a site notorious for such ads. It was set in motion by an affecting documentary, "I am Jane Doe", which chronicles the legal battles waged by sex-trafficking victims against Backpage.com.

But SESTA is also bad news for Google, which is still reeling from being made responsible for the firing in August of Barry Lynn, a prominent critic of big tech companies, from the New America Foundation, a Washington think-tank which the firm supports. Google worries, as many experts do, that SESTA will undercut section 230 of the Communications Decency Act, a statute that largely exempts online firms from liability for their users' actions and which is a big reason why the internet has been a fountain of innovation. Google cannot oppose the legislation openly because it would be seen as defending sex traffickers.

The bill also plays into the hands of some of Google's foes, who may be happy to see it weakened. Oracle, a software firm, has come out in support of SESTA. Google has fallen out with its Silicon Valley neighbour over Android, its mobile operating system; the two are now involved in a billion-dollar intellectual-property battle. Media types and academics are again discussing ways of reigning in big tech companies. The authors of two critical books—"Move Fast and Break Things" by Jonathan Taplin and "World Without Mind" by

► Franklin Foer—are a media scholar and a former magazine editor, respectively. Luigi Zingales and Guy Rolnik, both of the University of Chicago, have called for legislation to reallocate the ownership of data created on social media to users.

The question is whether the tech backlash will result in new laws, beyond (perhaps) SESTA. Big antitrust investigations still appear far off. The nominee for antitrust chief at the Department of Justice, Makan Delrahim, yet to be confirmed, seems most interested in protecting American firms from “discriminatory antitrust enforcement” abroad, not in attacking monopoly power at home. Much will depend on how the companies react. They need to do more than invest heavily in lobbying. Instead they should strengthen their infrastructure for policing their platforms and be much more transparent, argues Nick Sinai, a lecturer at Harvard University and an investor at Insight Venture Partners.

The GAFA, as Google, Amazon, Facebook and Apple are collectively called, also have good arguments on their side. If they are dominant, it is chiefly because consumers like their products. The four giants are an important engine of the American economy. That is why it would come as a surprise if America is ever as eager as the rest of the world to cut the giants down to size. ■

#### Aircraft manufacturing

## Aerial bombardment

OTTAWA

**Boeing takes off on a flight of hypocrisy against Bombardier**

“**W**E WON’T do business with a company that is busy trying to sue us.” So said an uncharacteristically stern Justin Trudeau, Canada’s prime minister, alongside his British counterpart, Theresa May, in Ottawa on September 18th. The two had teamed up to take on Boeing. The giant American aeroplane-maker is pressing Donald Trump’s administration to impose duties on commercial jets made by Canada’s Bombardier. Boeing says its smaller rival is using Canadian government subsidies to sell aircraft to Delta, an American carrier, at below cost price.

Few in either country question that Bombardier has had vital financial support from the Canadian and British governments since 2005 for its small jetliner, the C-Series. As the plane’s development costs soared, to \$5.4bn, Bombardier struggled to find buyers for it; financial trouble followed. An estimated C\$4bn (\$3.4bn) in state support, including C\$2.8bn in 2015, stopped a nosedive. It was not until 2016

#### Cancellations at Ryanair

## Pilot light

#### Europe’s biggest, cheapest and most efficient airline stumbles badly

**R**YANAIR, an Irish airline, is known for three things: low fares, the brash way in which Michael O’Leary, its chief executive, advertises them, and its record for sticking to its flight schedules. The last of these is key to its appeal: many businessmen chose Ryanair more for its punctuality than its cheapness. And so the announcement on September 15th that it is cancelling over 2,000 flights between now and the end of October—around 2% of its capacity over the period—is more serious than it may at first seem. Ryanair’s share price fell by more than 5% in the aftermath.

The problems began in early September when Ryanair’s on-time record plunged, owing to a pilot shortage. To restore punctuality, it cancelled many flights at short notice; passengers were marooned around Europe. Up to 400,000 people booked on the 2,000 scrapped flights risk missing business trips and holidays.

Mr O’Leary says the problems were caused by a change in the way the airline calculates pilots’ leave. The holiday year used to run from April to March, but under pressure from the Irish Aviation Authority Ryanair is adopting the calendar year, as new EU rules require. Ryanair obliged its pilots to take their annual leave between April and December this year. So many are taking their holiday after the summer rush that not enough are available to maintain a full schedule.

Other airlines say Ryanair’s woes are also due to pilots leaving for better pay and conditions. Norwegian, a rival low-cost carrier with outsized ambitions, claims to have recruited over 140 Ryanair pilots this year (out of around 4,200 at the Irish carrier). Mr O’Leary denies that the airline has a shortage. But evidence abounds that Ryanair’s crewing problems will substantially lift costs per passenger kilometre. Compensation and lost fares for the cancelled flights will cost €25m (\$30m). Ryanair will also need to

that the aircraft’s future seemed assured, when Delta ordered 75 units. Boeing then accused Bombardier of dumping the jets into America at “absurdly low” prices and asked the Commerce Department to impose countervailing duties. A preliminary ruling is due on September 25th.

Aircraft-makers are no strangers to subsidy disputes. Brazil, home to Embraer, which makes a rival to the C-Series, has complained to the World Trade Organisa-

tion (WTO) about Bombardier. But Boeing is a particularly active litigant, not only against Bombardier but against Airbus, which it says got billions of dollars of cheap loans from the EU. Naturally, Boeing itself got billions of dollars of help (in the form of military contracts) to get off the ground back in the 1950s and 1960s. Nor does it have a plane that competes with the C-Series. “Boeing says it wants a level playing field, but it is not even on the field,” ►

The combined cost is a small fraction of Ryanair’s profits of €1.3bn in the year to March. More serious was a less-noticed European Court of Justice ruling on September 14th which decreed that low-cost airlines’ employment disputes with crew must go to local labour courts in all the countries where airlines have bases (Irish labour law is broadly more flexible). Analysts say the firm’s costs may rise by around 5% as a result.

Lately Mr O’Leary has been warning of the possible consequences of a British exit from the European Common Aviation Area with no new aviation deal. EU carriers may serve any airport within the bloc, but after Brexit flights between Britain and the remainder of the EU might have to cease. Headlines about stranded passengers could damage British politicians, he claims. This week he used Ryanair’s debacle to return to the theme. “Imagine the problems this week times one thousand,” he said. “That is what a no-deal Brexit will look like.”



Not his biggest cock-up said O’Leary

spits Fred Cromer, president of Bombardier Aerospace.

That may be problematic, as industries usually need to show "material injury" to gain protection from anti-subsidy duties. Boeing has not made planes the size of the C-Series since 2006, notes Ed Bastian, Delta's chief executive, and has no plans to do so. "Instead Boeing offered to lease us second-hand planes built in Brazil," he says. And when Boeing accused Bombardier of selling its planes to Delta for less than they cost to build, it appeared to forget that it did the same with over 300 of its 787 jets. Furthermore, its estimate of the cost of the C-Series was inflated by looking at only one year early in the production life cycle.

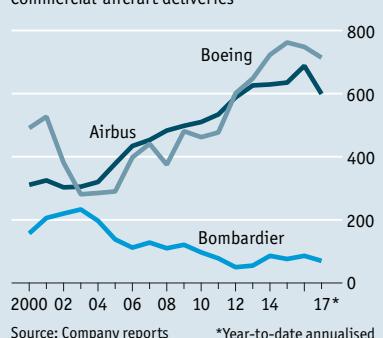
Even so, at the Commerce Department Boeing may be pushing on an open door. Wilbur Ross, the commerce secretary, has imposed countervailing duties on imports ranging from steel plate from South Korea to tool chests from China, and has angered Canada by placing a levy of up to 24% on its softwood lumber.

Boeing has reasons to guard against Bombardier. First, it fears encirclement by state-subsidised aircraft makers—not only Airbus and Bombardier, but ambitious state-supported Chinese and Russian producers. Second, Bombardier might grow into another Airbus, a rival Boeing did not take seriously until it was too late. Bombardier could stretch its fuel-efficient C-Series planes to challenge Boeing's smallest airliner, a big earner for the American firm but based on an old design. "Strangling the baby in the pram may prove rather convenient," says an adviser close to Boeing.

In the meantime, Mr Trudeau and Mrs May are both lobbying Mr Trump on Bombardier's behalf, and Canada is likely to appeal in the courts and at the WTO. If Boeing gets its way, about 3,500 jobs will be threatened in Quebec, where Canadian politicians are wary of stirring up separatist sentiment, and a further 4,500 in Northern Ireland, where Bombardier is the largest private-sector employer. Mrs May's Conservative government is propped up by the ten MPs from the province's Democratic Unionist Party; Bombardier lies in east Bel-

### On a wing and a prayer

Commercial-aircraft deliveries



fast, the party's heartland.

Canada has also threatened to cancel a likely \$5bn order of military jets from Boeing if the American company prevails against Bombardier; Britain could follow its lead. Several airlines, fearing less competition among planemakers, are unhappy with Boeing's behaviour and privately threaten to shun its jets if it continues to bully its smaller rival. This may be the trade case that ends up costing Boeing much more than it has to gain. ■

### American retail

## State of play

NEW YORK

### Toys "R" Us files for bankruptcy

ASK young American parents about Toys "R" Us and they are likely to be able to sing a jingle from their childhood: "I don't wanna grow up, 'cause maybe if I did, I couldn't be a Toys "R" Us kid". For children of the 1980s, Toys "R" Us was a mecca at the strip mall, an awe-inspiring array of dolls, trucks, board games, bikes, art supplies and much more. Many of them noticed when on September 18th, the chain filed for bankruptcy.

Dave Brandon, the company's chief executive, emphasised that shops would carry on operating as usual and claimed that Toys "R" Us was at the start of a new, brighter era. "These are the right steps to ensure that the iconic Toys "R" Us and Babies "R" Us brands live on for many generations," he declared. A Chapter 11 bankruptcy, many analysts agree, is a sensible way to deal with the chain's \$5bn of long-term debt. So Toys "R" Us is not dead. But

its future is hardly certain.

The company's tale in many ways typifies the ailments of American bricks-and-mortar retailing. Its woes began in the 1990s, as big-box stores grew both in number and in size. Walmart's vast selection meant parents could buy a toy in the same place where they picked up milk.

Then came e-commerce. Toys are particularly suitable for online shopping. Unlike a dress, they do not need to be tried on for size, and unlike a peach they do not need to be felt for ripeness. Those of prime toy-buying age, parents with young children, are busy. Women aged 25-44 spend almost as much time shopping as they do eating and drinking. Given the choice of buying a train set online or in a store, particularly when a toy shop can transform even the calmest child into an insatiable lunatic, many parents opt to buy online. Amazon makes that extraordinarily convenient. The result is that many former Toys "R" Us kids have no interest in being Toys "R" Us parents. Cowen, a financial-services firm, expects 41% of toys and games in America to be purchased online this year, about twice the proportion sourced from the internet in 2009.

Toys "R" Us also suffers from other common ills. The first is a heavy burden of debt. Three private-equity firms bought Toys "R" Us in 2005 in a leveraged buyout, adding substantially to its borrowings; it pays around \$400m a year in interest costs, even as it tries to compete with Amazon. It also has \$400m in secured and unsecured debt maturing next year. Many expected a bankruptcy, but the filing, just ahead of the vital holiday selling season, underlines how squeezed the firm has become. Two other retailers—Payless ShoeSource, a 61-year-old discount shoe-seller from Kansas, and Gymboree, which began selling children's clothing in 1986—are among those that declared bankruptcy this year after being backed by private-equity firms that left them similarly weighed down.

Second, Toys "R" Us has not helped itself. Like many department-store chains, its inventory has been painfully slow to adapt to changing trends. Sales of fidget spinners, a toy that has become ubiquitous in the past year, for instance, got twirling online first. Nor is it clear whether its strategy of trying to lure families to its shops with live events, such as music classes for children, will work.

Like so many other retailers, Toys "R" Us is striving to build its business online. That has been bumpy work. In 2000, back when Amazon was still trying to move beyond selling books, Toys "R" Us joined with the e-commerce giant to manage online toy sales. Four years later it sued Amazon, arguing that the e-tailer had broken the terms of their agreement. In 2006 a judge agreed, but 11 years on that victory gives scant solace. ■



### The music business

## Through the sound barrier

**How streaming has pushed Latin music into the mainstream**

“**M**I GENTE” lures listeners with a mesmerising hook, a thumping beat and lyrics about breaking down barriers. A collaboration between J Balvin, a Colombian reggaeton star (pictured), and Willy William, a French producer, the latest product of this summer’s Latin craze is crooned almost entirely in Spanish. (The title means “My People”; reggaeton borrows from hip hop, reggae and rap.) The song topped the charts on Spotify, a streaming service, for weeks. “To be a crossover artist, you used to have to sing in English,” said John Reilly, Mr Balvin’s publicist. Now six of YouTube’s top ten music videos are predominantly in Spanish. In August the Billboard Hot 100, which tracks streams, sales and radio plays, sported seven Latin hits. Just five graced the chart in all of 2016.

Latin music is helping the music industry to arrest years of decline. Its growth is far outpacing that of other genres. Last year Latin America yielded just \$598m out of total global recorded-music revenue of \$16bn, but sales increased by 12%, against 5.9% worldwide. Streaming revenue in the region (including subscription services such as Spotify and Apple Music, as well as YouTube and other websites) leapt by 57%.

“The Latin audience is a lean-back audience,” explains Rocio Guerrero, Spotify’s head of global cultures. For radio-loving Latin Americans, who were less likely to own CD players and iPods than music fans elsewhere, streaming was a natural fit.

### Teaching entrepreneurship

## Mind over matter

### Psychology beats business training among the businesspeople of Togo

**M**ANAGEMENT gurus have chewed over the topic endlessly: is a flair for entrepreneurship something that you are born with, or something that can be taught? In a break with those gurus’ traditions, a group of economists and researchers from the World Bank, the National University of Singapore and Leuphana University in Germany decided that rather than simply cook up a pet theory of their own, they would conduct a controlled experiment.

Moreover, instead of choosing subjects from the boardrooms of powerful corporations or among the latest crop of young entrepreneurs in Silicon Valley, Francisco Campos and his fellow researchers chose to monitor 1,500 people running small businesses in Togo in West Africa. These are not the sorts of business owners who give TED talks or negotiate billion-dollar mergers. The typical firm had three employees and profits of 94,512 CFA francs (\$173) a month. Only about a third kept books, and less than one in 20 had a written budget.

Studying lots of small businesses instead of a few big ones allowed the academics to conduct a randomised controlled trial. Usually associated with medical research, these are considered one of the most convincing types of evidence. Participants (in this case firms) are assigned, at random, either to receive “treatment” (in this case, two different sorts of training) or to the control arm, which receives nothing. Recruit enough participants for good and bad luck to even out across the sample, and you can

Now Latin fans are listening to hour upon hour of music. Mexico and Brazil are among Spotify’s top four markets by volume of streams. Jesús López, chief executive of Universal Music Latin America, has said the streaming platform has “democratised music consumption”. Fans have access to any music, anywhere.

