

# The Economist

MARCH 18TH-24TH 2017

Is the pope Catholic?

Why Modi's win matters

The remaking of Microsoft

A message from outer space

# On the up

The world economy's  
surprising rise



Three people in a field: a man in a plaid shirt, a woman in a pink shirt, and a man in a lab coat, looking at a tablet together.

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Volume 422 Number 9032

Published since September 1843  
to take part in "a severe contest between intelligence, which presses forward, and an unworthy, timid ignorance obstructing our progress."

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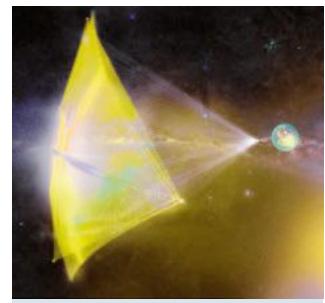
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## Politics



A general election in the **Netherlands** saw Mark Rutte returned to office as prime minister. His centre-right party handily defeated an insurgent campaign from the anti-immigration party led by Geert Wilders. Mr Rutte said the Dutch had rejected the “bad sort of populism”. A few days before the election the Dutch government barred **Turkey’s** foreign minister from speaking at a rally of Turkish expats in Rotterdam that was being held in support of the Turkish president, Recep Tayyip Erdogan. In the ensuing diplomatic row, Mr Erdogan accused the Dutch of acting like “Nazi remnants”.

The European Court of Justice ruled, in two cases in France and Belgium where Muslim women had been fired for wearing **headscarves** by their employers, that in certain circumstances it is permissible to limit visible religious symbols and dress at work.

### A gruesome find

Investigators found more than 250 skulls of people murdered by drug gangs in the **Mexican** state of Veracruz. The burial ground is still being excavated. The state’s prosecutor expects more mass graves to be found.

**Brazil’s** chief prosecutor asked courts to open 83 investigations into possible wrongdoing by current and former politicians. Their names were disclosed in plea-bargain testimony by former executives of Odebrecht, a firm at the centre of a scheme to siphon money from Petrobras, the state-controlled oil company, to parties and politicians.

News reports say the list includes at least five ministers in the federal government.

**Colombia’s** production of coca, the raw material for cocaine, has reached record levels, according to a report by the White House. The increase is in part a consequence of a peace agreement between Colombia’s government and the FARC guerrilla group. Farmers who grow the crop are to receive incentives to stop.

### Pirates ahoy!

Hijackers seized an oil tanker off the coast of **Somalia**. An earlier spate of snatching ships ended in 2012 after the world’s big naval powers deployed regular patrols to the waters around the Horn of Africa.



Muhammadu Buhari, **Nigeria’s** president, returned home after receiving medical treatment in London for two months. His absence had contributed to the growing sense of unease in the country.

Scores of people were killed in **Ethiopia** when a mountain of garbage in the capital, Addis Ababa, collapsed and crushed makeshift homes.

Doctors in **Kenya** ended a three-month strike over pay that had paralysed the public-health system.

**Iraqi** troops fighting Islamic State in Mosul seized a bridge in the centre of the city, and were close to the mosque at which the jihadists’ leader, Abu Bakr al-Baghdadi, declared his “caliphate” in 2014.

In an unusual intervention **Morocco’s** king said he would choose a new prime minister to form a government, follow-

ing five-months of deadlock since an election that was won by the Islamist Party for Justice and Development (PJD) but with no majority of seats.

### If at first you don’t succeed

A federal judge in Hawaii overturned the Trump administration’s revised **travel ban** on citizens from six mainly Muslim countries. The sticking point again was that any “reasonable” person would interpret the ban as being based on religion. The government may turn afresh to the appeals court to get its ban reinstated.

The Congressional Budget Office provided its assessment of a Republican bill to replace Obamacare, which it said would increase the number of those without **health insurance** by 24m and reduce the deficit by \$337bn. House Republicans say their plan will reduce costs and premiums for the vast majority of people.

### Park and regulations

**South Korea’s** constitutional court confirmed the National Assembly’s impeachment motion, removing Park Geun-hye from the presidency. An election for a new president will be held on May 9th.

Prosecutors in **Taiwan** indicted Ma Ying-jeou, the country’s president until last year, in connection with the illegal disclosure of wiretapped conversations during his time in office. He denies the charges.

**China’s** rubber-stamp parliament, the National People’s Congress, adopted a set of principles that will govern the drafting of the country’s first civil code—a supreme law governing legal disputes other than those involving crimes. Officials hope it will remove numerous inconsistencies and ambiguities in Chinese law.

At the congress, China’s prime minister, Li Keqiang said American companies would “bear the brunt” in any **trade war** between his country and the United States. But he also said the relationship was “crucial” for global peace, and con-

firmed that the two countries were discussing a possible meeting between presidents Xi Jinping and Donald Trump.



The Bharatiya Janata Party of prime minister Narendra Modi routed the opposition in an election in the most populous state in **India**, Uttar Pradesh, winning 312 of the state assembly’s 403 seats.

### Time Lords

In **Britain**, Theresa May’s government succeeded in passing legislation to trigger the formal process to start talks on leaving the EU. Two amendments added by the House of Lords, where record numbers of members turned out to vote, threatened Mrs May’s timetable. Despite the best efforts of the Lords’ galvanised grey brigade, the amendments were vetoed by the Commons.

Just as Mrs May overcame the final obstacle to the Brexit bill, Nicola Sturgeon, Scotland’s first minister demanded a second referendum on independence for **Scotland**, to take place in either late 2018 or early 2019. Scotland has voted to remain in the EU. Allowing the Scots a second say on breaking away from Britain would complicate Mrs May’s Brexit priorities.

The British government made an embarrassing U-turn on a proposal to increase **national insurance** contributions (a form of tax) for self-employed people, just days after the measure was announced. The ensuing furore rekindled memories of the Tories’ “omni-shambles” budget of 2012, when the government had to eat its words and reverse a tax on hot takeaway food, a controversy known as *pastygate*. ➤

## Business

Following heavy hints that it would do so, the Federal Reserve lifted the range for its benchmark **interest rate** by a quarter of a percentage point to between 0.75% and 1%, and said there would be more rises to come this year. Solid jobs data sealed the decision for Fed officials. Employers created 235,000 jobs last month; wages were up by 2.8%.

### Super Mario

The **European Central Bank** tinkered with the guidance it issues at its policy meeting, which markets interpreted as a signal that it was pondering a pull-back on quantitative easing. Mario Draghi, the ECB's president, said the bank no longer had a "sense of urgency" to take more action on stimulus because the battle against deflation had been won. But any increase in interest rates is not likely to happen until next year.

After just two weeks in the job, Charlotte Hogg resigned as a deputy governor of the **Bank of England** for not revealing that her brother is a senior executive at Barclays, a potential conflict of interest. An initial offer to step down by Ms Hogg was rejected by the governor, Mark Carney, but a damning report on the matter by a committee in Parliament made her position untenable.

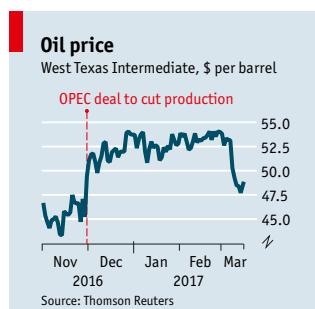
Four men were charged in America with hacking 500m **Yahoo** accounts in 2014, one of the biggest breaches of internet security to date. Two of the men are agents of Russia's intelligence service. They are accused of conspiring with the other two men, one of whom is on the list of the FBI's most-wanted cyber-criminals.

Donald Trump nominated Chris Giancarlo as chairman of the **Commodity Futures Trading Commission**. The CFTC regulates the \$700trn derivatives market. Mr Giancarlo supports the broad thrust of the Dodd-Frank reforms, though he has been critical of

certain aspects of the law and has opposed tighter regulations for high-frequency trading firms.

### Hancock's last hour

**American International Group** started the search for a new chief executive—its seventh since 2005—following the resignation of Peter Hancock in the wake of a bigger-than-expected quarterly loss.



**Oil prices** fell by 10% over a week, dropping to where they were before OPEC agreed to curtail production (in order to boost prices) late last year. A build-up of American crude supplies fed concerns that the oil glut will not ease soon.

Anil Agarwal, an Indian mining tycoon, revealed plans to buy shares worth \$2.4bn in **Anglo American**, making him its second-biggest shareholder. Last year Mr Agarwal tried and

failed to engineer a merger of his mining group with Anglo. He insists his latest move is just a family investment.

Last year's rally in commodity prices helped to push **Antofagasta**'s annual headline profit up by 79%, to \$1.6bn. The Chilean copper-mining group reckons that a rebound in demand from China and tighter supply because of the scarcity of new supplies will keep copper prices buoyant.

The scandal in South Korea that has led to the removal of the country's president and charges being laid against the de facto head of Samsung spread to **SK Group**, as prosecutors questioned three people with links to the chaebol.

### The Musk challenge

Elon Musk offered to solve an energy crisis in **South Australia** that has led to blackouts. Prior to talks with the government, the founder of Tesla and SpaceX said he could install a battery-storage system that connects to the grid within 100 days, and would not charge for the project if he failed to meet his deadline.

**EON**, a German utility, registered an annual net loss of €16bn (\$18bn) because of costs

associated with spinning off its fossil-fuel assets and funding the storage of nuclear waste. EON noted that the loss meant it was "freed from past burdens", leaving it to focus on its business in networks, consumer retail and renewables.

With its core chipmaking business slowing down, **Intel** accelerated its drive into the market for autonomous cars by agreeing to pay \$15.3bn for **Mobileye**, an Israeli company. Mobileye's systems enable autonomous cars to recognise pedestrians, traffic and road signs, though last year it had a very public falling out with Tesla after one of the electric-carmaker's vehicles was involved in a fatal crash.

**Iceland** withdrew the last of the capital controls it imposed when its banking industry imploded during the financial crash in 2008. The krona recorded its biggest one-day decline in eight years after the lifting of capital controls was announced. A surge in tourism has bolstered GDP, which grew by 11.3% in the fourth quarter of 2016, prompting some to fret that Iceland's economy is now overheating.

**Other economic data and news can be found on pages 88-89**





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# On the rise

A synchronised global upturn is under way. Thank stimulus, not the populists



**E**CLES have a habit of being out of sync. Just ask George Bush senior, who lost the presidential election in 1992 because voters blamed him for the recent recession. Or Chancellor Gerhard Schröder, booted out by German voters in 2005 after imposing painful reforms, only to see Angela Merkel reap the rewards.

Today, almost ten years after the most severe financial crisis since the Depression, a broad-based economic upswing is at last under way (see pages 18-20). In America, Europe, Asia and the emerging markets, for the first time since a brief rebound in 2010, all the burners are firing at once.

But the political mood is sour. A populist rebellion, nurtured by years of sluggish growth, is still spreading. Globalisation is out of favour. An economic nationalist sits in the White House. This week all eyes were on Dutch elections featuring Geert Wilders, a Dutch Islamophobic ideologue (see our leader overleaf), just one of many European malcontents.

This dissonance is dangerous. If populist politicians win credit for a more buoyant economy, their policies will gain credence, with potentially devastating effects. As a long-awaited upswing lifts spirits and spreads confidence, the big question is: what lies behind it?

## All together now

The past decade has been marked by false dawns, in which optimism at the start of a year has been undone—whether by the euro crisis, wobbles in emerging markets, the collapse of the oil price or fears of a meltdown in China. America's economy has kept growing, but always into a headwind (see page 69). A year ago, the Federal Reserve had expected to raise interest rates four times in 2016. Global frailties put paid to that.

Now things are different. This week the Fed raised rates for the second time in three months—thanks partly to the vigour of the American economy, but also because of growth everywhere else. Fears about Chinese overcapacity, and of a yuan devaluation, have receded. In February factory-gate inflation was close to a nine-year high. In Japan in the fourth quarter capital expenditure grew at its fastest rate in three years. The euro area has been gathering speed since 2015. The European Commission's economic-sentiment index is at its highest since 2011; euro-zone unemployment is at its lowest since 2009.

The bellwethers of global activity look sprightly, too. In February South Korea, a proxy for world trade, notched up export growth above 20%. Taiwanese manufacturers have posted 12 consecutive months of expansion. Even in places inured to recession the worst is over. The Brazilian economy has been shrinking for eight quarters but, with inflation expectations tamed, interest rates are now falling. Brazil and Russia are likely to add to global GDP this year, not subtract from it. The Institute of International Finance reckons that in January the developing world hit its fastest monthly rate of growth since 2011.

This is not to say the world economy is back to normal. Oil

prices fell by 10% in the week to March 15th on renewed fears of oversupply; a sustained fall would hurt the economies of producers more than it would benefit consumers. China's build-up of debt is of enduring concern. Productivity growth in the rich world remains weak. Outside America, wages are still growing slowly. And in America, surging business confidence has yet to translate into surging investment.

Entrenching the recovery calls for a delicate balancing-act. As inflation expectations rise, central banks will have to weigh the pressure to tighten policy against the risk that, if they go too fast, bond markets and borrowers will suffer. Europe is especially vulnerable, because the European Central Bank is reaching the legal limits of the bond-buying programme it has used to keep money cheap in weak economies.

The biggest risk, though, is the lessons politicians draw. Donald Trump is singing his own praises after good job and confidence numbers. It is true that the stockmarket and business sentiment have been fired up by promises of deregulation and a fiscal boost. But Mr Trump's claims to have magically jump-started job creation are sheer braggadocio. The American economy has added jobs for 77 months in a row.

## No Keynes, no gains

Most important, the upswing has nothing to do with Mr Trump's "America First" economic nationalism. If anything, the global upswing vindicates the experts that today's populists often decry. Economists have long argued that recoveries from financial crashes take a long time: research into 100 banking crises by Carmen Reinhart and Kenneth Rogoff of Harvard University suggests that, on average, incomes get back to pre-crisis levels only after eight long years. Most economists also argue that the best way to recover after a debt crisis is to clean up balance-sheets quickly, keep monetary policy loose and apply fiscal stimulus wherever prudently possible.

Today's recovery validates that prescription. The Fed pinned interest rates to the floor until full employment was in sight. The ECB's bond-buying programme has kept borrowing costs in crisis-prone countries tolerable, though Europe's misplaced emphasis on austerity, recently relaxed, made the job harder. In Japan rises in VAT have scuppered previous recoveries; this time the government wisely deferred an increase until at least 2019.

The tussle over who created the recovery is about more than bragging rights. An endorsement for populist economics would favour insurgent parties in countries like France, where the far-right Marine Le Pen is standing for president. It would also favour the wrong policies. Mr Trump's proposed tax cuts would pump up the economy that now least needs support—and complicate the Fed's task. Fortified by misplaced belief in their own world view, the administration's protectionists might urge Mr Trump to rip up the infrastructure of globalisation (bypassing the World Trade Organisation in pursuing grievances against China, say), risking a trade war. A fiscal splurge at home and a stronger dollar would widen America's trade deficit, which may strengthen their hand. Populists deserve no credit for the upsurge. But they could yet snuff it out. ■

Narendra Modi in the ascendant

## Uttar hegemony

The prime minister dominates Indian politics. He should put his authority to better use



**T**HREE years ago Narendra Modi led his Bharatiya Janata Party (BJP) to the most resounding victory in a national election in India since the 1980s. This week, in India's most populous state, Uttar Pradesh, the BJP capped that by chalking up the biggest majority in the state assembly since 1977 (see page 23). The result leaves Mr Modi and his party utterly dominant—and almost certain to win the national elections in 2019. It is also a test. Mr Modi could use his growing power to reignite India's culture wars, as some of his supporters wish. Instead, he ought to use it to unshackle India's economy.

### Lucknow and for a long time to come

Until the 1970s India was virtually a one-party state, with Congress, the party of independence, ruling over politics—including in Uttar Pradesh. Today the country seems to be heading that way again, but this time with the BJP in the ascendant. Congress came out on top this week in elections in Punjab, a middling state. In places such as West Bengal and Tamil Nadu, local parties rule the roost. And the BJP's adversaries can still win by teaming up. But in a country of unfathomable diversity, the BJP is as close to pre-eminence as any party is likely to get.

In Uttar Pradesh the BJP's victory was all the more remarkable for the turmoil Mr Modi unleashed late last year by voiding most of India's banknotes. "Demonetisation" was meant to hurt crooks and bring the "black" economy onto the books. Instead it caused chaos for ordinary Indians. Yet somehow, the BJP turned the straw of demonetisation into electoral gold.

The charisma and drive of Mr Modi is part of the explanation. The son of a chai-wallah, he embodies the aspirations of India's strivers. But the energy and organisation of his party

count, too. The BJP's appetite for power is matched only by the opposition's deficiencies. In this week's elections Congress won most seats in Goa and Manipur, two tiny states. But the BJP, quicker to woo allies, won the right to form governments.

In some ways this dominance is alarming. Although Mr Modi himself is careful about what he says, his party harbours many chauvinistic Hindus, who view India's 180m-odd Muslims with suspicion and disdain. It did not field a single Muslim candidate in Uttar Pradesh, where 19% of the population is Muslim. It also took advantage of the elections to pass legislation that had been blocked by the upper house of the national parliament on the ground that it was unfair to Muslims (see page 24). Mr Modi has done nothing to stifle a growing culture of intolerance in India, not just towards Muslims, but towards all critics of the prickly nationalism that the BJP espouses.

Yet he has also pressed ahead with economic reforms. He has won parliamentary approval for a nationwide sales tax to replace a confusing array of local ones. The government is improving the administration of India's bewildering bunch of welfare schemes for the poor. And demonetisation, for all its failings, at least shows that Mr Modi is willing to take bold steps in his eagerness to overhaul the Indian economy.

He should put that eagerness, and his thumping electoral mandate, to better use. The complexity of buying and selling land strangles development. State-owned firms, including huge, badly run banks, should be in private hands. The economy, which is growing by about 7% a year, will one day hit the buffers unless India's education system is overhauled.

The BJP's defenders argue that none of this is feasible, because the upper house of the national parliament is in opposition hands. That is a feeble excuse and, in any case, will change as state assemblies, which elect the upper house, fall to the BJP. Mr Modi has an extraordinary opportunity to act boldly for the good of all India. He should grasp it. ■

### Dutch elections

## Domino theory

Geert Wilders's poor showing does not necessarily mean Marine Le Pen will lose



**I**N THE run-up to its election on March 15th the international media descended on the Netherlands, speculating that the country might become the third "domino" to fall to nationalist populism, following the vote for Brexit and the election of Donald Trump in America. The Dutch themselves, excited by the unaccustomed attention, seem to have taken the idea to heart. The performance of Geert Wilders and his far-right Freedom Party (PVV), it was said, would be a portent of Marine Le Pen's chances in France's presidential election and of the prospects

for populism right across Europe.

On the night, Mr Wilders came a poor second, winning just 13% of the vote and 20 seats—far behind the Liberals, led by the prime minister, Mark Rutte, who won 21% of the vote and 33 seats (see page 51). Understandably, Mr Rutte was jubilant, proclaiming that his country had "said 'whoa' to the bad sort of populism". Jesse Klaver of the GreenLeft party, which had its best result ever, eclipsing Labour (see Charlemagne), with 9% of the vote, said that the Dutch message to the rest of Europe was that "populism did not break through."

Mr Wilders's bad showing is welcome. The less he can impose his version of xenophobia and Euroscepticism on the Netherlands the better. Unfortunately, however, it is too soon ►

► to celebrate the roll-back of populism.

The very idea of a populist “domino theory” is misleading. The term derives from the war in Vietnam, where it was used to justify American intervention to stop the spread of communism. In a military context it made sense. North Vietnam’s conquest of Saigon let it move on to Cambodia. But in democratic elections, nothing similar happens. When Britain voted to leave the European Union, the UK Independence Party did not suddenly take control of the economy and establish coastal bases from which to launch raids on Scheveningen.

Even if Mr Wilders had prevailed this week, he would not have won power—in the Netherlands governments are formed from coalitions, and virtually all the other parties had vowed not to work with him. The boost his triumph would have given Ms Le Pen, who the polls suggest is unlikely to become president, would have been insignificant next to the ebb and flow of the campaign within France. So, too, his defeat is a setback but hardly decisive.

Political movements sometimes leap in inspirational waves from one country to another, but local circumstances make all the difference. Mr Trump’s win could not have happened without the peculiarities of America’s electoral college. By the same token, the fact that Mr Wilders did not win does not translate on to Ms Le Pen. The Dutch political system is open and diffuse, with over a dozen parties in parliament and low barriers for new ones to make it in. The French system is more rigid. Because it has shut Ms Le Pen’s National Front (FN)

out of nearly all levels of government for years, despite rising popular support, the prospect of a sudden breakthrough is greater. France’s presidential run-off will pit two candidates head to head. One of them will almost certainly be Ms Le Pen.

Another reason to think that this may not be the high-water mark for populism is that Mr Wilders has shown how to drag politics in your own direction even without winning power. Mr Rutte has held him off in part by adopting some of his language. In the Netherlands, traditionally a tolerant country, it is now common to speak of Islam as a threat; the discussion of asylum-seekers focuses entirely on how to keep them out, and the idea of leaving the EU is now taken seriously. Mr Wilders has also put forward legitimate arguments about the welfare of working-class Dutch left behind by globalisation. If a new government dominated by the centre-right Liberals and the liberal D66 party ignores these issues, it will find its triumph over populism short-lived.

### Here's to Ponypark Slagharen

All of these anxieties, over Islam, refugees, the EU and globalisation, are as pressing for European voters today as they were yesterday. As it turned out, they did not lead to a win for Mr Wilders in the Netherlands, but they might yet for Ms Le Pen in France. The international rise of populism is not so much a row of dominoes, as a wave bearing down on a line of sand castles. Some will fall and others stand. Celebrate Mr Wilders’s disappointment, but the wave rolls on. ■

## Brexit and Scotland

# Leave one union, lose another

### Scots should read Brexit as an argument for remaining in Britain, not leaving it



**T**HIS was meant to be the week when a proud, sovereign nation served notice that it wanted to leave the overbearing, unrepresentative union to which it had long been shackled. And so it was—but not in quite the way that Theresa May had imagined. Britain’s prime minister had planned to trigger Article 50 of the European Union treaty, beginning the two-year process of Britain’s exit from the EU. But she was forced to delay her plans when Scotland’s first minister, Nicola Sturgeon, upstaged her by announcing that she would seek a new referendum on Scottish independence.

The threat of a second constitutional earthquake in as many years is the latest reminder of Brexit’s unintended consequences (see page 57). The English-led move to leave a 40-year-old union with Europe is pulling at the seams of its 300-year-old union with Scotland. Mrs May’s fundamentalist interpretation of the Brexit referendum—that it requires departure from the EU’s single market and an end to free movement to and from the continent—ignores the concerns of Scots, who voted to remain, and creates an intractable problem for Northern Ireland, which shares a land border with the EU. But the lesson for Scots from Brexit is more complex than Ms Sturgeon suggests. The arguments she puts forward for remaining in the EU highlight the weaknesses in their case for independence.

The Scottish independence referendum of 2014 was billed by nationalists as a “once-in-a-generation opportunity”. But they are right to demand another. Ms Sturgeon’s Scottish National Party (SNP) won an election last year on the promise of a new referendum in the event of a “material change” in circumstances. Brexit is as material as it gets. Mrs May and Britain’s Parliament, the consent of which is needed for another plebiscite, must not deny the Scottish people a second vote.

### If at first you don't secede...

But Mrs May has the power to delay it—and on March 16th she said that there should be no referendum before Britain’s relations with the EU are clear. Ms Sturgeon wants the vote to take place at some point between autumn 2018 and spring 2019, when Brexit negotiations will be entering their final, fraught phase. She suggested this week that this would allow an independent Scotland speedily to rejoin the EU. That is mistaken. There is no prospect of Scotland completing “Scoxit” before Britain leaves the EU (at the time of the referendum in 2014, an exit period for Scotland of 18 months was pencilled in). European officials have made clear that there would be no “fast track” entry process for a country that was previously part of a member state.

What holding a referendum during Brexit negotiations would achieve, as Ms Sturgeon surely knows, is maximum pressure on the British government, which would be incapable of fighting on a second front in Scotland. And it would ►

► damage Scotland's own interests: first by muddying the Brexit talks, in which Scotland has a stake, whether it ends up as part of Britain or not; and second by forcing Scots to vote before it is clear what sort of deal Britain is going to get with the EU.

Whenever the second referendum campaign begins, Brexit will make life trickier for the unionist side. Already Mrs May is finding that her position on the European Union makes it harder to defend the British union. Ms Sturgeon says she wants Scots "to be in control of events and not just at the mercy of them". How can British ministers disagree, when so many of them urged Britons to "vote Leave, take control" last summer?

Yet Brexit creates problems for the nationalists, too. Just as it sounds unconvincing for Brexiteers now to argue for the union, it is difficult for Ms Sturgeon to beat the drum both for membership of the EU and for exit from Britain. As she has pointed out, it is a bad idea to leave the single market to which

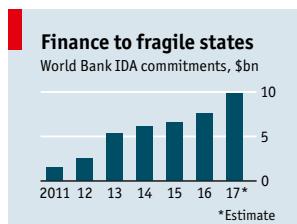
you send the lion's share of your exports. For Scotland, that means Britain. She laments the hardening of Britain's borders with Europe. Yet an independent Scotland might well mean a harder border with England, particularly if Scotland rejoined the EU. Pro-Europeans have noted that the sovereignty you regain by leaving a union is illusory when it also means losing the clout you get as a member of a more powerful group. So it would be if Scotland left Britain: it would indeed be more sovereign in a pure sense, but at the cost of its seat on the UN Security Council, nuclear weapons, G7 membership and much else that aids true self-determination in the world.

The Scots are in a wretched position. But they should be in no doubt: exit from Britain would compound the mistake Britain is making by leaving the EU. Though Brexit is the main motive for Ms Sturgeon's renewed independence push, it is also a warning of the perils of going it alone. ■

## Aid to fragile states

# The Central African conundrum

**Providing foreign aid to chaotic countries is both necessary and hazardous. It can be done better**



DAVID CAMERON lost his job as prime minister because he could not reconcile Britons to Europe. He might have sulked on the backbenches. Instead, Mr Cameron has a new (unpaid) job as the chairman of a commission on fragile states. Having failed to persuade Britons to stick with countries where they like to holiday, whose wine they happily imbibe and where many own homes, he will now try to convince them to send more money to some of the world's poorest, most corrupt and most violent places.

If Mr Cameron has lost his mind, he is not the only one. Britain's Department for International Development (DfID) plans to spend half its budget on fragile states and regions. It is nagging others to do the same, with some success. The World Bank plans to double to \$14bn the money it allocates to fragile states over the next three years. The war-scorched Central African Republic (CAR) will get as much as a third of its GDP in assistance from the World Bank over the next three years (see page 39). This raises two questions. Is sending more money to rickety countries wise? And is it being done well?

## More bread for basket cases

The answer to the first question is a qualified yes. It is true that, as development economists have argued for years, the ideal recipients of foreign largesse are poor, well-governed countries. Places like Bangladesh and Senegal still need help, and are not so atrociously mismanaged that the aid is bound to be stolen or wasted. These days, though, there are not many such countries. China, India, Indonesia, Vietnam and others are all pulling their people out of deep poverty, thank goodness.

The most acute need is now in fragile states, where government barely functions. Such places are home to half the world's very poor people, up from a third in 2010, on the OECD's rather broad definition of fragile. On the principle that (to misquote Barry Goldwater, the failed Republican presiden-

tial candidate in 1964) you ought to hunt where the ducks are, more aid should flow to the worst places. Moreover, fragile states are a regional menace. The calamity that is the Democratic Republic of Congo is a threat to its neighbours, many of which are themselves fragile. If basket-cases can be stabilised, many will benefit.

It will not be easy. Corruption and mismanagement are rife. In many of these countries Big Men are above the law, politics is a form of licensed theft and the police are little more than bandits. Money spent on rebuilding bridges or offices may be wasted if fighting resumes and the new infrastructure is blown up. Donors can undermine fragile states by setting up parallel welfare systems and by pinching their best bureaucrats. Rich countries often hold back until things get really bad, then rush in with bags of food—as Britain is now doing in South Sudan and Somalia.

Deft aid schemes need to avoid these pitfalls. Food aid looks good on television, but it is immensely wasteful. It costs a lot of money to get food to warring regions, and the recipients frequently sell it to raise money for whatever they really need. Far better just to give people cash.

Another good idea is to pay for a hefty peacekeeping force, which can provide the security needed for all else to develop. (The CAR has 13,000 blue helmets.) Young men can be hired to build roads. This would not only connect farmers with urban consumers, making both groups better off, but would also give those young men a reason not to take up arms. Paul Collier, a leading light in Mr Cameron's commission, offers two other suggestions. Donors could provide risk insurance or subsidies to help private firms enter terrifying markets. And they could let the government set spending priorities but, given its extreme lack of capacity, channel the spending through whatever organisations work in any given village, from NGOs to churches. An independent agency would be needed to oversee how the money is spent.

Fixing places like the CAR will be hard, and many of these new ideas may yet fail. But with luck, donors will learn from them. Given the stakes, there is no excuse for not trying. ■

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## You, too, might like an EU2

Bagehot, in his list of tasks for those who reject the inevitability of Britain withdrawing from the EU, omitted one of the most important (February 25th). Even pro-Europeans, as we used to be called, might be reluctant to remain in an EU in its present outdated form. We should become EU2ists, actively planning and advocating a deeply reformed union. Hubert Védrine, a former French foreign minister, has eloquently expressed the view of many on the continent that a source of the widespread antipathy to the EU is not merely that it has lost the vision that inspired it. It is simply not an appropriate form of pan-European polity for the 21st century.

PHILIP ALLOTT  
Professor emeritus of international public law  
Cambridge University

Wistful daydreaming that the decision to leave the EU might one day be reversed might bring some comfort to bereaved Remainers. They are delusional. Ask this question: if Britain had never joined the EU would we now vote to do so? Looking at the wasteful, sclerotic and undemocratic grouping that it has become, only a Euro-enthusiast of the deepest hue could think that we would.

It is worth remembering that when Britain joined in the 1970s the country's fortunes were at their lowest ebb. National morale was at rock-bottom and there were serious people who questioned whether Britain was actually governable, such was the dysfunctional nature of industrial relations. Across the Channel the EEC offered a vision of a better world with Germany still in the *Wirtschaftswunder* era and France enjoying *les trente glorieuses*. Britain's decision to join the EU was akin to that of a drowning man who decides to grab a lifebelt. Today the situation is very different: the European economic model is no longer one that Britain envies and it is Britain which is the magnet for energetic migrants.

Reversing Brexit is now the longest of long shots. But if it is ever to be achieved Tony Blair, a discredited political huckster, is the very last man the public would turn to. Europhiles must find a new face to lead them to the promised land.

ROBIN AITKEN  
Oxford

## Huxley, Orwell and facts

Regarding "The Trump bump" enjoyed by America's media (February 18th), Neil Postman, in "Amusing Ourselves to Death", envisaged this dangerously fractured moment in modern history. George Orwell was afraid of overseers depriving us of information. Aldous Huxley, on the other hand, warned of an onslaught of news, real or fabricated, that reduced its consumers to passivity and egotism. Orwell feared that the truth would be concealed from us. Huxley contended that when truth is drowned in a sea of irrelevance, we would become a trivial culture.

Both dystopian views have proven presciently true. Real facts are submerged into the swamp bottom of lies and manipulation (Orwellian) by the sea tides of their manufactured alternative cousins. But the media, both print and social, need to take care that this moment-by-moment accounting doesn't drown us in its thought-extinguishing momentum (Huxleyan).

JOSEPH TING  
Brisbane, Australia

## Chile's institutions

Trust in political institutions has fallen to the single digits in many countries in Latin America, as corruption scandals involving corporate money in politics are uncovered by the month (Bello, March 4th). However, in his effort to provide balanced reporting on different views and approaches to campaign reform, Bello's citation of me—"a role for corporate money might be acceptable in Chile in the future"—gives a misleading impression of the importance I attach to keeping corporate

money out of politics. With big companies at the centre of most scandals, this is crucial both to restore citizens' trust in political leaders and to prevent future corruption.

EDUARDO ENGEL  
Former president of the Presidential Advisory Council on Conflicts of Interest, Influence Peddling and Corruption Santiago, Chile

## Free speech in Singapore

"Grumble and be damned" (March 11th) alleged a lack of free speech in Singapore. Yet Singaporeans have free access to information and the internet, including to *The Economist* and the BBC. We do not stifle criticism of the government. But we will not allow our judiciary to be denigrated under the cover of free speech, nor will we protect hate or libellous speech. People can go to court to defend their integrity and correct falsehoods purveyed against them. Opposition politicians have done this, successfully.