Spotify’s curators are also makers of fortune, promoting Latin hits and rising stars by featuring them in playlists like “Baila Reggaeton” (Dance Reggaeton), the app’s third most popular. A spot in “Baila Reggaeton” guarantees tens of millions of streams from the list’s nearly 6m followers, which can propel a song into Spotify’s global charts. Danny Ocean, a Venezuelan unknown with a honey-smooth voice, released “Me Rehuso” by himself on YouTube—and saw it soar when Spotify added it to “Baila Reggaeton”.

tell, with high confidence, which method—if any—is superior.

As they report in *Science*, the researchers split the businesses into three groups of 500. One group served as the control. Another received a conventional business training in subjects such as accounting and financial management, marketing and human resources. They were also given tips on how to formalise a business. The syllabus came from a course called Business Edge, developed by the International Finance Corporation.

The final group was given a course inspired by psychological research, designed to teach personal initiative—things like setting goals, dealing with feedback and persistence in the face of setbacks, all of which are thought to be useful traits in a business owner. The researchers then followed their subjects’ fortunes for the next two-and-a-half years (the experiment began in 2014).

An earlier, smaller trial in Uganda had suggested that the psychological training was likely to work well. It did: monthly sales rose by 17% compared with the control group, while profits were up by 30%. It also boosted innovation: recipients came up with more new products than the control group. That suggests that entrepreneurship, or at least some mental habits useful for it, can indeed be taught. More surprising was how poorly the conventional training performed: as far as the researchers could tell, it had no effect at all. Budding entrepreneurs might want to avoid the business shelves and make for the psychology section.

As streaming services have tracked and monetised, labels have noted Latin music’s climb up the charts. The Spanish version of “Despacito”, by Luis Fonsi and Daddy Yankee, a Puerto Rican duo, was already ubiquitous in Latin America when Justin Bieber heard it in a club in Bogotá. Mr Bieber asked if he could “jump on the track”. The hybrid version released in April became the most-streamed song yet, with nearly 5bn audio and video plays.

Record labels are eager to tap a fan base that includes Latin Americans, Latinos in America (one of the country’s fastest-growing ethnic groups) and millions of teenagers worldwide drawn to reggaeton by “Despacito” and “Mi Gente”. Latin music captures 8% of streams in America, which translates into advertising revenues and performance sales for music labels. It still accounts for just 2% of songs and al-

bums sold. "Would labels rather have a million streams or a million albums sold? It's a no-brainer," says David Bakula of Nielsen Entertainment, a research firm.

Universal Music Group, the world's biggest music company, which co-manages Mr Balvin and Mr Fonsi, first invested in digital teams in Latin America a decade ago. That seems to be paying off. Scorpio Music, the French indie label behind "Mi Gente", last celebrated a Billboard hit in

1984. It hopes Latin music will be a ticket back to renown. "We have to prove we're relevant and that 'Mi Gente' wasn't a lucky strike," said Chiara Belolo, its head of international development. Mr Balvin has the same task. He is working on a remix of his hit track with a "huge" mainstream artist. He owes much of his success to streaming, he says, "but I'm the type of artist who doesn't like to talk about money." Even so, he is now the kind who makes it. ■

can yet identify what will make two youngsters click.

Spouseup, a south Indian startup, is undaunted. It trawls social media to determine a candidate's personality and recommends matches by calculating a "compatibility score". Nine-tenths of its 50,000 users are non-resident Indians who usually fly to India for a month or so, scout for partners, settle on one, get hitched and fly back together. For these time-starved travellers, the machine-led scouring "provides an insight that would come from five coffee dates," says Karthik Iyer, the firm's founder. Banihal, which is based in Silicon Valley, relies on a long psychometric questionnaire of around 100 questions to match like-minded partners.

Real-world complements to online efforts can help secure a match. Some services, such as IITIIMShaadi.com, aimed at people graduating from prestigious universities, also act as conventional wedding-brokers, by meeting prospects on their clients' behalf. The job is no different from that of a headhunter, says Taksh Gupta, its founder. He charges anywhere between 50,000 and 200,000 rupees for the service. His most recent catch, after a search lasting over two years, was a husband for a 45-year-old woman from a prestigious university who would settle for no less than an Ivy League groom. Matrimony.com, too, has over 400 "relationship managers" and 140 physical outlets.

"The opportunity is huge", enthuses Murugavel Janakiraman, boss of Matrimony.com. Around four-fifths of new customers now come via smartphones, lured by instant alerts about new potential matches and services that match up people in the same town. But the spread of smartphones also brings competition. Casual-dating apps are spreading fast. Tinder, on which decisions about eligibility rarely benefit from parental advice, now counts India as Asia's largest, fastest-growing market. ■

### Indian marriage websites

## Click, meet and marry

MUMBAI

### Online matchmaking businesses in India have many ways to woo

**I**T WAS 2012...I was number 37," says Ashwini, referring to the badge that was pinned on her shirt pocket. Her task was to go onto the stage and introduce herself to around 70 eligible bachelors and their parents. Families then conferred and, provided caste and religious background proved no obstacle, would approach the event's moderator asking to meet number 37. At midday girls would wait for prospects to swing by, again with parents on either side. A brief exchange might establish the potential bride's cooking skills or her intention to work after marriage. If the two sides hit it off, they would exchange copies of their horoscopes. Nearly 50 men lined up to meet Ashwini that day, speed-dating style. No one made the cut. She later married a colleague.

Such gatherings form an important part of the wedding industry, worth around \$50bn a year, in a country where arranged marriages continue to be the norm. India has 440m millennials—roughly, the generation born between 1980 and 1996—and a further 390m youngsters have been born since 2000, so there are plenty of anguished parents for marriage facilitators to pitch to. KPMG, a consultancy, estimates that out of 107m single men and women, 63m are "active seekers". For now, only a tenth surf the internet to find a spouse. But the number who do is about to explode, argue executives in the marriage-portal business (India has 2,600 such sites). "After Facebook [took off], people are more open about their lives than ever before, which has had a great knock-on effect," says Gourav Rakshit of Shaadi.com, one of India's oldest matrimonial sites.

Take Matrimony.com, the country's biggest online matchmaker, which raised \$78m in its initial public offering on September 13th. Its shares began trading this week. It runs 300-odd websites in 15 languages, catering to different castes and reli-

gions. It has sites for divorcees, the disabled, the affluent ("Elite Matrimony") and for those with unfavourable astrological charts, which make it difficult to find a match. All online firms run a "freemium" model: upload your profile at no charge and let an algorithm match horoscope details with potential partners filtered by age, caste, education, income and sometimes (alas) complexion. Or you can pay for features like instant chat or a colourful border around your profile to ensure the algorithm returns you as a top search result.

Such a long list of options means that finding a match on the web can be time-consuming and tedious. "It's like looking for a needle in a haystack," says one suitor. Predictably, many also complain that online profiles often do not reflect reality. Outright fakes remain a scourge. This month a man was arrested in Delhi for extorting over 5m rupees (\$77,700) from 15 women by luring them on matrimonial websites. And no amount of artificial intelligence



Arranged by algorithm

# Schumpeter | Big tech, big trouble

**What if large tech firms were regulated like sewage companies?**



THREE-QUARTERS of Americans admit that they search the web, send e-mails and check their social-media accounts in the bathroom. That is not the only connection between tech and plumbing. The water and sewage industry offers clues to the vexed question of how to regulate the Silicon Valley “platform” firms, such as Alphabet, Amazon and Facebook. The implications are mildly terrifying for the companies, so any tech tycoons reading this column might want to secure a spare pair of trousers.

In America and in Europe a consensus is emerging that big tech firms must be tamed. Their dominance of services such as search and social media gives them huge economic and political clout. The \$3tn total market value of America’s five biggest tech firms (Apple and Microsoft are the other two) suggests that investors believe they are among the most powerful firms in history, up there with the East India Company and Standard Oil.

Trustbusters in need of instant gratification want to break up the companies, but this might make their services less useful (imagine having ten social-media accounts), and network effects might mean that one of the tiddlers would grow dominant again. Others want tech firms to license their patents for nothing, as AT&T was required to do in 1956. This might create startups tomorrow, but will not stop firms exploiting monopolies today.

An alternative is to regulate these companies like utilities—monopolies with high market shares that provide an essential service from which it is expensive for consumers to switch. Here, the water industry is relevant, particularly the concept of a regulated asset base (**RAB**). It emerged in the 1990s when Britain was privatising its water firms, borrowing elements from American regulation. It is an acronym that few in Silicon Valley are aware of. But from these obscure origins **RAB** frameworks are now common in Europe and Latin America, used to regulate at least \$400bn-worth of power, airport, water and telecoms assets.

The idea is that the monopolist’s profits should not exceed the level that a competitive market would allow. That means estimating the cost to an imaginary new entrant of replicating the incumbent’s assets (this is the **RAB**) and calculating the profits the newcomer would make if its returns matched its cost of capital. The actual monopoly’s earnings should not exceed this amount. Safeguards are added to ensure the utility is run efficiently, keeping

costs low. Regulators review the framework every few years.

How might utility-style regulation work for Silicon Valley firms? Consider a thought experiment with Facebook. Its 1.3bn users pay nothing, but give it their data and control over the adverts they see. Facebook then sells advertisers targeted access to its users, pulling in \$27bn last year. Imagine that the service were “unbundled”, giving users control. All would own their data and could choose whether to sell them to advertisers. They would also have to pay Facebook a fee to compensate it for the cost of creating and operating the network.

The big question is how much compensation—profits—Facebook and other firms would deserve if they were treated as utilities. It is possible to get a rough idea. Assume a cost of capital of 12%—a high figure to reflect the risk inherent in tech firms’ models. Estimating their **RABs** is harder. They have some physical assets such as data centres, but unlike utilities their main resources are not pylons, pipes and property, but software and ideas that they create or acquire by buying rivals. Only some of these intangibles appear on their balance-sheets; the vast sums spent on research and development (**R&D**) do not. But you can reconfigure their balance-sheets as if all their **R&D** in the past had been recognised as an asset with a 20-year life. Alphabet and Facebook would have a combined **RAB** of \$160bn. If their returns were capped at 12%, operating profits would fall by 65% and 81% respectively.

If their services were unbundled, users would benefit. Using figures from 2016, the average Facebook user would pay \$15 a year to the firm for its return on its **RAB**, but they would pocket \$23 from selling advertisers their data and the right to be advertised to. A Google user would pay \$37 a year to Google, but collect \$45 from advertisers. Those are fairly small sums, but richer users with particularly valuable data could make much more.

## Bog standard

Regulating tech like water would cause an outcry among investors and in Silicon Valley. Yet some of the objections do not stack up. Essential investment would still happen—a guaranteed 12% return is a handsome reward. The firms could invest in new technologies that would remain outside the regulated utility. It would be possible to work out which assets sit abroad and exclude them from the **RAB**, or to reach arrangements with foreign regulators.

This approach would have shortcomings, though. Tech moves at the speed of light compared with conventional utilities. It was only five years ago that investors worried that Facebook would struggle with the shift to mobile phones. Regulators would be clumsy at coping with rapid change. And a **RAB** methodology would not resolve the incendiary issue of whether tech platforms should be responsible for what they publish.

Despite such problems, tech bosses should view regulation as utilities as a long-term risk. They have two defences. First, to bundle their services so tightly that it is impossible for outsiders to isolate the products that are monopolies and work out their profits and assets. Amazon is a master here. It is unclear how much it makes or has invested in e-commerce (where it is dominant), videos (where it is a challenger), or food (where it is a new entrant).

The second defence is to lobby Washington. The lesson from America’s veteran oligopolists—airline, telecoms and health-care companies—is that you can manipulate and dance around the regulatory system to ensure high profits. For tech firms, financial obfuscation and cronyism are the most effective ways to ensure their monopoly profits do not go down the drain. ■



## China's economy

## Biting the bullet

SHANGHAI

### The government sets its sights on building Chinese dominance in new industries

**I**N RECENT days China set the record for the world's fastest long-distance bullet train, which hurtled between Beijing and Shanghai at 350kph (217mph). This was a triumph of industrial policy as much as of engineering. China's first high-speed trains started rolling only a decade ago; today the country has 20,000km of high-speed track, more than the rest of the world combined. China could not have built this without a strong government. The state provided funds for research, land for tracks, aid for loss-making railways, subsidies for equipment-makers and, most controversially, incentives for foreign companies to share commercial secrets.

High-speed rail is a prime example of the Chinese government's prowess at identifying priority industries and deploying money and policy tools to nurture them. It inspires awe of what it can accomplish and fear that other countries stand little chance against such a formidable competitor. Yet there have also been big industrial-policy misses, notably the failure to develop strong car manufacturers and semiconductor-makers. China is rolling out a new generation of industrial policies, directed at a range of advanced sectors, raising worries that it will dominate everything from robotics to artificial intelligence. That result is far from preordained.

Industrial policy is a touchy topic. In continental Europe and, especially, Asia,

many have faith in the government's ability to steer companies into industries they might otherwise shun. In America and Britain, faith tends to be supplanted by deep doubts. Governments, after all, have a lousy record in picking winners in fast-evolving markets. Yet most countries try to support some industries, usually through a mixture of infrastructure, tax breaks and research funding. What differs is the stress they lay on such measures.

China is unique in the breadth and heft of its industrial policy. For years the government concentrated on modernising

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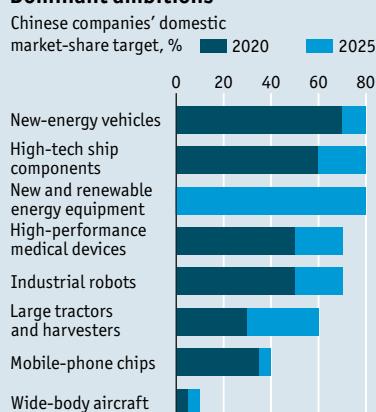
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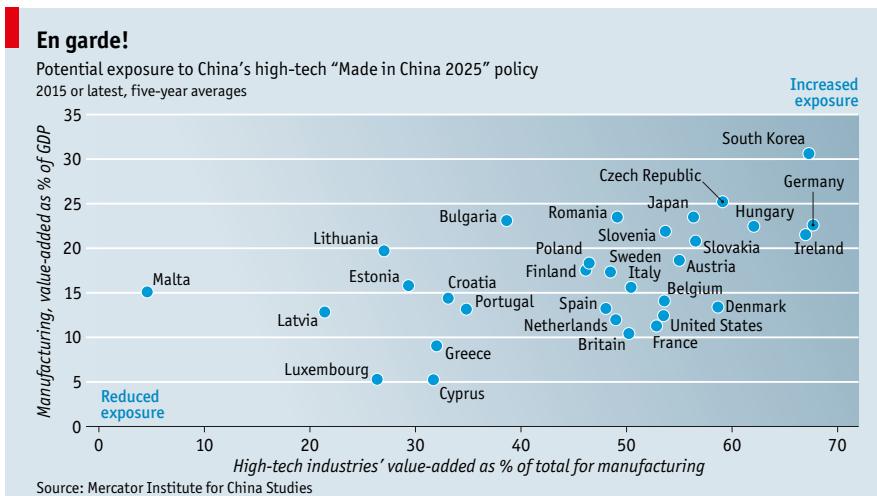
what it classified as nine traditional industries such as shipbuilding, steelmaking and petrochemical production. In 2010 seven new strategic industries, from alternative energy to biotechnology, also became targets. And two years ago it announced its "Made in China 2025" scheme, specifying ten sectors, including aerospace, new materials and agricultural equipment, which are now at the heart of its planning. The various plans overlap; cars, for example, have appeared in every iteration. The result is a wide-ranging approach in which the government tries to shape outcomes in important parts of the economy, new and old.

The "Made in China" plan, its latest industrial-policy craze, is derived in part from Germany's "Industry 4.0" model, which focuses on creating a helpful environment through training and policy support but leaves business decisions to companies. China's version is much more hands-on. By the start of this year, officials had established 1,013 "state-guided funds", endowed with 5.3trn yuan (\$807bn), much of it for "Made in China" industries. In August the Ministry of Industry and Information Technology unveiled a manufacturing-subsidy programme, spread across as many as 62 separate initiatives. Most contentiously, the government has laid out local-content targets for the various "Made in China" sectors (see chart). One plan features hundreds of market-share targets, both at home and abroad. "Clearly, this is no mere domestic exercise," the EU Chamber of Commerce in China warned in a report this year.

The targets also illustrate one of the facets of Chinese industrial policy that has so angered foreign companies and governments: the disguising of state support. The World Trade Organisation (WTO) strictly

### Dominant ambitions





limits local-content rules. But China's market-share targets are primarily contained in semi-official documents, such as a blueprint published by the Chinese Academy of Engineering. So the government can claim that these are simply industry reports, not official targets. But in the Chinese system the line between government-backed industry estimates and official guidelines is easily blurred.

Similarly, foreigners have long complained that China hides much of its illegal state aid. Since 2011 America has formally requested information about more than 400 unreported Chinese subsidies. "China learned how to game the system," says Tim Stratford, a former American trade official responsible for dealings with China. "The WTO is not designed to deal effectively with a huge economy that has, as the core of its development strategy, industrial policies across a wide range of sectors." Frustrations at the WTO's inadequacy in restraining China have led the American government to look at other mechanisms (see next story).

Foreign competitors see China as a well-oiled machine and worry that they will lose business not just in China but around the world. Export powerhouses such as South Korea and Germany feel most exposed (see chart). But in fact the Chinese government's record in promoting specific industries is patchy. Since the 1970s it has tried to develop semiconductors. But of the \$145bn-worth of microchips China consumed in 2015, only a tenth were truly domestic; foreign technology remains superior. The car industry, too, has disappointed. To manufacture in China, foreign firms must take local partners. The government hoped this would lead to knowledge transfers. Instead, local firms, insulated from head-on foreign competition, have milked the joint ventures for profits and innovated little.

Moreover, in their zeal, local governments can go overboard. Some worry that "Made in China" sectors will end up facing

gluts, like "old" industries where China is now cutting overcapacity, such as steel and coal. The Mercator Institute of China Studies, a Berlin-based research group, counted that, by late 2016, nearly 40 local governments had opened or planned robotics parks. The central government estimates that China will need nearly 150bn yuan-

worth of robots over the next few years. According to the Mercator tally, local targets add up to roughly five times as much.

Yet when four factors—foreign technology, domestic abilities, market demand and government money—come together, Chinese industrial policy can be ruthlessly effective. The boom in high-speed rail began in 2004 when the government offered lucrative contracts to foreign engineering companies such as Germany's Siemens and Japan's Kawasaki so long as they shared their know-how. Some resisted at first, but eventually the lure of China's vast market won them over, especially when they saw competitors getting a slice of it. With their prodigious engineering skills, born from years of trying to develop high-speed rail themselves, Chinese companies soon absorbed the technology. After a decade of laying tracks on an unprecedented scale, they have improved on it.

That success cannot be replicated in all ten of the "Made in China" sectors, not least because foreign companies are more guarded about sharing their secrets. But it would be rash to bet against China's succeeding in at least a few of them. ■

### The World Trade Organisation

## Dispute unsettlement

### The Trump administration is holding the WTO hostage

EIGHT months into Donald Trump's presidency, the rules-based system of global trade remains intact. Threats to impose broad tariffs have come to nothing. Some ominous investigations into whether imports into America are a national-security threat are on hold. Mr Trump looks less a hard man than a boy crying wolf. All the same, supporters of the World Trade Organisation (WTO), the guardian of that rules-based system, are worried. Other dangers are lurking. There is more than one way to undermine an institution.

The WTO is meant to be a forum for reaching deals and resolving disputes. But all 164 members must agree to new rules, and agreement has largely been elusive. So if members do not like today's rules, as interpreted by judges, they have little prospect of negotiating better ones. That puts pressure on the WTO's judicial function, the bit that has been working fairly well.

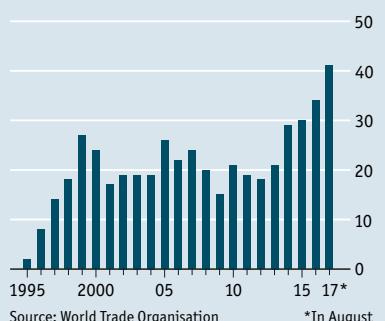
Trouble is brewing at the WTO's court of appeals. It is meant to have seven serving judges, but has only five and by the end of the year will have just four. The Americans refuse to start the process of filling the spots, citing systemic concerns. What seemed an arcane procedural row has be-

come what some call a "crisis".

This tension comes at a bad time. Over recent years the number of disputes has risen both in number (see chart) and complexity. The court is already dealing with a backlog of cases, which are supposed to take two months. One appeal from the EU, relating to Airbus, an aircraft manufacturer, is almost a year old. By the end of 2019 the terms of two more judges will expire, leaving only two. Three are needed to rule on any individual case. If the gaps are not

### Trading blows

WTO, number of active disputes



► filled, the system risks collapse.

Notionally, the Americans object to two procedural irregularities, including the way the most recently departed judges left. But according to Brendan McGivern, a lawyer in Geneva, neither is a "show-stopping" problem. And on September 18th Robert Lighthizer, America's usually tight-lipped trade representative, outlined a bigger agenda. To a Washington room packed with foreign-policy wonks, he complained that decisions from WTO judges had "diminished" what America had bargained for and imposed obligations it had not agreed to when it joined the WTO.

These are long-standing and uniquely American concerns. Panels at the WTO have repeatedly ruled that the way it calculates defensive duties on imports breaks the rules. Mr Lighthizer sees this as undermining America's ability to protect itself from unfair trade. Many in Washington accuse the WTO's lawyers of overstepping their remit, filling in the gaps where the original rules are silent.

So the American administration seems in effect to be using the judicial appointments to hold the WTO hostage. Oddly, though, it has been vague about what it wants. Mr Lighthizer's past offers clues. According to the *Wall Street Journal*, when he advised Bob Dole, a presidential candidate in 1996, he recommended that a panel of American judges should review any findings against America, which would threaten to quit the WTO after three duds. This week Mr Lighthizer spoke fondly of the system that preceded the WTO, under which members could block panel rulings.

Bullying the appellate body into ruling in favour of America would undermine its usefulness. If members no longer think that they will get a fair hearing, they are more likely to take matters into their own hands. Mr McGivern worries that an American fix to the perceived problem of judicial overreach could undermine the rules-based system, by tampering with the independence of the appellate body.

Some signs suggest that Mr Trump's administration is not planning to ditch the WTO entirely. It is pursuing two disputes initiated by Barack Obama. And Mr Lighthizer has said that if he uncovers a breach of China's commitments under WTO rules, he will file a dispute. But he expressed doubt about the WTO's ability either to deal with Chinese mercantilism or to reach any agreements at its next ministerial meeting in December.

Mr Trump's tough-cop trade policy appears to be to threaten tariffs unless he gets his way. Mr Lighthizer's is subtler but perhaps more menacing. By combining indifference with a ploy to starve the WTO of judges, he is gambling that the WTO needs America more than America needs it. In both cases the risks are the same: that the rule book will become irrelevant. ■

## Ethical investing

# Not its own reward

NEW YORK

## The mysteries underneath the hottest investment trend

MAYBE weary of its role as a punchbag for moralists, and certainly in search of products with widespread appeal, Wall Street has taken to selling products linked to virtue. That is not easy: how does an industry focused on financial returns go about gauging goodness?

The approach started years ago with funds that called themselves "socially responsible". More recently the terminology has evolved, with many claiming to pursue "ESG" investing, standing for "environmental", "social" and "governance".

Morningstar, a data-tracking firm, places any fund that uses terms such as sustainable investing, ESG and so on in its prospectus into a category that now has 204 members with \$77bn in collective assets. The oldest fund in the Morningstar group dates back to 1971. But nearly half have been launched in the past three years. More quietly, the wealth-management offices of many American investment firms constantly roll out investments touting these sorts of characteristics and Morningstar counts in excess of 2,000 funds worldwide. Endowments and pension funds, the big global money pools, are beginning to suggest they, too, want to invest along these lines.

Two perennial questions have accompanied the deluge of money. The first is whether the approach comes with special costs: ie, is there a virtue discount? Second

is the question of what should be measured. Neither is easy to answer.

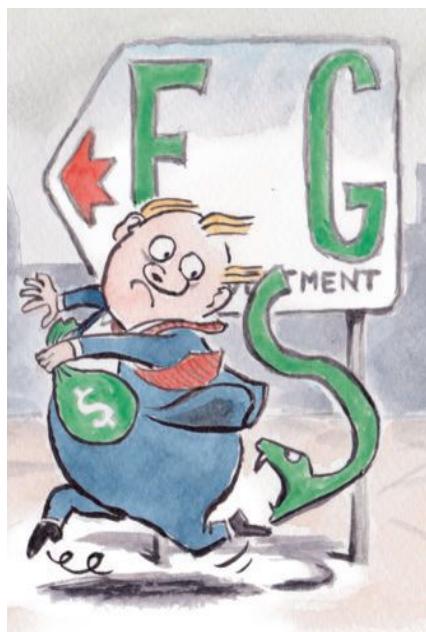
One attempt to answer the first looked at the converse: were returns higher for shares that would not qualify for inclusion in these efforts: in other words, is there a vice premium? Lists were compiled of "sin stocks", usually involving tobacco, alcohol and gambling, but sometimes firearms and the like (a future one might add fossil-fuel producers and defence companies). A paper published in 2009 called "The Price of Sin", by Harrison Hong and Marcin Kacperczyk, two academic economists, concluded that there were indeed unusual returns in firms that sold tobacco, alcohol and gambling.

However, a second paper published this year ("Sin Stocks Revisited", by David Blitz of Robeco Asset Management and Frank Fabozzi of EDHEC Business School) contests these results. It argues that added risk factors such as low reinvestment rates mean that there is no evidence that sin stocks provide a premium for reputation risk. Robert Whitelaw, a professor at New York University's Stern School of Business, says that the conflicting analyses reflect the broader results of more complex efforts aimed at tracking results from ("virtuous") companies that would qualify for these funds. Results are mixed.

It would help if there were an easy answer to the second question: what really determines an ESG company? Of the three categories represented by the initials, the clearest is the first. The environmental "E" means shunning companies that produce a large amount of externalities—costs not captured in the manufacturing process—like carbon or waste or other forms of pollution. The "G" for governance encompasses an evaluation of how the company structures its board, disclosure, compensation and so on.

Neither area is straightforward. But the complexity of each pales in comparison with that involved in exploring what lies behind the "S" for social. This often involves labour rights, such as working hours, wages and fatalities, and the ability to pursue a grievance; and issues such as the breakdown of employees by gender. Hundreds of different outside services analyse how companies tackle "social" issues. A study by NYU's Stern School ("Putting the 'S' in ESG") looked at 12 of the most popular approaches. It extracted from these more than 1,700 different measures. Companies seeking to respond to these evaluators faced a daunting task: answering 763 questions for companies involved in food and beverages; 698 for companies in extractive industries.

A consequence is that even companies willing to complete surveys are overwhelmed by the task. And the answer they provide is often incomplete anyway, because it overlooks their supply chains. The ►



► NYU survey notes that many current approaches ignore the full supply chain and thus often the hard end of manufacturing. Or they judge companies on their stated intentions, such as promising to ask suppliers to treat labour well, without actually monitoring or reporting the results.

That this category struggles to live up to its idealistic promises justifies some scepticism. But, at the very least, it is focusing attention on the problems and hence applying pressure for a better approach. It is also refining definitions of terms for investing that may have value elsewhere, and help replace feel-good bromides with crunchier measures. NYU is planning its own indicators for "social" factors. It wants them to be simple—a dozen factors. That it and others are exploring new approaches must, in itself, be a social good. ■

#### Real-time insurance

## Pay-per-risk

#### The availability of huge volumes of data in real time is changing insurance

EVEN at weddings or whale watches, the buzz of a drone is no longer a surprise. Drone photography is booming. Gartner, a consultancy, says some 174,000 drones will be sold for commercial use around the world this year, and 2.8m to consumers. It is easy to imagine a few might fall out of the sky, causing damage the pilot cannot hope to pay for: crushed wedding cakes, injured spectators and so on. Amid scores of near-misses, several incidents have already occurred. In 2014, for example, a drone filming a triathlon in Australia crashed on a competitor's head.

Clearly, drone-users need insurance. Typically, risks are insured through the payment of an annual premium. Insure4drones, a British specialist, charges £738.86 (\$1,000) to cover a DJI Phantom, a bestselling drone, for a year. From October Flock, a London startup, will offer insurance on a flight-by-flight basis, at the push of a button in an app, to any commercial drone-operator in Britain. Cover for amateur pilots will soon follow. Costs will be about £5 per hour of flight, according to Allianz, an underwriter.

Flock's app relies on a wide range of data. Weather forecasts come from IBM, a computing giant which, having spent over \$2bn on The Weather Company in 2015, now offers forecasts to within a few hundred metres, and over a period of minutes. Live information about nearby aircraft is provided by a software company called Snowflake, which tracks aeroplanes around the planet. Flock also considers lo-

#### Assortative mating

## Matching theory

#### Marital choices are exacerbating household income inequality

“**H**ERE'S what nobody is telling you: Find a husband on campus before you graduate,” wrote Susan Patton, a human-resources consultant, in 2013. In an infamous letter to the editor of Princeton's student newspaper, Ms Patton warned female students at the university that they will “never again be surrounded by this concentration of men who are worthy of [them]”. Critics responded harshly. Ms Patton recalls that she was branded “a traitor to feminism, a traitor to co-education and an elitist”.

Economists might offer yet another critique of Ms Patton's letter: it was largely unnecessary. It is clear to academics that people tend to marry spouses with similar levels of education. They also know that “assortative mating”, as the practice is called in the jargon, is exacerbating income inequality. In America, Britain, Denmark, Germany and Norway, they have found that household income would be more evenly spread if couples were less keen to marry similar sorts.

Less clear, however, is whether or not assortative mating is on the rise. Answering this question is hard, because the ratio of educated men to educated women has shifted over time. That university-educated men are now more likely to marry university-educated women may not show a change in spousal preferences. It may simply reflect the increased number of women with degrees.