You cited the case of three protesters convicted for creating a public nuisance at Speakers' Corner. They were not charged for criticising the government, but for loutishly barging into a performance by a group of special-education-needs children, frightening them and denying them the right to be heard.

In no country is the right to free speech absolute. When this right is extended to fake news, defamation or hate speech, society pays a price. Witness the Brexit campaign, and elections in America and Europe. Trust in leaders and institutions, including journalists and the media, has been gravely undermined, as have these democracies. In contrast, international polls show that Singaporeans trust their government, judiciary, police and even media. Singapore does not claim to be an example for others, but we do ask to be allowed to work out a system that is best for ourselves.

FOO CHI HSIA  
High commissioner for Singapore  
London

## A kiss on the hand...



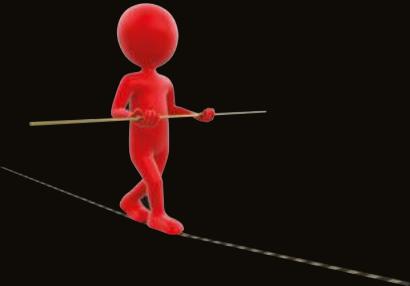
You referred to the "admen" who composed the slogan "A diamond is forever" ("A girl's new best friend", February 25th). In fact, advertising firms in the 1940s employed women as copywriters to create ads for women's products. Frances Gerety, a young copywriter assigned to the DeBeers account, came up with "A diamond is forever" late one night while at the point of exhaustion. Gerety worked on the DeBeers account successfully for 25 years and her catchline was described as the slogan of the century by *Advertising Age*. It has appeared in every engagement-ring ad for DeBeers since 1948.

PAULA HERRING  
Professor of business  
DeVry University  
Downers Grove, Illinois

Please stop suggesting new ways to demonstrate my marital fitness, such as tattoos, or self-mutilation. My economically savvy wife notes these as sunk costs ("what have you done for me lately?"). She also notes that my encroaching rotundness and retreating hair downwardly shift the demand curve for a husband, thus requiring a larger and, she hopes, refundable subsidy for continued marital fealty to me. The accumulated externalities of my subscription just overwhelmed its price.

TED LADD  
Jackson Hole, Wyoming ■

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# Executive Focus



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## From deprivation to daffodils

### All around the world, the economy is picking up

**I**F WINTER comes," the poet Shelley asked, "can Spring be far behind?" For the best part of a decade the answer as far as the world economy has been concerned has been an increasingly weary "Yes it can". Now, though, after testing the faith of the most patient souls with glimmers that came to nothing, things seem to be warming up. It looks likely that this year, for the first time since 2010, rich-world and developing economies will put on synchronised growth spurts.

There are still plenty of reasons to fret: China's debt mountain; the flaws in the foundations of the euro; Donald Trump's protectionist tendencies; and so on. But amid these anxieties are real green shoots. For six months or so there has been growing evidence of increased activity. It has been clearest in the export-oriented economies of Asia. But it is visible in Europe, in America and even, just, in hard-hit emerging markets like Russia and Brazil.

The signals are strongest from the more cyclical parts of the global economy, notably manufacturing. Surveys of purchasing managers in America, the euro zone and Asia show factories getting a lot busier (see chart 1 on next page). Global trading hubs such as Taiwan and South Korea are bustling. Taiwan's National Development Council publishes a composite indicator

that tracks the economy's strength: blue is sluggish, green is stable and red is overheating. The overall economy has been flashing green lights for seven months and is pushing up towards the red zone.

This reflects, among other things, demand for semiconductors around the world; this February exports from Taiwan were up by 28% compared with 2016. Although that is the most striking example, exports are up elsewhere in the region, too. South Korea's rose by 20% in February compared with a year earlier. In yuan terms, China's were 11% higher in the first two months of 2017 than in 2016.

This apparent vigour is in part just a reflection of how bad things looked 12 months ago; suppliers who overdid the gloom in early 2016 are restocking. Asia's taut supply chains also owe something to the two-to-three-year life-cycle of consumer gadgetry. On March 10th LG Electronics launched its new G6 smartphone. Its larger rival, Samsung, is due to unveil its Galaxy S8 phone by the end of the month; a new iPhone will be out later this year.

But the signs of life run deeper than just those specifics would allow. Business spending on machinery and equipment is picking up. A proxy measure based on shipments of capital goods constructed by economists at JPMorgan Chase, a bank,

suggests that worldwide equipment spending grew at an annualised rate of 5.25% in the last quarter of 2016.

The good news goes beyond manufacturing, too. American employers, excluding farms, added 235,000 workers to their payrolls in February, well above the recent average. The European Commission's economic-sentiment index, based on surveys of service industries, manufacturers, builders and consumers, is as high as it has been since 2011. After a strong fourth quarter, the Bank of Japan revised up its forecast for growth in the current fiscal year from 1% to 1.4%. Such optimism raises two big questions: what is behind this nascent recovery and will it take hold?

### Lilacs from the dead land

The revival's roots can be traced to the early months of last year, when a possible calamity was averted. At the end of 2015 stockmarkets tumbled in response to renewed anxiety about China's economy. Prices at the factory gate, which had been falling steadily for several years, had started to plunge. There were fears that China would be forced to devalue its currency sharply: a cheaper yuan might spur China's oversupplied industries to export more, fatten profits and service their growing debts.

Such a desperate measure would, in effect, have exported its manufacturing deflation to the rest of the world, forcing rivals to cut prices or to devalue in turn. The expectation that China's economy was weakening pushed raw-material prices to their lowest level since 2009. The oil price briefly sunk below \$30 a barrel. That worsened the plight of Brazil and Russia, al-

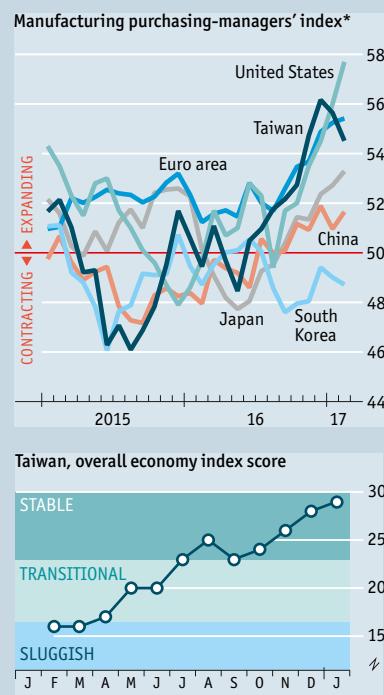
▶ ready mired in deep recessions. It also intensified the pressure to cut investment in America's shale-oil industry.

To stabilise the yuan in the face of rapid outflows of capital, China spent \$300bn of its foreign-currency reserves between November 2015 and January 2016. Capital controls were tightened to stop money leaking abroad. Banks juiced up the economy with faster credit growth. With capital now boxed in, much of it flowed into local property: house prices soared, first in the big cities and then beyond. Sales taxes on small cars were reduced by half. Between them, these controls and stimuli did the trick.

Soon stocks of raw materials that had been hurriedly run down started to look skimpy. Iron-ore prices jumped by 19% in just one day last March. Curbs on Chinese coal production underpinned a mini-revival in global prices. Steel prices rose sharply, helped by the closure of a few high-cost mills as well as more construction spending. Oil climbed back above \$50 a barrel (though it has slipped back a bit recently).

By the end of the year producer-price inflation in China—and across Asia—was positive again. And China's nominal GDP, which had slowed more than real GDP, sped up again (see chart 2). Central bankers, who had been employing various measures to forestall global deflation, were mightily relieved. On March 9th Mario Draghi, boss of the European Central Bank (ECB), proudly declared that the risk of deflation had "largely disappeared".

## Expanding



Sources: IHS Markit; Caixin; Nikkei; ISM; Taiwan National Development Council

\*Above/below 50 is expanding/contracting compared with previous month

His relief was a recognition that, though a surge in inflation will flood the economy's engine, a gentle dose can serve as a helpful lubricant. At a global level, a bit more factory-gate inflation lifts profits, since a lot of manufacturers' production costs are largely fixed. Fatter profits not only make corporate debt less burdensome, they also free cash for capital spending, which creates further demand for businesses in a virtuous circle.

Since worries about China and deflation receded, spending on things that show some faith in future income has indeed begun to stir. A revival in producer prices and thus profits is leading to business investment around the world. In the last quarter of 2016 business spending in Japan rose at an annualised rate of 8%, according to official GDP figures. Gartner, a tech consultancy, predicted in December that consumers and companies would increase their spending on IT by 2.7% in 2017, up from 0.5% in 2016. John Lovelock, a research analyst at Gartner, says the biggest jump in spending is forecast for the Asia-Pacific region.

## Continuous as the stars that shine?

In America imports of both consumer goods and capital goods are up. There has been speculation that the "animal spirits" of business folk have been lifted by Mr Trump's election in November, and that cuts in tax and regulations, and a subsequent return of the estimated \$1tn of untaxed cash held abroad by companies based in America, will fuel a big boom in business investment.

But James Stettler, a capital-goods analyst at Barclays Capital, notes that "no one's really pushing the button on capex yet". And companies which might benefit from an investment boom are not getting carried away. In a recent profits statement Caterpillar, a maker of bulldozers and excavators, said that, while tax reform and infrastructure spending would be good for its businesses, it would not expect to see large benefits until at least 2018. So far the recovery in global capital spending is in line with what you would expect from the recovery in global profits, says Joseph Lupton of JPMorgan Chase (see chart 3).

The signs of recovery are encouraging. But can they be trusted? The last few bursts of optimism about the global economy all petered out. In 2010 the rebound from a deep rich-world recession was pulled back to earth by the sovereign-debt crisis in the euro area. As soon as Europe gingerly emerged from recession in mid-2013, hints from America's Federal Reserve that its bond-buying programme would soon tail off prompted a stampede out of emerging markets. This "taper tantrum" blew over in a few months, but it had repercussions. The prospect of tighter monetary policy in America, however distant, hit the supply of credit in emerging markets. The squeeze

## Reflating

Producer prices  
% change on a year earlier



China, GDP  
% increase on a year earlier

Nominal GDP

Real GDP

Sources: Haver Analytics; US Bureau of Labour Statistics; NDRC

was made worse in 2014 when the oil price fell from over \$100 a barrel to half that in just a few months. The price of other industrial raw materials, which had settled onto a plateau after peaking in 2011, began to fall. The subsequent slump in investment was enough to drag big commodity exporters, such as Brazil and Russia, into recession.

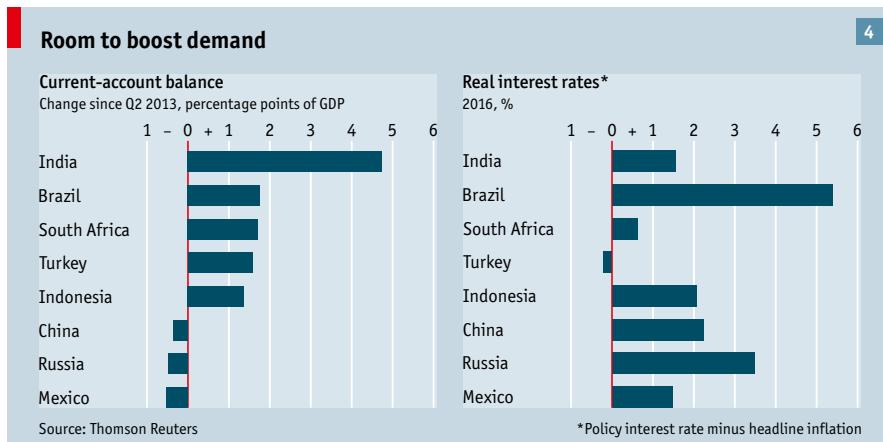
Even so, by the end of 2015 the Fed was sufficiently confident about the outlook to raise its benchmark interest rate by a quarter of a percentage point, the first such increase in a decade. More increases were expected in relatively short order. But the jitters about China, and then Brexit, meant that it was a full year before the next. It has now followed up with another increase in much shorter order (see page 69).

## A context for profits

Global, % change on previous quarter  
Annualised



Source: JP Morgan Chase \*GDP-weighted, % change on previous year †Based on shipments of capital goods



▶ False dawns were perhaps to be expected: recoveries from debt crises are painfully slow. Spending suffers as borrowers whittle away their debts. Banks are reluctant to write off old, souring loans and so are unable to make fresh new ones. And the world has had to shake off not one debt crisis, but three: the subprime crisis in America; the sovereign-debt crunch in Europe; then the bust in corporate borrowing in emerging markets.

But the initial and most painful stage of economic adjustment in emerging markets is coming to an end. Current-account deficits have narrowed, leaving most countries less reliant on foreign borrowing. Their currencies are a lot more competitive. And interest rates are high, so there is scope to relax monetary policy to boost demand (see chart 4). Business spending is already rising in response.

The breadth of the improvement—from Asia to Europe and America—makes for greater confidence that a pick-up is in train. A broad trend is a good proxy for an established trend, notes Manoj Pradhan of Talking Heads Macro, a research firm. Nevertheless, some countries are in better shape than others. India and Indonesia recovered quickly from the taper tantrum; their GDP growth has been fairly strong and steady. At the other end of the spectrum, Turkey and (to a lesser extent) South Africa look unlikely to see a big revival soon.

In the middle, there are signs that brutal recessions in two of the largest emerging markets, Russia and Brazil, are slowly coming to an end. Inflation in both countries is receding, restoring spending power to consumers. In Russia inflation fell to 4.6% in February, down from a peak of 16.9% two years ago. In the three months ending in September, GDP growth probably turned positive, according to the central bank, which has cut its main interest rate from 17% in January 2015 to 10% today; more cuts are likely. Manufacturing activity grew in each of the seven months to February, according to a survey of purchasing managers published by Markit, a data provider.

Brazil's economy shrank again in the fi-

nal months of 2016, but with inflation tumbling towards the 4.5% target, its central bank has cut its benchmark rate by two percentage points, to 12.25%, since October. Further cuts are again likely. Other commodity-producers in Latin America (bar Mexico, where the peso has weakened since Mr Trump was elected) are also relaxing monetary policy.

#### The recent buds relax and spread

That is the bull case. What of the risks? One is that tighter commodity markets will stymie consumer spending in the rich world by raising prices. But core measures of inflation that strip out volatile things like food and energy costs remain low: nowhere in the rich world have they reached the 2% rate that is the goal of central banks, the rate seen as necessary for a “normal” cyclical recovery. America is closest to that target; the index preferred by the Fed puts America’s inflation at 1.9%, with the core rate at 1.7%. In Europe the core rate is stuck below 1%, with wage growth of around 1.3% last year; but oil prices have pushed headline inflation back to 2%.

There is also the risk of expecting too much. A pick-up in global aggregate demand is good news. But growth rates will always be constrained by how fast the workforce can expand and how much extra output can be squeezed from each worker. In lots of places there is scope for jobs growth; but in America, Japan, Germany and Britain the labour market is already quite tight. With America close to full employment, wage growth has picked up to 2.8%, which is consistent with 2% underlying inflation if productivity growth stays around 1%. Pay is growing fastest in less well-paid industries, such as construction, retailing, hospitality and haulage, according to Morgan Stanley, a bank.

Wages might perk up yet more if productivity improved. But the post-crisis slump in productivity growth that has affected both rich and developing countries shows no sign of ending. In America output per hour rose by 1.3% in the year to the final quarter of 2016. Europe has not been

able to match even that dismal rate. It would take an astonishing shift in productivity for America’s economy to manage the 4% GDP growth promised by Mr Trump. A less fanciful view is that American GDP growth might top 2% this year, a bit better than is expected for Europe. Continued investment, and possibly deregulation, could improve productivity somewhat; but they will not provide a step change. Without one, rich-world interest rates are likely to stay well below the levels that were considered normal before 2007.

It is not hard to imagine things that might yet derail the recovery. Though there is a cast-iron consensus that nothing bad will be allowed to happen before the big Communist Party congress in the autumn, China’s growing debt pile could still bring markets tumbling down. Populist victories in Europe’s various elections could bring about a crisis for the euro. Even if they do not, an end to the ECB’s bond-buying programme, which has kept government-borrowing costs at tolerable levels and even allowed a bit of fiscal stimulus to lift the economy, will lay bare the euro’s still-unfixed structural problems.

The Fed might tighten policy too quickly, driving up the value of the dollar and draining capital (and thus momentum) from a recovery in emerging markets. Or Mr Trump might make good on the repeated threats he made in his campaign to raise import tariffs on countries he considers guilty of unfair trade, thus taking a decisive step away from globalisation just as the world’s main economic blocs are at last starting to get into sync.

These risks are not new or surprising. What brings a freshness to the air is that a cyclical recovery has managed to overcome them. There may actually be some rosebuds to gather, for a while. ■





### Impeachment in South Korea

## Rule of eight

SEOUL

### Park Geun-hye is forced from office, prompting a snap election

**S**HE blocked investigators from entering the Blue House, the presidential residence where she had holed up after the National Assembly asked the constitutional court to remove her from office in December. She refused to be questioned, and attended none of the 20 hearings at which the court heard evidence against her. Three weeks ago she demanded the ejection of one of the justices hearing the case.

It all did Park Geun-hye more harm than good. On March 10th she became the first president of South Korea to be removed from office by the court, which upheld the assembly's impeachment motion. It determined that she had not only conspired with a confidante to extort money from big firms, but had also attempted to conceal her wrongdoing. Ms Park was permanently removed from office, cutting short her five-year term by 11 months.

For the time being Hwang Kyo-ahn, the prime minister at the time of Ms Park's impeachment, will stay on as acting president. But the court's decision means that an election for a replacement must be held within 60 days; it was set this week for May 9th. Moon Jae-in, a former head of the opposition Minju party, who ran against Ms Park in 2012, is the favourite to win. His approval ratings hover around 32%, a full 15 percentage points ahead of the next-most-popular contender, Ahn Hee-jung, another progressive. Mr Moon says he can bring *jaejosanha*: a rebuilding of the country,

after nearly a decade of conservative rule.

But Mr Moon remains divisive. Many associate him with "old-school leftism", according to Choi Jin of the Institute of Presidential Leadership, a think-tank in Seoul—cooler on South Korea's alliance with America, warmer on talking to North Korea. That puts off older voters, who see his approach as a threat to the country's security (many carried the American flag at rallies protesting against Ms Park's impeachment). Others among the millions of South Koreans who agitated for Ms Park's removal from office expect the next president to satisfy their demands for a fairer political system.

Three parties have formed a coalition to call for a separate referendum to be held alongside the vote on May 9th, to limit the presidential term to four years with the possibility of a single re-election, as in America. Mr Moon says he supports some such reform in principle, but does not want to rush the decision or muddy the election campaign with it. Mr Choi says the question of whether there should be institutional checks on the head of state will be at the heart of the election.

For Ms Park's successor, building consensus will be crucial, says Park Hyung-jun of Sungkyunkwan University (no relation). Hard generational divides have surfaced in the scandal: in recent weeks police have set up barricades at large demonstrations to stop Ms Park's friends and foes

### Also in this section

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clashing. A vocal, mostly older minority feels that Ms Park has been the victim of a left-wing witch hunt: on hearing the verdict outside the constitutional court, many wept and blared out the national anthem in defiance. Cheers rose from the jubilant anti-Park camp, as they struck gongs and danced to chants of "We won!"

The court was unanimous in its verdict, even though five of the eight judges had a conservative bent and two had been appointed by Ms Park. The charges fell into five broad categories: abuse of authority in the appointment of government officials; failure to protect citizens' lives; violation of press freedom; receiving bribes; and extortion in conjunction with Choi Soon-sil, a friend of many years. The justices concluded that there was not enough evidence to prove the first three claims, and did not even address the allegations of bribery. But Ms Park could not be trusted to uphold the constitution, they said, since she had divulged state secrets to Ms Choi (who held no official position) and colluded with her to coerce conglomerates to funnel donations to two cultural organisations that Ms Choi controlled.

The court also said that Ms Park's attempts to hide the truth had hindered a parallel investigation by a special prosecutor, whom she herself had appointed in December after accusing the state prosecutors of bias. The justices noted that she had repeatedly pooh-poohed the accusations against her, "damaging the rule of law and representative democracy". The aloof and imperious style that characterised Ms Park's presidency also cut it short; Choi Jong-kun of Yonsei University says she "looked down on the entire legal process".

Three-quarters of South Koreans approved of Ms Park's impeachment—an extraordinary reversal for a dynasty whose ascent to the presidency had long seemed ►

► inevitable. She herself believed she owed it to her parents: Park Chung-hee, who served as president for 18 years after seizing power in a coup, and Yuk Young-soo. Both were assassinated in separate incidents in the 1970s. Ms Park became an MP in 1998, and the leader of the main conservative party in 2004. Much of her support stemmed from a stubborn reverence for her father felt by older voters.

On March 15th state prosecutors summoned Ms Park, who has lost her immunity from criminal investigation along with her job, as a suspect in the months-long investigation into her alleged abuse of power and the sordid collusion between political and corporate elites. High-ups in the chaebol, family-owned conglomerates which prospered under Ms Park's father, have routinely been convicted of criminal wrongdoing, then offered presidential pardons. Ms Park herself granted dozens, despite a campaign pledge to limit a practice that "undermined the rule of law".

This time Lee Jae-yong, heir to the Samsung empire, has been put behind bars

while being tried for bribery. Samsung was the biggest donor to Ms Choi's foundations—handing over 43bn won (\$38m)—in return, prosecutors allege, for government support for a controversial corporate restructuring in 2015. Samsung admits it gave the funds, but says the donations were not in return for any favours. Ms Choi (who, the special prosecutor revealed, owns 36 properties and whose personal wealth stands at 23bn won) is also on trial.

South Koreans will expect to see swift progress on these momentous trials, and due punishment. Every president since the country's democratic transition in the 1980s has been ensnared by corruption scandals. The shift to a fresh political set-up fit for a modern, vibrant democracy has been too long delayed, says Mr Park of Sungkyunkwan University. In the early days of the scandal protesters, outraged by what they saw as a complete institutional breakdown, held placards asking, "Is this a country?" The day after the verdict, hundreds brandished new ones: "This is a country. This is justice." ■

neurotransmitter, explains Charles Livingstone, of Monash University in Melbourne—"similar to the pattern occasioned by a cocaine addiction".

Most Aussies dabble sensibly enough, but almost half of the money sunk into the pokies is spent by problem gamblers, often from poor areas. It is not difficult to make the case for change. In 2010 a government advisory body estimated that the social costs of gambling are at least A\$4.7bn a year. Among other measures, it recommended reducing the amount a player can spend per spin to A\$1 (the current maximum is A\$10), and introducing mechanisms to allow gamblers to set limits on their losses.

Politicians have little appetite to see such measures through, however. State and territorial governments are responsible for regulating most forms of gambling. They rake in A\$5.7bn a year in taxes from the industry—income that has been especially welcome as royalties from mining have fallen. The federal government could, in theory, intervene. But the gambling lobby derailed the most recent such attempt, in 2012, when it caricatured a proposal to oblige gamblers to set limits on their losses as requiring Australians to obtain a "licence to punt".

The gambling industry says that it generates thousands of jobs and makes huge "social contributions", including sponsoring sports teams and providing subsidised food in clubs such as the Revesby. "They do a hell of a lot of good work in places where the government is slow to act," says one former MP. Yet the industry does not leave regulation to chance: it donates lavishly to both big political parties and to independent politicians. "This corrupts governance," argues Andrew Wilkie, an independent MP who instigated the attempt at federal regulation in 2012. "No different from a bribe." ■

## Gambling in Australia

# The biggest losers

SYDNEY

### No country wagers more

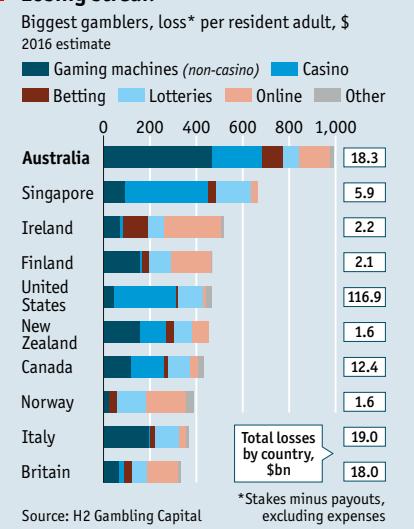
**A**BILLBOARD promoting huge cash jackpots hangs over the highway approaching Revesby Workers' Club, in a rundown suburb in western Sydney. Cafés, restaurants, a hairdresser and a gym are all housed inside the refurbished block. Yet the rooms full of electronic slot machines are among its chief attractions. Rows of

ageing punters sip beer and smoke cigarettes as they await a payout from the "pokies", as the machines are known. Most will leave disappointed: gamblers lose A\$330m (\$255m) a year at clubs in Canterbury-Bankstown, the local municipality.

This is no anomaly. Australia fritters away more money per person gambling than any other country. According to H2 Gambling Capital, a consultancy, the average adult lost \$990 in 2016; 49% more than Singaporeans, the next-biggest losers. According to an old saying, they would bet on two flies walking up a wall. The pokies are far and away the most popular form of flutter, accounting for over half of annual losses (spending on gambling minus the payouts from it) of \$18bn (see chart).

That is partly because of the proliferation of pokies: after decades of liberalisation, the country is peppered with some 197,000 machines—one for every 114 people. Most states allow them in pubs as well as clubs like the Revesby; only Western Australia restricts them to casinos. Punters can bet big and often, incurring losses of up to A\$1,200 an hour. Critics say the pokies are designed to get players hooked. Their many potential combinations, "near misses" and promises of big payouts cause the body to release dopamine, a feel-good

### Losing streak



Electronic cocaine



## State elections in India

# A lotus in full flower

VARANASI

## The party of Narendra Modi drubs the opposition in Uttar Pradesh

INDIAN media called it a watershed, a tsunami, the dawn of a new political era. But one cartoonist painted a humbler picture of the elections in five states, the results of which were announced on March 11th. His drawing of a crumpled bicycle, a bandaged hand and a dying elephant poked fun at the symbols of three parties that fared poorly in the most important vote, in Uttar Pradesh, India's most populous state. The Bahujan Samaj Party (the elephant) and an alliance between the Samajwadi party (the bicycle) and Congress (the hand) had both assumed they would match or outdo the Bharatiya Janata Party (BJP) of Narendra Modi, the prime minister. Neither the BJP's own pundits, nor the most enthusiastic pre-election polls, nor even illegal betting rackets had thought the party could capture much more than half of Uttar Pradesh's seats. Yet in the end the BJP, whose symbol is an orange lotus, saw its 40% of the vote magically boosted by India's first-past-the-post system into 77% of the seats in the state assembly.

Despite the hyperbole, this was a stunning win. One in six Indians lives in Uttar Pradesh (often shortened to UP), a state that straddles the Hindi-speaking heartland that tends to set the national agenda. Its capture gives a powerful boost to Mr Modi, who had appeared to lose momentum in recent months as he passed the mid-

point of the national parliament's five-year term. With no opponent remotely approaching his stature likely to emerge soon, the general election in 2019 should prove a low hurdle.

The tally of 312 out of Uttar Pradesh's 403 state legislators will begin to count sooner than that. State MPs vote in indirect elections for both the Rajya Sabha, India's upper house of parliament, and for India's presidency, a position that will fall vacant in July. Although Indian heads of state play a largely ceremonial role, the post carries important privileges; Mr Modi is now, in effect, able to choose who holds it. The Rajya Sabha, meanwhile, has been a check on the BJP's control of the central government. Its membership changes slowly by a com-

plex mechanism, which is why opposition parties still hold a majority. But with the BJP now running 13 of India's 29 states, including several of the biggest ones, it is a matter of time before the Rajya Sabha, too, turns the party's trademark orange.

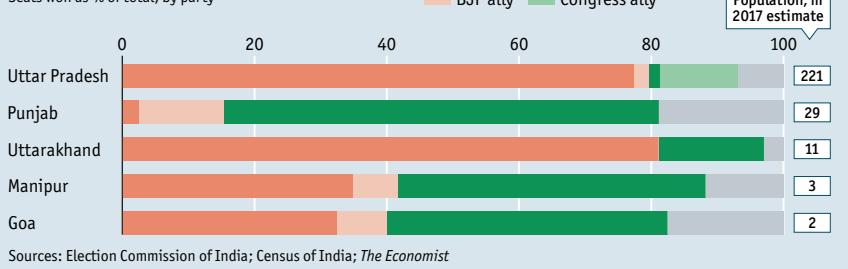
The chattering classes in Delhi, India's capital, had largely discounted a big win for the BJP. The conventional wisdom was that the party had peaked in the 2014 general election that brought Mr Modi to power; since then it had deflated under pressure from resurgent smaller parties, and been punctured outright by the folly of "demonetisation"—Mr Modi's decision last November to scrap most of India's paper currency. But though India's poorest were also the worst hit by the shocking move, many nevertheless appeared to trust the prime minister's assertion that it was all for their own good. So Mr Modi, quipped one wry tweet, has in effect demonetised elite opinion, too.

Along with Uttar Pradesh and its 220m people, the BJP captured three smaller states. In a particular humiliation for Congress, which was the main force behind India's independence movement and has dominated national politics for most of the past 70 years, Mr Modi's party actually captured fewer seats than its rival in Manipur and Goa (see chart), yet still managed to form the government in both states while Congress dithered. Nitin Gadkari, a heavyweight minister known for his bargaining skill, rushed to Goa as soon as results were called and haggled into the early hours to forge a coalition. In the north-eastern state of Manipur, Congress needed just three more seats to gain a majority. The BJP needed an extra ten, yet still mustered the numbers first.

Better-run at the top, the BJP is also formidable on the ground. At a modest party headquarters in the Hindu pilgrimage city of Varanasi a day after the election results were announced, local party officials deferred to a younger man described as the overall commander of their campaign in this part of UP. He turned out to be a *pracharak* or devotee of the Rashtriya Swayamsevak Sangh (RSS), a right-wing Hindu volunteer group with a membership thought to top 5m. Taking no salary, he slept on a ►

### Tangerine dream

Indian state-assembly elections, February-March 2017  
Seats won as % of total, by party



► camp bed in the building for nine months in the lead-up to the voting.

While other party men ascribed their victory to the BJP's openness to many castes, in contrast to the narrow bases of several other parties, or to its record of development, or to Mr Modi's personal charisma, the *pracharak* has no doubt as to the secret. "It is 100% organisation," he says, describing how his team recruited some 5,000 volunteers for each of the 71 voting districts in his purview, and spent a full year canvassing voters to choose candidates likely to win. Asked why rival parties had not repeated a winning strategy used in the neighbouring state of Bihar, where a broad coalition defeated the BJP in 2015, his answer is indirect. "We learn from our mistakes," he says with a quiet smile. The others, apparently, do not. ■

#### Parliamentary trickery in India

## An obsession with expropriation

DELHI

**The government goes to great lengths to avoid returning confiscated property**

IT WAS passed on a hasty voice vote, with only 31 of the Rajya Sabha's 244 members present. All were from the ruling party and ten, oddly enough, were cabinet ministers—an exceedingly rare sight on a quiet Friday afternoon, reserved by tradition for private members' bills. The few opposition MPs at hand had walked out in protest. Their ire was warranted: the government had promised that this particular bill, which the Upper House had already blocked both on the floor and in committee, would not be tabled.

Mr Modi's government has shown a strange determination to pass the bill. Five times—a first for India—since coming to power in 2014 it has imposed the law as a presidential "ordinance", a legal sleight of hand left over from the British Raj that allows governments to impose laws by decree as long as they are confirmed by parliament within six months.

The ponderous title of the stealth legislation is the Enemy Property (Amendment and Validation) Act. It revises an already controversial law, passed in 1968, which allowed the Indian state to seize properties owned by its "enemies", which was to say people of Pakistani or Chinese nationality. The new law redefines the word "enemy", so that those designated as enemies will remain so even if India and the country concerned start getting on famously. It also decrees that all the heirs of the original "enemy" should also be considered enemies, in perpetuity, even if they hold Indian citizenship. Furthermore, any transfer of such

property out of government custodianship after the 1968 act will be retroactively revoked. And civil courts will be barred from hearing any disputes over such property from now on.

What the legal mumbo-jumbo means is that some 2,100 properties seized in the wake of wars with Pakistan and China in the 1960s will forever remain the property of the Indian government. There is, of course, also a subtext: nearly all the property concerned belonged to wealthy Muslims, and the need to "tighten" the law reflects the fact that several of them or their heirs have successfully fought in Indian courts to reclaim it.

In 2005 India's supreme court ordered the government to hand over most of the property of the former Rajah of Mahmudabad, once one of the wealthiest landowners in Uttar Pradesh, to his sole heir, Muhammad Amir Muhammad Khan. The late rajah lived briefly in Pakistan, and foolishly took its nationality before retiring to London, where he died in 1973. But his son grew up in India and never lost Indian citizenship. Armed, after 32 years of legal battles, with the supreme court's ruling, Mr Khan did manage to secure some of the seized properties for a spell. But for the past decade successive governments have found ways to obstruct repossession.

He is, understandably, affronted by the government's apparent obsession with preventing the return of property to a law-abiding Indian citizen, to the point of passing laws that are very likely to be overturned as unconstitutional. "I suspect there is a desire on the part of the present dispensation not to allow any Muslim to go beyond a certain limit," muses Mr Khan. "The message is that we must do menial work, and study in madrassas so then they can blame us for being anti-modern." ■



Enemies keep out!

#### Post-war reconciliation in Sri Lanka

## Still riven

COLOMBO AND JAFFNA

**Measures to placate disenchanted Tamils are advancing at a snail's pace**

"**W**your men occupy our homes," read one of the banners strung up by Tamil protesters, mostly women in saris and ragged children. They had been camping for more than a month in a jumble of makeshift tents on a baking, dusty roadside near a Sri Lankan air-force base in the country's remote north-east. They said that the armed forces, consisting almost entirely of Sinhalese from the island's south, nabbed their land at the end of a long-running civil war nearly eight years ago and have refused to give it back, despite the promises of a kindlier reformist government elected two years ago. The government recently said it would return some of the disputed property, but the protesters are unassuaged. It is just one of the many grievances of Sri Lanka's disaffected Tamils, who feel that reconciliation between them and the Sinhalese majority is stalling.

Hopes of harmony rose two years ago when Maithripala Sirisena, who is Sinhalese, was elected president with the overwhelming support of the Tamils, who make up 15% of Sri Lanka's population of 21m or so. The island's Tamil-speaking Muslims, who are treated as a separate ethnic group and often feel done down by both sides, make up a further 10%—and also largely backed Mr Sirisena. The Tamils were particularly delighted by the shock defeat of Mr Sirisena's chauvinistic and autocratic predecessor, Mahinda Rajapaksa, who had exulted in the crushing of the Liberation Tigers of Tamil Eelam, a Tamil separatist group, in 2009, despite the devastating loss of life and property in Tamil areas.

Mr Sirisena duly set about a raft of reforms. He aims to present a new constitution to parliament soon, and to the public in a nationwide referendum before the end of the year. Presidentialial powers are to be clipped in favour of parliament. Greater devolution to the provinces, including powers over police and land registration, is intended to satisfy Tamil demands for self-rule without resorting to full federalism, which is a dirty word for most Sinhalese.

Other legislative proposals are intended to tackle the vexed question of "transitional justice": creating an office for missing persons to chronicle the thousands of people abducted or killed in the war (see next article); replacing the Prevention of Terrorism Act, which has allowed suspects to be held without trial for up to 18 months; providing for compensation for property ►

seized or destroyed in the war; setting up a truth-and-reconciliation commission; and, separately and most controversially, creating a hybrid court involving foreign judges and lawyers, where those accused of perpetrating the worst atrocities may be tried.

On March 22nd the UN's Human Rights Council in Geneva, which issued a remarkably tough resolution in 2015 that lambasted the previous government and proposed most of the measures listed above, will assess progress towards reconciliation. It will probably issue a "rollover" resolution co-sponsored by Sri Lanka's government, which will reiterate its promise to do all these things. The Tamils want to keep up international pressure. The government wants the world to stop chiding it.

The trouble is that on most of these fronts the Sri Lankan authorities have been, at best, marking time. Mr Sirisena's government is a coalition of two normally adversarial parties, one of which was formerly in thrall to Mr Rajapaksa. His many Sinhalese-nationalist admirers care little for reconciliation and resent pandering—as they see it—to the sensitivities of the tiresome Tamils. The possibility of foreigners judging Mr Rajapaksa's triumphant generals as war criminals enrages most Sinhalese.

Mr Sirisena has let it be known that he cannot achieve both the tricky constitutional reforms and the even touchier business of transitional justice at the same time. He wants to be allowed to do them one by one. "Transitional justice will fail if war crimes becomes the pivot," warns Je-han Perera, a prominent human-rights activist. Mangala Samaraweera, the foreign minister, admits that "people with the old Rajapaksa mindset in key positions are obstructing key reforms", but pleads for patience, insisting that reform is still broadly on track. "The same torturers are still there," laments a veteran of the UN's Human Rights Council.

The Tamils are increasingly frustrated. The north and east, where Tamils predominate, are poorer than most of the south and depend largely on remittances from the diaspora of several million in Australia, Britain, Canada, Malaysia and the Middle East, many of them fugitives from the civil war. Few have returned to invest. There are no international flights from Jaffna, the main city of the Tamil region, even to nearby Chennai, the capital of the Indian state of Tamil Nadu. The local airport is run by the air force. The government has built new roads but spent little on social or agricultural development. Fishing, once a big source of employment, has slumped.

Indebtedness, especially among the disproportionately large number of families headed by single mothers, is rife. So are drugs—heroin as well as cannabis—smuggled across the narrow channel from India. An international banker, who has returned to retire in Jaffna, laments the Tam-

## Sri Lanka's disappeared

# No closure

VISUAMADU

## The wounds of civil war remain raw

**I** STILL believe he's alive," says Tharasi Sini Santhirabose with a glazed, fixed smile. She last saw her husband, a fellow guerrilla for the Liberation Tigers of Tamil Eelam, in the final days of the civil war that ended with the Tigers' obliteration in 2009. Up to 40,000 civilians were killed, according to the UN, along with most of the remnants of the 10,000-strong separatist army and perhaps 5,000 hangers-on. The chances that Ms Santhirabose's husband will reappear are virtually nil.

No one knows precisely how many died or disappeared in the war. A fervently Tamil-nationalist Catholic bishop claims that, after the 26 years of fighting, 147,000 people, civilians and fighters, remain unaccounted for. The foreign ministry says that more than 65,000 queries about missing people have been received since 1994.

A few thousand former Tiger "cadres",

as they are known, have re-emerged from government "rehabilitation" camps. Many Tamils believe that secret detention camps still exist. Others claim, bizarrely, that the government has sent thousands of defeated fighters to undisclosed destinations abroad. Many also say that the Sri Lankan army's reluctance to give back land now used as army bases is because they do not want mass graves to be discovered.

One of 12 children of a poor fisherman, Ms Santhirabose, now 34, says she volunteered to join the Liberation Tigers of Tamil Eelam when she was 15, along with three of her siblings, and married another fighter when she was 20. Her parents now live in Canada; several siblings are in France. As a registered ex-combatant scratching a living from farming, she says she is watched by the authorities and discriminated against. She still has shrapnel in her head from an old wound.

Her loyalty to the Tigers' cause and to its leader, Velupillai Prabhakaran, who was killed in the final battle, is unshaken. She says she has no regrets about joining up, despite Prabhakaran's record of brutality: the Tigers suicide-bombed buses and banks, forcibly recruited children and routinely assassinated any perceived foes, Tamil and Sinhalese alike. "The war was lost only because he was betrayed," she laments, citing a close lieutenant who defected with several thousand fighters in 2004.

"In those days life was good. We slept safely. No crime. We had our own economy." Like many Tamils, she suggests that foreign governments should intervene. "Does the world think it is right for the Tamils to be treated as slaves?"



There are thousands of candles to light

ils' demoralisation and loss of a work ethic. A bigwig in Jaffna's chamber of commerce bemoans the lack of support from the central government: "It wants to enslave us, colonise us, get us to send our young men away abroad."

Tamils pour scorn on the Tamil National Alliance (TNA), their main representative in the Tigers' absence, which won most parliamentary seats in Tamil areas two years ago. Though technically in opposition to the coalition government in Colombo, the national capital, the alliance nonetheless seeks to co-operate with Mr Sirisena in his quest for constitutional reform and transitional justice. As the president falters, the alliance looks feeble, too.

Mr Rajapaksa's supporters claim that the disaffected Tamils are about to regroup and plot a bloody new rebellion. That is improbable, since the Tigers' military defeat in 2009 was so total. Indeed, in the short run the Tamils have few levers of any kind to secure better treatment, as witnessed by their straw-clutching hope that international pressure may somehow come to their rescue. But in the longer run Sri Lanka needs Tamil acquiescence. "If we fail to address transitional justice and Tamil youth feels that the Sinhalese south will never address Tamil grievances, there's nothing to stop the next generation being pushed towards a new terrorism," warns Mr Samaraweera. ■

# Banyan | Vanishing pork shanks

**South-East Asian cities are waging war on street food. Big mistake**



THE taxi-driver parks in the way a drunkard falls asleep: suddenly, with little regard for his surroundings. He leaps from his cab, eyes alight with anticipation, striding toward Ms Jae Deh. She shouts at him, pointing at the bucket of bones at her feet: "You're late! All finished!" The cabbie, who has the gelled hair, tinted aviator glasses and raspy voice of a low-level mafioso from New Jersey, staggers backwards as though he's been shot: "I've been coming here for ten years! You didn't save any for me?" Ms Jae Deh's mock-stern look collapses into merriment. She points him towards the nearest table, handing him a plate of rice and a bowl of braised pork. He helps himself to a couple of chilies and a coriander frond, keeping up a steady patter with Ms Jae Deh and her husband, Su Kit.

The couple has been selling *kha kha moo* (rice with stewed pork shanks) on Soi Thong Lo, a side street off one of Bangkok's main roads, since 1987, when they were just 16. Now their adult daughter works alongside them. The family is not rich, but Mr Su Kit says that on a good day they clear around 4,000 baht (\$13). Like many of Bangkok's street-food vendors, they came to the city from Isaan—Thailand's poor and dusty north-east—in search of a better life. And they have built one, shank by shank.

So have millions of families like theirs across South-East Asia. As the young and ambitious have moved from fields to factories, making the region among the world's fastest-growing and fastest-urbanising, others have moved to feed them. In cities, time is scarce and dwellings are small: people need something cheap, filling and convenient. Rickety plastic tables spread across pavements all over South-East Asia, offering a quick meal of *pho* (noodle soup) in Saigon, *kha kha moo* in Bangkok, *mie bakso* (meatball and noodles) in Jakarta and *mohinga* (fish soup) in Yangon. Office workers in pressed shirts and builders in orange jumpsuits sit cheek by jowl. According to the UN's Food and Agriculture Organisation, 2.5bn people eat street food daily. The most recent study available, from 2007, found that Bangkok's 20,000 vendors provided residents with 40% of their food; two-thirds of households ate at least one meal a day on the street.

Providing those meals is not an easy life. Jane, a no-nonsense woman who does a brisk late-night business in papaya salad and hotpots, begins setting up around 3pm; her tables are still packed

at midnight. Luung Pan, who sells pork-noodle soup and dumplings with his son just up the street from Ms Jae Deh, starts cooking at 4am and rarely makes it home before 9.30pm. But he takes tremendous satisfaction in having fed the same people for a decade. He prides himself on how few of his customers feel the need to season their meal with the condiments he sets out on each table: "I know my soup is number one." Says Mr Su Kit: "We are happy. We can work as a family and we have our own place."

But trouble looms. Unless there is a sudden and unlikely reprieve, vendors will no longer be able to sell food on Soi Thong Lo's pavements after April 17th. Local officials have decided to bar them from the footpath, on the grounds that they impede pedestrians, make a mess and attract vermin. The displaced vendors can at least find company in their misery: over the past two years Bangkok's municipal government has evicted almost 15,000 hawkers from the city's pavements. Previous governments threatened to crack down; this one, obsessed as it is with public order, is actually doing it. Other vendors have lost their space to landlords cashing in on Bangkok's booming property market, particularly in the area around Thong Lo.

Bangkok's government is not the only one seeking to "tidy up" its streets. Authorities in Ho Chi Minh City are moving vendors away from congested areas, and "advising them on more stable ways to make a living". A similar drive is under way in Jakarta.

Soi Thong Lo's hawkers are scrambling to secure their livelihoods. Mr Su Kit points to his hair, which is shorn on the sides but sprouts, turnip-like, into a topknot on his crown: "Thinking about what to do has turned my hair white." He found a shop one street away, but that would cost him 30,000 baht a month to rent—compared with his current 1,000-baht fee to the district—as well as a 100,000-baht deposit. Mr Luung Pan wonders whether a nearby bank might rent him part of its outside space. Jane says she may just go back home to Chiang Mai, a northern city.

For the most part, Bangkok's hawkers have proved to be adept improvisers. Thrown off the streets, they have recongregated in basements and courtyards. As long as a demand exists for cheap, quick food, supply will follow.

Singapore faced this problem years ago, and moved its hawkers off the streets into dedicated, convenient "hawker centres", with running water and regular hygiene inspections. That may be feasible for a small rich country, but not for big poor ones such as Indonesia or Myanmar. Even if it were feasible, it would not be desirable. Street stalls may cause a bit of congestion and disorder, but they also make urban life more vibrant.

## Hawkish on hawkers

Banyan hopes that Bangkok's government—and the authorities in the region's other megacities—look beyond the superficial inconveniences caused by street-food vendors, and think harder about their role in the city's fabric. There is a reason food trucks have begun to populate the streets of American and European cities: not everyone wants the formality of a restaurant, much less the anomie of a sandwich at a desk.

Asia's hawkers do not just provide cheap, delicious food for the masses. They also embody the beating heart of a national cuisine. Perhaps most important, they create a community: the chance for citizens of all classes to rub shoulders over a bowl of noodles swimming in fish broth. Move the vendors along, and people will still find places to fill their bellies. But they will have a harder time finding each other. ■



**China and South Korea**

## Nationalism unleashed

BEIJING

**Officials are whipping up anger against South Korea, but are wary of unrest**

THE aisles at Lotte Mart in Beijing's Wangjing district were strangely quiet early this week. A few elderly shoppers pushed trolleys; shop assistants tidied the supermarket's shelves. Customers have been scarce since "something happened" a few weeks ago, says one cashier. That event was a deal signed on February 28th by Lotte, a South Korean firm, allowing America to build an anti-missile system on land the company owns in South Korea. China's government has responded by encouraging an outpouring of public anger directed not just at Lotte, whose shops in China are now being boycotted, but almost anything South Korean.

Nationalism is a familiar weapon in China's diplomatic armoury. The last time the government made such a sustained effort to whip it up was in 2012, shortly before Xi Jinping came to power, when officials encouraged protests against Japan's nationalisation of islands it controls in the East China Sea that are also claimed by China. South Korea is not a usual target. But China is furious at its decision to deploy the missile-defence system, known as THAAD (the first components of which arrived in South Korea on March 6th). America says THAAD will help defend the peninsula against North Korea. China says America will use the system's powerful radar to "snoop" on its missiles too, reducing their potency as a deterrent.

In recent weeks state media have been publishing daily attacks on South Korea's

"erroneous decision". The Global Times, a jingoistic newspaper in Beijing, has encouraged Chinese consumers to "become the main force in teaching Seoul a lesson". It said they should "make it hurt".

Censors often try to rein in online discussion when it threatens to boil over into real-world protests. But they are allowing netizens to vent rage at South Korea. One group of online nationalists called on "all patriots to unite and show South Korea what we can do". A famous beauty blogger exhorted the 2.7m followers of her microblog to boycott goods from the country and not to travel to it. A patriotic pop-song has been played more than 3.5m times since its release on March 8th. It includes the lyrics: "Chinese sons and daughters must stand up; everybody, stop buying Lotte; make them get out of China fast."

Lotte owns about 100 supermarkets in China, as well as other businesses. They have been badly hit. The company has been subjected to sudden and simultaneous tax and safety inspections. Ten of its shops have been shut for violating fire codes. The website of Lotte Duty Free crashed after a cyber-attack. Several e-commerce sites have stopped selling Lotte's goods and some suppliers have ceased doing business with the company.

The tourism industry has also been disrupted. South Korea is normally a popular destination, but many Chinese travel agencies have recently reduced or halted trips there (seemingly on the government's or-

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ders). Others have been warning customers that it is dangerous to go. Airlines from both countries have been reducing services. On March 11th about 3,000 Chinese tourists refused to leave their ship when it docked at the South Korean resort of Jeju, apparently in protest against THAAD.

The Chinese government may be relishing the opportunity that THAAD has provided to push back against what officials sometimes call South Korea's "cultural infiltration": its popular music ("k-pop") and television dramas have huge Chinese followings. No South Korean artist has been granted approval to perform in China since September. Appearances by a famous South Korean soprano, a concert pianist and a popular boy-band, EXO, have all been cancelled. Companies and TV stations have been urged to "fine-tune" performances by South Koreans: a k-pop star had his face blurred on a reality show. Chinese streaming platforms have removed some South Korean programmes. South Korean celebrities now find it hard to renew advertising contracts in China.

### Careful calibration

But China's leaders worry about any popular movement that does not involve the Communist Party—even one that is led by nationalists who profess to be on the government's side. Mr Xi, despite his own nationalist rhetoric, has been wary of letting passions flare too high. Officials tried to dampen them last year when a tribunal in The Hague rejected China's claims in the South China Sea. Only a few small protests erupted. The party's main mouthpiece, the *People's Daily*, praised the public's low-key response at the time as evidence of a "brand-new level of patriotism".

In the case of THAAD, the government clearly believes that a more heated public response may persuade South Korea's next president, who is due to be chosen in May, ►

► to reconsider its deployment (see page 21). But officials are still anxious. There were more police outside Wangjing's Lotte Mart this week than customers inside. Some dozed in vans, waiting in case of trouble.

A protest against South Korea on March 5th in the north-eastern city of Jilin conveyed a hint of what the government fears: that protesters may use displays of patriotism to vent other grievances. Some demonstrators in Jilin carried portraits of Mao Zedong (pictured, previous page). Despite appearances, these do not necessarily suggest agreement with the party line. People sometimes use them to poke at the current leadership—Mao symbolises an era that was, as some Chinese remember it, a better one for the underprivileged. Mr Xi worries about THAAD, but trouble at home disturbs him more. ■

#### Civil law

## Code red

BEIJING

### China finally starts to organise its legal principles

THE National People's Congress (NPC), China's rubber-stamp parliament, wrapped up its annual session on March 15th. Usually its business is unremarkable. This year, however, a piece of legislation that was passed on the final day may prove unusually important. It is known by the unlovely name of the General Principles of Civil Law. It sets the stage for China to pass its first civil code, an overarching law governing legal disputes other than those involving crimes.

China has a civil-law system, which means that statutes are essential reference for judges. (In common-law countries such as Britain and America, verdicts are also decided according to precedent: ie, previous rulings by courts.) But under Communist rule, China has muddled through without a unified civil code. It has bits of one. It passed an inheritance law in 1985, a contract law in 1999 and a property law in 2007. But there are big gaps and inconsistencies. The Supreme People's Court, the highest judicial authority, issues directives in an attempt to sort these out.

The country has been trying to write a civil code since 1954. But China's then ruler, Mao Zedong, was lukewarm about it—he did not want any law that might restrict his power. China's current leaders are far keener to have one. They hope it will provide a stable legal framework for a rapidly evolving society racked by increasingly complex disputes. In 2014 they decided to try again, aiming to write one by 2020. This week's approval of the code's general prin-

#### Football

## New rules, new dodges

### Chinese football clubs are struggling with new curbs on foreign players

MUCH grumbling accompanied the start on March 4th of this year's season of the Chinese Super League (CSL), the uppermost tier of professional football in China. Managers of its 16 clubs have been gnashing their teeth at a change of rules which was suddenly announced just a few weeks before the first matches. Teams are now allowed to field a maximum of three foreigners.

The clubs would have preferred more notice. Many of them have only just acquired even more foreign players. All now have at least four, the previous maximum per side in any CSL game. (One of them, a Brazilian called Oscar, is pictured in a CSL match—he was transferred to Shanghai SIPG from Chelsea, an English club, for £60m, or about \$75m, in December.) Last year China spent more than \$450m on footballers, the fifth-largest such outlay by any country.

But all this money has not improved the dismal state of Chinese football. The men's national team ranks 82nd in the world. In October an embarrassing 1-0 defeat to war-torn Syria triggered protests by hundreds of fans in the city of Xi'an where the match was played. Local media say the Chinese Football Association announced its new rules on orders "from above". They impose a levy on big transfers and demand that one-sixth of clubs' spending must be on youth training.

Officials have also been trying to curb the buying of stakes in foreign clubs—Chinese investors shelled out about \$2bn on them last year. The government says

this is part of an economy-wide clampdown on currency outflows. But it also wants to make the point that foreign talent won't necessarily help China's. The government has recently scuppered several investment deals. A Chinese consortium bought AC Milan, an Italian club, for \$825m in August, but has been unable to move money out of China to complete the purchase.

Rather than simply moaning about the new rules, clubs have been devising ways of dodging them. Teams must now field at least one Chinese player under 23 each week. Some coaches simply replace them early in the game with older hands.



Is he worth it?

ciples is the first fruit. It covers everything from individual rights and the statute of limitations to whether fetuses can own property (they can).

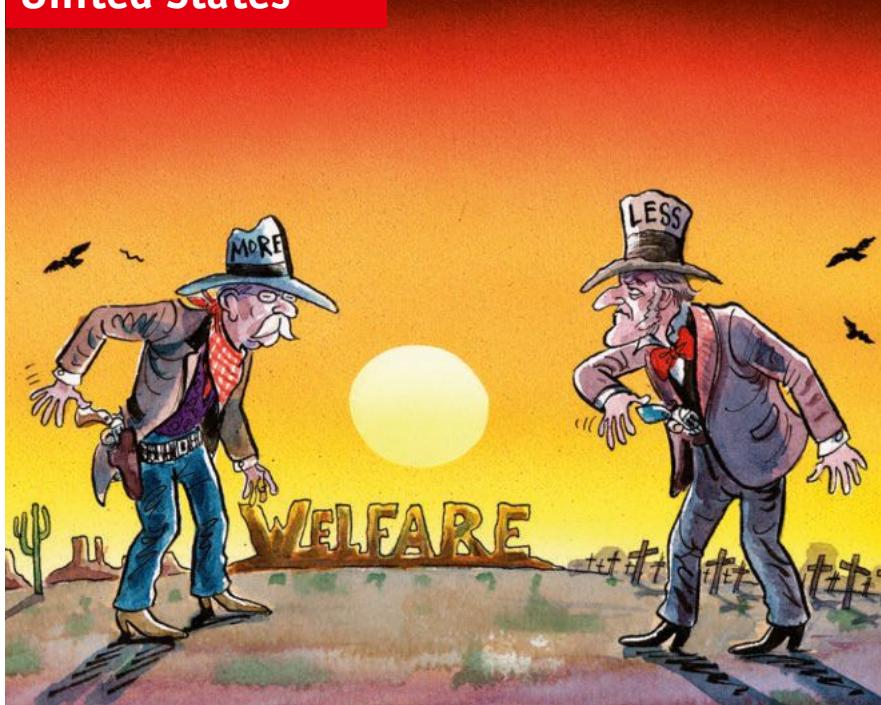
The preamble updates and expands one that was adopted in 1986, when the legal system still looked much like the Soviet Union's. In defining a company, for example, the old principles talked only about state-owned or collective enterprises, as well as joint ventures with foreign firms. The new preamble has a more useful definition: "a legal entity established for the purposes of making profits". The old version did not mention privacy. The new one says citizens have a right to it. The old principles said that "where there is no provision of law, activities must be in accordance with state policy." Strikingly, that clause has been deleted.

Some of the new principles have been set out before. Privacy rights, for example,

are in the tort bill of 2009. But their inclusion in the revised preamble gives them more authority.

Not all the changes are for the better. In a section on protecting personal reputations, the new preamble makes it an offence to defame "heroes and martyrs". That is likely to have a chilling effect on historical inquiry. Qiao Xiaoyang, the head of the NPC's law committee, says the civil code "upholds private rights". But the ones mentioned in the law, such as the rights to life, health, and reputation, do not cover the full range.

A civil code—embracing laws of property, contract, inheritance, family and marriage—will not guarantee fairness. The Communist Party will continue to ignore the law when it wants to. But for all the legal system's flaws, many people still use it. The code may make it less opaque and outdated, and judges' lives easier. ■



## Exceptionalism

## Wagner vs Wagner

### Warfare helps explain why American health care is different

THE House Republicans' health-care plan, the American Health Care Act, may, if enacted, leave 24m Americans without coverage, in the judgment of the Congressional Budget Office. But for those determined to shrink the government, that may not be enough. Americans for Prosperity, an influential campaign group, calls it Obamacare 2.0; Freedom Works, an anti-tax group, Obamacare-lite. The Republican Study Committee, which consists of 170 House Republicans, describes it as "a Republican welfare entitlement". When Obamacare became law, Democrats crowed that it would prove impossible to take health insurance away from people once they had it. For those on the drown-the-government wing of the Republican Party, the fight over repealing the law is an existence-threatening event. If a Republican president with majorities in both houses of Congress cannot succeed in taking away an entitlement, then they might as well give up.

Viewed from the rest of the world, this debate has an unreal quality. America is alone among rich countries in not arranging for its government to provide some form of health care for all its people. When Obamacare became law in 2010, America seemed to be converging with the rest of the world. The share of people who do not

have health insurance, and are not covered by government programmes for the elderly or the poor, fell from 16% before the law was passed to 8.8% now, according to the Kaiser Family Foundation. It would have fallen further had more Republican state governors chosen to take federal funds to expand Medicaid, which finances some care for poor Americans. That convergence may now be reversed.

The American difference on health care is partly a question of philosophy. Americans are more inclined to believe that peo-

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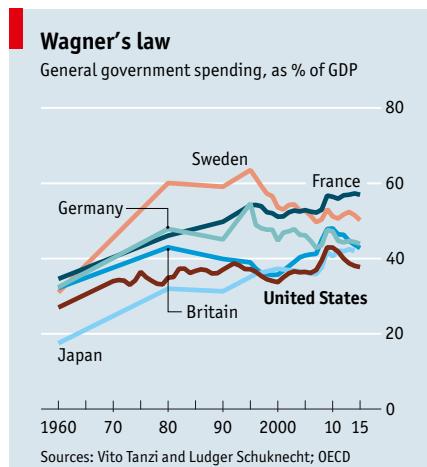
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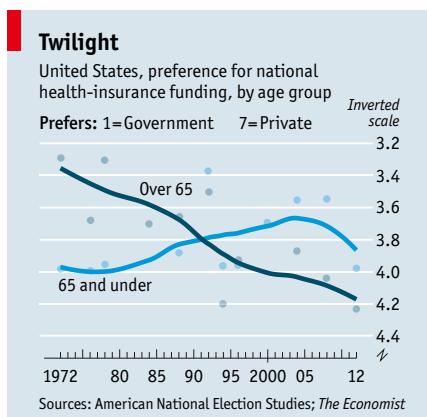
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ple make their own luck than people in countries with more developed welfare states. According to a Pew global attitudes survey, 31% of Germans think that success is determined by forces within their control, whereas 57% of Americans say the same. It follows from this that those who do not have insurance could get it if they only worked a bit harder.

But it is also a question of history and, more specifically, of how welfare states in the rest of the world developed alongside warfare. European welfare states began in Prussia at the end of the 19th century, when war with France required the mobilisation of a large number of civilians. Britain's welfare state has its origins in the discovery that many of the men who presented themselves to recruiting offices during the Boer war were not healthy enough to fight. Before the second world war, British liberals would have seen the creation of a government-run national health service as an unwarranted intrusion of government into private life. After 1945 it seemed a just reward for a population that had suffered.

In America this relationship between warfare and health care has evolved differently. The moment when the highest proportion of men of fighting age were at war, during the civil war (when 13% of the population was mobilised), came too early to spur the creation of a national health system. Instead, the federal government broke the putative link between war and universal health care by treating ex-servicemen differently from everyone else. In 1930 the Veterans Administration was set up to care for those who had served in the first world war. It has since become a single-payer system of government-run hospitals of the kind that many Americans associate with ▶





▶ socialised medicine in Europe. America did come close to introducing something like universal health care during the Vietnam war, when once again large numbers of men were being drafted. Richard Nixon proposed a comprehensive health-insurance plan to Congress in 1974. But for Watergate, he might have succeeded.

Still, though slow to get going on welfare, the direction of travel in America has been unmistakable. Beginning in the 1930s during the Depression, Congress gradually added federal entitlements. They multiplied again in the 1960s and have grown steadily since. The last time the country had a Republican president, a new entitlement, Medicare part D, was created. Rather than oppose this, many Republicans reasoned that if anyone was going to create a new social programme, it might as well be them. This creeping growth of government provision has left those conservatives who really do want to cut social programmes to try and starve the federal government of revenue, in the hope that one day they will collapse under the weight of their own contradictions. The reckoning is yet to come. Wagner's law, named after Adolph Wagner, a German economist, states that as societies grow richer, government consumption tends to take up a greater share of GDP. The pattern holds for America, too (see chart). Hence the distress on the right over the American Health Care Act.

Pushing against Adolph Wagner's law is another, newer tendency. Americans who recalled the Depression and the second world war tended to look more favourably on the redistribution of income. Ilyana Kuziemko of Princeton and Vivekian Ashok and Ebonya Washington, both of Yale, have found that support for redistribution has dropped among retired people over the past few decades (see chart). One explanation for this is that people retiring now have no memory of the two big, unifying events of the 20th century. It may be no coincidence that this reluctance to redistribute, which comes out particularly strongly in the opposition among current pensioners to extending health insurance, followed a surge in immigration at the end

of the 20th century. In the 1950s, immigration to America averaged 250,000 people a year; in the 1990s, it reached 1m a year.

If true, this tendency (which could be called Richard Wagner's law, after the composer who understood how powerful the urge to root for your own tribe can be) is as alarming for America's liberals as Adolph Wagner's law of ever-increasing spending is for its conservatives. For it seems to suggest that by embracing the causes of immigration and diversity, they may have accidentally weakened support for the economic policies they favour.

Take Donald Trump, Paul Ryan and Barack Obama out of America's current argument about health care, and it could be seen as a clash between these two Wagner's laws: Richard versus Adolph. Whether American welfare continues to converge gradually with the rest of the rich world, or stays distinctively flinty, depends on which Wagner comes out on top. ■

### Counter-terrorism

## Loosening the rules

**The president wants to make it easier to order lethal drone strikes**

THROUGH a mixture of leaks and semi-official confirmations, a picture is beginning to emerge of how the Trump administration will loosen the rules for counter-terrorism operations laid down by its predecessor. Some of the changes form part of the preliminary plan for accelerating the destruction of Islamic State (is) that James Mattis, the defence secretary, was ordered by Mr Trump to conclude within 30 days. Mr Mattis has to tread a delicate path between the bombast of Mr Trump's campaign promise to "bomb the shit" out of ISIS and the operational constraints imposed by Barack Obama, which many military and intelligence officers thought unduly restrictive.

Among the changes that are in the pipeline (or are already being quietly implemented) is a loosening of the guidelines Mr Obama set for drone strikes and targeted killings in places that are not counted as war zones, such as Yemen, Somalia and Libya. Although Mr Obama authorised extensive use of drones to kill terrorists, particularly al-Qaeda groups in Pakistan's North Waziristan, he became uncomfortable about the ease with which America could kill its enemies, wherever they were.

Mr Obama's playbook for drone use had four main principles. The first was that strikes outside war zones could occur only if there was near-certainty that civilians would not be harmed. The second was

that the target had been identified with near-certainty and represented a threat that could not be dealt with in any other way. The third was proper oversight and chain-of-command accountability—a reason for moving responsibility for drone strikes from the CIA to the Pentagon. The fourth was that any strikes had to advance broader American strategic interests—for example, they should not undermine intelligence-sharing with a host country or be a recruiting agent for new terrorists.

Sensible though these rules were, they reduced the speed and nimbleness that is sometimes required when a target is fleeting. Under the loosening of the rules now under way, avoiding civilian deaths will no longer be an overriding priority. A place that fails to qualify as a war zone may be designated "an area of active hostilities" where rules of engagement can be eased.

Mr Obama used this label to authorise strikes against IS in its Libyan base, Sirte. Mr Trump has already agreed to a Pentagon request to apply the description to three provinces of Yemen, which have subsequently been heavily pounded. One attack on March 2nd against the Yemeni al-Qaeda affiliate comprised 25 strikes by manned and unmanned aircraft (nearly as many as in the whole of last year).

A further change is that the CIA will once again be allowed to carry out lethal strikes, as opposed to using its drones only to gather intelligence. Indeed, it has already done so, killing Abu al-Khayr al-Masri, a son-in-law of Osama bin Laden, in northern Syria in late February. Because the CIA operates under covert authorities, it is not subject to the same legal constraints and transparency as the Pentagon.

Meanwhile, without any previous an-



Copy that, Langley

►nouncement, a further 400 troops—from the Army Rangers and the Marine Corps—have turned up in northern Syria, both to help the Kurdish-Arab Syrian Democratic Forces (SDF) in their coming assault on the is stronghold of Raqqa, and to deter Turkey, a NATO ally, from attacking the SDF. That brings American ground forces in Syria to 900. Another 2,500 troops will soon be on their way to Kuwait to join the fight.