The latest iteration of the debate comes in a recent paper by Pierre-André Chiappori and Bernard Salanié, of Columbia University, and Yoram Weiss, of Tel Aviv University, which argues that assortative mating is indeed growing. They note that in the mid-20th century households were primarily concerned with divvying up chores. Since then, inventions like the washing machine and frozen food have meant that people can spend less time on housework. At the same time, computers have increased the demand for skilled labour. The authors argue that parents worried about their

children's future now have to focus on raising the brightest youngsters possible, and one of the surest ways to have bright children is to marry a bright spouse. By building an economic model which takes into account these shifting preferences and testing it against census data, the authors conclude that Americans born in 1972 do indeed have a stronger preference for better-educated partners than those born in 1943.

One implication of assortative mating is that most estimates of the returns on investment in a university education err on the low side, as they fail to take spouses' earnings into account. Research from the Federal Reserve Bank of New York finds that the annualised return on investment for a four-year bachelor's degree in America rose sharply between 1980 and 2000 but has since stabilised at around 15%. Our calculations show that, if a spouse's income is added to a person's own, the returns to higher education have increased steadily since 2000, now reaching 18%. Similar patterns hold for both men and women. Gender inequality in lecture halls has faded; household income inequality has widened.



It's all a matter of degree

cal topography, such as proximity to churches, hospitals and schools, as well as roads and traffic levels. It also monitors the drone itself, gathering data as it flies to build a risk profile for that machine. All these numbers are crunched when a customer requests insurance through the app. As well as offering a quote, the app tells pilots how to reduce their risks.

Allianz then converts Flock's data-dri-

ven risk scores into a price. The attraction for Allianz is acquiring customers cheaply. “Rather than humans sitting and writing business, the algorithm does it on the spot,” says Tom Chamberlain, who manages its aviation underwriting.

Conventional insurance works by pooling individual risks and then setting a price for that group—new drivers under 30, say. But that process can be much refined if ►



Mind your heads

► the objects and people being insured can report to the insurer automatically, and if there is a wealth of data on the external environment. As an ever-growing number of sensors—in phones or watches, drones or cars—gather ever-greater volumes of data, more and more activities can be assessed for real-time risk (though in the absence of pooling, some risks may become prohibitively expensive to insure).

Flock is not alone. Verifyly, a New York startup, competes with it in America. Root, a car insurer, offers drivers insurance based on their minute-to-minute behaviour behind the wheel. It even offers a discount to Tesla drivers if their car spends plenty of time in autonomous mode. Slice, a San Francisco startup, lets its customers insure their houses and cars for the time they are used on services such as Uber and Airbnb. Trov, also from San Francisco, insures personal possessions for short periods.

Flock's chief executive, Ed Klinger, says that he eventually wants to insure all kinds of future autonomous activities, from taxi rides to rolling delivery pods. He argues that selling insurance through annual premiums is inflexible. It less easily takes advantage of the large volume of live data that can now help estimate the risk posed by a given activity at a given time. For instance, a passenger in an autonomous taxi may be at far lower risk if the trip takes place outside rush hour, or in weather conditions in which the car performs at its best. Firms that dispatch delivery drones might use Flock to calculate the risk for each flight automatically, depending on cargo and address.

The business model is in its infancy, but on-demand insurance seems bound to grow. In a world where consumers expect push-button convenience from their services, they will demand the same of the insurance those services rely on. ■

## Ukraine's sovereign-bond issue

# Welcome back?

KIEV

### A triumphant return to the debt markets worries reformers

MUCH has changed since Ukraine last tapped global debt markets in 2013. The next year the “Maidan revolution” drove out the corrupt regime of Viktor Yanukovych; and Russia annexed Crimea and stoked a war in Ukraine’s east. The economy languished, with GDP contracting by 16% in 2014–15; only an IMF rescue staved off collapse. Unable to pay its debts, Ukraine in 2015 submitted its creditors to a 20% “haircut”, or debt reduction (an offer rejected by just one creditor, Russia, which is pursuing Ukraine in British courts). This week the government returned to the international markets, issuing \$3bn in dollar-denominated bonds.

This testifies to the progress Ukraine has made. As Oleksandr Danylyuk, the finance minister, puts it: “We’re back; we transformed the country.” The government has largely stabilised the economy, bringing inflation down from a peak of 61% in April 2015 to a more manageable 13.5%. It has also undertaken structural reforms: overhauling energy markets, shoring up banks and increasing transparency in public procurement. GDP growth resumed last year, albeit at the modest rate of 2.3%. The bond, which includes \$1.3bn of fresh money and \$1.7bn of rolled-over short-term obligations, carried an annual yield of 7.375% and was oversubscribed by about \$7bn, says someone with knowledge of the deal. Ukraine’s president, Petro Poroshenko, hailed investors’ “unbelievably positive

assessment of reforms”.

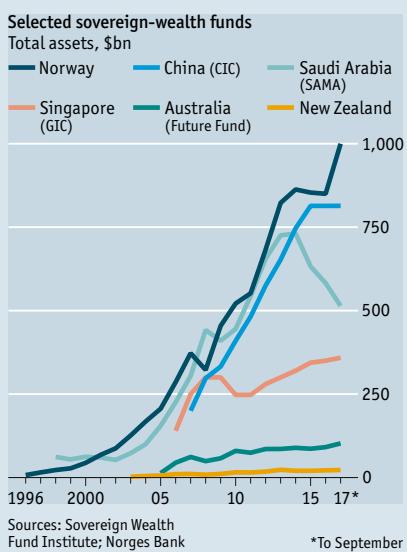
External factors have also helped. Despite expectations of gradual monetary tightening in America and Europe, there is still a global shortage of bonds, especially higher-yielding ones, says Timothy Ash of BlueBay Asset Management. So emerging-market issues are in vogue: other countries recently selling bonds include Iraq and even dirt-poor Tajikistan (to finance a dam meant to export hydroelectricity to Afghanistan and Pakistan). Claudia Calich of M&G Investments, an asset manager, points out that, compared with such countries, Ukraine has a more diversified economy, if a higher level of debt.

The strong demand is welcome. But, as part of a broader trend favouring riskier sovereign borrowers, it raises concerns about what would happen if sentiment towards emerging markets were to worsen sharply. Ukraine may be especially vulnerable to a sell-off because of recent signs that important reforms—such as the fight against corruption—have stalled. The National Anti-Corruption Bureau, for example, created recently as a condition of the IMF’s lending, has been unable to ring up convictions in courts filled with holdovers from the old system. An anti-corruption court favoured by civil-society activists, reformist MPs and Western donors faces resistance from entrenched interests, including Mr Poroshenko himself.

Reformers in Kiev worry that, by weakening the IMF’s sway, the financial independence access to the bond markets has brought the government will further reduce the pressure for change, especially ahead of presidential elections in 2019. During a recent visit, the IMF’s deputy director, David Lipton, warned Ukraine of the “risks of going backwards”. Even forgiving markets may not be able to save Ukraine from its own worst instincts. ■

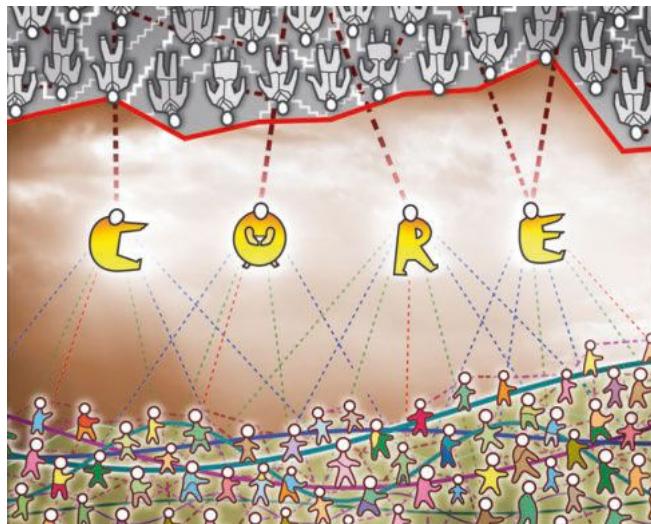
## Norway's \$1trn wealth fund

A year earlier than expected, Norway’s sovereign-wealth fund, the world’s largest, surpassed \$1trn in assets on September 19th. It had gained over \$100bn in the past year, thanks in large measure to the global stockmarket boom in 2017: around two-thirds of its assets are held as equities (over 1% of shares globally). It helps that Norwegians continue to earn fat revenues from pumping North Sea oil and gas, which go to the fund to be invested abroad. The fund is so big it is becoming a tool for 5m-odd Norwegians to shape values abroad. It is an increasingly activist shareholder, speaking out on executive pay, ethical behaviour, companies’ use of water, child labour and more. Both its size and influence are likely to keep on growing.



# Free exchange | Think again

The teaching of economics gets an overdue overhaul



ECONOMISTS can be a haughty bunch. But a decade of trauma has had a chastening effect. They are rethinking old ideas, asking new questions and occasionally welcoming heretics back into the fold. Change, however, has been slow to reach the university economics curriculum. Many institutions still pump students through introductory courses untainted by recent economic history or the market shortcomings it illuminates. A few plucky reformers are working to correct that: a grand and overdue idea. Overhauling the way economics is taught ought to produce students more able to understand the modern world. Even better, it should improve economics itself.

The dismal science it may be, but economics is popular on campus. It accounts for more than 10% of degrees awarded at elite universities each year, by one estimate, and many more students take an introductory class as part of their general-education requirements. Teachers of such courses aim to grab the attention of their glassy-eyed audience, to acquaint students with the basics of the subject and, ideally, to equip them to apply economic reasoning to the real world. Economics teaches that incentives matter and trade-offs are unavoidable. It shows how naive attempts to fix social problems, from poverty to climate change, can have unintended consequences. Introductory economics, at its best, enables people to see the unstated assumptions and hidden costs behind the rosy promises of politicians and businessmen.

Yet the standard curriculum is hardly calibrated to impart these lessons. Most introductory texts begin with the simplest of models. Workers are paid according to their productivity; trade never makes anyone worse off; and government interventions in the market always generate a "deadweight loss". Practising economists know that these statements are more true at some times than others. But the all-important exceptions are taught quite late in the curriculum—or, often, only in more advanced courses taken by those pursuing an economics degree. Other disciplines are also taught simply at first. New physics students learn mechanics through models stripped of all but the simplest elements. The risk is low, however, that a student who drops a physics course will think he lives in a frictionless vacuum.

Students pay \$300 or more for textbooks explaining that in competitive markets the price of a good should fall to the cost of

producing an additional unit, and unsurprisingly regurgitate the expected answers. A study of 170 economics modules taught at seven universities found that marks in exams favoured the ability to "operate a model" over proofs of independent judgment.

The CORE project (for Curriculum Open-access Resources in Economics) seeks to change all this. It sprang from student protests in Chile in 2011 over the perceived shortcomings of their lessons. A Chilean professor, Oscar Landerretche, worked with other economists to design a new curriculum. He, Sam Bowles, of the Santa Fe Institute, Wendy Carlin, of University College London (UCL), and Margaret Stevens, of Oxford University, painstakingly knitted contributions from economists around the world into a text that is free, online and offers interactive charts and videos of star economists. That text is the basis of economics modules taught by a small but growing number of instructors.

"The Economy", as the book is economically titled, covers the usual subjects, but in a very different way. It begins with the biggest of big pictures, explaining how capitalism and industrialisation transformed the world, inviting students to contemplate how it arrived at where it is today. Messy complications, from environmental damage to inequality, are placed firmly in the foreground. It explains cost curves, as other introductory texts do, but in the context of the Industrial Revolution, thus exposing students to debates about why industrialisation kicked off when and where it did. Thomas Malthus's ideas are used to teach students the uses and limitations of economic models, combining technical instruction with a valuable lesson from the history of economic thought. "The Economy" does not dumb down economics; it uses maths readily, keeping students engaged through the topicality of the material. Quite early on, students have lessons in the weirdness in economics—from game theory to power dynamics within firms—that makes the subject fascinating and useful but are skimmed over in most introductory courses.

Teaching the CORE curriculum feels like doing honest work, says Rajiv Sethi, of Barnard College, who contributed to the CORE textbook. Academic economists do not hide from students the complications they grapple with in their own research. Homa Zarghami, also at Barnard, appreciates having to spend less time "unteaching", ie, explaining to students why the perfect-competition result they learned does not actually hold in most cases. A student who does not finish the course will not be left with a misleading idea of economics, she notes.

## Esprit de CORE

Early results are promising. Assessments at UCL found that CORE students performed better in subsequent intermediate courses than non-CORE counterparts. Anecdotally, at least, students seem more engaged in CORE courses and graduate assistants less pained by the prospect of teaching them.

The hopes for CORE are much more ambitious than simply providing non-economists exposed to the material with a clearer idea of what economics is all about. The new curriculum may also help departments retain students drawn to economics as a way to understand the world's great challenges, and not simply as a place to play with elegant models. That could mean, eventually, a broader array of perspectives within economics departments, bigger and bolder research questions—and fewer profession-shaking traumas in future. ■



### Carbon budgets

## Breathing space

**Changed estimates of how much carbon dioxide can still be emitted to meet climate targets leave no room for complacency**

IN JUNE Christiana Figueres, the UN's former climate chief who helped broker the Paris agreement in 2015, warned that the world has "three years to safeguard our climate". It was a hyperbolic claim, even then. New research makes it seem even more of one today. An analysis published in *Nature Geoscience* on September 18th, by Richard Millar of Oxford University and his colleagues, suggests that climate researchers have been underestimating the carbon "budget" compatible with the ambitions expressed in Paris. It may be possible for the world to emit significantly more carbon dioxide in the next few decades than was previously thought, and still keep global warming "well below" a 2°C rise above pre-industrial levels, which is what the agreement requires.

It is the total amount of carbon dioxide emitted, rather than the rate at which it is emitted, which determines how much greenhouse warming the world will undergo. This allows scientists to draw up budgets that quantify the total emissions associated with a given temperature rise. In the most recent report of the Intergovernmental Panel on Climate Change (IPCC) the carbon budget for a good chance of keeping global warming to 1.5°C—the preferred target of the Paris agreement—was 2.25tn tonnes of carbon dioxide since 1870. Estimates of the amount in fact emit-

ted by the time of the Paris agreement were a smidgen over 2tn tonnes, and annual emissions at the moment are almost 40bn tonnes. This suggested that the total carbon budget would be spent by about 2020. Hence Ms Figueres' alarm.

The calculations on which that IPCC budget was based—which were carried out in part by some of Dr Millar's co-authors—depended on the use of a set of complex climate models called CMIP5 to replicate what had happened in the climate since 1870 and assess what might happen in the century to come. In the average of these models, which were run in the early 2010s, cumulative emissions took until a little after 2020 to top 2tn tonnes (ie, several years after they actually did so). Also, the temperature they predicted would prevail at that time was about 1.2°C above that of 1870 when, in actual fact, the temperature after 2tn tonnes had been emitted was only 0.9°C higher. In other words, the real world had seen slightly more carbon emitted, and less warming, than the models had suggested it should have.