One of Mr Trump's aims appears to be to delegate much more of the decision-making to the Pentagon and the spooks.

Asked about the deployment to Syria, his press secretary, Sean Spicer, said only that “the president was made aware of that.” After the recent ill-fated special forces raid in Yemen that left a Navy SEAL and at least 25 civilians dead, Mr Trump tried to evade responsibility for what happened, saying it was just something the generals had wanted to do. The complaint those same generals made against Mr Obama was that he micro-managed. By contrast, under Mr Trump, it seems that if anything should go wrong, it will not be his fault. ■

\$232m in sales this year, much of it from construction and textiles, though \$10m is also expected from meat-cutting. In Idaho, prisoners roast potatoes. In Kentucky, they sell \$1m worth of cattle.

Critics have spent years directing their anger towards private prisons, by pointing out the moral hazard created when profiting from punishment. Jeff Sessions, the attorney-general, caused a stir last month when he cancelled an Obama-era directive to phase out federal contracting with private prison companies, which expect bumper earnings under Donald Trump. The share price for CoreCivic, the rebranded name of the Corrections Corporation of America, shot up by 43% in a single day after Mr Trump was elected, in anticipation of lucrative contracts to run immigration detention centres.

But those who attack the new prison-industrial complex might be surprised to learn that America's publicly run prisons have been providing labour for private companies since 1979. More than 5,000 inmates take part in the scheme, known as “Prison Industry Enhancement”. “Orange is the New Black”, a television show set in a women's prison, recently lampooned a private-prison takeover, after which the inmates are forced to sew lingerie for \$1 an hour. But this gets the history only half right. Female inmates did indeed make lingerie for brands like Victoria's Secret in the 1990s—but only through a deal between South Carolina's public prisons and a private manufacturer.

America's prison-labour industry is wrapped in euphemism. Federal Prison Industries does business under the more palatable name of UNICOR, and government-run prison production schemes are called “correctional industries”. Some slogans are better than others; UNICOR has an unfortunate habit of calling its facilities “factories with fences” in reports.

Employment upon release is perhaps the best defence against recidivism. The chief justification for prison labour is that it both defeats idleness and gives inmates marketable skills. Whether it actually does so is unclear. “The vast majority of prison labour is not even cloaked in the idea of rehabilitation,” says Heather Thompson of the University of Michigan. Simple manufacturing jobs, like the ones done cheaply by most inmates, have already left the country. The study pushed by the Bureau of Prisons, showing drops in reoffending, was published in 1996. More recent comparison statistics often ignore bias in how those being studied are chosen. Rigorous academic work on the subject is almost non-existent.

Still, such programmes are undoubtedly legal. The Thirteenth Amendment to the constitution prohibits slavery and indentured servitude—“except as a punishment for crime”. ■



## Prisons

# The incarcerated workforce

LEXINGTON, KENTUCKY

## Prison labour is a billion-dollar industry, with uncertain returns for inmates

SILICON VALLEY mavens seldom stumble into San Quentin, a notorious Californian prison. But when Chris Redlitz, a venture capitalist, visited seven years ago, he found that many of the inmates were keen and savvy businessmen. The trip spurred him to create The Last Mile, a charity that teaches San Quentin inmates how to start businesses and code websites, for which they can earn up to \$17 an hour. One of the first people it helped was Tulio Cardozo, who served a five-year sentence after a botched attempt at cooking hashish, which also left him with severe burns across half his body. Two years after he was released, he got a job as a lead developer in a San Francisco startup.

Such redemptive stories are the model for what the prison system could be. But they are exceptions—the rule is much drearier. Prison labour is legally required in America. Most convicted inmates either

work for nothing or for pennies at menial tasks that seem unlikely to boost their job prospects. At the federal level, the Bureau of Prisons operates a programme known as Federal Prison Industries that pays inmates roughly \$0.90 an hour to produce everything from mattresses, spectacles, road signs and body armour for other government agencies, earning \$500m in sales in fiscal 2016. Prisoners have produced official seals for the Department of Defence and Department of State, a bureau spokesman confirmed. In many prisons, the hourly wage is less than the cost of a chocolate bar at the commissary, yet the waiting list remains long—the programme still pays much more than the \$0.12-0.40 earned for an hour of kitchen work.

Similar schemes exist at the state level as well, making the market of 61,000 captive labourers worth well over \$1bn. California's programme expects to generate

### Chuck's gun shop

## Anything you want

CHICAGO

**Shopping at the nation's most contentious gun-dealer**

**R**IIGHT next to Travis Funeral Home & Cremation Services, a dignified-looking canopied establishment offering funerals for \$3,995, sits Chuck's Gun Shop, a retailer of shotguns, rifles, pistols and semi-automatic guns, as well as ammunition, knives and holsters. The store in Riverdale, a suburb of Chicago, advertises itself as "your friendly neighbourhood gun shop", but in recent years Chuck's has acquired national notoriety as possibly the worst of the "bad apple" shops that supply a high percentage of guns recovered at crime scenes. "Criminals will always get guns because Chuck's sells to the criminals," is a frequent saying of Father Michael Pfleger, a pugnacious Catholic priest, who has led several demonstrations in front of Chuck's.

On a wintry day in March, Chuck's is businesslike and friendly. Asked whether a foreigner can buy a gun (most cannot), Ted, an avuncular, moustachioed salesman, replies: "This is America, you can get anything you want," before offering a quick tour of the shop's shooting range, a low-lit room with four 50-feet lanes and a rubbish bin riddled with bullet holes. He explains that all buyers must apply for a Firearms Owners Identification (FOID) card from the Illinois state police, who will check the applicant's criminal background, a process which can take up to ten weeks. Anyone with a FOID card can buy a gun, though once a purchase is made Chuck's will hold on to the gun for 24 hours, during which the shop's personnel are required to check whether the card is still valid. The cooling-off period is meant to prevent impulsive acts of violence.

Why has Chuck's become the favourite whipping boy of gun-control campaigners? According to the Brady Campaign To Prevent Gun Violence, more guns used in crimes between 1996 and 2000 were traced to Chuck's than to any other gun-dealer in the country—2,370. And from 2009 to 2013 more than 1,500 guns found at Chicago crime scenes were traced to Chuck's, more than the next two dealers combined. The average number of crime guns traced back to other gun-dealers in the area during the same period was three.

John Riggio, the owner of the shop, does not give interviews nowadays. In the past, he has said that he follows Illinois's relatively strict gun laws meticulously. Neither he nor a member of his family has ever been charged with wrongdoing.

(Chuck's has been a family business for 50 years.) Mr Riggio has also argued that he cannot control what happens when someone leaves the shop, especially if the buyer is a straw man. "We don't buy that argument," says Dan Gross of the Brady Campaign. If shops follow the Brady code of conduct, drawn up to prevent dangerous people from getting guns, argues Mr Gross, they won't sell to straw buyers or gun-traffickers. The code includes looking out for tell-tale signs of straw purchases, such as a clueless buyer of a gun (likely to be under instruction), or someone waiting in the car outside while a purchase is being made. It also suggests limiting sales to one handgun per civilian every 30 days, and keeping an electronic inventory of all sales that is backed up regularly.

The two most effective reforms to reduce gun violence, according to Adam Winkler at the University of California, Los Angeles, would be a federal universal background check and a crackdown on

rogue gun-dealers. Current rules on background checks apply only to licensed gun-dealers, but up to 22% of gun sales take place at gun fairs or over the internet, which do not require such checks. The Bureau of Alcohol, Tobacco, Firearms and Explosives, he argues, needs money and orders to go effectively after gun-dealers who overlook fishy sales.

It would also help if straw purchasers were punished more harshly. According to Harold Pollack at the University of Chicago, who conducted interviews with inmates of Cook County jail, the country's biggest, for a study he co-wrote on the provenance of their weapons, most got their guns through a family member or a friend, rather than stealing them or buying them directly. Many admitted they thought they needed a gun because they feared others with guns. "I would rather be judged by 12 than carried by six," they said. It may not be a coincidence, after all, that a funeral parlour set up shop next to Chuck's. ■

### America's missing servicemen

## Raiders of the lost barks

JOINT BASE PEARL HARBOUR-HICKAM, HAWAII

**A crack military unit whose quarry is not foreign enemies but long-dead Americans**

**T**WO hundred and eight boxes were handed over by the North Koreans, but American scientists quickly realised that the remains inside them belonged to many more lost servicemen. The consignment of bones, acquired in the early 1990s, was augmented by 33 American expeditions, spread over a decade. Although those were tightly escorted, recalls Johnie Webb, who went on some of them, the North Koreans were "very receptive". Too receptive, perhaps: some of the specimens the Americans dug up had been freshly reburied for them to find. The visitors brought hard currency; their hosts wanted them to succeed.

The North Korean haul—altogether containing the remnants of over 600 individuals—has its own section in the Defence POW/MIA Accounting Agency's new laboratory at Joint Base Pearl Harbour-Hickam, on the outskirts of Honolulu. The scenes inside the lab and beyond its windows are grimly contrasting. Outside stand monkey-pod trees and the mountains of Oahu; inside are rows of tables on which rest skeletons, individual skulls or hip bones, and grisly scraps. The Korean project exemplifies some of the challenges of the agency's mission to account for all missing American servicemen from the second world war onwards—a task that encompasses the edges of forensic science and the delicacies of diplomacy. It is logisti-

cally challenging and emotionally wrenching, expensive but priceless, quixotic but quietly heroic.

To illustrate the environment's effect on a corpse, John Byrd, the lab director, points to the skeletons of two marines known to have died on the same day in the Battle of Tarawa (now in Kiribati) in 1943. One, ►



**The bones surrender their secrets**

► which was buried in a coffin, is recognisably human; the other, which was left in the sand, has disintegrated. In South-East Asia there are monsoons, humidity, lots of wild animals: "horrible for preservation," says Mr Byrd. Many of the missing from the Vietnam war were shot-down pilots, says Brigadier-General Mark Spindler, the agency's deputy director, so "you're looking for teeth, you're looking for slivers of bone." Jumbles of fragments are brought in from battlefield sites or mass graves, such as a pile retrieved from Cabanatuan, a camp that was a terminus of a POW death march in the Philippines.

"The first question", Mr Byrd says, "is, is it even human?" Then his colleagues must determine how many individuals are represented and whether they were American. Recent advances in the science of bone DNA make that easier; its insights are combined with biographies, dental records and rib-cage data from tuberculosis tests, plus circumstantial clues such as aircraft serial-numbers. The sleuthing can take years—and that is just the lab work.

Before they can be identified, the remains must be recovered. Some come from American military cemeteries, in Hawaii itself, Manila and elsewhere, in which around 8,000 unknowns are thought to lie. But others are unearthed by teams dispatched to dig in jungles and beaches around the Pacific or to sift through European mud, highly skilled units whose quarry is not live enemies but long-dead compatriots, and whose role is more humanitarian than military. They include photographers, forensic archaeologists and anthropologists, aircraft experts and (depending on the terrain) divers and mountaineers.

### Strange meetings

Fifty missions went out last year. Given its reach, the agency inevitably faces political hurdles as well as practical ones. The North Korean visits, for example, stopped in 2005 because of security worries. Still, while authoritarian regimes may impose restrictions, says General Spindler, usefully their officials "work all the access". In democracies the constraints are subtler: there is "a greater awareness that you're on personal property" and more room for private objections. Moreover, "Archaeology is a damaging science." On a recent trip to the Solomon Islands, in pursuit of ten marines interred close to where they fell in 1942, a team dismantled a local's kitchen, rebuilding it after the dig.

The risks are not just to property. There are tropical diseases, landmines—unexploded-ordnance officers are deployed too—and accidents. Seven Americans were killed in a helicopter crash in Vietnam in 2001. "There is nothing easy about this," says General Spindler. Nor is the quest cheap. The custom-built facility in Hawaii,



Searching in the waters of Vietnam

named after Daniel Inouye, the senator who lobbied for it, cost \$85m; previously the relics were housed in an old barracks at risk of flooding. There is another lab in Omaha, an HQ in Washington, DC and permanent detachments in Germany, Laos, Thailand and Vietnam. A total of 700 people work for the agency; its annual budget is around \$115m.

According to various audits and reports of a few years ago, not all those funds have always been well spent. The bureaucracy was found to be ramshackle; there was talk of "military tourism" and luxury hotel stays in Rome. A Senate subcommittee weighed in. The structure has since been consolidated and—says General Spindler—inefficiencies addressed. Yet the implied cost of each ID continues to be eye-raising. Last year's total was 164, a bump on previous tallies but short of a congressional target of 200. The overall caseload is around 83,000, including 73,000 from the second world war. Even discounting more than 40,000 lost at sea, at today's pace it would take a couple of centuries to clear the backlog. (It would help if the rules were changed, so that physical evidence was not always required for an accounting.)

While the dividends may seem intangible, though, they are real. "You cannot associate a dollar value with this national imperative," says General Spindler. Overseas missions "publicly demonstrate our values" of loyalty and honour; sometimes the agency can repatriate other countries' casualties (South Korea is said to be keen to take them, the North less so). The effort assures current servicemen that, should the worst befall them, they won't be forgotten.

Then there are the families. Sometimes the missing's links to the living are tenu-

ous, and the agency has to enlist genealogists to find relatives who can supply DNA samples for comparison. But often, observes Wil Hylton—author of "Vanished", a book about the long search for a bomber crew lost over Palau in 1944—the unanswered questions inflict "hereditary damage". Children "grow up not knowing whether their father is dead or alive"; wives are haunted by a hybrid hope and fear that their husbands survived and "might walk back through the door". It is "a wound that never heals", Mr Hylton says.

Unless the agency provides a salve. Mr Byrd recalls a woman who, before entering the family viewing room at the heart of the building in Hawaii, fixed her hair to encounter what was left of the father she never met. "It's still very real, raw pain," he says, "like it happened a week ago." The protocol after an ID is the same as after a new fatality: a visit from an officer, a formal service at Arlington National Cemetery or in the no-longer missing's home state.

Deanna Klenda's brother, Major Dean Klenda of Marion, Kansas, was shot down over North Vietnam in 1965. His parachute failed to open, Ms Klenda says, and his family knew he had died, but she longed to bury him, "even a knuckle". They "never thought they would ever find anything of him"; but after a Vietnamese villager chanced on a jawbone, and after years of prompting by Ms Klenda and excavations by researchers, his remains were finally flown back to Kansas from Hawaii last year. "When they put that little piece of dental work in my hand," Ms Klenda says, "that was the biggest hug I'd gotten in 51 years." There was a fly-over in his honour at the funeral, and "I cried my heart out because he was finally home." ■

# Lexington | Deal breaker

**Why fixing American health care is a challenge like no other Donald Trump has faced**



**A**SK Washington grandees to explain President Donald Trump's rise, and they often recommend reading "The Art of the Deal". One piece of advice from that I-got-rich-quick book, published in 1987, is cited more than any other: Mr Trump's boast that he built a property empire on "truthful hyperbole", playing on the public's desire "to believe that something is the biggest and the greatest and the most spectacular". It is a striking passage to choose, but also a misleading one—implying that Trumpian success, in essence, rests on a talent for bamboozling rubes.

Actually, at the heart of "The Art of the Deal" lies a more subtle point about human nature: that some of the most profitable bargains are struck not with passive dupes, but with partners who are complicit in their own manipulation. A revealing episode describes Mr Trump tricking investors into thinking that a casino in Atlantic City is almost half-built by cramming the site with bulldozers under orders to look busy. Despite an awkward moment when an investor asks why one builder is refilling a hole that he has just dug, the gambit works. The investors had already been burned once by a project that ran over-budget so now needed a quick success, Mr Trump explains: "My leverage came from confirming an impression they were already predisposed to believe."

That variety of leverage has been key to Mr Trump's success, in business and now in politics. He is an unusual sort of tycoon. He has no life-changing invention to his name. He did not build a globally significant corporation (worth about \$4bn, the Trump Organisation would be America's 833rd-largest firm if it were listed). Instead he turned himself into a brand. He is a salesman whose greatest product is himself, slapping his name on everything from skyscrapers to hotels, casinos, golf courses or the series of high-priced, hard-sell property seminars dubbed Trump University. He boasts of how many deals involve other people's money, whether that involves picking up distressed assets for a song or luring gamblers to his casinos—"I've never gambled in my life," he bragged back in 1987, adding: "I prefer to own slot machines. It's a very good business being the house."

Mr Trump's business model offers him an unusual advantage. Whenever customers buy into his brand, they have a vested interest in his continued success. When buyers complain about corner-cutting in the construction of a Trump-branded apartment

complex ("value engineering", he calls such penny-pinching in "The Art of the Deal"), they harm the value of their own asset. Unhappy students of Trump University extracted \$25m from the businessman, as he settled class-action lawsuits without admitting wrongdoing. Their satisfaction was hard-won: the world now knows their "qualifications" are worthless.

Mr Trump has worked to forge similar bonds of complicity with voters. His pledges to put America First, to deport "criminal aliens" or to bring back millions of manufacturing jobs make supporters feel empowered, headed, safe and hopeful. Critics question such pledges at their peril: millions of Americans have invested a good deal in believing this president.

So much for Mr Trump's success. Now, not two months into his presidency, he faces the hardest test of his political life to date, as he and Republicans in Congress wrangle over how to repeal and replace the Obamacare health law, more formally known as the Affordable Care Act (ACA).

On the campaign trail Mr Trump pledged to abolish what he called the "disaster" that is the ACA, and to "come up with a new plan that's going to be better health care for more people at a lesser cost." He promised to scrap things that the public dislikes about Obamacare, starting with its government mandate to buy health insurance or pay a penalty, while keeping things that are popular, such as protections for people with pre-existing conditions.

As a candidate Mr Trump proudly broke with Republican orthodoxy and said that—unlike other rival conservatives with White House ambitions—he would preserve "without cuts" the Medicare and Social Security safety-nets that mostly serve the elderly, as well as the Medicaid system of health insurance for the poor and disabled. The ACA offered federal funding to states that agreed to expand Medicaid, adding 12m people to its rolls.

## Repeal, replace and reap what follows

On March 13th the Congressional Budget Office (CBO), which "scores" new laws for probable costs and impacts, concluded that under an ACA replacement proposed by House Republicans, 14m more Americans will be uninsured in 2018 compared with current law, while by 2026 the ranks of those without health cover will swell by 24m as Medicaid is cut back. This will hit some core Trump supporters: the CBO estimates that while the young would gain from the Republican plan, those in their early 60s on low incomes, as well as rural folk, would see costs rocket.

Republican responses have been cacophonous. Party leaders like Paul Ryan, the Speaker of the House of Representatives, defend the new health plan for cutting spending and call the cover offered by Medicaid so skimpy as to be worthless. Conservative House members call the new plan Obamacare-lite, saying its system of tax credits is too generous. Some Senate Republicans, especially those from states which expanded Medicaid, call the new plan too harsh. White House aides have rubbed the CBO and promise that Mr Trump's dealmaking skills will save the day.

But even for Americans predisposed to believe that Mr Trump is their champion and that his critics are lying, the question of whether they can or cannot afford health insurance is starkly binary. Being unable to buy treatment for a loved one is not empowering, it is frightening. Health care is an area in which voters have little incentive to forgive broken promises: even if their first instinct may be to blame those around the president, not Mr Trump. The president is in perilous territory. He needs a product that does an almost impossible job. Sales patter will not do. ■



**Andrés Manuel López Obrador**

## Mexico City, we have a problem

JILOTEPEC

### A fiery populist could become the next president

WHEN Andrés Manuel López Obrador winds up a stump speech in the main square of Jilotepec, a small town in the eastern state of Veracruz, the crowd surges forward. It takes him 15 minutes to pass through the commotion of backslapping, selfies and jabbing microphones to reach the car parked outside the tent where he spoke. The point of the rally is to promote Mr López Obrador's party, Morena, in municipal elections to be held in Veracruz in June. But his main goal is much bigger: to win Mexico's presidency on his third attempt, in 2018.

That is a prospect that thrills some Mexicans and terrifies others. A figure of national consequence for more than 20 years, AMLO, as he is often called, has fulminated against privilege, corruption and the political establishment. Sweep away all that, he tells poor Mexicans, and their lives will improve. Many others hear in that message the menace of a charismatic populist who would punish enterprise, weaken institutions and roll back reforms. The biggest worriers view him as a Mexican version of the late Hugo Chávez, an autocrat who wrecked Venezuela's economy and undermined its democracy.

But Mexico, like some richer countries, may now want more drastic politics. Voters are enraged by corruption, crime, which is rising again after a drop, and feeble economic growth. Not long after Mr López Obrador spoke in Jilotepec, the state

prosecutor in Veracruz reported that 250 skulls, belonging to victims of drug gangs, had been found in pits near the state capital. Many Mexicans have stopped believing that either of the parties that have governed Mexico this century, the Institutional Revolutionary Party (PRI) of President Enrique Peña Nieto or the opposition National Action Party (PAN), will do much about such horrors. And now they face a confrontation with an American president who wants to end free trade, deport millions of Mexicans, build a wall and force Mexico to pay for it.

AMLO proposes to answer graft with his own incorruptibility, and Donald Trump's nationalism with a fiery nationalism of his own. In Jilotepec he rails against

the former governor of Veracruz, now facing corruption charges and on the run from the police. He slams the PRI, the fugitive's party, as "corrupt and cynical" and the PAN as "corrupt and hypocritical". The message strikes home. "Mexico is rich, but those who govern us rob us," says a supporter.

Mr López Obrador has taken his campaign to the United States, where he presents himself as the only politician who can stand up to Mr Trump. In New York on March 13th he denounced Mr Peña for allowing his American counterpart to rain "insolence and insults" upon millions of Mexicans living in the United States. A President López Obrador would mean "alpha males either side of the border", says Juan Pardinas of IMCO, a think-tank. Voters may like that idea.

Mr López Obrador is the early front-runner for next year's election (Mr Peña cannot run again). In a one-round election, he could win with as little as 30% of the vote (see chart). If that happens, Mexico will embark on a perilous political experiment.

He began his political career in the southern state of Tabasco as an operative of the PRI, which monopolised political power at the national level from 1929 to 2000. His renegade streak showed up early. As an official of the National Indigenous Institute he spent five years living with the Chontal, an Indian community. Hence his preoccupation with the poorest Mexicans, says Lorenzo Meyer, a historian. Mr López Obrador became the PRI's state chief, but was squeezed out of the job by priistas suspicious of his grassroots organising.

His rise to national prominence came after he lost a race to be governor of Tabasco in 1994 as the candidate of what is now the Party of the Democratic Revolution (PRD), a left-wing group that had broken away from the PRI. At a sit-in in the Zócalo, Mexico City's main square, Mr López ►

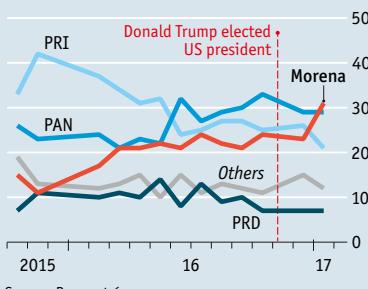
### Also in this section

36 Bello: Mauricio Macri's gradualism

38 Deaths foretold in Guatemala

### Pop goes the populist

Mexico, voting intention in presidential election %



► Obrador theatrically presented 14 boxes of documents proving, he said, that the PRI had stolen the election.

His talent for political showmanship helped make him mayor of Mexico City from 2000 to 2005. He ran twice for the presidency, in 2006 and 2012, losing to Mr Peña in the second contest. In 2014 he split from the PRD over its support for Mr Peña's economic reforms and founded Morena, the Movement of National Regeneration.

Mr López Obrador has been an unremitting opponent of measures to modernise the economy, from the North American Free Trade Agreement with the United

States and Canada, which took effect in 1994, to the opening up of the energy market to private investors under Mr Peña in 2014. If elected, Mr López Obrador promises to hold a referendum on energy reform. A chapter in his most recent book is called "privatisation is a synonym for robbery". He has sided with a radical and disruptive teachers' union in resisting an education reform promoted by Mr Peña, which would require teachers in the abysmal state schools to take evaluation tests.

As Mexico City's mayor, Mr López Obrador caused less mayhem than his image suggested he might. He built roads and

introduced a small universal pension. Debt rose by a modest 9% in real terms during his mayoralty. "He got on well with businesses and with developers," says Agustín Barrios Gómez of the Mexican Council on Foreign Relations, who is a former PRD congressman. He left office with an approval rating of 84%. But he preferred popular policies to good ones. The pensions did not require future beneficiaries to contribute. The investment in roads would have been better spent on public transport. He did not work to professionalise the police or the judiciary. In short, "he was not an institution builder", says Mr Pardinas. ►

## Bello | The pros and cons of Macri's gradualism

### The new Argentina prepares for an electoral test

**T**O THE deafening beat of big bass drums and the occasional firecracker, tens of thousands of banner-waving trade unionists marched through the heart of Buenos Aires on March 7th, in protest at job losses and inflation. "We're up to here," said Silvia Blanchoux, a hospital cleaner, gesturing with a hand across her throat. "My rent has gone up, and my daughter is unemployed."

The protest coincided with a strike by teachers. This stirring of opposition comes at a delicate time for Argentina's president, Mauricio Macri, and his efforts to repair the damage inflicted by the populism of his Peronist predecessors, Cristina Fernández de Kirchner and her late husband, Néstor. In October Mr Macri's centre-right Cambiemos ("Let's change") coalition faces a mid-term election for almost half of congress. This will be a symbolic referendum on the government.

In fact, it is surprising that Mr Macri, a former businessman, remains as popular as he is (his approval rating is around 50%). His victory in November 2015 was unexpected. He inherited a country whose future was mortgaged: international reserves were negligible; a dispute with bondholders had cut Argentina off from credit markets; inflation was around 30%; and the fiscal deficit was 5.4% of GDP in 2015, swollen by indiscriminate subsidies to consumers and crony companies and financed by printing money.

Mr Macri's team moved swiftly to dismantle exchange controls, devalue the peso and settle with the bondholders. It raised interest rates to stop inflation from getting out of control, which pushed the economy into a short recession. It has otherwise moved cautiously. Official targets call for single-digit inflation to be reached only in 2019, when the deficit should be 2.2% of GDP. Some 15% of imports are still



subject to the Kirchners' barriers.

This caution stems from circumstance—Mr Macri lacks a majority in congress—but also from his preference for consensus-building, honed during eight years as mayor of Buenos Aires. It may mitigate the social impact of stabilisation in a country still traumatised by an economic collapse in 2001-02.

Yet gradualism is no panacea. Businesses worry that the use of dollar loans to finance the fiscal deficit, although non-inflationary, is again leading to an overvalued peso. Although Nicolas Dujovne, the treasury minister, says that inflation is falling and output and employment are growing, many Argentines do not yet feel the benefits. "We were going OK and now we're poorer," said Ms Blanchoux. Despite an increase in social assistance, a survey by the Catholic University found that the urban poverty rate edged up last year from 29% to 33%. Since December opinion polls show a sharp dip in optimism.

That coincides with a series of what pundits call "unforced errors" by the government. They range from the trivial (a row over moving a public holiday) to the trou-

bling: a now-cancelled write-down of a disputed debt owed to the state by a firm owned by Mr Macri's father. Critics also complain of micromanagement by the Casa Rosada, the presidential palace.

Marcos Peña, Mr Macri's cabinet chief, insists that the errors are minor compared with those of the Kirchners. The biggest problem, he adds, is the pain that the squeeze is producing in the lower-middle class, "who voted for us". In response, the government is slowing down the withdrawal of subsidies (which had caused big rises in electricity and water bills, albeit from almost nothing). It has launched a \$33bn, four-year infrastructure plan to try to speed the economy along.

Mr Macri still has much going for him. Mario Blejer, a former central-bank governor, thinks GDP will grow by 4% this year. Deficit-cutting is easier because spending under the Kirchners was corrupt and wasteful: contracts for new roads are being signed for up to 40% less than previously budgeted, says Guillermo Dietrich, the transport minister. The Peronists are divided. Many Argentines have tired of the permanent confrontation engendered by Ms Fernández, who is defending herself from corruption charges.

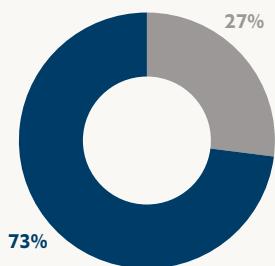
"Our biggest asset is that we are underestimated," says Mr Peña. "Without that, we wouldn't be here." It is all but impossible for the government to win a congressional majority in October. But it must avoid the perception of defeat, which would make Mr Macri's government seem like a parenthesis in a populist country rather than the start of a new era. The election comes before the full benefit of more rational policies becomes clear. Even so, many Argentines seem to recognise that Mr Macri is Argentina's best chance in a generation of breaking out of its vicious circle of populism and decline.

# The year in crisis

## The world is becoming riskier for most businesses

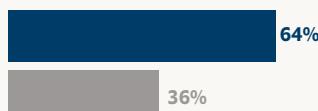
Companies are no strangers to corporate crises. But in 2016 most businesses faced a substantial risk—and experienced crisis managers think things will get worse. A survey of more than 500 of them shows:

Facing crises



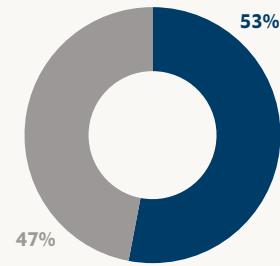
Almost three out of four said they faced a major crisis in 2016 that could have significantly harmed their firm's reputation.

A dangerous world



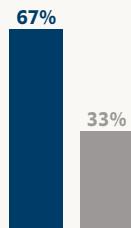
Almost two-thirds believe the world became a riskier place to do business in 2016.

Types of risk



53% of executives reported that cyber-risk is the foremost source of corporate crises.

More trouble ahead



Two out of three believe the world will become an even riskier place to do business in 2017–2020.

**"Corporate crises are nothing new, but 2016 was the year of living dangerously. From cyber risk to political uncertainty, the challenges will only increase. Corporate management will need to be more proactive and display decisive leadership to mitigate the existential risks that crises present."**

Edward Reilly, global chief executive officer of the strategic communications segment at FTI Consulting

Are we in a period of exceptional risk for corporations?

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► That failure points to his most worrying trait: a contempt for norms, separation of powers and the rule of law. After he lost the election in 2006, his supporters threatened a revolution and blocked Reforma, one of the capital's main roads, for six weeks. In 2001 he responded feebly to the lynching of a man suspected of stealing religious images near Mexico City, saying, "We do not interfere with the beliefs of the people." Though personally honest, Mr López Obrador lacks the respect for institutions that would make him an effective corruption-fighter.

As the date for the 63-year-old's third (and probably final) run for the presidency approaches, he is trying to be less divisive. He endorsed Mr Peña's plan to visit Mr Trump in January. (The trip was cancelled after the American president posted an insulting tweet.) He has been friendlier to business. Disappointed by the performance of the economy under the reformist Mr Peña, some entrepreneurs are "more willing to give Mr López Obrador a chance", says Gerardo Esquivel, an economist at the Colegio de México, a university.

For now, Mr López Obrador has the political field to himself. Morena is basically a one-man party, which means its quota of party-propaganda broadcasts can focus on promoting him. Other parties have to divide their resources among various politicians; none has yet selected its presidential candidate for 2018. This "has had an enormous effect" on AMLO's chances of winning, says Mr Aguilar.

The PRI's nominee for president, whoever it is, will be tainted by association with the current government. The likeliest PAN candidate, Margarita Zavala, is popular, but she is the wife of a former president, Felipe Calderón, who is widely blamed for an upsurge of violence provoked by his inept crackdown on crime. The PRD has little support. Inflamed relations with the United States and an economy weakened by the onslaught from the Trump administration would also play into Mr López Obrador's hands.

His victory is no sure thing. His momentum would be slowed if Morena does badly in the governor's election in the State of Mexico in June. Anybody-but-AMLO voters could unite behind one candidate; nearly half of voters have a negative view of him, a much higher share than for any other potential candidate. He has a talent for self-destruction. In 2006 his 16-point lead vanished after he refused to participate in the first televised debate and called the president, Vicente Fox, *chachalaca*, a bird noted for its loud cackle.

Much of Mexico's elite prays that such buffoonery will again prove his undoing. But he has become smoother and more disciplined. The danger is that, even if he is shrewder about obtaining power, he may be no wiser about how to exercise it. ■

## Guatemala

# Deaths foretold

### A tragic fire draws attention to a broken social-services system

**O**N MARCH 7th a team from an international human-rights group arrived in Guatemala to evaluate state-run institutions for disabled people. One stop on their itinerary was the Hogar Seguro (Safe Home) Virgen de la Asunción, a shelter for indigent children, which had been the subject of reports about sexual abuse, violence and overcrowding. The team arrived too late. That night, a fire engulfed a girls' dormitory, killing at least 40 adolescents and severely injuring a dozen.

A tragedy at Hogar Seguro was pre-ordained. In interviews with survivors, the team from Disability Rights International (DRI) discovered that 800 children were crammed into a home built for 500. At least two staff members have been jailed for sexually abusing residents. Last year, 142 children ran away. Survivors said staff had locked around 60 girls in a room as punishment for a recent escape attempt; when the girls set mattresses ablaze to protest against their confinement, they were unable to get out.

Hogar Seguro is not an isolated case. The fire is "an indictment of the whole social-service system in Guatemala", says Eric Rosenthal, DRI's director. The group found violence, neglect and forced prostitution at several state-run institutions, including Federico Mora, a psychiatric institution for adults. The Inter-American Commission on Human Rights has ordered that institution to improve conditions.



How protesters showed the horror

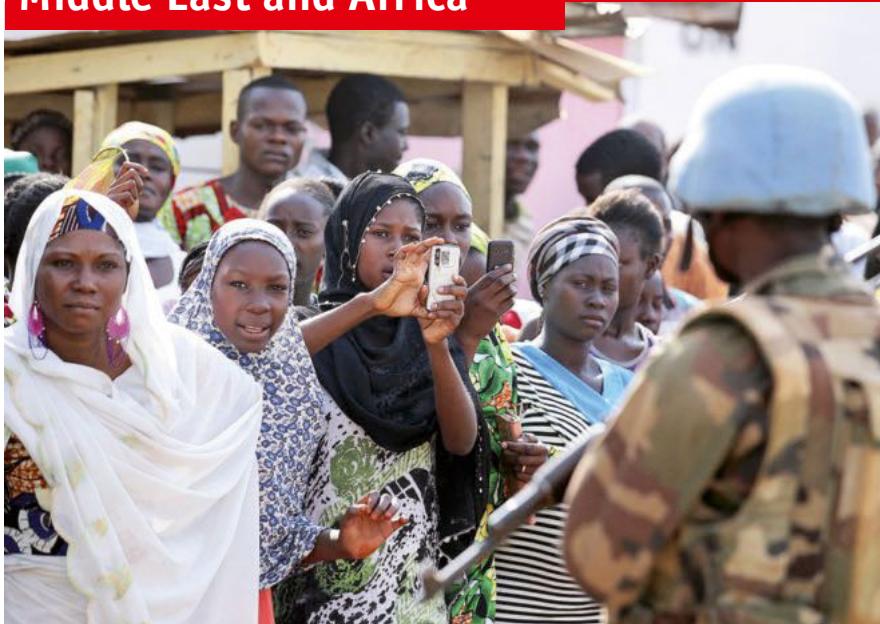
The victims of the Hogar Seguro fire are among the 7,000 children who live in public and private institutions in Guatemala. Most are not orphans. They come from violent homes or from families that cannot afford to take care of them. The Guatemalan government spends the equivalent of 3.2% of GDP directly on children and adolescents, including on education. That is the lowest rate in Central America. The child-protection agency has a budget of just \$2.5m to pay for state-run facilities, which house around 1,000 children, and for monitoring scores of privately run homes. These hold the bulk of children and vary greatly in quality. Even the best do not provide a healthy environment for children to grow up in, say children's-rights advocates. They have long urged Guatemala to replace them with a system of foster care like that in other countries.

This will not be easy to arrange. A move away from institutionalisation would require paying stipends to poor families who take their children back; monitoring parents who have been violent but can learn not to be; and expanding a foster-care system that now comprises just 40 families. Paraguay, which is nearly as poor as Guatemala, is an example. It began a shift towards "community placement" after the Inter-American Commission ordered the government to reduce the number of mental-health patients in institutions.

Human-rights advocates hope the Hogar Seguro calamity will spur reform. "There's finally growing awareness that things must change," says Mariko Kagoshima of UNICEF's Guatemala office. Thousands of people demonstrated on March 11th to demand a government investigation into the malpractice that led to the fire.

The government's first response to the fire was inept. It wrongly claimed that the girls were juvenile offenders who had "sharp objects hidden in their hair" and that they had protested because they didn't like the food. It sent 700 survivors to other institutions, placing some of them with gang members and adult psychiatric patients. Some rock back and forth, hit and bite themselves, and cry through the night as they relive their trauma.

The government has since taken the tragedy more seriously. It has arrested the director of Hogar Seguro and the social-services secretary, promised changes and asked UNICEF for help. But the resolve to reform must outlast the shock of the fire, which will soon be replaced by other traumas. Improvements to child protection will require "gigantic and sustained social pressure, and a majority of congressmen in favour of change", says Iduvina Hernández, the director of a Guatemalan human-rights group and a columnist for Plaza Pública, a news site. Despite the tragedy at Hogar Seguro, she fears that "the indignation hasn't yet reached that level". ■



**Central African Republic**

## Averting another CAR crash

KAGO-BANDORO

**The World Bank used to shun war zones. Now it is trying to help before the shooting stops**

**H**OOPS of razor wire overlooked by guard towers mark the border between order and chaos in Kaga-Bandoro, a market town in the middle of the Central African Republic (CAR). On one side are the ordered rows of white tents and shelters of the UN's "Multidimensional Integrated Stabilisation Mission in the Central African Republic" (MINUSCA), a 13,000-strong peacekeeping force. On the other, huddling under the guns of the Pakistani battalion billeted here, are the tarpaulins that shelter some 12,000-15,000 people in one of the world's newest refugee camps.

They have fled not once, but at least twice. Many had already sought safety in a nearby camp after their homes were destroyed. In October, however, the refugee camp was attacked and burned down by members of Seleka, the remnants of mostly Muslim militias which had toppled the government in 2013. "Six men were threatening me with knives," says Paul Fradjala, the head of the local government in town, twisting and turning his shoulders to demonstrate how he wriggled free and ran. Yet even under the guns of the peacekeepers, security is illusory. "If someone kills someone in front of you, there is nothing you can do," says Mr Fradjala of the crowded new camp that encircles the UN base.

Nerves are even more frayed in other parts of the country. In February the UN conducted air strikes on a faction of Seleka that was preparing to overrun Bambari,

another market town. And in the capital, Bangui, killings and retaliations boil over every few months. Yet even amid this simmering conflict a bold experiment is taking place that may change the future of state-building and peacekeeping across the world. It is to test a big, and still relatively new, idea about how to deal with fragile or post-conflict states: whether a big injection of aid into countries that have not yet fully emerged from conflict can revive their economies and reduce the risk of them sliding back into full-blown civil war.

Few countries have been dealt a worse hand by geography and history than the CAR. It is not just landlocked; it is farther from the coast than anywhere else in Africa. Moreover it is in an unstable neighbourhood, sharing borders with the Democratic Republic of Congo, Sudan and South Sudan. The diamonds under its soil are valuable enough to be worth fighting over and portable enough to fund militias. It has mostly been ruled by dictators since independence in 1960.

The most recent crisis started in 2013 after Seleka militias ousted the government and installed the country's first Muslim president, Michel Djotodia, before burning villages and massacring civilians. The militia that formed to oppose them was itself soon going door-to-door, killing Muslims, until a French military intervention—some reckon its seventh in the country—put a lid on the fighting.

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It was this narrowly averted genocide that made the world sit up, send peacekeepers and promise to pump large sums of money into a country that for years had received very little help. Before the most recent crisis the CAR used to get about \$50 in aid per head each year, between a third and an eighth as much as was given to better-governed darlings of the donor community such as Seychelles or Mauritius.

Since the crisis, the CAR has become an example of how donors are changing their focus: from giving money mostly to well-run places, to putting more of it into the basket-cases that account for an ever-growing share of the world's poor. The World Bank, for instance, has pledged to spend as much as \$500m, or about a third of the CAR's current GDP, over the next three years, ten times its previous commitments. Globally, the World Bank plans to double to \$14bn the amount of money it allocates to fragile states over the next three years. "The CAR is a test case," says Jean-Christophe Carret, the World Bank's country manager. "Fragile states are the new frontier of development."

Others are also shifting focus. Britain's Department for International Development plans to spend half of its budget in fragile states and its private investment arm, the Commonwealth Development Corporation, is making 44% of its new investments in such places.

An example of what this money is being spent on can be found about an hour's drive east from Kago-Bandoro, where a group of villagers in orange high-visibility vests and red hard hats swing pickaxes and shovels as they repair a stretch of dirt road. The project is partly about connecting towns with farmers to boost growth. But the more immediate goal is to give young men jobs in the hope that this will make them less eager to take up arms. "The crisis ►

► has idled many young people," says Faustin-Archange Touadéra, a former maths professor who is now the country's president. "If we give them work, we give them a vision, a hope." Other infrastructure being built or refurbished includes a hydro-power plant that provides electricity to the capital and small pumping stations to provide clean drinking water.

The harder challenge, of promoting private investment in a country that has almost none, is evident at Bangui's only industrial plant of note, a brewery. It produces Mocaf, a light lager so popular that, when Islamist militias took over the capital, they stole the entire stock but took care not to destroy the plant. Pascal Berenger, who runs the business, guffaws when asked if he buys raw materials locally. "Normally brewers use some maize, some rice, but we don't find any maize or rice. Everything is imported." Yet adversity creates opportunity, he says, noting that beer sales rise during conflicts. After three profitable years, his shareholders have given him the money for modern equipment.

Few think fixing the CAR will be quick or easy. "We may soon be—but are not there yet—at a turning point in this country to bend the arc of history," says Parfait Onanga-Anyanga, who heads the UN mission. "It will take sweat, tears and faith." That may well be true, but it will also take money and a great deal of patience from those providing it. ■

## South Sudan

# Death spiral

JUBA

To fight soaring inflation amid a famine, South Sudan taxes aid workers

EVEN in the posher restaurants in Juba, the capital of South Sudan, the world's newest country, the menus are printed on cheap paper. It is not worth having more expensive ones when they have to be updated every few weeks. Thanks to an inflation rate that touched more than 50% a month at one point last year (the conventional definition of hyperinflation, though price rises have since eased off a bit), even a modest meal costs a brick-sized bundle of currency. Over the past year, the value of the South Sudanese pound has collapsed. It used to take 30 to buy a dollar; now it takes 120. The biggest banknote in circulation, the ss100, is now the world's least valuable highest-denomination national note.

This nasty bout of inflation has two causes: money-printing and economic collapse. South Sudan's economy is among the least diversified in the world. In 2014 oil

provided 99.8% of the country's export revenues. At independence in 2011, when production was high and oil fetched over \$100 a barrel, petrodollars flowed freely and fuelled colossal political patronage. But a shutdown in 2012 followed by civil war, which broke out in 2013, has slashed output. South Sudan now produces around 120,000 barrels of oil a month; half as much as it did at its peak, and the price per barrel is only half what it was in 2011. The government has printed fresh banknotes to try to cover this gigantic shortfall, with predictable results.

An NGO worker in Juba shows off a picture of boxes and boxes of currency loaded onto a small plane: to pay local staff, the NGO must first pay a hefty extra baggage fee. Taxi drivers, a prominent source of black-market currency, tie up bricks of pre-counted banknotes with elastic bands to save people from having to count them out themselves.

Government salaries, when they are paid, are now worth almost nothing. And food, which is mostly imported from Uganda and Kenya, has soared in price, adding to the near-famine situation in much of the country. At Gumbo market, a litter-swept patch of dirt near where the tarmac road to Uganda starts, Grace Asio, a Ugandan trader, laments the state of her business. "The dollar costs more and more," but the price in South Sudanese pounds that her customers can pay stays the same. "If this carries on, then definitely I will have to close," she says.

A normal economy would adjust to the worse terms of trade, says Peter Ajak, a South Sudanese economist. Indeed, faced with a worse exchange rate, in 2015 farmers in Equatoria, an area of rich soil south of Juba, began selling their produce to Uganda—reversing the normal trade flow. Conflict, however, has stopped this. In July, a barely respected ceasefire broke down in Juba; since then the civil war, which had previously been confined to the north, has spread to Equatoria. The number of South Sudanese refugees in Uganda has more than tripled to above 700,000, while farming has all but stopped. "There is really no



productive capacity left," says Mr Ajak.

Inflation has slightly decelerated in the past few months, taking South Sudan out of technical hyperinflation. Yet the fundamental problems remain. The government is still overspending, despite having no new sources of revenue. There are still almost no non-oil exports. With peace, a bail-out might come from international donors. But South Sudan's leaders keep fighting. Their latest revenue-raising proposal, announced just a few weeks after famine was declared in parts of the country, is to raise the cost of work permits for foreign aid workers from \$100 per person to \$10,000. Feast on that. ■

## Libya's war

# Coastal retreats

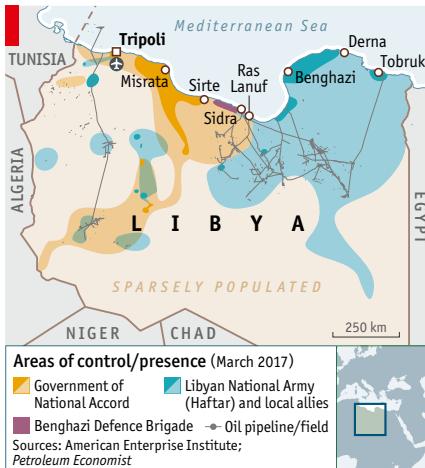
CAIRO

**The battle for Libya's oil ports complicates an already chaotic civil war**

FEW places exemplify the chaos that has enveloped Libya better than the oil ports of Sidra and Ras Lanuf, which have changed hands twice in March. First the Benghazi Defence Brigade (BDB), an Islamist militia, captured them from the forces of Khalifa Haftar, the head of the self-styled Libyan National Army (LNA). Then, as the BDB handed control of the ports to forces aligned with the Government of National Accord (GNA) in the capital, Tripoli, Mr Haftar, who is supported by a rival authority in the east, grabbed them back.

For nearly three years Libya has been mired in a civil war that at first pitted east against west. Now there are so many groups fighting that it is difficult to draw the battle lines. An attempt by the UN to stitch the country together, by creating the GNA in 2015, has all but failed for lack of support. Even Tripoli is beset with violence. Oil production, Libya's economic lifeline, is threatened by the fighting, which may spur deeper involvement by Russia. It says it wants stability, but it supports Mr Haftar.

Though he has, at least for now, come out the winner, the battle for the ports exposed Mr Haftar, who believes he is the only one who can unite the country and defeat the terrorists in its midst. "He behaves like a strongman, but he does not have the capabilities of a strongman," says Mattia Toaldo of the European Council on Foreign Relations, a think-tank. His national army is more a coalition of ragtag militias from the east, stretched thin by fighting in Benghazi and Derna. Indeed, it was forces aligned with the GNA, not Mr Haftar's army, that kicked the jihadists of Islamic State out of their stronghold in Sirte last year. ►



Russia, nevertheless, seems to view Mr Haftar as a stabilising force worth backing. It is said to have deployed special forces to an air base in western Egypt, near the border with Libya. Both Egypt and Russia deny this. "Excessive intervention...is hardly possible and is hardly advisable," says Dmitry Peskov, a spokesman for the Kremlin. But American officials see parallels with Russia's actions in war-torn Syria, where it supports Bashar al-Assad, the blood-soaked president. Russia has hosted Mr Haftar three times since the start of last year—on one occasion, aboard an aircraft-carrier in January, when he was greeted with a full-dress parade.

The Russians have also hosted the GNA's prime minister, Fayez al-Serraj, in Moscow. But many blame Mr Haftar's intransigence for the lack of progress towards peace. Egypt, which backs the LNA, was angry at his refusal to hold direct talks with Mr Serraj at a summit in Cairo last month. Now Mr Haftar's team is trying to rally support at home and abroad by saying that the BDB is affiliated with al-Qaeda. The charge is rejected by the group, though some of its fighters have ties to extremists. One target of the propaganda is the new American administration, which has yet to take a position on Libya.

The GNA, for its part, is both weak and divided. Mr Serraj probably did not know about the BDB's plan to attack the ports, which his government condemned. But his defence minister, Al-Mahdi al-Bargathi, probably supported the effort. Back in Tripoli, rival militias are shooting it out in the streets, as a previous Islamist government tries to reclaim power. Mr Serraj himself survived an assassination attempt on his motorcade in February. He is losing support even among the militias of Misrata, which have fought on the side of the GNA. Ironically, his weakness may also be an asset—some militias back him precisely because he cannot challenge their power.

Suffering Libyans just want the fighting to stop. The GNA has failed to provide services. Cash is in short supply. One bright

## South Africa and Russia

# Say my name

JOHANNESBURG

Old ties from the days of struggle are being renewed

Vladimir Putin may frighten some countries, but Russia gives many South Africans a warm and fuzzy feeling. They remember support in decades past: during apartheid the Soviet Union provided military training and arms to the African National Congress (ANC), as well as to other liberation movements on the continent. Some surprisingly common South African first names—such as Soviet, Moscow and Lenin—are living tributes to these old ties. Sputnik Ratau, born shortly after the first satellite's launch, is a spokesman for the water and sanitation department. A high school in KwaZulu-Natal is named after Eric Mtshali, a stalwart of the struggle who spent decades in exile and goes by the nickname "Stalin".

Recently, Russia and South Africa have sought to renew these cold-war-era ties. The two countries are scrapping visa requirements from March 30th, allowing up to 90 days of trouble-free travel. South Africa's president, Jacob Zuma, has already developed a taste for Russian holidays. In 2014, after a tiring election campaign, he took a six-day trip with his state security minister that included several days of "rest". A few weeks later South Africa signed an agreement with Rosatom, Russia's state-owned nuclear power company, to buy several nuclear-power stations. Though the deal appears to have stalled because of controversy over the 1 trillion-rand (\$76bn) price tag, there has been other co-operation in intelligence and defence, with South African spies and air-force pilots said to have received Russian training. On March 6th communications officials

from the two countries pledged to work on "collaborative media activities".

The countries have grown closer within the BRICS (Brazil, Russia, India, China and South Africa) grouping, an economic club that has developed into a broader, more political alliance. For Mr Zuma, and for an anti-Western strain within the ANC, Russia and China offer an ideological alternative. Sanctions-hit Russia sees Africa as a source of political support and business opportunities. South Africa has laid out the welcome mat, inviting Mr Putin to visit this year.

Gerrit Olivier, a former South African ambassador to Russia, says visa-free travel symbolises this "special relationship". But he doubts it will boost travel, since there are few South African-Russian business deals, and no direct air links. "Cultural incompatibility" is also a problem, he reckons. Perhaps this is the secret to the two countries' friendship: personal interactions remain rare.



spot had been oil production, which almost doubled, reaching 700,000 barrels per day (bpd), after Mr Haftar first captured the ports in September. It has since fallen to about 600,000 bpd. Libya, which has the largest oil reserves in Africa, needs the revenue, which goes to the central bank and finances both halves of the country. "Unless it can get to 900,000 or 1m bpd by the end of the year, it has no hope of avoiding fiscal

collapse," says Mr Toaldo.

That is not impossible. Before the revolution that toppled Muammar Qaddafi's regime in 2011, Libya produced 1.6m bpd. Russia seems hopeful. Its state-owned oil giant, Rosneft, signed a co-operation agreement with Libya's National Oil Corporation last month. But much depends on how Mr Haftar and his allies handle their recovered treasure. ■

## Saudi Arabia

# Farewell my guardian

**Chafing at being treated like children, some Saudi women are leaving the country**

CAN Saudi Arabia keep its women? Last month's appointment of women to head two big banks and Tadawul, the kingdom's stock exchange, offers hope that the path to a fulfilling career is not completely blocked. But the restrictions of Saudi life remain so irksome that covertly, silently, many women are finding ways out.

On family trips abroad, some jump ship. Some, having been sent to Western universities at the government's expense, postpone their return indefinitely. Others avail themselves of clandestine online services offering marriages of convenience to men willing to whisk them abroad. Iman, an administrator at a private hospital in Riyadh, has found a package deal for \$4,000 offering an Australian honeymoon during which she plans to scarper.

Propelling the flight is the kingdom's *wilaya*, or guardianship, law. Although it has received less publicity than the world's only sex-specific driving ban, it imposes harsher curbs on female mobility. To travel, work or study abroad, receive hospital treatment or an ID card, or even leave prison once a sentence is served, women need the consent of a male *wali*, or guardian. From birth to death, they are handed from one *wali* to the next—father, husband and, if both of those die, the nearest male relative. Sometimes that might be a teenage son or brother, because although boys are treated as adults from puberty, women are treated as minors all their lives.

Iman, a divorcee, is subject to the guardianship of her brother, who at 17 is barely half her age. He lets her work as a manager at a hospital, but pockets her earnings. She says she is kept like a chattel, while he spends her money on drugs and weekends in massage parlours in neighbouring Bahrain. Her ex-husband refuses to let her see their children. Her brother prevents her from completing her studies in Europe. If she protests, he threatens to beat her.

She tried going to court to have the guardianship transferred to a more sympathetic elder brother, but the judge dismissed the case, she says, while talking on his phone. Though she dressed demurely in a full veil, she suspects the judge objected to her presenting her own case. Social services offer poor refuge, since hostels for abused women resemble prisons where the windows are barred and visitors banned. When she hears other women say that their brothers don't beat them, Iman assumes they are lying "because they are

scared of social housing".

Estimates of the number of "runaway girls", to use the Saudi term, are imprecise, but, says Mansour al-Askar, a sociologist at Imam Muhammad ibn Saud University in Riyadh, the rate is rising. By his estimates, over a thousand flee the kingdom every year, while more escape Riyadh for Jeddah, the kingdom's more liberal coastal metropolis.

Dissenting Saudi scholars insist that the guardianship laws stem not from Islam, but the Bedouin customs that still hold sway in much of Arabia's hinterland. Khadija, the Prophet Muhammad's first wife, was a merchant who sponsored her husband. His subsequent wives moved between Medina and Mecca without him. "Islam freed women from the *wilaya*," says Hassan al-Maliki, a theologian in Riyadh who has sometimes been jailed for free-thinking. "A woman can choose whom she marries." But the clerics who man the judiciary maintain that guardians protect the vulnerable and keep families and, by extension, society together. Last December the courts sentenced a man caught denouncing the *wilaya* on social media to a year in jail. Another Saudi study, at a university in Mecca, acknowledged that some runaways might be fleeing physical abuse, but said that most had

been influenced by the "misuse of social media, copying other cultures and weak beliefs".

Economists note that the guardianship system makes Saudi Arabia poorer. More than a quarter of the 150,000 students the kingdom sends abroad every year are women. Given that many defer their return or choose to remain in more liberal places like Dubai, much of the \$5bn the government spends on their studies each year is going to waste. "Saudi Arabia is losing the battle to keep its talent," says Najah al-Osaimi, a female Saudi academic who has settled in Britain.

Awkwardly for reformers, some of the most tenacious advocates of the *wilaya* are women, particularly in obscurantist southern provinces like Asir. Despite such beguiling hashtags as #StopEnslavingSaudiWomen and #IAmMyOwnGuardian, a social-media campaign to end the *wilaya* system attracted just 14,000 signatures.

## Use them or lose them

Saudi Arabia's leaders acknowledge the need to make the kingdom more women-friendly. Already, more women attend Saudi universities than men. And although some men still send their own photographs when they apply for jobs for their wives (and even attend their interviews), in 2012 the kingdom waived the need for women to have their guardians' approval for four types of work, including clothes-shop assistants, chefs and amusement-park attendants.

In upmarket malls, women can be seen selling aftershave, boldly spraying samples onto male hands. Broadminded men can give their female wards five-year permits to move unaccompanied (though they get updates by text message whenever their charges travel abroad). Country-wide, the dress code has relaxed a bit. In big cities, women have added streaks of colour and patterns to the black *abayas* or cloaks that the state requires them to wear. Even in Burayda, the bastion of Saudi Arabia's puritanical rite, women have cut slits for their eyes in veils that hitherto fully covered their faces, and let their *abayas* slip from their heads to their shoulders.

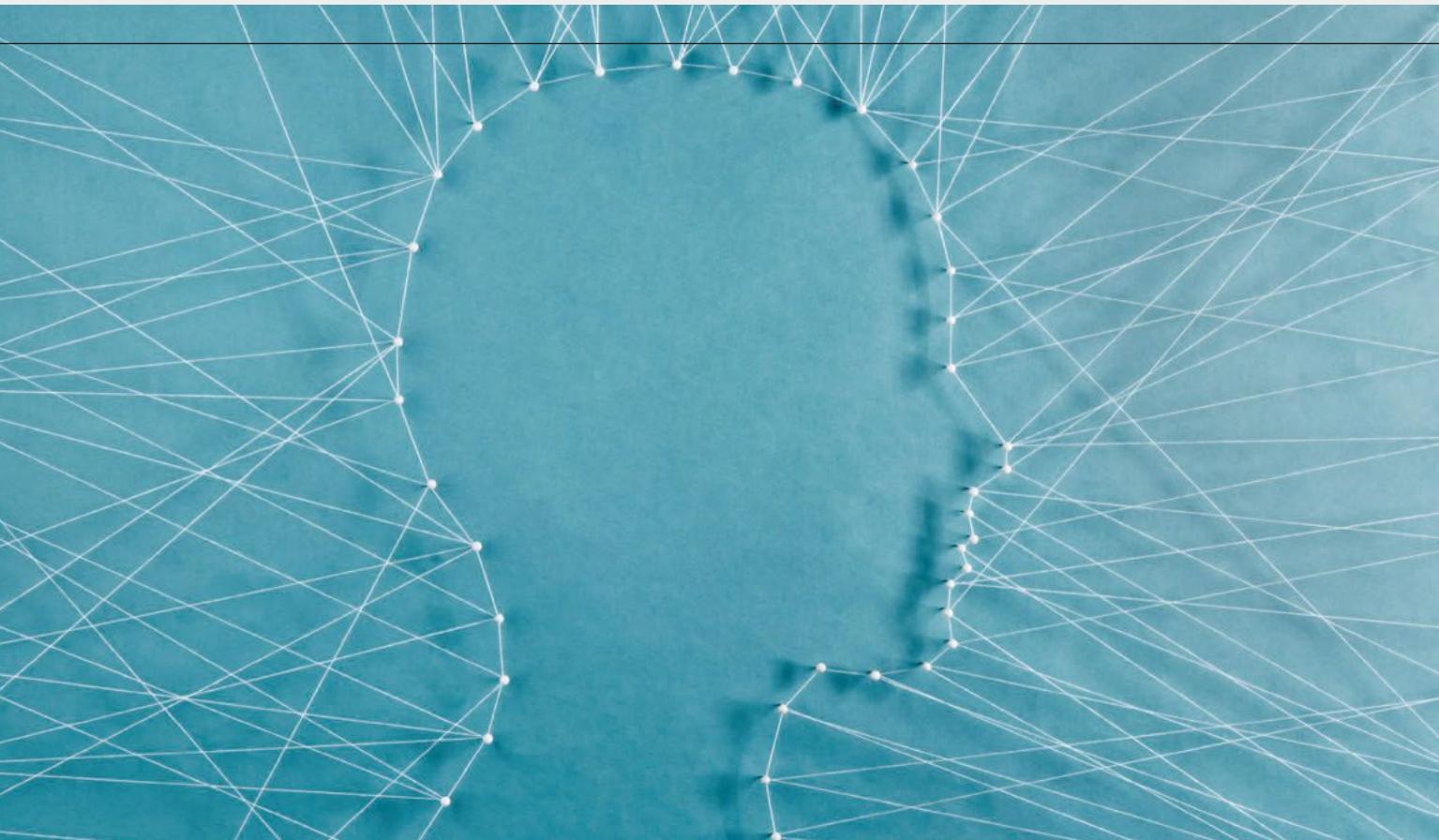
Nonetheless many women seethe with frustration. On social media, footage of women riding motorbikes has gone viral. So too has a female silhouette, whisky bottle in hand, dancing on her car roof. A female pop group, clad in black, sings songs of protest from dodgems, toy cars, skateboards, roller-skates and other wheeled vehicles that they can legally drive. Unless the system adapts, warns Mr al-Askar, the sociologist, it risks crumbling. Judges and the police should work together to strip oppressive men of their right to be *walis*, he says. But for Iman, the hospital manager, reform can't come soon enough. An Australian honeymoon awaits. ■



I'm leaving on a jet plane

# CYBER SECURITY

*Anytime, anywhere access to data. IoT connectivity. Cryptocurrencies. All offer unparalleled opportunities for businesses—and cyber criminals. How can companies keep data safe in the rapidly evolving digital world?*



# UNLOCKING THE POTENTIAL OF IoT

## *Data ownership and rights*

By 2020 up to 50 billion devices will be connected to the internet. Known as the internet of things (IoT), this interconnected landscape could boost efficiency for businesses and consumers – as well as add significant data privacy and security risks.

“IoT is designed to connect millions of things together in a smart and efficient way, but that also adds to the growing universe of attack points,” says Bill Mann, chief product officer at Centrify. “The next dimension in security has to be about protecting users and their access through Identity Services.”

One of the major concerns is that sensitive data like healthcare records stored by IoT devices could be stolen and exposed by criminal hackers. Another danger is the possibility of devices themselves

being hijacked and used as ‘botnets’ to carry out a distributed denial of service (DDoS) attack. This was a technique apparently exploited last year in Singapore when telecoms firm StarHub’s DNS infrastructure was compromised using a combination of broadband routers and webcams.

Meanwhile, there could be catastrophic consequences if IoT systems that control power stations are intercepted by hackers.

The chance of a breach is increased by a lack of standardisation and regulation around the devices, which have not been built with security in mind. “IoT has lousy security concepts and criminals will pick this up,” says Sandro Gaycken, head of the Digital Society Institute at the European School of Management and Technology.

In order to protect IoT data, it is important to understand who 'owns' it. But the answer to this is often unclear and varies depending on local regulation. Overall, according to law firm Taylor Wessing, there is no property right in a piece of data itself.

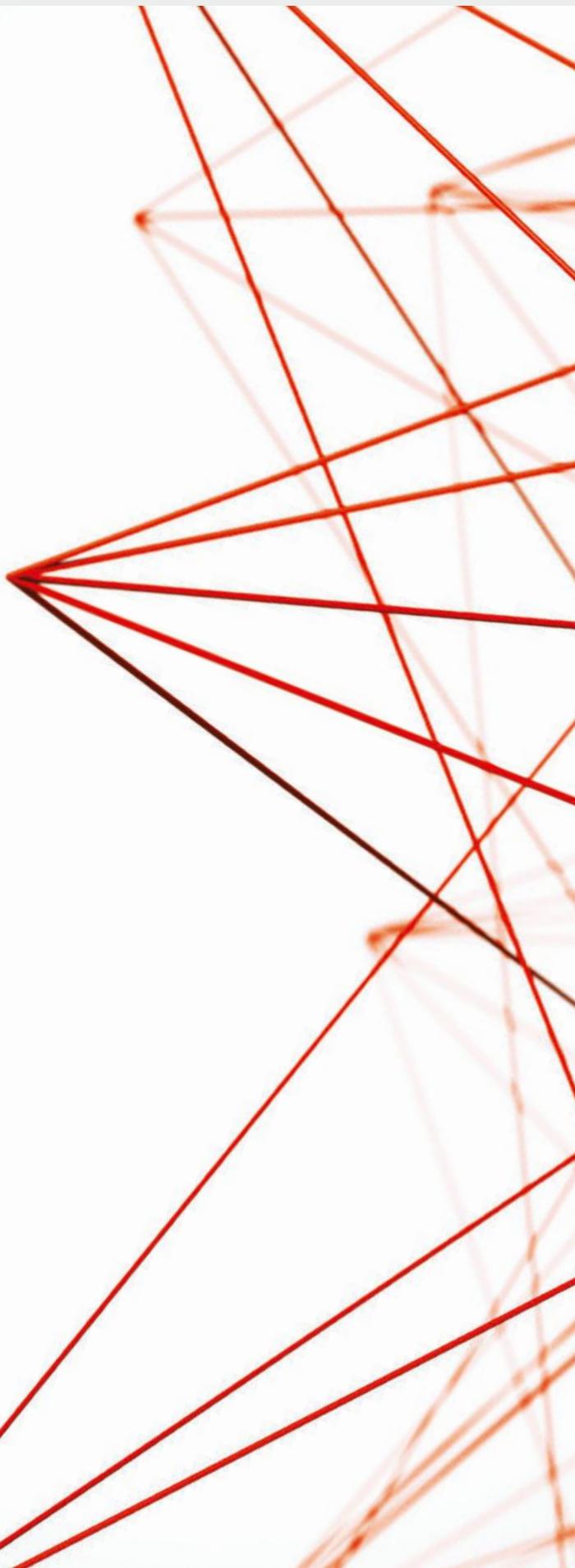
But when the data is processed, it becomes the property of whoever collects it in a database – not the user, explains Jamal Elmellas, CTO at Auriga Consulting, citing the example of location data on a smartphone, which could be collected by an app or the phone's manufacturer: "Once the data is processed and therefore value has been added to it, it belongs to someone else."