The discrepancy caused Dr Millar to wonder what would happen if the CMIP5 results were shifted so that they centred on the known temperature and cumulative carbon-dioxide emissions for 2015 rather than 1870—if, in other words, you took a set of clocks with well-understood, if imper-

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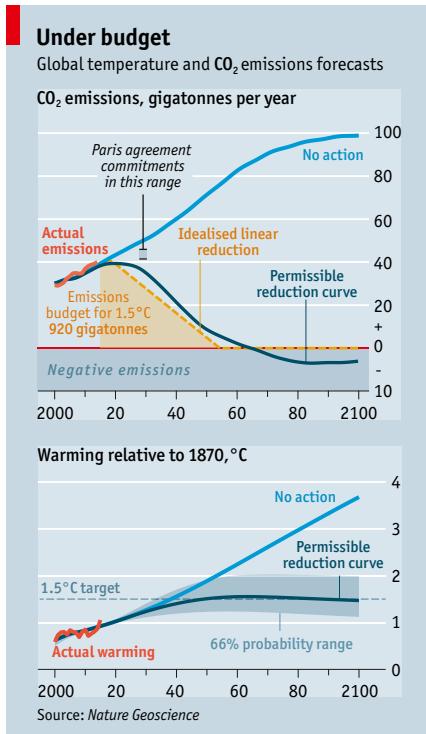
fect, inner workings and reset them all. The result was a sizeable increase in the budget. The world could emit about 750bn tonnes of carbon dioxide from 2015 onwards and still be "likely"—IPCC jargon for a two-thirds chance—to keep further warming below 0.6°C. Given that warming by 2015 was 0.9°C, this therefore defines the budget for staying below 1.5°C.

To confirm this, the researchers used a different type of computer model to look at futures in which emissions are reduced sharply from now on, the climate responds in the way it seems to have done in the past, and the overall temperature rise is limited to 1.5°C or less. They found it likely that this could be done with 920bn tonnes of post-2015 carbon-dioxide emissions. Given the uncertainties involved, that is a pretty close match to their other figure. Again, the carbon budget lasts a few decades, not just a few years.

### Under budget?

These results are controversial. Those who have been sceptical about the case for strong action on climate change have fallen on them as evidence that models such as those used in CMIP5 have fundamental flaws. It is true that, as Dr Millar and his team point out, those models may have overestimated the cooling effects of some pollutants, and thus of the warming that would be "unmasked" when those cooling pollutants, such as sulphur from Chinese coal-fired power stations, were reduced.

At the same time, certain climate scientists have raised questions about the Oxford work. Some have doubts about the "resetting" of the CMIP5 results to the measured data for 2015. Another worry is that a number of different data sets claim to trace global temperature from the 1870s to now. ►



► The one Dr Millar and his colleagues used is that with the smallest increase. The set which shows the largest increase calculates the current temperature as being less than 0.4°C short of the 1.5°C target, rather than 0.6°C. Use this, and the new budget would be significantly smaller.

There are uncertainties, then, in both models and data, and no single study should be expected, of itself, to reset the world's plans. Even if the Oxford paper's new budgets were copper-bottomed truths, though, they would hardly provide the respite they might seem to. No one expected the constraints of the previous 1.5°C budget to be met, and meeting the new constraints would still be challenging.

The pathways with happy outcomes that Dr Millar and his colleagues describe in their paper had net emissions falling to zero shortly after the middle of the century. That requires steep emissions cuts to be maintained for decades. If the process were to start today, emissions would have to be cut by 1.1bn tonnes of carbon dioxide every year. If cuts started later, they would have to be steeper at some point. Even then, by the middle of the century the budget might be overspent in a way that required the deployment of technologies which can suck CO<sub>2</sub> out of the atmosphere, thus producing "negative emissions" to balance the books (see chart).

One way of doing this would be to burn plants instead of fossil fuels in power stations, and then store the resulting carbon dioxide underground. Disposing in this way of carbon that those plants had taken from the atmosphere as they grew would reduce the amount of atmospheric carbon

dioxide. But to suck up enough would be a huge undertaking, requiring vast plantations. Alternative technologies that might do the same with a smaller footprint are at extremely early stages of development.

All this said, big cuts in emissions seem more plausible now than they did in Paris, as the technology of renewable energy improves. Scarcely a day goes by without some low-carbon milestone being passed. At a British auction on September 11th offshore-wind power came in at a record low price of £57.50 (\$76) per megawatt hour (though it still enjoys a subsidy). China has recently announced that it will stop building petrol-driven cars. Solar energy is already competitive with fossil fuels in sunny places and the Potsdam Institute for Climate Impact Research reckons it could make up 30-50% of the world's electricity by 2050, up from 2% now—and do so without government handouts. The recent history of solar power has seen it routinely surpass the estimates of such experts.

Annual carbon emissions, which have been climbing steeply for decades, have reached a plateau in the past couple of years. This year may see that happy lull continue. But that is a long way from the cuts of 4-6%, year on year, that the models require. If countries are to meet the global target they set themselves in Paris while minimising their reliance on untested and possibly damaging approaches such as negative emissions—in effect, deficit spending for the carbon budget—they still have to up their game considerably. ■

### Treating snake bites

## The general and the specifics

### Many antidotes to snake venom do not work as well as they might

**N**O GENUS of snakes kills more people and causes more economic damage than *Echis*. Saw-scaled vipers, to give the group's common name, are found in Africa, the Middle East and Asia. Their venom makes blood clot, bringing agonising death. Victims are often farm workers who support entire households, so an attack can plunge a family into poverty.

Antivenoms—chemicals that reverse or blunt the effects of a snake's toxin—are standard medicines in areas where bites are common. But a study led by Bryan Fry of the University of Queensland, in Australia, which has just been published in *Toxicology Letters*, has found a problem: against many snake populations, these medicines do not work.

Antivenom production, which was pioneered in the 19th century by Albert Cal-

mette, a student of Louis Pasteur, involves extracting venom from snakes and injecting it into animals, such as horses, that can, thanks to their size, survive large doses of the stuff. The injected animals' immune systems produce antibodies that neutralise the venom. These can be extracted and stored for later use on human victims. Nowadays, rather than producing a single antivenom for each type of snake, the animals employed to make the stuff are injected with several different toxins, in the hope of creating an antivenom effective against them all. This makes sense. Most victims of snake bites will not know exactly what bit them. But the underlying principle is the same as Calmette's.

The antivenom approach does, though, depend on the venom injected into a victim being among those used to make the treatment. Dr Fry, observing the huge ranges of some of the species involved, and the tendency of evolution to result in local adaptations even within such species, wondered whether that was always true for existing snake-bite remedies.

To find out, he obtained venom from saw-scaled vipers in Ghana, India, Kenya, two regions of Mali, Nigeria, Pakistan, Senegal, Saudi Arabia and the United Arab Emirates. He and his colleagues measured the rate at which venom from each of these caused human blood to clot. They then ran the experiment in the presence of each of four different commercial antivenoms, to see if these slowed the process down. Two of the antivenoms in question, Echi-Tab-Plus-ICP and SAIMR Echis, were made using venom from African snakes. The other two, SII Polyvalent Anti-snake Venom Serum and Snake Venom Antiserum I.P., were from Indian snake venoms.

The best of the antivenoms, Echi-Tab-Plus-ICP, did well against toxins used by the vipers of Ghana, Nigeria, one of the Malian regions and Senegal. But it did little against all other saw-scaled vipers, despite being listed as a treatment in Kenya and in the region of Mali for which the experiment suggested it did not work. SAIMR Echis was similar. It performed well against snakes from Saudi Arabia, Kenya and one region of Mali, moderately against snakes from Ghana, Nigeria and the other part of Mali, and poorly elsewhere. This antivenom is listed as effective against a species called *Echis carinatus* (pictured overleaf). But Dr Fry's results suggest that protection does not extend to populations of this species living in India.

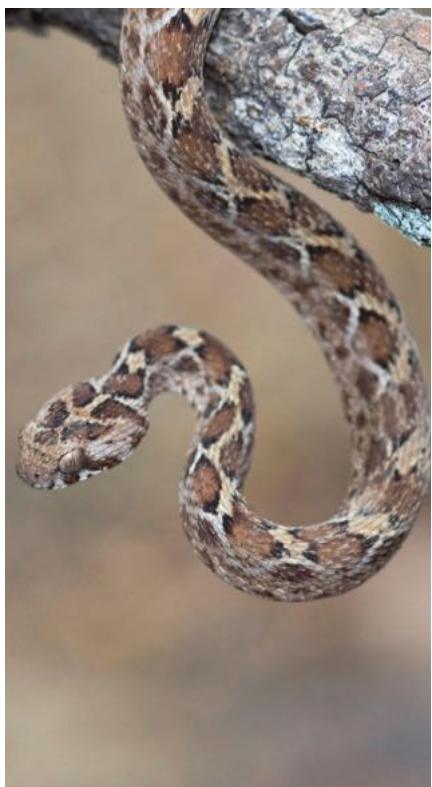
The makers of both of these antivenoms have been receptive to the findings. Megan Saffer of SAVP, in Johannesburg, the firm responsible for the SAIMR Echis antivenom, says that an effort is now under way to re-label this antivenom so that it will be used only in regions where it is truly effective. Alberto Alape-Girón, the head of Instituto Clodomiro Picado, in ►

► Costa Rica, where EchiTab-Plus-ICP is made, noted that his team was responding to the situation by “developing a new anti-venom of wider neutralisation efficacy”.

The results were worse for Sii Polyvalent Anti-snake Venom Serum, which worked well only against venom from populations of *E. carinatus* in Pakistan, and for Snake Venom Antiserum I.P., which had only a mild effect against even that venom. Both are listed as being effective against Indian populations of *E. carinatus*, but Dr Fry's results call this into question.

Rajendra Prabhu, chief scientist at Vins-Bio, in Hyderabad, the firm that makes Snake Venom Antiserum I.P., says that the “antiserum is geospecific to neutralise our Indian region species only”, yet the new findings do not support this claim. Dr Prabhu also argues that “it is not appropriate to compare potency against other venoms of African or Asian countries”. But Dr Fry says that both it and Sii Polyvalent Anti-snake Venom Serum are routinely found on the shelves of African clinics, even though they grant no benefit against native vipers.

What seems clear from Dr Fry's work is that makers of antivenoms—including, presumably, antivenoms against snakes other than saw-scaled vipers—need to look more closely at how snake venom varies from place to place, even within what appear to be single species. Antivenoms are wonderful things, and have saved many lives. But this study suggests they could, with a little effort, be made better still. ■



The serpent's tale

### Exploring the asteroid belt

## E-sail away

### A new method of propelling spacecraft

**S**PACE travel is expensive. Missions such as *Cassini*, a recently ended exploration of Saturn and its moons, and *New Horizons*, a trip to Pluto and one or two more distant objects in the far reaches of the solar system, have involved launching craft weighing hundreds or thousands of kilograms. For big, essentially unique targets such as these, that expense has proved worthwhile. But as exploration moves on to smaller and more numerous objects, like asteroids, individual visits at costs of hundreds of millions, or even billions of dollars are no longer a feasible idea. Some system of mass robotic space travel needs to be devised. And Pekka Janhunen of the Finnish Meteorological Institute in Helsinki thinks he has invented one.

In 2004 Dr Janhunen put forward the idea of a sail that harnesses the solar wind, a stream of charged particles emanating from the sun which manifests itself on Earth in the dramatic displays of the aurora. He and his colleagues have since refined the idea. In a paper they presented to the European Planetary Science Congress, in Riga, Latvia on September 19th, they proposed that spacecraft equipped with their new propulsion system could make a round trip to the asteroid belt in little more than three years. A fleet of 50 such craft, weighing about 5kg each and thus capable of being launched by a single rocket, could visit 300 asteroids, survey them and return to Earth for a thrifty €60m (\$72m) or so, including the cost of launch.

The electric solar wind sail (E-sail), as Dr Janhunen dubs his invention, consists of four wires, each 20km long but just 25 microns (millionths of a metre) thick. These are braided together into a tether. For launch, this tether is wound tightly around a small motorised reel inside the craft. Once in space, the wires are unwound by the motor, assisted by the centripetal force of the spinning craft. Once fully deployed, the tether thus sweeps out a circle with a diameter of 40km.

The craft's propulsion comes from the interaction between this tether and the hydrogen and helium nuclei that form most of the mass of the solar wind. These nuclei are positively charged. And so is the tether, because the craft also carries a solar-powered electron gun that shoots out into space a stream of electrons scavenged from the wires. Since electrons are negatively charged, ejecting them in this way keeps the tether positive. Since like charges repel,

the positive tether reflects the positive hydrogen and helium nuclei back where they came from. And since to every action there is an equal and opposite reaction (Newton's third law of motion), that reflection drives the spacecraft forward.

If the tether were stationary with respect to the craft, the result would be a lopsided force. But because it rotates, that force evens out after an entire circuit, propelling the craft ahead. Varying the output of the electron gun, however, can create a lopsided force deliberately, permitting the craft to be steered. And, though the acceleration produced is small (1mm per second per second), there is little in the vacuum of space to slow the craft down. It can therefore reach a speed of tens of kilometres per second after a year of travel, making its rapid jaunt to the asteroid belt possible.

In addition to the E-sail, the craft Dr Janhunen envisages would have a small telescope on board, and also an infra-red spectrometer. These would analyse the surface of every asteroid encountered. Each probe would be able to fly to within 1,000km or so of six or seven asteroids, snapping photos and collecting data. Probes would not have the power to broadcast these data all the way back to Earth from the asteroid belt. But they would, instead, be able to store them in flash-memory chips, for relay to Earth on their return home.

In some ways an E-sail resembles a solar sail, a rival idea for powering craft cheaply through space. A solar sail provides propulsion because the sunlight it reflects exerts pressure on the sail, pushing it forward. But E-sails have an important advantage over solar sails. Once unfurled, there is no easy way to stop a craft with a solar sail gathering speed. An E-sail-powered craft can be prevented from accelerating simply by switching off its electron gun. This means it can return to Earth under the influence of the sun's gravity.

E-sails have, however, not been tested. A solar sail has. *Ikaros*, a craft launched in 2010 by JAXA, Japan's space agency, successfully deployed such a sail with an area of 196 square metres. Dr Janhunen hopes to make a start on proving his technology by unwinding a tether 100 metres long in space later this year.

For those of a romantic disposition, E-sails may come to be seen as the technology that will unlock the asteroid belt for commercial exploitation. There is reason to believe that some asteroids are rich in valuable metals, such as platinum and iridium. Craft equipped with many tethers could carry heavy payloads—perhaps up to a tonne—that would permit mining equipment to be deployed and cargoes of metal to be brought back to Earth.

One day, perhaps. But, in the meantime, E-sails do sound a plausible way of extending humanity's understanding of the nearby cosmic neighbourhood. ■

## Dental health

# Brush with confidence

## A child's genes do not assist decay-causing bacteria

**T**HAT children should be taught to brush their teeth regularly is a *sine qua non* of bringing them up. But the suspicion remains among some people, dentists included, that even so, certain children are doomed to develop dental cavities. The hypothesis behind this fear is that some combinations of genes may give succour to the sorts of oral bacteria which are responsible for cavities. If true, that would be sad for the youngsters concerned. But a study just published in *Cell Host and Microbe*, by Andres Gomez and Karen Nelson of the J. Craig Venter Institute, in San Diego, suggests it isn't true.