**"Once data is processed...it belongs to someone else."**

IoT is only in its early stages and widespread adoption of its related applications, such as smart cars and connected healthcare, is still years away. But as the market develops, security must be built into devices from the start.

At the same time, data must be protected by those responsible for its care, says Walter Lee, head of the innovation management office, global safety division at NEC. He thinks biometrics is key to the future of securing IoT: "It requires securing the data and securing the device."

Having a good inventory will be important as the number of IoT devices grows, adds John Edgar, co-founder and managing director at Stae. "Every organisation dealing with large amounts of data should employ a database architect or engineer to own the data." □





# AGILITY & SECURITY

## *Finding a digital balance*

Digital technology such as cloud and social media provide customers and employees the flexibility and convenience they want, but digital ways of working can also put valuable data at risk by opening up more vectors of attack. This has led firms to apply robust security – which has resulted in another problem: Security solutions can lock a technology down, rendering it useless.

Individual technologies offer different benefits and risks. The huge number of devices comprising the internet of things (IoT), provides efficiency for accessing data but also adds risks partly because security isn't built into the ecosystem. Managing this requires protecting devices while ensuring they are still able to do the job for which they were intended with optimum efficiency. Cloud technology, for example, is extremely flexible and is thought to be secure when managed in the right way, but safety measures such as encryption can remove analytics capabilities. "Many people don't like to add encryption as it removes the business benefits," explains Deloitte cyber risk director, Kristian Alsing, for instance by reducing the usability of a cloud-based CRM system.

In this trade-off for both business and consumer products, how can the right balance be achieved?

Striking a balance between protection and convenience will require tactic. "Because hackers are always thinking of new ways to attack, cyber security experts constantly battle to stay one step ahead,"

says Walter Lee at NEC. "We must continually innovate new cyber security solutions, like working with INTERPOL, to keep pace with today's cyber criminals." For this reason, he adds, firms must live with a percentage of risk.

Taking this into account, protection is a strategy of risk management, rather than risk avoidance. "It comes down to ID management using strong passwords as part of two-factor authentication, preferably including a biometric such as facial recognition," Lee advises.

**"Firms must live with a percentage of risk."**

According to Alsing, "Companies should start with considering the risk: What are the threats we are mitigating against – such as a transaction being intercepted or financial data being stolen? Understand the technology that you are building and implementing and look at the asset you are trying to protect: Is it client data? Is it an individual transaction? Is it reputational? It's security by design."

Michael Kaiser, executive director at the National Cyber Security Alliance, also advocates risk reduction. "It's about understanding the risk of data and building security around it." When this doesn't happen, it leads to restrictions on some technologies that aren't as dangerous as others. But the issue is getting better, he says: "Security itself is becoming easier and more convenient." □

# INSURERS FIGHT BACK AGAINST STATE-SPONSORED CYBERCRIME

An increasing risk of cyber-attacks and resulting fall out has created a huge appetite for cyber insurance solutions. According to Allied Market Research, the global cyber insurance market will generate \$14bn by 2022 – a compound annual growth rate of nearly 28% from 2016 figures. While that sum is significant, will it cover losses the industry might incur?

Cyber insurance covers firms for data loss and reputational damage after a breach, but complex issues must still be resolved before it becomes a viable risk management solution. This is especially true in the case of state-sponsored attacks, where the breach is perpetrated by a nation state often for political gain. It can be difficult for insurers to mitigate their losses, as the breach is notoriously difficult to prove, and subrogation (or pursuing the perpetrator) requires the involvement of the state.

In the case of a suspected state-sponsored attack, legal recourse is potentially available against the party that was responsible in the same way as it would be against any other equivalent hacker, according to Helen Davenport, director at law firm Gowling WLG.

However, she says: "The impact of state-sponsored attacks, and therefore the losses that may flow from them, can be substantial, so insurers will be rightly

concerned about the perceived rise. This will potentially increase their exposure in circumstances where subrogation is not a practical option."

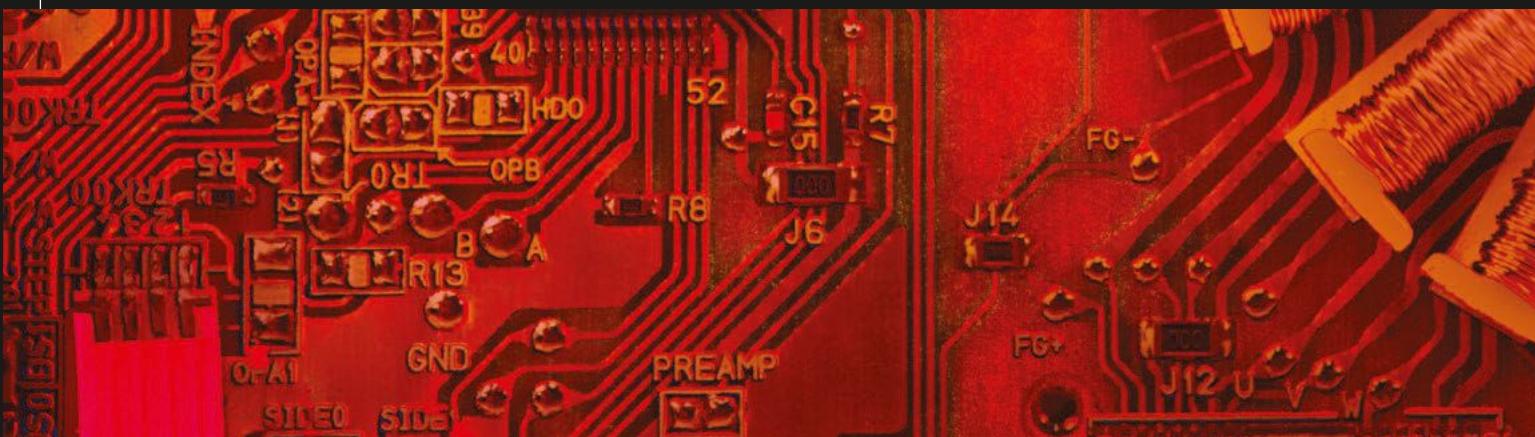
The issue creates a conundrum for insurers: They want to appeal to enterprises as a solution to manage risk, but the losses that can stem from state-sponsored attacks have the potential to stifle growth in the insurance industry.

At the same time, because cyber insurance is a relatively new area, enterprises can fail to understand its purpose, which is a risk both for insurers and for the businesses taking out policies. Some companies now rely on their insurance policies as a "fall back," explains Jamal Elmellas, CTO at Auriga Consulting. "Companies think they don't need to renew their systems; they think they don't need to train people because they have insurance."

**"Losses that can stem from attacks have the potential to stifle growth."**

As the cyber insurance market grows, there will need to be a change in the way policies are structured and sold. And in order to protect themselves from hefty payouts, cyber insurers will have to do more stringent checks. It is likely that in the future, insurers will always require companies to prove they are taking steps such as patching systems to secure themselves properly.

In the case of state-sponsored attacks, there is no easy solution, says Elmellas. He concedes: "This area might have to fall under an act of god. In the same way as if your house was struck by lightning, firms could have to dig deep and pay out." □





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## Q&A: JUST HOW SECURE ARE CRYPTOCURRENCIES?

The complex networks involved in cryptocurrencies make them difficult to breach – but could they be fallible once adopted on a mass scale? **Mustafa Al-Bassam**, 21 years old, is a security advisor at online payment processor Secure Trading and PhD researcher focusing on cryptocurrency and blockchain technology. At age 16, he co-founded LulzSec, a group that hacked Sony, Fox and the FBI.

### How does the system around cryptocurrencies such as Bitcoin work?

Bitcoin is a peer-to-peer decentralised electronic cash system. Bitcoins are generated using a process called mining. That's where blockchain comes in: it is the unique part of Bitcoin and what makes it so secure. Blockchain is a ledger that authenticates and records Bitcoin transactions; it stops people spending money twice.

### How are they secured?

Bitcoins are secured using a combination of cryptography and economics. You have to solve a difficult cryptographic puzzle and this means very powerful computers are needed to do Bitcoin mining. These computers are very expensive to buy – which at the same time makes them very secure.

### How does the economics of Bitcoin mining make the currency unattractive to hackers?

At the moment the reward for mining a block is 12.5 Bitcoins, or around \$12,500. Blocks are generated every 10 minutes, and transactions are generally considered confirmed after six blocks. Miners spend a lot of money on resources to get the reward, and have small profit margins.

This means a fraudster trying to orchestrate a double spend attack would have to spend up to hundreds of thousands of dollars to successfully execute one, to fork the blockchain with new blocks and reverse transactions. It is not really worth it for most transactions.

### So what is the cyber security risk of Bitcoins?

The risk is that Bitcoins would be stolen, in the same way that money could be taken from a person's bank account. Criminals might look to infect someone's computer using a virus by sending out phishing emails targeted at those with Bitcoin wallets.

### How can users secure their cryptocurrencies?

One way of securing Bitcoins is by storing them in something called a cold storage wallet. This is essentially a Bitcoin wallet that's kept on your computer. It is secure because it isn't connected to the internet, so a potential hacker can't get into it.

### What is the challenge for Bitcoin users?

Bitcoin gives you lots of power but also responsibility: it's like having your entire bank account in your pocket. You can't reverse transactions because of how it is secured, but this also makes it harder for people to use.

### How is this being resolved?

There are an increasing number of services aiming to make it easier for users to manage their Bitcoins. They have a usable interface and they are financially regulated. But the trade-off is, you then have to trust a company with your Bitcoins.

### What does the future hold for cryptocurrencies?

The easier they are to use, the more likely they are to take off – and criminals will always go to where money is available. □

# Securing the digital city: Cyber-threats and responses

Critical infrastructure providers are not unique in their inherent vulnerability to cyber-attacks, but the fact that the services they provide underpin the very workings of civil society and the economy means that the consequences of failing to defend against attacks are far greater.

A new report from The Economist Intelligence Unit, based on a survey of 200 critical infrastructure providers, examines the response of these providers to the rising threat.

**87.5%** of infrastructure organisations have a clear chain of command for reporting and dealing with cyber-incursions.

**36.5%**  
have had a  
cyber-attack in  
past 5 years

**74%**  
expect a serious  
cyber-attack in  
next 3 years

## Cyber-security solutions organisations currently have in place:

% of respondents agreed



**34.5%**

Outsource to a third party to manage all or most of cyber-security.



**27%**

A commercial, off-the-shelf solution that we mostly manage ourselves.



**17%**

Proprietary, in-house cyber-security solution that we developed and manage ourselves.



**19.5%**

A mix of all three solutions, depending on the situation.

Securing the digital city: Cyber-threats and responses is an Economist Intelligence Unit (EIU) report sponsored by NEC.

To download a copy of the full report,  
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## Dutch elections

# The centre holds

AMSTERDAM AND THE HAGUE

## The Netherlands breathes a sigh of relief

IT WAS supposed to be the kick-off of Europe's year of populism. For months, analysts had speculated that Geert Wilders, the platinum-blond rabble-rouser who calls for the Netherlands to shutter its mosques and quit the European Union, might come first in the Dutch election, portending smashing wins for anti-Muslim Eurosceptics across the continent.

It did not happen. On March 15th the Dutch delivered a vote of confidence in the competent centre—despite a last-minute diplomatic clash with Turkey that featured riots in Rotterdam and wild allegations from Recep Tayyip Erdogan, Turkey's president. After the Netherlands blocked Turkish ministers from visiting to campaign for a Turkish referendum among Turkish-Dutch dual citizens, Mr Erdogan called the Netherlands a "Nazi remnant", barred its ambassador and bizarrely accused the Dutch of the massacres of Bosnian Muslims in Srebrenica in 1995.

Mark Rutte (pictured, third from right), who has been prime minister since 2010, was always the likeliest candidate to form the country's next government. With 95% of votes counted when *The Economist* went to press, his Liberal (VVD) party is set to remain the largest, with 33 seats, though it lost eight. In a speech after the exit polls were announced, Mr Rutte hailed the vic-

tory as "a feast for democracy". At a VVD party in Amsterdam young men and women cheered; the result was a "beautiful victory for the liberals", one ex-banker enthused. Pieter Veldhuizen, a VVD campaigner, said the result showed that the Dutch prefer those who "do things" rather than "tweet on the sofa" (presumably in contrast to Americans).

Mr Wilders's anti-immigration PVV, which over the past year looked as if it might win the most seats, now looks likely to come second, with 20. Both the Liberals and every other sizeable party have ruled out collaborating with the PVV, and reneging seems neither possible nor desirable.

Mr Rutte will have to negotiate with a handful of parties that emerged from the election much stronger. The Christian Democrats (CDA), who shifted right on is-

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sues of national identity and crime in response to Mr Wilders, will be a natural partner. But most of the mid-sized groups are to the VVD's left: the liberal, pro-European D66 party, the GreenLeft party, the far-left Socialists, and behind them micro-outfits like the Christian Union, 50Plus (a pensioners' party), the Party for the Animals and Denk, a new ethnic-minority party. The centre-left Labour Party, the junior partner in Mr Rutte's grand coalition, lost three-quarters of its seats. (Its voters blamed it for abetting Liberal austerity.)

The Netherlands now faces lengthy haggling before a government based on dozens of compromises can take shape. In other words, Dutch politics as usual—just what Mr Wilders and his followers despise. The anti-immigrant right had hoped the row with Turkey would help them reframe the election as a battle between the Netherlands and Islam. Instead, it handed Mr Rutte control of the agenda.

## Raging Istanbul

The row with Turkey erupted when the Turkish foreign minister, Mevlut Cavusoglu, attempted to visit Rotterdam to drum up support for a referendum on a new constitution, scheduled for mid-April, that ►

### Splintered, but still centrist

Dutch parliamentary election results, total seats: 150

2017\*

Denk Socialists	GreenLeft	PvdA	D66	Christian Democrats	VVD	Christian Union	PVV	Others
3	14	14	9	19	19	33	5	20

2012

15	4	38	12	13	41	5	15	7
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Sources: Netherlands electoral council; NOS

\*Preliminary results

would give Mr Erdogan almost complete control of the government. About 400,000 Dutch have Turkish backgrounds, and their loyalty is a sensitive issue. Most who vote in Turkey back Mr Erdogan and his Islamist AK party—a stance that non-Muslim Dutch find incomprehensible. Mr Wilders often exploits these tensions, calling Muslim Dutch a “fifth column”.

Seeking to avoid pro-Erdogan demonstrations, the Dutch government denied Mr Cavusoglu permission for a rally. After he threatened sanctions if he were not allowed to come, his landing rights were revoked. Hundreds of Turkish-Dutch staged a protest, and the Turkish minister of family affairs drove to Rotterdam to speak to them. Dutch police dispersed the crowd with truncheons, dogs and water-cannons, and forcibly returned the minister to Germany. The reaction in Turkey was furious. Turks declared boycotts, staged protests and vowed sanctions.

The clash, many feared, would play into Mr Wilders's hands. Instead, it allowed Mr Rutte to show backbone and widen his lead. Nonetheless, it may have helped the PVV to pull Dutch voters yet further to the right. Already, according to Peil, a pollster, 71% of Dutch want to pull out of the EU's association agreement with Turkey, which prevents the government from forcing Dutch of Turkish origin to take integration courses.

But in the end, domestic issues seem to have trumped international ones. The Netherlands took longer to recover from the euro crisis than some neighbours. Mr Rutte had cut social spending, raised the retirement age and reduced mortgage tax deductions. Populists and moderates alike accused the government of neglecting the elderly and making health care unaffordable. In a debate this week, the only time



When life gives you oranges

Mr Rutte looked uncomfortable was when Mr Wilders savaged him over conditions in care homes, and claimed that prisoners were cared for better than the elderly.

As in other countries, the broad right-left ideological confrontations that once structured Dutch politics are breaking down, and voters are moving in many directions at once. Some 13 parties made it into parliament, up from 11 in the previous election. After their final pre-election debate, the party leaders could barely squeeze in tight enough for a portrait.

But the mid-sized parties that will probably be needed to form a coalition are divided, on classic left-right lines, over how wealth should be shared. Jesse Klaver, the handsome 30-year-old leader of Green-Left, demanded in the debates that janitors should earn more and bankers less, framing the CDA and VVD as bankers' friends. On climate change the parties are miles apart, with the Greens prioritising green

energy and the VVD cheap petrol and fast roads.

And yet here lies the irony of Dutch politics. Parties shout at each other for months and then govern together for years. Forming a majority government will take weeks, more likely months. In 2012 the financial crisis added urgency to the process; now, the lack of a deadline may be a problem, making it harder for party leaders to sell concessions to their members. In the coming weeks an official “informer” will be charged with exploring which coalitions might work and which horses different parties are willing to trade. The most likely combinations are a centre-right government involving VVD, CDA and D66, propped up either by the Greens or the smaller Christian parties.

In the meantime Mr Rutte's caretaker cabinet will continue to run the country. It is supposed to refrain from controversy. That may be hard. ■

### The EU-Turkey deal

## Out of sight

BELGRADE AND İSTANBUL

A year on from a deal with Turkey, Europe still struggles with migration

**L**OUNGING in a smoky café in Aksaray, a rundown part of Istanbul, Ahmed, a 23-year-old Palestinian people-smuggler, expresses confidence in the future of his industry. “People come here, they have sold everything, they will find a way to get smuggled,” he shrugs. Business has got harder since March 18th 2016, when the European Union struck a deal with Recep Tayyip Erdogan, Turkey's president, to send asylum-seekers back from Europe. But people are still trying to make the journey. Indeed, Ahmed boasts, before the deal smuggling was “too easy”.

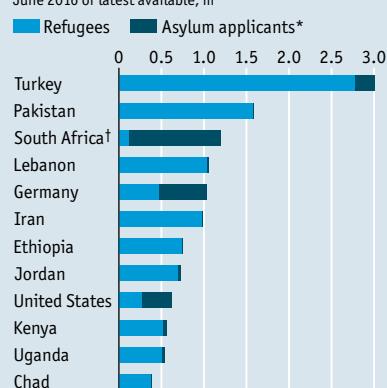
Ahmed's bravado contradicts European politicians' claims that the deal with Turkey has broken the smugglers' business model. Going purely by the numbers, the Europeans would seem to be right. Before the deal was struck around 50,000 people crossed the Aegean to Greece on flimsy boats each month. Between December 2016 and February this year, only about 3,500 made the journey.

But on a closer look, the deal deserves criticism. Although it has been a political success, seemingly demonstrating that the EU can control its borders, its humanitarian impact has been far murkier. And it leaves the EU uncomfortably dependent on less-than-fully democratic governments elsewhere to manage migration.

In Turkey it is not hard to find people-smugglers still plying their trade. Moham-

### Mr Erdogan's leverage

Countries hosting the largest numbers  
June 2016 or latest available, m



\* Asylum seekers may be registered in more than one European country

Source: UNHCR

<sup>†</sup>Asylum cases cannot be withdrawn

med (not his real name), a 37-year-old Palestinian who claims to have given up smuggling after he was caught and jailed for four months, estimates that around 100 smugglers are still operating in Istanbul. Their tactics have changed: some asylum-seekers fly to Europe from Turkey using passports—bought or stolen—belonging to similar-looking EU citizens. A few have been sent from Kas, farther south on the Turkish coast, to Kastellorizo, a tiny Greek island. Others are smuggled from Syria to ➤



**Learning the hard way**

► Sudan, then up through Libya to Italy, Mohammed claims.

As the numbers show, however, since the deal many more migrants are staying put in Turkey. Some 2.9m Syrians and hundreds of thousands of Afghans and Iraqis live there. Around 10% are in camps; the majority live in Istanbul or towns in the south-east, near the border with Syria. Turkey has the largest refugee population globally (see chart on previous page).

The fortunes of these migrants are mixed. Many are attempting to make a life in Turkey. Because of a quirk in Turkey's accession to the UN refugee convention of 1951, only Europeans fleeing war or persecution are considered "refugees"; instead, the 2.9m have been offered temporary protection. Since January 2016 it has supposedly become easier for Syrians to get work permits, but only around 10,000 have succeeded. Many migrants' houses are overcrowded, says Metin Corabatir, the president of the Research Centre on Asylum and Migration, a think-tank in Ankara. Although around half a million refugee children have been sent to school, nearly as many remain out of it. Child labour is not unheard-of, nor are child brides.

Yet in some ways refugees are faring better in Turkey than in other parts of Europe. Each Syrian refugee is given a temporary guest card and free access to public health care. Since the deal came into place €3bn (\$3.2bn) in aid from the EU has been agreed, with €750m already disbursed. Another €3bn has been promised. Along with a food programme, a cash-card scheme has been set up; by February over 200,000 people were being helped by it. The EU has also increased legal resettlement: since the deal came into force 3,565 Syrian refugees have gone to a dozen EU member states.

On the other side of the Aegean, how-

ever, the deal has been far less successful. With the flow of migrants halted, Greece and EU countries were supposed to process those who had already arrived. "Today there should not be more than a handful of asylum seekers on the Greek islands," says Gerald Knaus of the European Stability Initiative, a think-tank. Instead 62,000 are still in Greece, with around 13,000 on the islands in overcrowded, squalid camps. Once the numbers of new arrivals fell, EU politicians became complacent, thinks Mr Knaus. Emergency assistance to Greece was boosted by €357m, of which €70m directly supports the EU-Turkey agreement. Yet Greece's asylum system remains sluggish. The rate at which rejected applicants are sent back to Turkey has actually fallen since the agreement came into place.

Similar problems occur up through the Western Balkans. Around 7,000 asylum-seekers are stranded in Serbia, with about 1,000 staying in abandoned warehouses next to Belgrade's main railway station. These makeshift camps have no running water or electricity; to escape the cold, migrants burn leftover railway sleepers, creating a suffocating stink of oil. Some sleep in derelict cars stuffed full of blankets instead.

Such conditions are shameful. So is the

EU's record on shifting refugees from Greece to other members: only 7,280 were moved between September 2015 and January 2017. The target set in 2015 was to relocate more than 63,000 in two years. Intransigent politicians have been a problem, particularly in eastern Europe. Bureaucratic backlogs have done the rest.

### **The saving face that stopped 1,000 ships**

Meanwhile, the deal has left Europe dependent on Mr Erdogan's goodwill. Officials in Turkey have repeatedly vowed to cancel it if Europe does not fulfil the promise of visa-free travel for its citizens. Europeans accuse their governments of down-playing Mr Erdogan's growing authoritarianism for fear that he might "open the gates", as he threatened to, in November. The threat is mostly rhetoric: with borders closed across Europe, it has become far harder for migrants to make the journey.

Yet the EU is vulnerable to worsening relations with Turkey and political chaos in Greece. Many politicians are just pleased the deal turned the migrant crisis from a situation of "intolerable dysfunction to tolerable dysfunction", says Elizabeth Collett of the Migration Policy Institute, a think-tank in Brussels. It would not take much for it to become intolerable once more. ■

### **Polish diplomatic squabbles**

## **Pyromaniac politics**

BRUSSELS AND WARSAW

### **At home and abroad, the Polish government is ever more difficult**

DONALD TUSK'S appointment as president of the European Council in 2014 seemed to complete Poland's journey to the heart of the European Union. A decade after Poland led the accession of eight former Soviet-bloc countries, its prime minister was elevated to one of the most senior posts in Brussels. The job involves chairing summits of European leaders and forging compromise from their debates. At first some thought Mr Tusk operated more like a Polish prime minister than a consensus-seeking European. But most came round as he coolly shepherded the EU through the Greek bail-out, the refugee crisis and Britain's Brexit vote. His election to a second two-and-a-half-year term at an EU summit on March 9th looked like a formality.

Instead, Mr Tusk found his own country blocking his path, and a Polish political psychodrama imported to Brussels. Beata Szydlo, Poland's prime minister, circulated a letter to her fellow heads of government that more or less accused Mr Tusk of treason. "He used his EU function to engage personally in a political dispute in Poland,"

she wrote. (This may refer to a speech Mr Tusk made in Wroclaw last year calling on the government to respect the constitution.) Ms Szydlo nominated Jacek Saryusz-Wolski, an obscure member of the European Parliament, to replace Mr Tusk.

In the end the matter came to a vote, an unusual development in a forum that prefers to settle such matters by acclamation. Despite speculation that Hungary, which often sides with Poland, might support the gambit, Mr Tusk was re-elected by 27 votes to one. Ms Szydlo responded by sulkily blocking the summit's conclusions on matters such as trade and defence, an act without legal significance.

Animosity between Mr Tusk and Jaroslaw Kaczynski, who as head of the ruling Law and Justice (PiS) party is the true leader of Poland, has been brewing for over a decade. Mr Kaczynski absurdly blames Mr Tusk for a plane crash in Smolensk in 2010 that killed his twin brother Lech, then Poland's president. By smearing his arch-enemy as a traitor, Mr Kaczynski may hope to reduce Mr Tusk's chances of ►

ever returning to domestic politics.

In the eyes of PiS and its supporters, Mr Tusk and his centre-right Civic Platform party exemplify a post-communist elite that sold out Polish interests after 1989. A histrionic video published by PiS this month blames Mr Tusk for destroying Poland's shipbuilding industry. The strong relationship Mr Tusk forged with Germany as prime minister has been turned against him. Witold Waszczykowski, the foreign minister, said the vote in Brussels proved that the EU is "under Berlin's diktat".

A similar level of paranoia could be traced behind the Polish government's decision, on March 14th, to approve an amendment to the law on the foreign service. Ostensibly the new law will remove those who co-operated with the communist-era security apparatus; according to the draft, some diplomatic posts abroad resemble *skanseny* (open-air museums) of the communist era, while some diplomats are accused of having "insufficiently strong bonds with the Polish state".

In reality, if the law is adopted by parliament, the effect will be much broader: all foreign-ministry employees' contracts will be terminated in six months. Only those offered new ones, according to unspecified criteria, will stay on. It could thus become far easier for PiS to stuff the foreign service with loyalists or those keen on its more confrontational foreign policy. The amended law states that the service's role is to "protect Poland's sovereignty", which echoes Ms Szydło's calls to stand up to Brussels. Even if the foreign service does not end up exclusively staffed by PiS cronies, the change would permanently politicise a fairly neutral institution.

PiS has pursued a worrying policy of polarisation since winning the election in 2015. Mr Kaczyński's government portrays its political opponents as enemies of the state. Its purges of official institutions aim to cement PiS's own vision of the post-1989 revolution, and have turned state media into a mouthpiece of the regime. The tactics appear to be working: the government dominates opinion polls.

Poland is drifting ever further from the European mainstream. From energy to climate to the preparations for a big EU summit in Rome this month, diplomats and officials describe a government that is becoming increasingly hard to work with. Some urge the commission to trigger Article 7 of the EU treaty, the as-yet unused "nuclear option" that could see Poland's EU voting rights suspended. The government will be the first victim of the futile diplomatic to-do it provoked; it can hardly expect generous treatment in the forthcoming negotiations over the EU budget, for example. After his re-election, Mr Tusk warned that burned bridges cannot be crossed again. But Mr Kaczyński appears to be in the grip of full-blown pyromania. ■

## Ireland's lame duck

# Jaded isle

DUBLIN

**For voters, Enda Kenny has lost his twinkle**

**I**RISH-AMERICANS, who celebrate St Patrick's Day with a frenzy of public drunkenness, dyed-green beer and leprechaun costumes, might be disappointed at how the Irish themselves mark the holiday. Most prefer to watch the parades on television rather than brave the changeable spring weather, perhaps hoisting an evening toast to Saint Paddy (never "Saint Patty", as it is often rendered in America). And they never put dye in their beer. Those in search of emerald ale must go abroad, as indeed nearly the entire cabinet does every year, fanning out to visit the global Irish diaspora. In no other country do the upper ranks of government mark the national holiday by flocking overseas.

The most high-profile ritual takes place in Washington, where the *taoiseach* (prime minister) presents America's president with a bowl of fresh shamrock. For the current *taoiseach*, Enda Kenny, this year's visit to the White House will be his sixth. It is likely to be his last. Facing a mutiny in his centre-right Fine Gael party last month, Mr Kenny said that after meeting Donald Trump he would make an announcement about his future—presumably, that he will step down.

Mr Kenny's departure would alarm some in Brussels, who see him as a faithful implementer of the austerity policies that the European Union imposed after the Irish property crash of 2008. The EU regards Ireland's strong recent economic performance as proof that its prescriptions worked. (Some economists think the patient might have recovered faster

without the medicine.) Unemployment in February was at a nine-year low of 6.6%, and the EU forecasts GDP growth of 3.4% this year. But in an election last year Mr Kenny's coalition lost 42 of its 99 seats; he now runs a minority government.

In February Mr Kenny mishandled the latest twist in the saga of a police whistle-blower, Maurice McCabe. In 2014, after Sergeant McCabe exposed systematic corruption in the Garda Siochana, the national police force, senior officers tried to smear him with false charges of sexual abuse. Asked by parliament when he had learned of the smear, Mr Kenny contradicted himself.

Should Mr Kenny resign, he will probably be replaced by a younger party colleague. If Fine Gael loses office, the next *taoiseach* will almost certainly be Micheal Martin, the leader of Ireland's other big centre-right party, Fianna Fail. Between them, the two parties have governed Ireland ever since the founding of the modern state. A poll last month by the *Irish Times* put their combined support at 57%. A constellation of small left-wing parties managed about ten points between them. As for the hard right, in Ireland there is none.

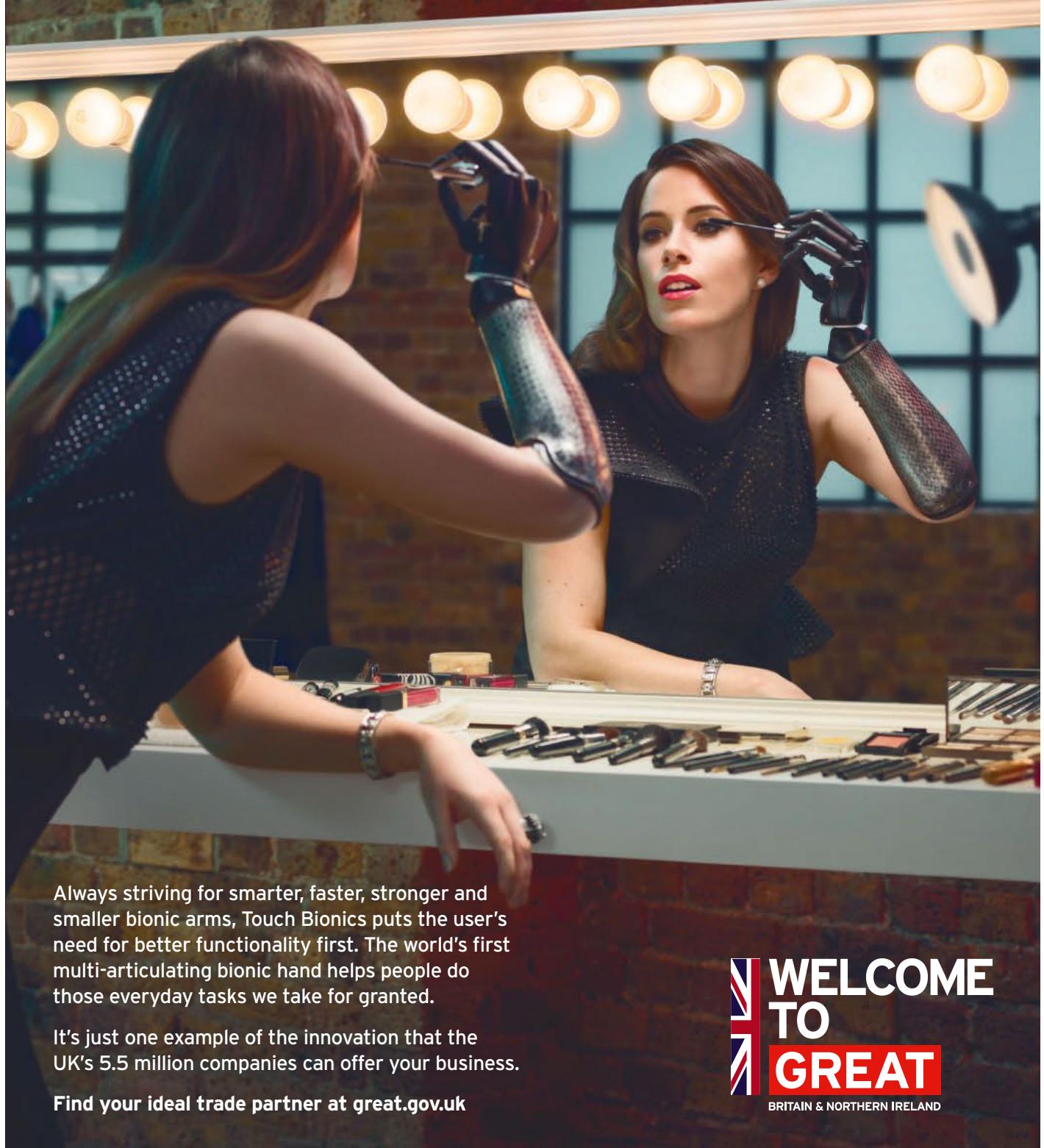
This is not to say that ordinary Irish people are content. Many complain of disintegrating health services, precarious jobs, mass emigration, a housing crisis and a cost of living that approaches Nordic levels. But this disaffection has yet to trouble the political calm. As with Saint Patrick's Day, few Irish are ready to take to the streets.



The usual paddywackery

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# Charlemagne | Open up

**Identity politics is not the preserve of the far right, as the Dutch election shows**



**W**ILL no one stand up for the Dutch cosmopolitan elite? For many observers of this week's election in the Netherlands there was only one story: the fate of Geert Wilders, the bottle-blond nativist who wants to ban the Koran and exit the European Union. Rare was the bar in Limburg, Mr Wilders's home province, left unmolested by journalists expecting Dutch voters to deliver a populist hat-trick, following the triumphs of Brexit and Donald Trump. The young, educated urbanites of Amsterdam's Canal District or Haarlem barely got a look-in. And yet in an election with many subplots, theirs was among the more arresting.

Though Mr Wilders disappointed on election day, he remains more than an irritant. With 20 seats in the new 150-seat parliament, he may well lead the opposition to whatever government emerges from the electoral mélange produced on March 15th. His vicious brand of anti-Islam populism is no less shocking for its familiarity (Mr Wilders founded his Freedom Party in 2006, and he is not the first peddler of xenophobia to Dutch voters). And opposition presents no impediment to his influence. Before the election Mr Wilders told an interviewer that by tugging other parties in his direction, he had already won. In a way, he was right.

But his influence extends in other directions. Until now, the politics of identity across Europe has been largely ceded to the likes of Mr Wilders. Mainstream parties of left and right often struggle to find the vocabulary to discuss culture, nation, race and immigration; some change the subject, others meekly ape the far right. But in the Netherlands the two parties that performed most strongly compared to the 2012 election—D66, a collection of earnest pro-European liberals, and GreenLeft, a once-fringe amalgam of radicals and environmentalists—succeeded by taking Mr Wilders on directly. GreenLeft at least tripled its number of seats. D66 won 19 seats and runs strong in every Dutch city.

One of the campaign's most telling moments came during a debate of party leaders on March 5th. Asked whether they agreed that the Netherlands was failing to "protect its own culture", most muttered about the decline of values or the national anthem. But Jesse Klaver, the 30-year-old GreenLeft leader, said he agreed with the proposition, and went on to describe a vision of national identity centred on tolerance, openness and internationalism that he claimed was under siege from the right. Viewers declared

his performance the best of the night. "It's a new kind of patriotism," says Marjolein Meijer, the GreenLeft chair. As for D66, no other party has so strongly stood up to Mr Wilders's calumnies.

Dutch politics is too complex and fragmented to provide straightforward lessons. Thirteen parties won seats this week; the coalition that eventually emerges may well resemble the centrist governments that have run the Netherlands for decades (although with four or five parties it will struggle for coherence). If a cosmopolitan-nationalist divide has emerged, it has not so much supplanted the old left-right axis as complemented it, suggests Cas Mudde, a political scientist at the University of Georgia.

Yet the Dutch have often served as political bellwethers for other parts of Europe. Without the roadblocks of parliamentary thresholds or complex voting systems, social changes can find political expression quicker than in other countries. GreenLeft and D66 have exploited the political space opened up by the collapse of the traditional centre-left—the Labour Party, the junior coalition partner, lost three-quarters of its seats this week—and the right's failure to resist the populist temptation. Brexit and Mr Trump presented them with cautionary tales almost as potent as the threat from Mr Wilders.

The Dutch may have avoided a serious rupture. But the politics of identity still has the power to divide. Two years ago "Separate Worlds", a report by two government think-tanks, warned of a drift to American-style polarisation between an educated elite that is enthusiastic over globalisation and a remaining class of poorer Dutch rooted in place and tradition. Those parties that sit firmly inside one or other of these bubbles were among the big winners this week (only 14% of those with little education went for D66 or GreenLeft; Mr Wilders hoovered up this group's votes).

And Dutch identity politics has found a third, more worrying dimension in the emergence of Denk, a party catering specifically to Dutch Muslims. Karina, a young Moroccan Dutchwoman buttonholed by Charlemagne as she emerged from a mosque serving as a polling station in Amsterdam, explained that she used to vote Labour before Messrs Wilders and Trump left her fearing for her freedom to don the headscarf. Thanks to her vote, and many thousands more, Denk netted three seats.

## That's not me

An electoral landscape increasingly marked by identity politics is a recipe for national unease. For the parties that are on the rise, one response is to explore fresh policy terrain vacated by the exhaustion of the traditional left. Changing labour markets and job insecurity provide an obvious example: unemployment is low in the Netherlands, but it has Europe's highest share of temporary workers. Crafting asylum rules that combine generosity for outsiders with reassurance on borders for anxious Dutch is another. D66 may have given some thought to these issues; it is less clear that GreenLeft has. Mr Klaver's critics charge that his speeches are often heavier on inspiration than insight. If his party signs up to government, he has a chance to prove them wrong.

If so, like-minded parties elsewhere in Europe will take heart. Last year Alexander van der Bellen, a former Green, defeated a far-right challenger for the Austrian presidency on an avowedly pro-European platform. The untested Emmanuel Macron is seeking to do the same against the far-right Marine Le Pen in France. Liberals have started to win votes in such unlikely places as Spain and Poland. This is hardly the beginning of the end for the anti-immigrant, identity-politicking right. But it is worth watching. ■



## Scottish independence

# Sturgeon the brave

EDINBURGH

**Scotland's first minister demands a new referendum, hoping that Brexit might help bring about Scoxit**

GAMBLING on a referendum whose outcome is unsure is a risky business. Ask David Cameron, who resigned as prime minister hours after losing the Brexit ballot last June. But Nicola Sturgeon is prepared to take her chances. On March 13th Scotland's first minister said she would seek permission from Westminster for a second referendum on Scotland's independence from the United Kingdom, less than three years after a plebiscite in which Scots voted by 55% to 45% to stay put.

The Conservative government's response was swift and stinging. Theresa May denounced Ms Sturgeon for "playing politics" and creating "uncertainty and division". But Westminster is unlikely to refuse the request. It would add to the already-damaging perception of an English-dominated government that ignores Scotland. Once again a Conservative prime minister faces the prospect of presiding over the break-up of the union. And this time it is against the backdrop of perhaps the most complex international negotiations Britain has ever undertaken, as it leaves the European Union.

Ms Sturgeon wants a referendum between autumn 2018 and spring 2019, well into the Brexit negotiations but before they are complete. Last time Scotland held such a vote, Westminster left it to Holyrood to decide when it should take place. This time Mrs May could insist on setting the date, which would enable her to put it off until

the Brexit talks are finished, or even later.

Ms Sturgeon is keen to take advantage of growing support for independence. At 46%, according to a survey carried out in the second half of last year by ScotCen Social Research, it is twice as high as in 2012, when the previous campaign for independence began (see chart). Holding the poll before the divorce with the EU is finalised would allow the nationalists to paint Brexit in the worst possible light: their version of the "Project Fear" employed by Remainers during the Brexit campaign.

Even so, there are arguments for delay. Support for independence is strongest and growing fastest among the young. Waiting a few years until more are able to vote (and

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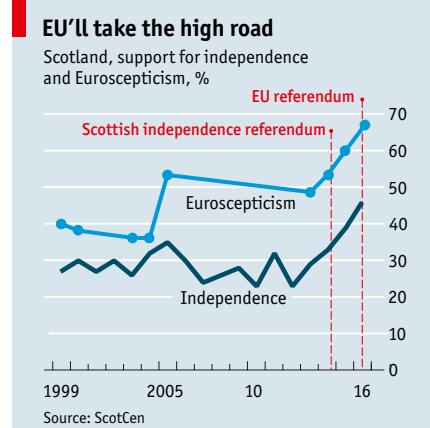
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fewer of the elderly unionists are around) could boost the nationalists' chances. And the adverse effects of Brexit forecast by most economists—which would make Scoxit more appealing—could take time to kick in.

More worrying for Ms Sturgeon, Euroscepticism is on the rise among Scots. Two-thirds either want Britain to leave the EU or would like the EU's powers to be reduced, up from just over half in 2014. Even among the 62% of Scots who voted to Remain last year, more than half think that Brussels's authority should be curbed. And of those who plumped for independence in 2014, a third voted to leave the EU. Stephen Gethins, the spokesman on Europe for Ms Sturgeon's Scottish National Party (SNP) in Westminster, describes support for the EU as being in the party's "DNA". But it was not always so: in the 1975 referendum, when Britons decided to stay in the European project, the SNP wanted to leave. Tying the case for independence too tightly to continuing membership of the EU is risky.

And rejoining the EU might not be easy. Alfonso Dastis, the Spanish foreign minister, says that Scotland would have to "join the back of the queue" for EU membership. Spain worries that Scottish independence would embolden separatists in Catalonia. Like all EU members, it can veto applications. Perhaps partly for that reason, the SNP is said to be examining the alternative of the European Free Trade Association (EFTA), whose members include Norway and Iceland. That could allow Scotland greater access to the EU's single market, while lessening the threat of a Spanish veto. It might also avoid annoying Scots who voted for Brexit.

At home, Scottish nationalists face a divided opposition. Labour's position on Europe and Scotland is muddled. Jeremy Corbyn, Labour's leader in London, was ➤



► slammed by colleagues in Scotland for saying it was “absolutely fine” to hold a second independence vote. The most prominent unionist is Ruth Davidson, under whose leadership the Tories became the main opposition in the Scottish Parliament last year. Conservatism is a less toxic brand than it was, but Scots still care little for the Tories. That makes Labour’s shambolic state doubly harmful, since the Conservatives’ unchallenged position in Westminster makes Britain even less appealing. “This is what the SNP dreamed of in the 1980s,” says James Mitchell of Edinburgh University.

But if the politics look favourable for Ms Sturgeon, the economics do not. Weak last time, the economic case for independence is even more feeble today. Ms Sturgeon insists that free trade between Scotland and the rest of Britain will continue, whatever the result of the independence referendum. But this would be trickier if Scotland rejoined the EU or became part of EFTA. So would be maintaining the open border with England. And regulatory standards between Scotland as an EU member and Britain might soon diverge, complicating trade between the Scots and their biggest market. Scotland sends two-thirds of its exports to the rest of Britain, compared with less than a fifth to the rest of the EU. Edinburgh-based financial firms are already covertly installing brass plates in London, which would allow them quickly to shift operations out of Scotland.

Worries over trade would pale in comparison with concerns over Scotland’s public finances. A greying population and relatively weak tax base make it hard to balance the books. In the past these structural problems were partly offset by taxes on North Sea oil. A decade ago, when oil prices were high, such taxes were equivalent to 6.7% of Scottish GDP. But in the latest financial year they accounted for less than 0.1%. Curtailed investment in the oil and gas sector has contributed to a wider slowdown. In the year to September Scotland’s GDP grew by 0.7%; the rest of the country grew by 2.4%. Scotland’s budget deficit is now nearing 10% of GDP, more than twice Britain’s.

That is not sustainable for a small country. Scotland would have to bring the budget closer towards balance. Sharply raising taxes might cause rich Scots to pack up and move south. So spending would have to be slashed. For Scots who have already endured six years of Westminster-imposed cuts, this would be a rude awakening.

Still, the economic arguments were not decisive last time, contends Michael Keating, an analyst of Scottish politics at Aberdeen University. The question was which side looked riskier. Scots did not want to take a leap in the dark voting for independence. “This time,” he says, “they’ll be offered two leaps in the dark.” ■

## Article 50

# Scotched

### Theresa May holds back from triggering the Brexit process

AFTER protracted parliamentary debate, the bill authorising the prime minister to invoke Article 50, the legal basis for leaving the European Union, finally became law this week. Late on March 13th the House of Commons rejected two amendments that had been proposed by the Lords. As expected, the upper house then backed down. The government had been hinting broadly that the letter triggering Article 50 would be sent to Brussels immediately. On March 14th Mrs May duly hailed the bill’s passage into law as “a defining moment for our whole country”.

But then came anticlimax: Downing Street said the invocation of Article 50 would actually happen only in the week of March 27th. Before then, Mrs May plans to visit Scotland, Wales and Northern Ireland. All being well, she will still fulfil the promise she made last October of starting the Brexit process by the end of March.

A delay of two weeks in a negotiation due to last two years may sound trivial. Yet a plan in Brussels to hold a special EU summit on April 6th to discuss Mrs May’s letter had to be hastily jettisoned. The meeting will now take place in early May, losing almost four weeks out of what is already an extremely tight timetable.

So why did Mrs May pull back at the last minute? After all, there was never going to be a perfect moment to invoke Article 50. Doing so just before the Dutch election on

March 15th might have bolstered the far-right anti-EU party of Geert Wilders. Acting too close to the 60th anniversary celebration of the Treaty of Rome on March 25th might have seemed provocative. French and, later, German elections also loom in the near future.

The truth seems to be that Mrs May’s plans were upset by Scotland’s first minister, Nicola Sturgeon, who chose to announce on March 13th that her government would ask for a second independence referendum (see previous story). She cited Brexit as the “material change” to justify this demand. And she attacked Mrs May for choosing to pursue a hard Brexit that will take Britain out of the EU’s single market, when a majority of Scots had voted to stay in the EU last June.

The reality is that Brexit is unwelcome not just to Ms Sturgeon but to all of Britain’s European partners. Even as they hold their 60th birthday party—which Mrs May will not attend—they know that the club is in deep trouble, not least because so many countries besides Britain have seen an upsurge of populist anti-EU parties. To most other EU countries, indeed, Brexit is just one more ingredient in a cocktail of often more pressing problems that afflict them.

In this context, indeed, some may take quiet satisfaction from seeing the Scots ruin Mrs May’s plan to trigger Article 50. A few may even see the rising risk of a break-up of the United Kingdom as suitable punishment for Brexiteers. Yet nobody will much enjoy the Article 50 negotiations when they eventually start.

At the same time few are convinced by Mrs May’s repeated mantra that no deal is better than a bad deal, which they see as just an attempt to bolster Britain’s weak bargaining position. On March 15th David Davis, the Brexit secretary, admitted to the Commons Brexit committee that since the referendum the government had made no forecasts of the economic consequences of leaving the EU without a deal and reverting to trade under World Trade Organisation rules. That makes it even harder to see how Mrs May can justify her claim.

Nor are the parliamentary manoeuvres over Brexit finished. This week it emerged that at least seven bills besides the planned “Great Repeal Bill” will be needed to give effect to Brexit. Mr Davis has also conceded that any deal negotiated under Article 50 would require parliamentary approval. And although Lord Bridges, a Brexit minister, said in the Lords that he found it hard to see how Parliament could hold a vote if there were no deal, even that could be open to question. Lord Hope has declared that the Supreme Court judgment which forced the government to bring forward the Article 50 bill may require further primary legislation before Brexit actually happens. And he should know—for he is a former Supreme Court justice. ■





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## Is the pope Catholic?

ROME

**Francis is facing down opposition from traditionalists and Vatican bureaucrats. But on clerical sex-abuse, he seems weak**

THE Pacific island of Guam is more than 12,000km from Vatican City. Yet it was in this far-flung American territory that last month the two most contentious issues facing Pope Francis—the scandal of clerical sex abuse and a rebellion by traditionalists—intertwined. Cardinal Raymond Burke spent two days on Guam presiding at the church trial of Archbishop Anthony Apuron, who is accused of molesting altar boys. The archbishop is the highest-ranking Catholic cleric to be tried on sex-abuse charges. The proceedings could last years. Cardinal Burke, an arch-conservative, is the pope's most outspoken critic.

The defiance of papal authority by a minority of senior Catholic clergy has become more brazen in recent months than at any time since the 1970s, when the late Archbishop Marcel François Lefebvre refused to disband his arch-traditionalist Society of St Pius X. Last month Vatican officials received in their e-mail what appeared to be a digital version of the Vatican's newspaper, *L'Osservatore Romano*. On opening it they found a perfect facsimile ridiculing the man Catholics are told is God's representative on Earth. The headline was "He's Replied!"—a sarcastic reference to the pope's refusal to answer a letter from four cardinals, including Cardinal Burke, last September (and, most unusually, made public by them in November). The letter challenges Francis to state that passages in his apostolic exhortation,

*Amoris Laetitia* (The Joy of Love), conform with established doctrine. In the fake-news *Osservatore*, all four replies were "Yes and No". Less than a week earlier, posters had appeared in Rome calling on the pope—disrespectfully addressed in Roman dialect as Francé ("Frankie")—to say how his vaunted advocacy of mercy squared with his forthright treatment of Catholic institutions including the Roman Curia, the church's central administration.

### Rock of ages

As the protests showed, discontent within the church comes from two sources and two overlapping camps. The first is the most obviously conservative. It includes those, inside and outside the Vatican, who seek clarity and certainty from their religion and think the rules cannot be altered without forsaking the essence of Catholicism. They are appalled by what they see as Francis's lack of interest in theology, and his abandonment of principle in the name of a nebulous requirement for mercy.

Last year Anna Silvas, an Australian scholar, charged the pope with writing "tracts of homespun, avuncular advice that could be given by any secular journalist without the faith—the sort of thing to be found in the pages of *Readers Digest*". The conservatives' biggest gripe is with *Amoris Laetitia*, which in a footnote opened the way for some remarried Catholics to receive the sacrament of the Eucharist,

which Catholics believe is the very body of Christ. Polls suggest that the faithful in Europe and the Americas strongly back the change. But critics see it as legitimising adultery. They will scarcely have been reassured when Francis last month encouraged a gathering of priests to show understanding for parishioners who were living together before marriage. On March 10th he again shocked traditionalists, suggesting that the church might ordain married men to help lessen an acute shortage of priests.

A second, much smaller band of critics is made up of Vatican-based clerics, whose objection is to the pope's treatment of his officials. It is no secret that he has little sympathy with the Vatican. As archbishop of Buenos Aires, he was repeatedly frustrated in his dealings with its bureaucrats. Soon after his election as pope, he formed a team of cardinals to advise him on how to reform the Roman Curia, pointedly choosing most of them from among pastoral leaders beyond the Vatican's high walls. Acting on its recommendations, he set up two new "super-ministries", or secretariats, one for the Vatican's finances and the other for its media operations, and merged six smaller "ministries" into two.

That alone would have earned Francis enemies in an organisation as notoriously resistant to change as the Roman Curia. But it is style as much as substance that has rankled. A Jesuit, Francis comes from an order founded by an ex-soldier, St Ignatius of Loyola, which supplied the Counter-Reformation with its shock troops. The Jesuits' first pope is a humble and humorous man—but also a blunt and ruthless one. "The Holy Father is not a person who works easily with an institution," remarks someone who has witnessed his uncompromising decisiveness at close quarters.

During the year after Francis's election, ►►

► he appalled the Vatican's highest-ranking officials by listing 15 faults to be found in their ranks. One, he told his ageing listeners, was "spiritual Alzheimer's". Most recently, the pope intervened in a dispute among the leaders of the Knights of Malta, an ancient military and religious order. Though they no longer govern territory (or take up arms to defend Christians in majority-Muslim countries), and largely devote themselves to good works, the order still wields the sovereignty it enjoyed when it ruled the island of Malta. It has many of the trappings of a state, maintaining diplomatic relations with more than 100 countries and holding observer status at the UN. It is legally separate from the Holy See. Yet on January 24th Francis demanded its grand master's obedience and resignation. He later named a trusted associate to sort out the dispute from inside.

When Francis expects resistance from Vatican diehards, he sidesteps it. He ordered outsiders to draft changes to the rules on marital annulment (a declaration that a marriage was never valid; not to be confused with divorce, which the church does not sanction). He is said to have set up a commission to review new translations of liturgical texts, cutting out the relevant Vatican department, which is headed by Cardinal Robert Sarah, a conservative.

#### Unto the least of these my brethren

The biggest mystery surrounding this man, who combines toughness and compassion, is why he has not applied his rough-house tactics to the issue that most cries out for action: clerical sex abuse. It is more than just a moral matter. The priority of all the church's recent leaders has been to halt the secularisation that began in its European heartland and is spreading through the Americas. Top of the list of reasons why many Catholics have abandoned their faith is disgust at the ever-mounting evidence of rape and molestation of minors by priests, which has been repeatedly overlooked, indeed covered up, by the offenders' superiors. The Vatican continues not to require bishops to report allegations of abuse to the police, unless doing so is compulsory under civil law (which in many countries, including Italy, it is not).

In 2014 Francis set up a Pontifical Commission for the Protection of Minors. Doubts about its efficacy have circulated ever since. One member complained that it was under-funded. And last month it suffered a blow to its credibility with the resignation of the lone remaining abuse victim on the panel, Marie Collins from Ireland (the other victim, Peter Saunders, a Briton, was suspended without his knowledge last year). Ms Collins said that what decided her was the failure of the responsible Vatican department, the Congregation for the Doctrine of the Faith, to reply to victims' letters. She has also spoken of the

#### The Vatican bank

## Man of God v Mammon

ROME

#### Pope Francis presses ahead with tackling the Vatican's murky finances

ONE area where Francis has managed to make progress is in cleaning up the Vatican's largely secret financial machinery. Most of the accounts at the Institute for the Works of Religion (IOR), or Vatican bank, that belong to people not directly associated with the church have been closed. The Vatican has invited scrutiny by Moneyval, an international financial watchdog. It has acquired an auditor-general. And by the end of last year the Holy See's regulatory body, the Financial Information Authority (AIF), had found 23 cases of suspected financial hanky-panky and sent them to the Promoter of Justice, the Vatican's prosecutor.

Until last year none had led to a prosecution. But according to the Promoter of Justice's annual report, submitted last month, the first two cases went to court in 2016. According to a Vatican source (Vatican justice is not exactly transparent), one of the trials concerns the renovation of a penthouse apartment for Cardinal Tarcisio Bertone, formerly the

Vatican's most senior official. Two defendants, not including the cardinal, are charged with using the project to launder cash. Six cases have been shelved. Of the others, one is said to have included a fraud perpetrated on the IOR requiring investigation in several countries.

That points to a question familiar in other micro-states: whether the Vatican has the resources to handle complex financial crime. It certainly enjoys some advantages. At least one Catholic country that normally refuses to co-operate with foreign investigators swiftly supplied vital information to the AIF. Last year the Vatican's deputy prosecutor was put in charge of a new section to deal with financial offences. The Vatican police, the Gendarmeria, has hired officers with experience in the field. But that still leaves the judges, most of whom are experts in church law, who may struggle to follow intricate financial dealings.

Another question is how far the clean-up will reach into the Vatican administration, which handles large volumes of cash. Last month Italian police froze assets worth €2.5m (\$2.7m) belonging to Giampietro Nattino, an Italian banker who is alleged to have ramped up the price of shares in his own bank, Banca Finnat Euramerica, by secretly routing purchases through a Vatican department. He denies wrongdoing.

Much will depend on whether the Secretariat for the Economy, which Francis set up in 2014 to bring discipline to the Vatican's finances, seeks to do so vigorously. But the standing of its head, Cardinal George Pell, has been eroded by a police investigation into allegations that he molested children in the 1970s and 1980s in his native Australia (he denies all wrongdoing). The church's historical indifference to the suffering of children under its care casts a long shadow.



**Cardinal Pell: financial enforcer**

commission being "hindered and blocked by members of the Curia".

Two of the commission's most important recommendations have come to nothing. A tribunal to handle cases of bishops accused of failing to act on abuse claims was buried, and guidelines for dioceses on how to prevent, detect and respond to abuse have not been distributed. Cardinal Gerhard Müller, who heads the Congregation for the Doctrine of the Faith, protested that obstruction by the Vatican of efforts to curb child sex-abuse was merely a "cliché". But he also remarked that he had never

met Ms Collins.

Pope Francis has battled to force his church to reckon with a world in which many Catholics break church teaching by using artificial methods of contraception and cohabiting before marriage. A shrinking proportion share their religious leaders' view of homosexual activity as sinful. But there is a growing danger that this pontiff may be remembered less as a valiant reformer and moderniser than as a pope who shrank from being as tough on predatory paedophiles and complicit bishops as he was with fogeys in the Vatican. ■



## Microsoft

# Head in the cloud

REDMOND

**The world's biggest software firm has overhauled its culture. But getting cloud computing right is hard**

A DECADE ago, visiting Microsoft's headquarters near Seattle was like a trip into enemy territory. Executives would not so much talk with visitors as fire words at them (one of this newspaper's correspondents has yet to recover from two harrowing days spent in the company of a Microsoft "brand evangelist"). If challenged on the corporate message, their body language would betray what they were thinking and what Bill Gates, the firm's founder, used often to say: "That's the stupidest fucking thing I've ever heard."

Today the mood at Microsoft's campus, a sprawling collection of more than 100 buildings, is strikingly different. The word-count per minute is much lower. Questions, however ignorant or critical, are answered patiently. The firm's boss, Satya Nadella (pictured), strikes a different and gentler tone from Mr Gates and Steve Ballmer, his immediate predecessor (although he, too, has a highly competitive side).

Both these descriptions are caricatures. But they point to an underlying truth: how radically the world's biggest software firm has changed in the short time since Mr Nadella took charge in early 2014. Back then everything at Microsoft revolved around Windows, the operating system that powered most computers. It was a franchise the company believed needed to be extended and defended at almost any price.

Windows has since retreated into a supporting role; sometimes it is little more than a loss-leader to push other products. At the heart of the new Microsoft is Azure,

a global computing cloud. It is formed of more than 100 data centres around the world, dishing up web-based applications, bringing mobile devices to life and crunching data for artificial-intelligence (AI) services. Along with this shift in strategy has come a less abrasive, more open culture.

Microsoft's transformation is far from complete. Windows, Office—the once equally dominant package of applications for personal computers—and other PC-related products together still generate about two-fifths of its revenues and three-quarters of its profits. But even those who have watched Mr Nadella's actions with a high degree of scepticism reckon the firm is moving on from its cash-cows.

The firm's transformation did not begin with Mr Nadella. It launched Azure and started to rewrite its software for the cloud under Mr Ballmer. But Mr Nadella has given Microsoft a new *Gestalt*, or personality, that investors appear to like. The firm's share price has nearly doubled since he took over (see chart on next page).

Dethroning Windows was the first task. Previously, new products were held back or shorn of certain features if these were thought to hurt the program (something known internally as the "strategy tax"). One of Mr Nadella's early decisions was to allow Office to run on mobile devices that use competing operating systems. He went so far as to use a slide that read "Microsoft loves Linux". Mr Ballmer had called the open-source operating system a "cancer".

The downgrading of Windows made it

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easier for Mr Nadella to change the firm's culture—which is so important, he believes (along with Peter Drucker), that it "eats strategy for breakfast". Technologies come and go, he says, so "we need a culture that allows you to constantly renew yourself". Whereas Mr Ballmer was known for running across the stage and yelling "I love this company", Mr Nadella can often be seen sitting in the audience, listening. When, in 2016, internet trolls manipulated Tay, one of Microsoft's AI-powered online bots, into spewing racist comments, people waited for heads to roll. Mr Nadella sent around an e-mail saying "Keep pushing, and know that I am with you... (the) key is to keep learning and improving."

Employees are no longer assessed on a curve, with those ending up at the lower end often getting no bonus or promotion. For the firm's annual executive retreat in 2015, Mr Nadella included the heads of companies Microsoft had recently acquired, such as Mojang, the maker of Minecraft, a video game, and Acompli, an e-mail app, breaking with the tradition that only longtime executives can attend.

## The book of Nadella

Sending such signals matters more than ever in the tech industry. Well-regarded firms find it easier to recruit top-notch talent, which is highly mobile and has its pick of employers. A reputation for aggression can attract the attention of regulators and lead to a public backlash, as Microsoft itself knows from experience and Uber, a ride-hailing unicorn, is finding out.

Mr Nadella has changed the firm's organisation as well as its culture. It is now more of a vertically integrated technology firm—"full stack", in the jargon. It not only writes all kinds of software, but builds its own data centres and designs its own hardware. Mr Nadella points out that it now even develops some of the chips for its data centres.

His imprint can be seen on three businesses in particular: the cloud, hardware and AI. Microsoft does not break out by how much it has increased investment in the cloud, but building data centres is expensive and its capital expenditure is soon expected nearly to double, to \$9bn a year, from when Mr Nadella took over. If you take only basic services, such as data storage and computing, Microsoft's cloud is much smaller than Amazon Web Services, the leader in cloud computing, which is owned by Amazon, an e-commerce giant. But if you add Microsoft's web-based services, such as Office 365 and other business applications, which are only a negligible part of AWS's portfolio, the two firms are of comparable size. Both AWS's and Microsoft's cloud businesses boast an annual run rate (the latest quarterly revenues multiplied by four) of \$14bn. Microsoft hopes to reach \$20bn by its 2018 financial year, a fifth of total expected revenues.

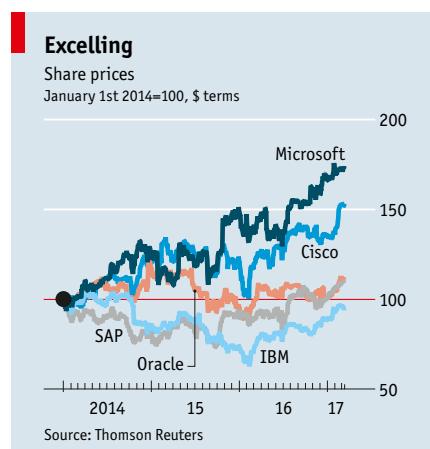
In terms of scale, then, there has been much progress. Yet in stark contrast to AWS, which supplies the bulk of Amazon's profits, Azure is still loss-making. Some analysts are optimistic that this could change. Mark Moerdler of Sanford C. Bernstein, a research firm, thinks that once Microsoft tapers its investments in data centres and their utilisation goes up, it could approach the margins enjoyed by AWS, which reached more than 30% in the last quarter.

Scott Guthrie, who heads Azure, admits that the margins for cloud-based services will probably be lower than for conventional software. But when applications are delivered online, he points out, Microsoft can capture a bigger slice of the overall pie. As well as offering its existing software as services in the cloud, it also takes care of components of IT systems, such as storage and networking, that used to be provided by other vendors. The firm's addressable market is far bigger, he says.

Perhaps. But however well Microsoft performs, life in the cloud will always be far tougher than it was in the realm of personal computers, argues David Mitchell Smith of Gartner, a consultancy. Microsoft will not only have to compete with Amazon, but with Google, which intends to go after business customers.

Although the cloud is the core of the new Microsoft, hardware is another important bet. The firm has shed its ailing mobile-phone division, which it had bought from Nokia, but on its campus in Redmond hundreds of employees are busy developing new devices. Its prototyping lab offers all that a designer of mobile gadgets could want, such as 3D printers to churn out overnight new models of a hinge, for example, or machines to cut the housing of a new laptop from a block of aluminium.

"Failing faster" is the purpose of the new equipment, says Panos Panay, who is in charge of Microsoft's hardware busi-



ness. Designers can test ideas more quickly in pursuit of the firm's goal to develop new categories of product. Hardware, software and online services are meant to be bundled into a single product to create what the firm gratingly calls an "experience".

One example is the Surface Book, a high-end laptop. It features a detachable screen which doubles as a computing tablet—a combination that has already found a following, and according to some, offers better value than comparable laptops from Apple. More daring still is HoloLens, an augmented-reality device in the form of a wireless head-mounted display. It is capable of mixing "real" and virtual reality for business purposes—for example, by projecting new parts on a motorcycle frame so a designer can easily see what works. (It is currently only available for developers.)

HoloLens, its designers hope, will also be a device where people use artificial-intelligence services—Mr Nadella's third big bet. In September Microsoft formed a new AI unit, combining all its efforts in the field, including its basic-research group of more than 1,000 people and the engineering team behind Bing, its search engine.

Every single business application is going to be disrupted by AI, says Harry Shum, who is in charge of the new unit. Algorithms trained by reams of data could tell sales staff which leads to spend most time on, and help identify risky deals where, for instance, the customer might not fulfil contract terms. This, he explains, is also a big reason why Microsoft spent a whopping \$26bn to buy LinkedIn, a professional social network that has 467m users. The deal adds to the data the firm needs to train its new AI applications.