The mouth is home to many species of microbes. Most are benign. Some, though, are well known to secrete acidic waste products when fed sugar. This acidity weakens teeth, causing them to decay. To try to find out whether a child's genes play any role in encouraging such acid-secreting bugs, Dr Gomez and Dr Nelson set up an experiment with twins.

Their "volunteers" (actually volunteered by their parents, of course) were 280 pairs of fraternal twins and 205 pairs of identical twins, all aged between five and 11, who had not taken antibiotics during the previous six months. The children were asked to refrain from brushing their teeth the evening and the morning before the crucial moment of data collection. This was when the researchers swabbed the children's gingival sulci (the clefts between teeth and gums, in which bacteria collect) to find out what was there. The children also had their teeth scored by dentists as belonging to one of three categories: having no signs of current or previous dental cavities; having signs of current or previ-

## Academic sexism

# Purblind prejudice

## Students are biased against female lecturers

**S**EXISM is among the prime suspects for the scarcity of female professors. Yet proving that bias against women is widespread in academia—or even exists at all—is tricky. But a forthcoming paper in the *Journal of the European Economic Association* rises to the task.

This paper's authors, Friederike Mengel of the University of Essex, in Britain, Jan Sauermann of Stockholm University, in Sweden, and Ulf Zöllitz of the Institute on Behaviour and Inequality, in Bonn, Germany, used data from nearly 20,000 student evaluations of instructors. These were made between 2009 and 2013 at the School of Business and Economics at Maastricht University, in the Netherlands. The students on each course had been assigned, randomly, either a male or a female instructor, and filled out end-of-course evaluations before they knew their grades. Half of the students involved were German, a third were Dutch and the rest mostly from other European and some Asian countries.

The results are both striking and disturbing. Ranked on a scale from zero to 100, the evaluations place female instructors an average of 37 slots below male ones. Students taught by women gave lower ratings even to teaching materials that were the same for all course instructors, such as the textbooks and the online learning platform.

Women did not appear to be worse

teachers. On average, the students taught by women achieved the same course grades as those taught by men, and spent a similar amount of time studying for the course on their own. Neither did an instructor's sex affect how much students' overall grades improved—which suggests that female instructors added the same amount of value to students' learning as did male instructors. And when the researchers stripped out the estimated gender bias from the evaluation scores, the difference in ranking between male and female instructors shrank from 37 rungs to five on the zero-to-100 ladder. That difference is statistically insignificant.

Both male and female students gave worse ratings to female instructors, though the men were much more prejudiced. Most worryingly, the bias was particularly pronounced in the case of junior instructors, for whom student evaluations are much more crucial for teaching awards, tenure decisions and even salary negotiations.

There is a broader lesson in all of this. The study was conducted at one of Europe's top business schools. Its graduates, presumably, are destined for great things in the fields of commerce and industry. If the biases they hold against the competence of their female teachers stick with them at the office, equality of the sexes in the workplace has a steep hill to climb.

ous cavities affecting the enamel (a tooth's hard, outer layer); or having signs of cavities that penetrated the enamel and affected the underlying dentine as well.

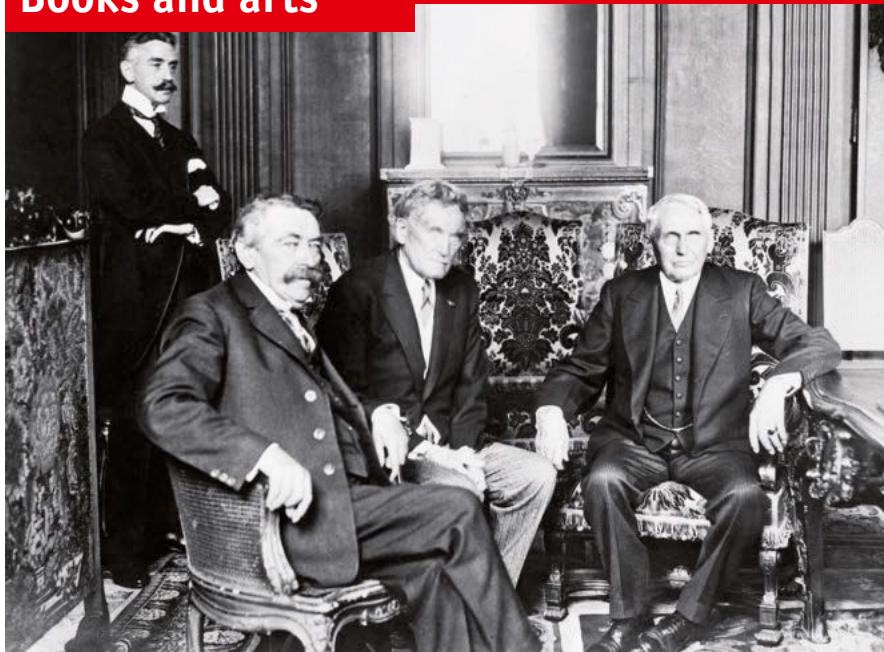
Dr Gomez and Dr Nelson found that, though identical twins shared many groups of bacteria which were not shared

by fraternal twins, none of these was a type responsible for cavities. Moreover, similarities in bacterial flora were greatest among five- to seven-year-olds, weaker among seven- to nine-year-olds and weakest among nine- to 11-year-olds. This suggests that any role genes do play in regulating the mouth's ecology fades with time.

Far from supporting the idea that some children are fated to suffer from cavities no matter how well they brush their teeth, these results make it clear that the power to control the growth of the relevant bacteria is very much within reach of children and their parents. Brushing, however, may not be the only approach. Avoiding sugary foods is obviously *de rigueur*. It seems likely, though, that which other foods a child eats may help shape his oral ecosystem, too. This is an area of ongoing research. But, as in the intestines, so in the mouth, scientific medicine is at last coming to grips with the fact that the mixture of microbes present is both important and capable of manipulation, to the benefit of the host. ■



The hole story



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## Outlawing war

## Blessed are the peacemongers

The post-war liberal order was underpinned by a movement to make the waging of aggressive war illegal. That principle is now seriously under threat

THE rules-based international order that emerged from the wreckage of the second world war was a huge improvement on any preceding era. It stimulated trade on an unprecedented scale and allowed even relatively small and weak countries to develop their potential without fear of predatory interference. At the heart of that order was an underlying principle that perpetrators of aggressive war should not be rewarded. In particular, any territorial gains which derived from their aggression would not be recognised by the international community as being legitimate. Instead, aggressors should be subjected to punishment—usually economic sanctions. Occasionally, concerted military action approved by the United Nations (UN) forced them to relinquish what they had illegally seized.

Yet liberal internationalism is now under attack from many sides. Donald Trump's America First doctrine explicitly repudiates it. Even two of the so-called "adults in the room", who supposedly temper Mr Trump's nativist excesses, seem happy to join him. In a *Wall Street Journal* article in May H.R. McMaster and Gary Cohn, respectively the president's national security adviser and economic adviser, wrote: "The world is not a 'global community' but an arena where nations, non-governmental actors and businesses engage and compete for advantage. We bring to

**The Internationalists: How a Radical Plan to Outlaw War Remade the World.**  
By Oona Hathaway and Scott Shapiro.  
*Simon & Schuster*; 608 pages; \$30. Allen Lane; £30

this forum unmatched military, political, economic, cultural and moral strength. Rather than deny this elemental nature of international affairs, we embrace it."

Apart from the bit about cultural and moral strength, neither Vladimir Putin nor Xi Jinping, who both challenge the liberal international order by seeking to create spheres of influence through intimidation and military bullying, would find anything to disagree with in that statement. Mr Putin annexed Crimea in 2014 (the first time that the borders of post-war Europe had been changed by force) and launched a covert invasion of eastern Ukraine in support of a separatist insurrection. Mr Xi is attempting to make the South China Sea, through which over half the world's commercial shipping passes, into a Chinese lake by creating artificial islands in defiance of international law.

"The Internationalists" by Oona Hathaway and Scott Shapiro, both law professors at Yale, is an impassioned history of how the liberal international order came into being and why it must be defended as never before. They believe that the basis of

what they call the New World Order (to distinguish it from the Old World Order, codified by a 17th-century Dutch scholar, Hugo Grotius, in which might was nearly always right) was an extraordinary diplomatic event in Paris in 1928. The General Treaty for the Renunciation of War as an Instrument of National Policy, or the Kellogg-Briand pact (named after the foreign ministers of the United States and France who had sponsored it, pictured seated right and left), was signed by more than 50 countries, including all the great powers.

The pact was a direct consequence of the "Great War" of 1914-18—a truly Grotian conflict that had left 1m combatants dead. Its purpose was to outlaw aggressive war and territorial conquest. But there was a problem of enforcement. Japan's seizure of Manchuria in 1931 was never legitimised, as it would have been under the Old World Order, but a new system had not yet come into effect which could make Japan surrender its prize. Neither the signatories of the pact nor the League of Nations was willing or able to stem the rise of militarism during the decade that followed and its apotheosis in the second world war.

The ideas underpinning the pact did, however, have a profound influence on the way in which the allies saw both their fight against the Axis powers and the organisation of the peace that followed. When the war ended, with the partial exception of the Soviet Union, the victors handed back the land they had conquered. The Nuremberg trials re-established the principle that waging aggressive war was a criminal act and punished at least some of Hitler's henchmen accordingly. The founding of the UN and the establishment of the International Court of Justice in The Hague, although far from perfect, have had very positive effects. Gunboat diplomacy imposed ►

▶ by major powers on weaker countries became an anachronism. So too did interstate war between them.

Of course there are still plenty of wars. In some ways the New World Order, which has helped make international wars so much less imaginable, has inadvertently made possible more "intranational" wars. Fragile and fractious countries that would previously have feared being conquered by more powerful neighbours can now fall prey to civil wars or brutal insurrections without bad actors fearing loss of the national territory they seek to control. Non-state groups, such as Islamic State (a misno-

mer), can take and hold, at least for a while, territory from dysfunctional governments. Well-meaning but ill-conceived wars to change odious regimes have sometimes gone badly wrong. Foreign-policy realists will also, with justification, point out that the main reason why great powers no longer fight each other is because the destructive force of nuclear weapons has removed any incentive to do so.

Yet the authors argue persuasively that the liberal order of the past 70 years has been better than any of the alternatives and is well worth striving to preserve. The authors pay proper tribute to those who

defined and fought for the principles that brought it into being. They include Salmon Levinson, a Chicago lawyer whose ideas led directly to the Kellogg-Briand pact; Sumner Welles, an American diplomat who envisaged the creation of a world organisation with the military clout to bring future warmongers to book; Hersch Lauterpacht, a great Polish-British jurist who helped create a body of international law based on universal values and human decency; and James Shotwell, a Canadian academic who worked with Aristide Briand to bring the pact into being and later contributed to the design of the UN. ▶

## Johnson | Comma chameleon

**The punctuation mark most likely to start fights between grammar gurus**

A LAW in Maine excluded from overtime pay "the canning, processing, preserving, freezing, drying, marketing, storing, packing for shipment or distribution of" certain products. But is the end of that list—"packing for shipment or distribution"—one activity? Or are they distinct things, (1) packing for shipment and (2) distribution? The company argued that they were distinct, and that although lorry drivers do not pack, they do distribute, and are hence exempt from overtime pay. A lot of money was at stake. But the company lost and the drivers got another chance to sue for millions in back pay.

It was not just the lorry drivers claiming victory. Fans of the serial (or "Oxford") comma exulted. Had "distribution" been set off by an extra comma, there would have been no ambiguity at all, and no dispute. The serial comma appears before the last item in a list: "red, white, and blue" has it; "red, white and blue" does not. Some style guides require it; others (including *The Economist's*) do not.

Children are taught that getting punctuation wrong risks messing up the message they are trying to get across, and the Maine case seemed to prove it. But how can it be that there is disagreement on such a major bit of punctuation? Those who like hard rules must accept that the comma is an oddball among the punctuation marks, in two ways. First, it does a lot of different jobs. One usage book lists 11 functions, and it is typically the longest section in a description of punctuation. Second, it is frequently optional.

People do not like the idea of optional punctuation. Much other punctuation is mandatory, including that statements end in full stops, and questions in question-marks. The comma, however, was not originally intended as a grammatical mark, but a place to pause for breath.



So the comma in this sentence is not grammatical, but stylistic. Some writers would omit it, and they would not have broken any rules. Others might insist that it simply has to be there. One reader might look at a passage and find it woefully short of commas; another might find it overstuffed with them.

In general, British writers seem to omit optional commas more often than American writers do. Lynne Murphy, an American linguist at Sussex University, recently looked at large collections of British and American text for sentences beginning "In 19\*\*", for any year, as in "In 1914". In the American texts, the year was followed by a comma about twice as often as not. In Britain those proportions were reversed. And whereas it is harder to research, it seems that Americans (though perhaps not in Maine) are bigger fans of the serial comma.

Ms Murphy also found that British friends wished her "Happy Birthday

"Lynne" on social media; Americans preferred "Happy Birthday, Lynne". And of course British and American rules differ on where commas are placed relative to other punctuation marks, like inverted commas.

No wonder novice writers are often at a loss, and put commas where they do not belong. The title of the punctuation-promoting bestseller "Eats, Shoots and Leaves" comes from a joke about a poorly punctuated wildlife guide describing the diet of panda bears. But putting a comma between a verb and its direct object is not a common mistake. A much more frequent foible in the writing of inexperienced students, is the habit of putting a comma between a long subject and a predicate (as here). Others join two sentences with only a comma, which makes editors furious.

With all this potential confusion, it is no wonder that style-book authors prefer to leave little wiggle-room, requiring or banning wherever possible. Serial-comma fans say that it can never introduce ambiguity, and can often remove it. They like to cite an article in the *Times* that described "encounters with Nelson Mandela, an 800-year-old demigod and a dildo collector." But as Stan Carey, a language blogger and editor, points out, adding a serial comma here would still leave the possibility that Mandela was a demigod, if not a dildo aficionado.

As much as people want the rules for commas to be ironclad, no mechanistic rules can substitute for slow proofreading and redrafting, or even better, a good editor. And having some flexibility in punctuation is one of the things that gives an author a style. Finally, writers may be mild-mannered, but everyone likes to get fighting mad once in a while. Sometimes little things are bigger than they seem.

► Ms Hathaway and Mr Shapiro are right to sound the alarm that the post-second-world-war consensus on the illegality of war is under siege. Among those threats are militant jihadism; an angry Russia and an ambitious China determined to challenge an international system they believe fails to reflect their interests; Iranian support for terrorist groups; and North Korea's contemptuous dismissal of diplomatic

attempts to rein in its nuclear programme. But perhaps the greatest danger at present is the incumbency of an American president who despises international norms, who disparages free trade and who continually flirts with abandoning America's essential role in maintaining the global legal order. The "internationalists"—the heroes of this important book—must be spinning in their graves. ■

nities of Bahia in Brazil. Acting as enabler rather than overseer, the Getty has ensured a remarkable collaboration between institutions. Its only stipulation was that each show be underpinned by serious art-historical research to ensure that the effects of *PST: LA/LA* are far-reaching.

Despite the broad range of ideas and artistic practice, home emerges as an overarching theme. "Home: So Different, So Appealing" at LACMA is one obvious example. Another is "Found in Translation—Design in California and Mexico: 1915–85", which traces the stylistic exchanges of vernacular architecture between the two regions. The artists who make up the magnificent collection put together by Patricia Phelps de Cisneros, a Venezuelan-American, show how European modernism gained a new home in South America in the 1930s and 1940s and made it its own. And the exhibition at the Los Angeles Municipal Art Gallery, "Learning from Latin America: Art, Architecture and Visions of Modernism", asks uncomfortable questions about the home-grown taste for brutalist architecture in Latin America and what happened when the promised modern future turned into dicta- ►

### Latin American art

## Waking up to a new world

LOS ANGELES

### The endless ripples of putting on America's biggest Latin American artfest

IT IS night and you are barefoot, stumbling across cold desert sand. A ragbag of humans almost crashes into you. They are so close you can see that the child who has lost a shoe is curling her little toes inward to avoid the thorns. A man drags her by the arm, doubling himself over to escape the helicopter searchlights scissoring the landscape. Too late. A snapping mastiff dives off the chopper. Two border guards lift their automatic weapons and take aim at you, yelling: "Geddown! GEDDOWN!"

"Carne y Arena" (Flesh and sand) is a virtual-reality (VR) installation by Alejandro Iñárritu, a Mexican artist and film director, at the Los Angeles County Museum of Art (LACMA). Each visitor dons the VR mask and earphones for six and a half minutes, but the sense of terror lingers for hours. Mr Iñárritu wants you to feel the trauma of the migrant who abandons home and braves danger, all in the hope of a better life across the border.

The show is part of "Pacific Standard Time: LA/LA" (PST: LA/LA), the biggest exploration of art from Latin America ever put on in the United States. It is no surprise that it is centred on Los Angeles, where it opened on September 14th. California was once part of Mexico. Los Angeles is the biggest Latin American city outside the region and it is permeated by the language, culture, food and music of the south. This is a city "that exists and thrives on diversity", says Ann Philbin of the Hammer Museum.

It is hard not to see PST: LA/LA as an antidote to the divisiveness of American political debate about immigration. More than 1,100 Latin American artists are taking part in shows in 70 cultural institutions throughout southern California. "We are tearing down walls," said Michael Govan, the director of LACMA, at the opening.

PST: LA/LA follows "PST: Art in LA, 1945–80", which took place five years ago. The Getty Foundation provided \$16m of seed money for the project. Those early

grants, often the hardest to secure, helped 50 institutions start developing shows that cover photography, film, dance, music, performance, architecture, sculpture and visual art from 45 countries, as well as the Japanese and Chinese diasporas of Peru and the Caribbean and the black commu-



Higgledy-piggledy home

► torship and economic stagnation.

But home is also where the heart is. And for many 20th-century Latin American women who were determined to be artists, choosing between home-making and making art was often a struggle. To see the dozens of artists who travelled to Los Angeles and whose work makes up "Radical Women: Latin American Art, 1960-85" was to see a group of women—most now in their 60s and 70s—who knew of each other but had rarely met, and had never expected to be exhibited together in America.

A highly academic show, as befits the Hammer's position as part of University of California, Los Angeles, "Radical Women" is no walk in the park. Common themes include silence, loneliness and the many sufferings of the female body, from childbirth to rape. For a more personal narrative, head instead for the retrospective of Anna Maria Maiolino, a Calabria-born Brazilian artist, at the Museum of Contemporary Art (MOCA LA). A collaborator of Lygia Clark, Lygia Pape and Hélio Oiticica, three of Brazil's best-known artists, she was long overshadowed by her more famous former husband, Rubens Gerchman. Undaunted, she carried on working, drawing, sculpting and making installations. Having raised her daughters, she took a new artistic turn working with clay. At 75, Ms Maiolino is now one of Brazil's most important artists.

The Maiolino retrospective is one of many exhibitions that will be shown elsewhere. The Getty's own landmark show, "Golden Kingdoms: Luxury and Legacy in the Ancient Americas", will open next year at the Metropolitan Museum of Art in New York. "Radical Women" will travel to the Brooklyn Museum and then to São Paulo, and LACMA's "Home: So Different, So Appealing" will open in 2018 at the Museum of Fine Arts in Houston. James Cuno, president of the J. Paul Getty Trust, points out that much of the research the Getty insisted on will form the basis of an array of courses on Latin American art throughout American universities, testimony to the ripple effect of PST: LA/LA.

But the most important long-term outcome may turn out to be a shift in perspective. A small show at the Craft & Folk Art Museum shows the Mexican-American border not as a wall but as a place of imagination and possibility, and the artists who inhabit it as makers of "cross-border art": artists like Raquel Bessudo, who makes polyester jewellery based on the route followed by the deadly immigrant train, *La Bestia*, or Ana Serrano with her village "Cartolandia" (pictured, previous page) and Ronald Rael, who playfully reimagines the border wall as a cycling track, a xylophone or a place to hang a seesaw. No longer the home only of snapping mastiffs and armed guards, Donald Trump's wall could become an inspiration to creativity, proof of a common humanity. ■



### American economic history

## A dance to the markets of time

**Americana: A 400-Year History of American Capitalism.** By Bhu Srinivasan. Penguin Press; 576 pages; \$30

BHU SRINIVASAN'S new book, "Americana", is a delightful tour through the businesses and industries that turned America into the biggest economy in the world. Not only is the book written in a light and informative style, it is cleverly constructed. Each chapter has a theme—tobacco, cotton, steam, oil, bootlegging, mobile telephones and so on—and these themes are organised to lead the reader through a chronological history of the American economy.

Along the way, there is plenty of surprising detail. Until the first world war, for example, the Busch family (who produced Budweiser beer) held a big annual celebration for the Kaiser's birthday. Bill Levitt, the builder who pioneered the post-1945 shift to suburban living, was one of many who refused to sell homes to African-Americans. To finance their new company, Apple Computer, Steve Jobs and Steve Wozniak respectively sold a VW minibus and a Hewlett-Packard calculator.

But Mr Srinivasan, himself an immigrant who became an entrepreneur, never lets the detail interfere with the bigger picture. As he notes, European settlement in America was originally driven by commercial imperative. In 1606 the British chartered the Virginia Company of London as a profit-seeking operation; an early version of "venture capital". The pilgrims on the *Mayflower* (pictured) were backed by English financiers.

Commerce played a decisive part in setting the course of American history. The first settlers struggled but eventually a lucrative business was found; growing and exporting tobacco in the southern states. But the early planters developed a taste for luxuries, placing them in debt to English creditors. That proved to be one source of resentment towards the colonial power; another irritation was British efforts to earn some revenue after the expense of the Seven Years' War (1756-63), which ended French attempts to control the continent. The result, inevitably perhaps, was the American war of independence.

The plantation economy developed in the southern states, and the initial political dominance of Virginia (which provided four of America's first five presidents) ensured the continued survival of slavery in the newly independent country. By 1860 auction prices suggested that the collective value of American slaves was \$4bn at a time when the federal government's annual budget was around \$69m. That explains both why southern slaveowners, many of whom had borrowed against their slaves as collateral, would never give up the practice, and why a financial settlement of the issue was out of the question.

The resulting civil war hastened the industrialisation of the northern states, which owed their victory, in part, to their greater economic strength. In the late 19th century American companies were able to exploit the economies of scale that came from trading over a continent-wide country. This allowed them to overtake their British and German rivals.

In time, the growth of these industrial giants, or trusts as they were known, led to another political spat, as a Republican president, Theodore Roosevelt, tried to challenge monopoly power. It was under the first Roosevelt that America pulled decisively away from a laissez-faire approach, setting up the Pure Food and Drug Act and the Federal Meat Inspection Act to protect consumers. A much bigger shift occurred under his relative, Franklin Roosevelt, who pursued aggressive policy intervention and established a welfare system in the course of the Great Depression.

As Mr Srinivasan observes, American capitalism has always had a strong input from the state: the tariffs that shielded industry in the 19th century; the military expenditure that helped develop radio, satellites and the internet; farm subsidies; the federal guarantees for bank deposits and home loans; and so on. "It was an endlessly calibrated balance between state subsidies, social programmes, government contracts, regulation, free will, entrepreneurship and free markets," he writes. In short, American economic history is more complex than some ideologues seek to portray it; this excellent book gives readers a fully rounded picture. ■

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**Economic data**

% change on year ago

	Gross domestic product latest	qtr*	2017†	Industrial production latest	Consumer prices latest	2017†	Unemployment rate, %	Current-account balance		Budget balance % of GDP 2017†	Interest rates, % 10-year gov't bonds, latest	Currency units, per \$ Sep 20th	year ago
								latest 12 months, \$bn	% of GDP 2017†				
United States	+2.2 02	+3.0	+2.1	+1.5 Aug	+1.9 Aug	+1.9	4.4 Aug	-460.9 Q2	-2.4	-3.4	2.24	-	-
China	+6.9 02	+7.0	+6.8	+6.0 Aug	+1.8 Aug	+1.8	4.0 Q2 <sup>§</sup>	+157.3 Q2	+1.5	-3.9	3.63 <sup>§§</sup>	6.57	6.67
Japan	+1.4 02	+2.5	+1.6	+4.7 Jul	+0.5 Jul	+0.5	2.8 Jul	+189.8 Jul	+3.6	-4.5	0.02	111	102
Britain	+1.7 02	+1.2	+1.5	+0.4 Jul	+2.9 Aug	+2.7	4.3 Jun <sup>††</sup>	-99.8 Q1	-3.4	-3.6	1.33	0.74	0.77
Canada	+3.7 02	+4.5	+2.6	+10.0 Jun	+1.2 Jul	+1.7	6.2 Aug	-45.0 Q2	-2.6	-2.1	2.11	1.23	1.32
Euro area	+2.3 02	+2.6	+2.0	+3.2 Jul	+1.5 Aug	+1.5	9.1 Jul	+370.8 Jul	+3.2	-1.3	0.45	0.83	0.90
Austria	+2.2 02	-1.0	+2.2	+4.5 Jun	+2.1 Aug	+1.9	5.4 Jul	+6.4 Q1	+2.1	-1.0	0.62	0.83	0.90
Belgium	+1.5 02	+1.7	+1.7	+4.0 Jun	+1.9 Aug	+2.1	7.6 Mar	-4.2 Mar	+0.7	-2.1	0.74	0.83	0.90
France	+1.7 02	+1.9	+1.6	+3.7 Jul	+0.9 Aug	+1.2	9.8 Jul	-27.9 Jul	-1.2	-3.1	0.73	0.83	0.90
Germany	+2.1 02	+2.5	+2.1	+4.0 Jul	+1.8 Aug	+1.6	3.7 Jul <sup>†</sup>	+274.1 Jul	+8.0	+0.7	0.45	0.83	0.90
Greece	+0.7 02	+2.2	+1.0	+1.7 Jul	+0.9 Aug	+1.3	21.2 Jun	-0.7 Jul	-1.3	-1.4	5.51	0.83	0.90
Italy	+1.5 02	+1.5	+1.3	+4.4 Jul	+1.2 Aug	+1.3	11.3 Jul	+51.0 Jul	+2.4	-2.3	2.12	0.83	0.90
Netherlands	+3.3 02	+6.2	+2.6	+3.0 Jul	+1.4 Aug	+1.2	5.9 Aug	+68.4 Q1	+9.9	+0.6	0.57	0.83	0.90
Spain	+3.1 02	+3.5	+3.1	+2.0 Jul	+1.6 Aug	+1.9	17.1 Jul	+21.2 Jun	+1.5	-3.3	1.56	0.83	0.90
Czech Republic	+3.4 02	+10.3	+4.5	+3.2 Jul	+2.5 Aug	+2.4	2.9 Jul <sup>†</sup>	+1.7 Q2	+0.9	-0.1	1.07	21.8	24.2
Denmark	+1.9 02	+2.5	+2.0	-2.4 Jul	+1.5 Aug	+0.9	4.5 Jul	+26.0 Jul	+8.2	-0.6	0.53	6.20	6.67
Norway	+0.2 02	+4.7	+1.9	-1.6 Jul	+1.3 Aug	+2.0	4.3 Jun <sup>††</sup>	+16.6 Q2	+5.4	+4.2	1.60	7.80	8.29
Poland	+4.6 02	+4.5	+3.7	+8.7 Aug	+1.8 Aug	+1.8	7.1 Aug <sup>§</sup>	-3.0 Jul	-0.4	-2.2	3.32	3.56	3.85
Russia	+2.5 02	na	+1.7	+1.5 Aug	+3.3 Aug	+4.2	4.9 Aug <sup>§</sup>	+33.6 Q2	+2.7	-2.1	8.13	57.9	64.7
Sweden	+3.0 02	+5.2	+3.1	+5.3 Jul	+2.1 Aug	+1.7	6.0 Aug <sup>§</sup>	+22.5 Q2	+4.5	+0.9	0.64	7.95	8.58
Switzerland	+0.3 02	+1.1	+1.3	+2.9 Q2	+0.5 Aug	+0.5	3.2 Aug	+73.6 Q1	+9.6	+0.7	-0.01	0.96	0.98
Turkey	+5.1 02	na	+4.0	+25.6 Jul	+10.7 Aug	+10.3	10.2 Jun <sup>§</sup>	-37.1 Jul	-4.4	-2.0	10.84	3.47	2.97
Australia	+1.8 02	+3.3	+2.3	+0.8 Q2	+1.9 Q2	+2.1	5.6 Aug	-21.8 Q2	-1.4	-1.8	2.83	1.24	1.32
Hong Kong	+3.8 02	+4.1	+3.1	+0.4 Q2	+1.9 Jul	+1.6	3.1 Aug <sup>††</sup>	+14.9 Q1	+4.1	+1.0	1.62	7.80	7.76
India	+5.7 02	+4.1	+7.0	+1.2 Jul	+3.4 Aug	+3.6	5.0 2015	-29.2 Q2	-1.2	-3.2	6.58	64.3	67.0
Indonesia	+5.0 02	na	+5.2	+1.4 Jul	+3.8 Aug	+4.2	5.3 Q3 <sup>§</sup>	-14.2 Q2	-1.7	-2.4	6.64	13,284	13,153
Malaysia	+5.8 02	na	+5.4	+6.0 Jul	+3.7 Aug	+3.9	3.5 Jul <sup>§</sup>	+8.1 Q2	+2.3	-3.0	3.89	4.19	4.14
Pakistan	+5.7 2017**	na	+5.7	+3.5 Jun	+3.4 Aug	+3.9	5.9 2015	-12.1 Q2	-4.5	-5.9	8.25 <sup>†††</sup>	105	105
Philippines	+6.5 02	+7.0	+6.5	-1.1 Jul	+3.1 Aug	+3.0	5.6 Q3 <sup>§</sup>	-0.8 Jun	+0.3	-2.8	4.64	51.0	47.9
Singapore	+2.9 02	+2.2	+2.9	+21.0 Jul	+0.6 Jul	+0.9	2.2 Q2	+59.0 Q2	+18.4	-1.0	2.07	1.34	1.36
South Korea	+2.7 02	+2.4	+2.9	+0.1 Jul	+2.6 Aug	+1.9	3.6 Aug <sup>§</sup>	+82.1 Jul	+5.6	+0.9	2.28	1,128	1,121
Taiwan	+2.1 02	+0.5	+2.3	+2.4 Jul	+1.0 Aug	+0.5	3.8 Jul	+70.7 Q2	+12.7	+0.2	1.03	30.1	31.4
Thailand	+3.7 02	+5.4	+3.5	+3.7 Jul	+0.3 Aug	+0.7	1.2 Jul <sup>§</sup>	+44.9 Q2	+11.4	-2.5	2.15	33.1	34.8
Argentina	+0.3 Q1	+4.3	+2.6	-2.5 Oct	+23.1 Aug <sup>†</sup>	+24.6	8.7 Q2 <sup>§</sup>	-16.8 Q1	-3.3	-6.1	5.96	17.1	15.2
Brazil	+0.3 02	+1.0	+0.6	+2.5 Jul	+2.5 Aug	+3.7	12.8 Jul <sup>§</sup>	-13.8 Jul	-0.8	-8.1	8.67	3.13	3.25
Chile	+0.9 02	+3.0	+1.2	+3.3 Jul	+1.9 Aug	+2.4	6.9 Jul <sup>§††</sup>	-5.6 Q2	-1.9	-3.0	4.33	621	672
Colombia	+1.3 02	+3.0	+1.7	+6.2 Jul	+3.9 Aug	+4.0	9.7 Jul <sup>§</sup>	-12.4 Q2	-3.7	-3.3	6.52	2,896	2,906
Mexico	+1.8 02	+2.3	+2.1	-1.6 Jul	+6.7 Aug	+5.8	3.2 Jul	-17.6 Q2	-1.9	-1.9	6.83	17.7	19.7
Venezuela	-8.8 04~	-6.2	-9.3	+0.8 Sep	na	+720	7.3 Apr <sup>§</sup>	-17.8 Q3~	-1.2	-19.5	10.08	10.2	9.99
Egypt	+4.9 02	na	+3.8	+33.0 Jun	+31.9 Aug	+26.9	12.0 Q2 <sup>§</sup>	-15.6 Q2	-6.0	-10.8	na	17.6	8.88
Israel	+3.9 02	+2.4	+3.5	+2.6 Jul	-0.1 Aug	+0.4	4.1 Aug	+10.7 Q2	+4.1	-2.6	1.72	3.50	3.78
Saudi Arabia	+1.7 2016	na	-0.5	na	-0.1 Aug	+1.1	5.6 2016	-1.0 Q1	+0.5	-8.2	3.68	3.75	3.75
South Africa	+1.1 02	+2.5	+0.6	-0.5 Jul	+4.8 Aug	+5.3	27.7 Q2 <sup>§</sup>	-7.9 Q2	-3.2	-3.2	8.41	13.3	13.9

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**

	% change on			
	Index Sep 20th	one week	Dec 30th 2016 in local currency terms	in \$
United States (DJIA)	22,412.6	+1.1	+13.4	+13.4
China (SSEA)	3,524.7	-0.5	+8.5	+14.7
Japan (Nikkei 225)	20,310.5	+2.2	+6.3	+11.2
Britain (FTSE 100)	7,272.0	-1.5	+1.8	+11.8
Canada (S&P TSX)	15,389.6	+1.7	+0.7	+10.2
Euro area (FTSE Euro 100)	1,207.2	nil	+8.6	+23.5
Euro area (EURO STOXX 50)	3,525.5	+0.1	+7.1	+21.9
Austria (ATX)	3,289.1	+0.3	+25.6	+42.9
Belgium (Bel 20)	3,965.5	-0.6	+10.0	+25.1
France (CAC 40)	5,241.7	+0.5	+7.8	+22.6
Germany (DAX)*	12,569.2	+0.1	+9.5	+24.5
Greece (Athex Comp)	758.0	-6.4	+17.8	+33.9
Italy (FTSE MIB)	22,355.6	+0.5	+16.2	+32.2
Netherlands (AEX)	528.7	nil	+9.4	+24.4
Spain (Madrid SE)	1,037.3	-0.7	+9.9	+25.0
Czech Republic (PX)	1,047.3	+0.3	+13.6	+33.8
Denmark (OMXCB)	922.0	-0.5	+15.5	+31.2
Hungary (BUX)	38,108.0	nil	+19.1	+35.5
Norway (OSEAX)	842.1	+0.6	+10.1	+21.5
Poland (WIG)	64,749.5	nil	+25.1	+46.7
Russia (RTS, \$ terms)	1,122.4	+0.4	-2.6	-2.6
Sweden (OMX30)	1,585.4	+0.3	+4.5	+19.4
Switzerland (SMI)	9,095.7	+0.5	+10.7	+16.9
Turkey (BIST)	105,323.6	-2.6	+34.8	+36.6
Australia (All Ord.)	5,769.7	-0.6	+0.9	+12.0
Hong Kong (Hang Seng)	28,127.8	+0.8	+27.9	+27.1
India (BSE)	32,400.5	+0.7	+21.7	+28.5
Indonesia (JSX)	5,906.6	+1.0	+11.5	+13.1
Malaysia (KLCSE)	1,773.6	-0.7	+8.0	+15.7
Pakistan (KSE)	43,347.0	+2.5	-9.3	-10.2
Singapore (STI)	3,218.1	-0.4	+11.7	+20.1
South Korea (KOSPI)	2,412.2	+2.2	+19.0	+27.4
Taiwan (TWI)	10,519.2	-0.1	+13.7	+21.8
Thailand (SET)	1,670.7	+1.7	+8.3	+17.2
Argentina (MERV)	24,358.0	+2.2	+44.0	+32.9
Brazil (BVSP)	76,004.1	+1.6	+26.2	+31.3
Chile (IGPA)	26,147.3	+1.3	+26.1	+36.0
Colombia (IGBC)	11,078.9	-0.9	+9.6	+13.7
Mexico (IPC)	50,364.0	+0.4	+10.3	+28.4
Venezuela (IBC)	425,758.3	+21.0	1,243	na
Egypt (EGX 30)	13,695.3	+1.9	+10.9	+14.0
Israel (TA-125)	1,295.3	+0.8	+1.4	+11.6
Saudi Arabia (Tadawul)	7,319.8	-0.8	+1.1	+1.2
South Africa (JSE AS)	55,867.5	-0.5	+10.3	+13.7

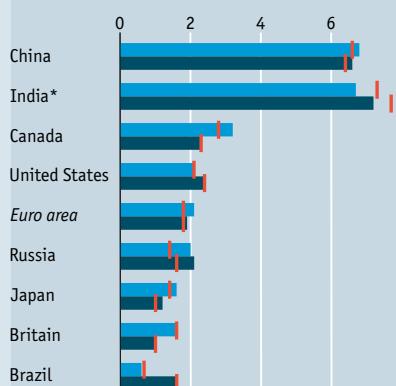
**GDP forecasts**

Global GDP is projected to grow by 3.7% in 2018, slightly more than in 2017, according to the OECD, a club of mostly rich countries. Since their previous forecasts in June the OECD's economists have raised expected growth rates for both years for most countries. In the euro area, forecasts for 2017 have increased by 0.3 percentage points. Economic expansion exceeded expectations in the first half of this year; consumption and exports have been robust, and growth is more evenly spread across the zone's member countries. In India, the effects of demonetisation and the new goods-and-services tax have caused this year's growth forecast to be trimmed by 0.6 points, to 6.7%. The forecast for 2018 has also been cut.

% increase on a year earlier

September 2017 forecasts

2017 2018 June 2017 forecasts



Source: OECD

\*Fiscal years starting in April

**Other markets**

	% change on			
	Index Sep 20th	one week	Dec 30th 2016 in local currency terms	in \$
United States (S&P 500)	2,508.2	+0.4	+12.0	+12.0
United States (NAScomp)	6,456.0	-0.1	+19.9	+19.9
China (SSEB, \$ terms)	359.1	-0.1	+5.1	+5.1
Japan (Topix)	1,667.9	+1.9	+9.8	+15.0
Europe (FTSEurofirst 300)	1,499.7	nil	+5.0	+19.4
World, dev'd (MSCI)	1,996.1	+0.5	+14.0	+14.0
Emerging markets (MSCI)	1,109.6	+0.9	+28.7	+28.7
World, all (MSCI)	487.4	+0.5	+15.5	+15.5
World bonds (Citigroup)	949.8	-0.1	+7.4	+7.4
EMBI+ (JP Morgan)	841.3	-0.3	+9.0	+9.0
Hedge funds (HFRX)	1,254.3 <sup>§</sup>	+0.2	+4.2	+4.2
Volatility, US (VIX)	10.2	+10.5	+14.0 (levels)	
CDSs, Eur (iTRAXX) <sup>†</sup>	56.9	+10.7	-21.1	-10.3
CDSs, N Am (CDX) <sup>†</sup>	55.2	-1.7	-18.6	-18.6
Carbon trading (EU ETS) €	6.9	-2.8	+4.9	+19.3

Sources: IHS Markit; Thomson Reuters. \*Total return index.

†Credit-default-swap spreads, basis points. <sup>§</sup>Sep 18th.**Indicators** for more countries and additional series, go to: [Economist.com/indicators](http://Economist.com/indicators)**The Economist commodity-price index**

2005=100

	% change on		
	Sep 12th	Sep 19th*	one month one year
<b>Dollar Index</b>			
All Items	145.8	146.3	+1.5 +6.4
Food	147.9	150.5	+3.0 -5.0
<b>Industrials</b>			
All	143.6	141.8	-0.1 +22.5
Nfa <sup>†</sup>	137.5	132.0	+1.3 +4.2
Metals	146.2	146.1	-0.7 +31.5
<b>Sterling Index</b>			
All items	199.9	196.8	-3.7 +1.9
<b>Euro Index</b>			
All items	151.7	151.8	-0.3 -0.8
<b>Gold</b>			
\$ per oz	1,326.6	1,308.6	+1.7 -0.5
<b>West Texas Intermediate</b>			
\$ per barrel	48.2	49.5	+3.9 +13.9

Sources: Bloomberg; CME Group; Cottlook; Darmenn &amp; Curl; FT; ICCO; ICO; ISO; Live Rice Index; LME; NZ Wool Services; Thompson Lloyd &amp; Ewart; Thomson Reuters; Urner Barry; WSJ. \*Provisional

<sup>†</sup>Non-food agriculturals.

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## Fighting for the stage

**Sir Peter Hall, founder-director of the Royal Shakespeare Company and director of the National Theatre, died on September 11th, aged 86**

WHEN he was preparing a Shakespeare play—always with love and awe, though it might be for the 20th time—Peter Hall would mutter it to himself in Elizabethan. It sounded like a cross between Devon and Belfast, but it revealed the colours and made the words wittier. American, he thought, might be just the accent for it. But in his decades as the dominant figure in British theatre, his most famous American hire was a disaster: the venerable Charles Laughton, as Lear, stressing every word that was capitalised in the First Folio, to ludicrous effect.

Authenticity in Shakespeare was not one of his causes. Too much had changed, and would change. In 200 years the plays would probably need translating. And theatre itself was so ephemeral, like any living thing. A group of people combined for a spell to put on performances that were never the same twice, a bubble that had to burst as soon as they left the stage.

The job of a director was therefore highly risky. Though he always knew what he wanted to do—as firmly as he knew, after seeing “Love’s Labours Lost” at 16, that he had to be the man who made the magic on that stage—he was still scared to death that he might not pull it off. Those who saw the blood-soaked violence of “The Wars of the Roses” in 1963, his daring masked “Ores-

teia” of 1981, or the bravery of his English-language premiere of “Waiting for Godot” in 1955, at 25, imagined him brimming with confidence, even arrogance. Yet behind the loud affability, the flights on Concorde, the Jaguars and Rolls Royces and the glamorous wives, was a stationmaster’s son from Suffolk. Despite precocious success from Cambridge onwards, he never felt comfortable at the pinnacle of British theatre—especially not at the National, a dizzying public role where, like Nelson on his column, pigeons got him from every side.

In this maelstrom, he clung to his core beliefs. If fashion failed to follow him, he didn’t care. Shakespeare’s iambic pentameters were sacred, precise as a page of music, never to be broken mid-line, even at a full stop. The rhythm of action and inaction in Samuel Beckett’s plays, and the pauses and silences in Harold Pinter’s (12 of whose works he premiered, from “The Homecoming” onwards) had to be rigorously observed. His reverence for text induced Tennessee Williams, among others, to send him their plays unasked.

Next, he needed settled players. Rather than assembling a cast from scratch for each production, he insisted when he founded the Royal Shakespeare Company in 1960 that the 30-40 actors should be on three-year contracts. They would work to-

gether over the long term like a tribe, learning from each other as much as from him. (Autocracy was not his style. His style was “Let’s find out.”) He tried to do the same at the National when he took over in 1973; times were more troubled then. But when everyone in a company was inspired together, he felt ecstatic. The RSC in the mid-1960s—personified by David Warner’s ganging dreamy-student Hamlet, and underpinned by subsidy—was “hot” in a way British theatre has never been since.

### Politics v art

Such a company needed a permanent home. A decent building conferred identity and drew in money. Without them, the British public seemed not to notice theatre. To the RSC’s natural home in Stratford he added London bases at the Aldwych and, later, the Barbican, and also oversaw the National’s move from the cramped Old Vic to a sprawling new concrete venue on the South Bank. His switch from the RSC to the National was rocky; he was seen as a traitor by one, as an interloper by the other. And he was now plunged deep into political rows over whether the National’s repertoire was too left-wing or too elitist, over censorship and, continually, over public funding. He found himself hotly defending not only the cost of the new buildings, but also theatre itself—and whether, in a recession, it should be subsidised at all.

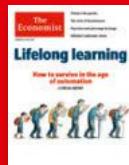
No question, he shot back. Theatre was society’s sharpest way to observe itself and provoke authority. It was awkward. It was dangerous. So it was often not commercial, and needed help. Sometimes, too, its sheer beauty made it necessary to a civilised society. This was the spirit in which, from 1984 to 1990, he was artistic director of Glyndebourne Festival Opera—pumping too much adrenalin, as usual, in an even more elitist enterprise than spoken theatre. He homed in on Mozart, whom he had loved a little earlier than Shakespeare, banging out his sonatas on the piano at the age of nine. Though he had great success with other composers (a ravishing production of Britten’s “A Midsummer Night’s Dream”, a startlingly sexy rendition of Strauss’s “Salomé”), he was there for “Così” and “Figaro”, as many times as anyone wanted. He stayed close for 35 years.

Recounting his life, he tended to mention Mozart and Shakespeare in the same breath. For many privileged years, he lived inside their heads. The frustrations of Whitehall and Westminster, the backstage bitching, onslaughts by the critics, his miserable divorces, all occurred against that background of genius: a sublime regularity of form in words or music which, even when crisscrossed by anguished irregularities, still held each work in shape. His job, on every possible stage, with every ounce of energy, was to make it heard. ■

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