AI is a growing part of Azure, too. In recent months Microsoft has introduced two dozen "cognitive services" to Azure. Some understand language and can identify individual speakers, others recognise faces and can tap into academic knowledge. The idea is for other firms to be able to use these offerings to make their own products smarter, thus "democratising AI". Schneider Electric, which makes gear to

manage energy systems, for instance, uses some of Microsoft's AI services to monitor its equipment.

It is easy to be impressed by what Mr Nadella has achieved in only three years. But it is far from certain that his technology bets will play out as planned. To run a computing cloud profitably you need hyper-efficient operations; something that Amazon, in contrast to Microsoft, has grown up with. Although Microsoft has expertise in AI, others, such as Google and IBM, got a far earlier start. Nor is designing integrated devices part of Microsoft's DNA in the way it is for Apple. Augmented reality is an extremely promising field but HoloLens may turn out to be no more than an expensive toy for developers.

Success or failure in the new areas will of course continue to be cushioned for some time by the revenues and profits from Windows and Office. Yet there, too, lie risks. If the PC market, whose secular decline has slowed since last year, take another turn for the worse, the company's finances would suffer badly, warns John Di Fucci of Jefferies, an investment bank.

Mr Nadella doesn't seem to be worried by such unknowns, which are to be expected in a fast-changing industry. Instead, he frets about too much success. "When you have a core that's growing at more than 20%, that is when the rot really sets in," he says. It remains to be seen whether or not the firm can ever again achieve such velocity. For now, though, its share price is showing plenty of speed. ■

### Intel buys Mobileye

## The road ahead

JERUSALEM

An Israeli firm and a tech giant join forces to shape the future of cars

CARMAKING in Israel has amounted to little more than some unstylish models put together in the latter half of the last century and a few rugged off-roaders still assembled for the country's security forces. A reluctance to make them, however, has not stopped Israel from becoming a thriving centre for the high-tech kit with which cars now bristle, and also for mobility services such as ride-hailing.

The latest evidence of Israel's pre-eminence in the field came on March 13th, when Intel, a giant American chipmaker, paid \$15.3bn for Mobileye, a Jerusalem-based firm that is at the forefront of autonomous-car technology. With the acquisition, Intel joins the ranks of technology companies that are trying to outmanoeuvre carmakers and auto-parts suppliers to develop the brains of vehicles of the future. ►

**Data trafficking**

► Mobileye is an attractive target because of what it does now and what it will soon be capable of. Its EyeQ software is already used by most of the world's carmakers to help their vehicles stay in their lanes and brake in emergencies, precisely what will also be required in autonomous vehicles. This system, which is currently fitted in over 15m vehicles but is set to be used by many millions more, can also collect information from installed cameras to continuously update the incredibly detailed maps that self-driving cars will require.

Israeli politicians are cock-a-hoop that the country's prowess in technology had made headlines around the world. Yigal Erlich, a former chief scientist of the Israeli government, called it "a great achievement that a company like Intel is building its future on Israeli technology". There was further delight that Intel will relocate its existing car-technology business, which is sizeable, to the country.

Mobileye is not the first Israeli car-technology firm to attract a foreign buyer. Waze, a driving-navigation app, was snapped up by Google in 2013 for \$1.bn. Last year Volkswagen paid \$300m for a share of Gett, a ride-hailing startup. But this is by far the biggest deal.

Though not a vast sum by technology-industry standards, some analysts reckon that Intel has overpaid. The firm is under pressure. Its main business, of providing chips for PCs, is past its peak. Its record with deals to make up for that is unenviable. Intel has proved willing to write enormous cheques to chase growth. Last year it sold McAfee, a cyber-security business, for some \$4.2bn, around half what it had paid for it six years earlier.

Having largely missed out on the transition to mobile devices, Intel may fear doing the same in autonomous cars. Competitors are beefing up. Last year Qualcomm, another big chipmaker, announced a deal worth \$47bn for NXP Semiconductors, a firm that makes chips for cars. Nvidia, bet-

ter known for chips used by the gaming industry, is developing them for cars, too.

Setting price aside, marrying Mobileye's camera and mapping expertise with Intel's chip and computing skills makes sense as the battle to establish predominance in the field of autonomous vehicles

heats up. The priority for tech companies such as Intel and Google is to get their hands on the prodigious amounts of data that cars generate. Data are a vital commodity for perfecting the algorithms that underpin autonomy. Established car firms already have access to data from billions of miles of driving. Google's self-driving vehicles throw off data of their own. For Intel, too, Mobileye's value will be as a source of data as well as revenue and profit.

Tech firms have also tried striking alliances with carmakers to secure more data. Last year, in fact, both Intel and Mobileye teamed up with BMW to develop self-driving cars. Carmakers have at last caught on to the value of data and know that they should guard it jealously. The problem they face is that they are also under pressure to share their data in return for the new technology they badly need. Intel and Mobileye have recognised that becoming large and powerful gives technology firms more leverage in this relationship. As the battle for data heats up it would be no surprise if both tech and automotive companies were to come shopping for more of Israel's car-tech wizardry. ■

### Disneyland Paris

## Taking the Mickey?

PARIS

### A quarter of a century of broad smiles and financial losses

**I**F YOU judge only by the volume of screams and the beaming faces of those taking rides at Europe's most-visited, privately-owned tourist destination, then it is clear that Disneyland Paris has much to celebrate. In the three decades since Disney, an American media firm, agreed to put its European theme park on a site east of Paris, and the 25 years since its doors swung open, in 1992, 320m customers have queued for attractions such as "Space Mountain", a stomach-twisting rollercoas-

ter, and photo-ops with Disney characters.

To mark these anniversaries the firm is making bold claims for the park's economic and social benefits. Nearly €8bn (\$8.6bn) has been invested in or near the site, which includes a second Disney studio-themed park, 8,500 hotel rooms, convention centres and a golf course. France's economy has supposedly seen gains worth €68bn and the creation of 56,000 jobs. Politicians pay it heed: François Hollande, the retiring president, made an end-of-term visit late last month.

But investors tell a different story. Shares in Euro Disney (the French parent company) have performed like a raft on the "Pirates of the Caribbean" log-flume ride: the price on the opening day in 1989 was the equivalent of €97 and they reached €221 three years later, but have languished for more than a decade since (see chart). Disney repeatedly reinvested capital to avoid bankruptcy at Euro Disney, in the process diluting others' holdings. In 1989 it owned 49%; it is now the majority-owner.

Last month it restated its wish to take Euro Disney wholly private, and agreed to swap some of its own stock for a 9% stake in the European firm that was held by ►



► Prince Alwaleed bin Talal of Saudi Arabia. Disney now holds nearly 86% of Euro Disney. It is offering—for a limited period—to buy out remaining investors for €2 a share, roughly the current price.

A senior executive at Euro Disney suggests that the smallest investors are unlikely to grumble about that price, even if they are out of pocket. They may have bought into the project as much for emotional as financial reasons, caring about the brand and perks, such as preferential entry to the park. In any case, he says, the firm always risked “financial failure” right from the start because of high debt, held by 64 different lenders. Had Disney not recapitalised and reduced those borrowings, no business would even exist to be taken private.

Yet investors clearly have reasons to lament the firm’s performance. Disneyland Paris has failed to deliver more than a handful of profitable years—it last did so in 2008. Visitor numbers have slipped. Some 13m came last year, 1m-2m fewer than a decade ago; hotel occupancy rates that were at nearly 90% early in this decade are below 80%; spending per visitor is up only modestly, despite new restaurants. A spokesman, François Banon, blames “macroeconomic conditions and difficulties”, noting years of stagnation in France and its neighbours, plus fears about terrorism.

Others say that Disney itself may be at fault. CIAM, a French activist fund, took a stake in Euro Disney in 2015. It reckons its shares were badly undervalued, and has decided to resist Disney’s effort to take it private. It has asked a judge to investigate if Disney’s description of Euro Disney’s value was fair. CIAM points to Euro Disney’s rights until 2035 to develop 2,200 hectares of prime commercial land close to Paris, around the theme park, at a remarkably low purchase cost, it says, of €1.69 per square metre (rights which it has only partly exercised). The judge may yet dismiss the case. But Anne-Sophie d’Andlau, of CIAM, says a surveyor commissioned by her fund concluded the value of controlling the land was €1.9bn alone—far above Euro Disney’s market capitalisation.

CIAM also alleges a “darker side” to Disney’s behaviour, suggesting the American firm should reimburse over €900m in fees and royalties for the Disney brand that were charged to its European outfit over the years. Although these are occasionally waived by Disney, CIAM claims that they are excessive and that they help to explain Euro Disney’s lack of profits.

Mr Banon calls these allegations “false and unfounded”. The property business earns Euro Disney just €10m annually, he points out, and CIAM’s calculation “grossly exaggerates the value of these real-estate rights”. As for Disney’s various fees, he says royalties are unexceptional at 6% or less of total revenues, and that a management fee is 1% of revenues.

The dispute could quickly end if Disney increases its offer. CIAM notes that since it began asking questions, Disney has already raised its bid to minority holders, from €1.25, which implies that the earlier valuation was too low. CIAM is emerging as a rare French activist fund that gets results: it profited by intervening in the takeover of Club Med, a tourist firm, by China’s Fosun International two years ago.

As for Euro Disney, its theme park has high running costs. It is woefully behind on digital efforts: it lacks Wi-Fi for visitors. But it is popular, and France’s economy is perking up a bit. A plan to develop new railway lines in the greater Paris region should increase demand for the commercial land that it has rights to. How irksome it would be for some if it delivered steady profits under Disney’s full ownership. ■

### Elon Musk and batteries

## Megawatts and mega tweets

**Amid blackouts, Australia supercharges progress on energy storage**

HOW much power does a tweetstorm involving two tech tycoons, the prime minister of Australia and 8.5m Twitter followers generate? Enough, at least, to supercharge a debate about the future role of batteries in the world’s energy mix.

Elon Musk, a Silicon Valley entrepreneur (pictured), may be best known for his gravity-defying ambition, but his core product is the battery: whether for his Tesla cars, for the home or for grid-scale electricity storage. He gave the last of these an unexpected jolt of publicity on March 10th, by responding to a blackout-inspired challenge on Twitter from an Australian software billionaire, Mike Cannon-Brookes. Mr Musk said he could install 100 megawatt hours (MWh) of battery storage in the state of South Australia in 100 days to help solve an energy crisis it faces, or it would be free of charge. “That serious enough for you?” he asked.

In response, Malcolm Turnbull, the prime minister, communicated with Mr Musk and appeared to turn from pro-coal sceptic into battery believer. On March 14th Jay Weatherill, the premier of South Australia, went further. Declaring that the national electricity market was “broken”, he said the state would launch its own A\$550m (\$415m) plan to build a 100MW battery system, as well as a gas-fired power station, with public funds. Mr Musk may have got what he wanted. He is “good at bringing nerdy subjects to a broad audience”, says Julia Attwood of Bloomberg New Energy Finance.

Are batteries now cheap enough to be a cost-effective way of solving energy crises like that in southern Australia, brought on since July by storms, heatwaves, the intermittency of solar and wind power and the closure of coal- and gas-fired power stations? The answer, says Michael Ottaviano of Carnegie Clean Energy, which is hoping to sell its own grid-scale battery systems to the state, is “no”—especially under current market structures.



Storage salesman

True, battery prices have plummeted and Mr Musk’s price, of about \$250 per kilowatt hour (kWh), is relatively cheap. But the total cost (including building the plant, for example) would be about \$500 per kWh to hook the batteries up to the grid. A 100MWh facility would cost \$50m. Only when power prices reach stratospheric levels would that investment make sense for a utility. That’s why the government of South Australia is having to stump up instead. Eventually, practitioners hope that changes to the power market will make battery storage viable without public funding. “This is a short-term Band-Aid until the regulatory process catches up,” Mr Ottaviano says.

But it has all sparked a discussion about batteries that will keep going (and going). On March 13th GTM, a consultancy, and the Energy Storage Association, a trade body, said that battery installations in America, led by utility-scale storage, doubled to 336MWh by the end of 2016. Much was in California, reacting to the blowout of the Aliso Canyon gas plant in 2015. At least crises aren’t going to waste: an industry is emerging.

# A lot of people understand money. How many people understand families?

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## The pharma business

# A better pill from China

SHANGHAI

**Chinese pharma firms are starting to develop new drugs for the global market**

**W**ALK into the Shanghai laboratories of Chi-Med, a biotech firm, and you encounter the sort of shiny, cutting-edge facilities common in any major pharma company in America, Europe or Japan. Chi-Med has just had positive results in a late-stage trial of its drug for colorectal cancer, which is called Fruquintinib. If the drug is approved both in China and in Western markets it could be the very first prescription drug to be designed and developed entirely in China that will be on a path to global commercialisation.

Given China's ageing population, higher incomes and rising demand for health care it is clear why innovation in drugs is a priority for the country. Its national market for drugs has grown rapidly in recent years to become the world's second-largest. It could grow from \$108bn in 2015 to around \$167bn by 2020, according to an estimate from America's Department of Commerce. By comparison, America spends about \$400bn a year on drugs.

Chinese firms mainly sell cheap, generic medicines that earn only razor-thin margins. The pharma industry is extremely fragmented, with thousands of tiny manufacturers and distributors. That helps explain the limited amount of finance that is available for investment in new medicines. Most Chinese pharma firms devote less than 5% of sales to R&D, according to a report last year from the World Health Organisation (big global drug firms typically spend 14%-18% of sales on R&D). And the bulk of that spending goes to research into generics.

But things are changing quickly. The government is encouraging the industry to consolidate, chiefly by raising standards for the quality of new medicines. It is also improving the country's regulatory infrastructure, which should make it more efficient, and faster, to develop drugs. The value of deals in the health-care sector has been increasing as a result. ChinaBio, a research firm, reckons that over \$40bn of foreign and local money went into the life sciences in China in 2016. In the same year just three Chinese biotech firms—cStone, Innovent and Asclexis—together raised more than \$500m of financing.

Another boost is the arrival of talent from abroad, whether Chinese-born executives returning with a Western education or Westerners with experience of multinational pharmaceutical firms. Christian Hogg, the boss of Chi-Med—which was

founded in 2000, has eight drugs in clinical development and listed on the NASDAQ stock exchange in 2016—used to work at Procter & Gamble, a global consumer-goods firm. Samantha Du, the firm's very first scientific officer, was formerly an executive at Pfizer, an American pharma giant. Now known as the godmother of Chinese biopharma, she used to manage healthcare investments for Sequoia Capital, a Silicon Valley venture-capital firm. In 2013 she helped found Zai Lab, which licenses late-stage drugs from Western pharma companies to develop and sell in China. Zai Lab also aims to develop innovative medicines in immuno-oncology.

Another firm attracting attention is BeiGene, an oncology firm based in Beijing, which has four clinical-stage drug candidates and which raised \$158m in an IPO last year. Chi-Med's Fruquintinib may even be beaten in the race to approval in America and Japan by a cancer drug called Epidaza from Chipscreen Biosciences of Shenzhen. China approved it in 2015.

It is too early to say whether these innovative firms will remain rarities. Only a few large ones have emerged, since the industry is resisting consolidation. But the size of the local market will itself help the industry grow. And developing a drug in China is far cheaper than it is in America or Europe. Given the outrage at the high cost of drugs in America, in particular, there is every incentive for Chinese firms to develop medicines for the global market. ■



The way things were

## Cannabis and Donald Trump

# Weed killer?

**America's pot industry shrugs off the government's harder line on legal drugs**

**T**Hese are high times for America's marijuana industrial complex. More than half the country's states have legalised medical cannabis, often rather loosely defined. Eight have voted to legalise the drug for recreational purposes. The industry was worth about \$6bn last year, a figure that is likely to rise sharply in 2018 when recreational sales begin in California.

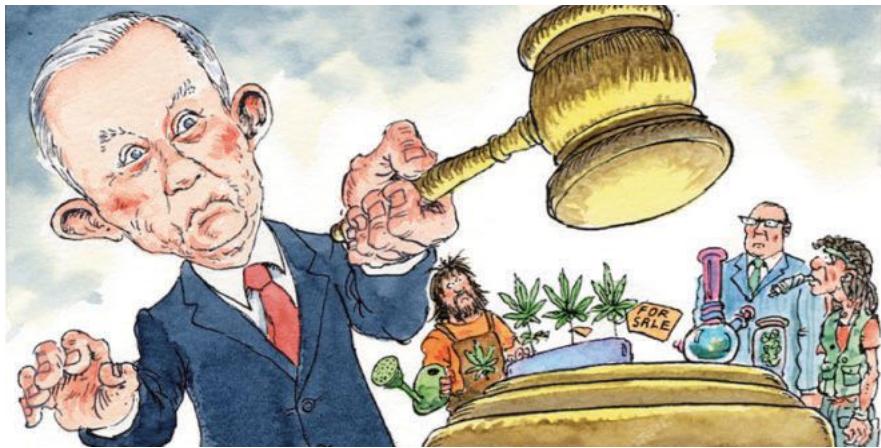
Yet in Washington, DC, the mellow mood has soured. Donald Trump said in 1990 that "You have to legalise drugs to win that war", but in politics he became more conservative. Campaigning for the presidency he called Colorado's legal cannabis market a "real problem". His press secretary, Sean Spicer, recently said he expected to see "greater enforcement" of the laws that still ban cannabis at the federal level.

That worries pot-pedlars. The fact that they are in breach of federal law means that in theory their profits are criminal proceeds, subject to forfeiture. In 2013 the deputy attorney-general of the day, James Cole, published a memo reassuring states that had legalised cannabis that federal agents would not interfere unless the states allowed the industry to cross certain red lines, such as selling to minors, funding crime or leaking their product into jurisdictions that had not chosen to legalise.

Mr Trump's attorney-general, Jeff Sessions, has made clear that he sees things differently. In his confirmation hearings before the Senate he refused to endorse the Cole memo, saying: "I won't commit to never enforcing federal law." A letter from the Department of Justice is all it takes to shut any cannabis firm.

This has given some investors an attack of paranoia. An index of 50 cannabis stocks kept by Viridian Capital Advisors, a pot-industry consultancy, slid by about a tenth in the week after Mr Spicer issued his warning on February 23rd. The worst-hit were those companies dealing directly with the drug, which are on shakier legal ground than those providing ancillary products and services, such as chemical-extraction machinery or security.

But most investors have kept calm. Viridian's index is still up by 18% this year. Medical marijuana, which accounts for the bulk of the industry, is expressly protected by a federal law that bans federal agents from interfering in states where it is legal. Mr Trump backs medical cannabis "100%", as do most Americans. And although only a smallish majority of people favour lega- ►



► RISING RECREATIONAL WEED, a large one (including most Republicans) support the right of states to set their policy on the matter, says a poll by Quinnipiac University.

For now the main impact of Mr Trump's harder line may be to make entrepreneurs stick extra-carefully to state regulations, rather than "pushing the boundaries" of the law, says Sam Kamin, a professor of marijuana law and policy at the University

of Denver. Some have bypassed rules outlawing interstate commerce, for instance, by trading as intellectual-property companies. That sort of thing looks a bit riskier now. But cannabis backers are hardly strangers to risk, Mr Kamin notes. "If you've invested your personal fortune in a product that's prohibited by the federal government, you're comfortable with a certain amount of uncertainty." ■

#### Sporting mega-events

## Gamesmanship

#### The business model for the Olympic Games is running out of puff

PIERRE DE COUBERTIN, the French aristocrat who founded the modern Olympics, was seduced by the world's fair. In 1900, 1904 and 1908 his games were embedded within such exhibitions. He soured on the arrangement eventually because the games were overshadowed, "reduced to the role of humiliated vassal", as he put it. The Olympics still criss-crosses the globe, but with city after city ditching ambitions to put on the world's largest sporting event, the model is under threat.

The latest blow comes courtesy of Budapest, which on March 1st withdrew its bid to host the 2024 summer games after public opposition. Its retreat comes on the heels of Boston, Rome and Hamburg canned their bids within the past two years, whittling a once-crowded pool of candidate cities down to only two: Los Angeles—*itself* a replacement for the torpedoed Boston bid—and Paris.

The situation ought to feel familiar by now to the International Olympic Committee (IOC), the governing body of the games. After lots of cities bowed out of the competition for the 2022 winter games it was again left with two options: Almaty, Kazakhstan and Beijing, China. The pros-



pect of having no bidders for future events—or of having a bidding contest between autocrats eager to host a vanity project—seems likelier than it once did.

A study in 2016 from the University of Oxford's Said Business School found that from 1960-2016 (when data were available), the average cost overrun of hosting the games was 156%, the highest of any megaproject. Tokyo has already seen its costs rise to ¥3trn (\$26bn), four times the origi-

nal estimate. The IOC's contract with host cities includes a taxpayer guarantee, which puts them on the hook for overruns.

There is no end of enthusiasm from sponsors or television broadcasters to pay fat sums to affiliate themselves with the Olympic brand. Broadcasters are still making the bet that live sports will continue to fascinate TV audiences. Comcast, the parent company of NBC Universal, an American television company, paid a whopping \$7.75bn for exclusive broadcast rights to the games from 2022-2032. But the IOC pockets an ever-greater share of these revenues: today it gives less than 30% of television revenues to the host city. In 1992, by contrast, it gave Barcelona 69% of the broadcast spoils (see chart).

If no cities wish to host the games, however, this model is unsustainable. The IOC has been here before. Interest in hosting the five-ringed circus waned in the 1970s after a series of games tainted by terrorist attacks, crippling debt and boycotts. Los Angeles was the sole bidder for the 1984 event. Peter Ueberroth, the businessman heading its bid, ripped up the taxpayer guarantee and imposed spartan conditions, such as housing athletes in university dormitories. The games turned a profit for the city, of \$215m.

Could similarly radical reform save the day again? In 2014 the IOC passed Agenda 2020, changes that try to make the games more affordable. They have made little difference. After Budapest withdrew its bid, the IOC said in a statement that politics were to blame, before conceding that further adjustments to the bidding process would need to be made because "the current procedure produces too many losers."

It could simply tinker with the existing model and give a larger share of its revenues to the host city, or promise to cover a portion of a city's cost overruns. Some suggest a more decentralised hosting model, with different Olympic events taking place in those cities around the world that have the right sports infrastructure for them. This would spread the costs more widely and decrease the probability of white elephants. But broadcasters would bear the cost of setting up teams around the world.

The really radical answer would be to designate one or a few permanent host cities so that the Olympics sports infrastructure has a life beyond the extinguishing of the Olympic flame. Christine Lagarde, managing director of the International Monetary Fund, has spoken favourably of this idea. The proposal is not new. In 1896 Greece's King George pleaded with de Coubertin to make the country the permanent host. The Frenchman would not have it. "I decided to act as if I were stupid, pretending not to understand," he wrote. Thomas Bach, the IOC's president, may not have the luxury of ignoring reality for much longer. ■

# Schumpeter | To hell and back

Citigroup's decade of agony is almost over. It needs a bolder plan for what happens next



**I**F YOU ask financial types in New York for their views on the world's big banks, they usually come up with similar vignettes for each one. They agree that JPMorgan Chase is an unstoppable force under its boss, Jamie Dimon. Goldman Sachs is on a roll, with its shares up by 36% since the election (even if some worry that its Darwinian culture is going soft given all the regulation it faces). Across the pond Deutsche Bank is struggling to keep its head above water; its leader, John Cryan, embarked on a capital-raising and cost-cutting plan on March 5th. Yet one big bank elicits shrugs of bafflement: Citigroup. Its managers are anonymous and they get paid about a fifth less than their peers at other financial groups. No one is quite sure what Citi is up to or what it exists for. Once too big to fail, it is now too drab to mention.

That Citi has become the world's half-forgotten bank is surprising. It was America's biggest firm before the financial crisis, measured by size of assets; it is now the fourth-largest. After suffering huge losses on loans and subprime securities, in 2008-09 it received the biggest bail-out of any American bank. Citi can still lay claim to being the most important firm in the global financial system. It operates in 97 countries, from Kenya to South Korea to Kuwait. Soon it will confront its next strategic dilemma: when should it start growing again?

Citi's roots go back to 1812, but it came of age in the 20th century, organising loans and cross-border payments for American companies abroad. In the decade to 2007 it tripled in size as it tried to be a financial supermarket that offered everything to everyone, everywhere. The government sold its last Citi shares in 2011. The men appointed in 2012 to clear up the mess, Michael O'Neill, its chairman, and Michael Corbat, its chief executive, were given three goals: to make Citi safe, to make it profitable and to return cash to shareholders. They have almost finished the job.

Consider safety first. Since the nadir in 2009, the bank's core capital has risen by 59%, and its cash reserves by 28%. Citi's assets have fallen by 3%, its holdings of "Level-3" (ie, hard-to-value) securities by 80%, and its short-term debts by 78%. Mr Dimon likes to say that JPMorgan's balance-sheet is a fortress. If so, Citi's is a nuclear-bomb shelter. If another crisis hit, it has enough capital and earnings to absorb four times the losses it suffered in 2008-09. Mr Corbat is shutting down the bad bank that was created in 2009,

which has disposed of \$650bn of toxic exposures—think of steaming piles of subprime bonds and Greek mortgages.

The second goal is profitability. The bank has made relatively slow progress here, but its headline figures underestimate returns. An accounting rule means that its balance-sheet appears bloated by tax breaks relating to its losses during the crisis. Its return on tangible equity, a measure which adjusts for this, was 9% in 2016. If the last dregs of its legacy assets are sold this year, the ratio should reach 10%. That is below JPMorgan, at 13%, but acceptable.

With its capital base restored, Citi can meet its third goal, of returning cash to shareholders. Its share price has fallen by 88% over the past decade, so they could do with some payback. The bank is producing especially strong cashflows because its former losses can be set against tax bills. It should be able to pay out \$17bn-18bn in dividends and share buybacks a year, which would make it one of the seven most generous American firms for the absolute amount of cash returned. Citi shareholders should soon receive a dollar of cash a year for each \$10 of stock that they own.

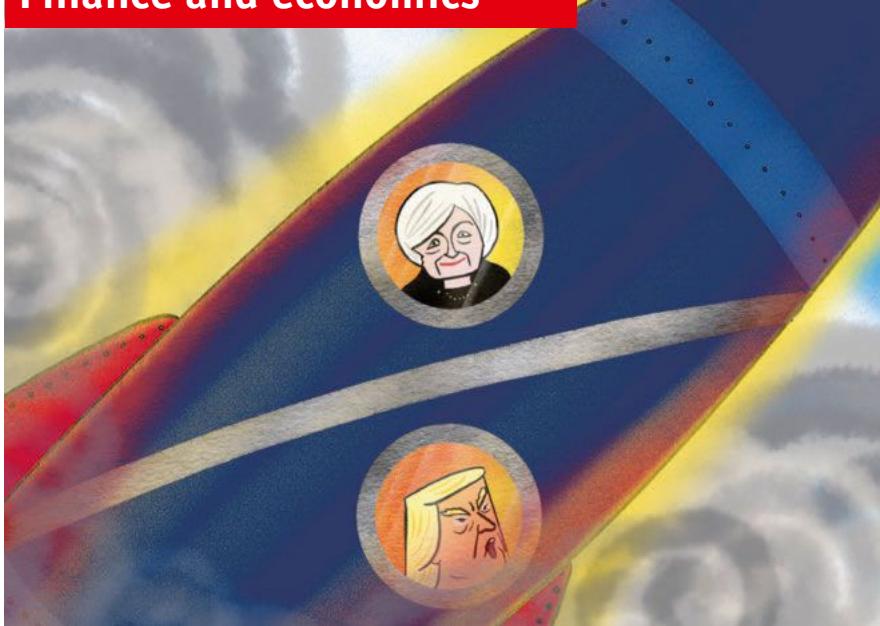
If life were fair, Citi's bosses would each be given a Martini and a medal for years of gruelling work. But investors' expectations are seldom static. By as soon as the end of this year, Citi will be under pressure to show that it can grow again. Its revenues fell by 2% in 2016 (excluding the sales made by the bad bank). By contrast, Wells Fargo and JPMorgan Chase expanded revenues at a rate of 3-4%. With a third of its business in emerging markets, where growth is picking up, Citi should be doing better.

The idea of the bank expanding again is not as mad as it may appear. It has room to grow without upsetting regulators (who still fret about banks being too big). Citi is 28% smaller than Bank of America and 27% smaller than JPMorgan Chase, measured by the risk-adjusted assets of its core business. Unlike European basket-cases such as Deutsche and Royal Bank of Scotland (which recently reported its ninth consecutive annual loss), Citi's international business is viable. It ships cash globally for big firms and is entrusted with \$430bn of deposits abroad—more than in 2006 and almost twice what JPMorgan Chase has. Citi's bond-trading unit is ranked first in the world. It has a powerful presence in Asia, the only region where it hasn't lost money in the past decade.

## Nervous in 97 countries

So far, though, Citi's managers have focused on modest projects. In 2016 the bank bought a credit-card portfolio in America. It is bulking up in equities and is investing more in its Mexican business. The risk is that excessive caution causes the bank's global position to deteriorate. Citi's main customer base, of American multinationals, is probably mature. Their profits doubled between 2003 and 2013, but are now falling. Citi needs to find more local corporate customers abroad, but its loan books in the two biggest emerging economies, China and India, stagnated in 2016. As Citi has been recovering, China's big banks, ICBC, CCB and Bank of China, have built formidable networks across Asia.

It is easy to understand why Citi's top brass are treading gingerly. The urge to make far more of the bank's global footprint was behind the disastrous expansion of 1997-2007. Of the bank's 17 directors, 15 are American: a global bank should have more of a mix of nationalities. And the real sign that a company is recuperating is not that it is locked in a permanent state of contrition and austerity. Rather it is that it can grow at a measured and rational pace in its core areas. Over the next couple of years, that's what Citi needs to become well-known for. ■



## The Federal Reserve

# Up, up and away

WASHINGTON, DC

### As Janet Yellen's Fed raises rates, political uncertainty hangs over the central bank

**T**HIRD time lucky. In each of the past two years, the Federal Reserve has predicted multiple interest-rate rises, only to be thrown off-course by events. On March 15th the central bank raised its benchmark Federal Funds rate for the third time since the financial crisis, to a range of 0.75-1%. This was, if anything, ahead of its forecast, which it reaffirmed, that rates would rise three times in 2017. "Lift-off" is at last an apt metaphor for monetary policy. But as Janet Yellen, the Fed's chairwoman, picks up speed in terms of policy, she must navigate a cloudy political outlook. The next year will define her legacy.

Ms Yellen took office in February 2014 after dithering by the Obama administration over a choice between her and Larry Summers, a former treasury secretary. Left-wingers preferred Ms Yellen, in part because she seemed more likely to give jobs priority over stable prices. Indeed, Republicans in Congress worried that she would be too soft on inflation. *The Economist* called her the "first acknowledged dove" to lead the central bank.

Today Ms Yellen looks more hawkish—certainly than Mr Summers, who regularly urges the Fed to keep rates low. Headline inflation has risen to 1.9% a year; but excluding volatile food and energy prices it is a bit stuck, at around 1.7%. Yet Ms Yellen has not really changed her plumage. As expected, she has consistently given high weight to unemployment. Before her appoint-

ment, when joblessness was high, she wanted the Fed to promise to keep rates low for longer than it then planned. Now that unemployment is just 4.7%, she is keener to raise rates than those who worry about stubbornly low inflation.

In March 2015 Ms Yellen argued that, were the Fed to ignore a tight labour market, inflation would eventually overshoot its 2% target. The Fed might then need to raise rates sharply to bring it back down, risking a recession—and hence more unemployment. Better to lift rates in advance.

Unemployment, however, was already down to 5.5%. So most rate-setters had started 2015 forecasting a rapid lift-off, tak-

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ing rates up by at least one percentage point over the year. But inflation remained strangely tepid (see chart). Cheap oil and a strong dollar were partly to blame. But wages also seemed stuck. Ms Yellen and her colleagues deduced that unemployment could safely fall a bit further.

In the end, they raised rates once in 2015, in December. Again, they forecast four rate rises for the next year. This time they were delayed by worries over the global economy (China wobbled early in 2016). Officials also began to see lower rates as a permanent feature of the economy. Today, the setters think rates will eventually stabilise at 3%, down from a forecast of 4% when Ms Yellen took office.

Ms Yellen's Fed, then, has proved very willing to change course. And this time the Fed is speeding up, rather than postponing, rate rises. Three factors are at play. First, the global economy has been reflating since the middle of 2016 (see Briefing, page 18). Second, financial markets are booming, boosting the economy by almost as much as three interest-rate cuts, by some esti-

### Attracting the hawks

United States



mates. Third, a fiscal stimulus is looming. According to the Fed's model, a tax cut worth 1% of GDP would push up interest rates by nearly half a percentage point. During his campaign Donald Trump promised cuts worth nearly 3% of GDP, according to the Tax Policy Centre, a think-tank.

Doves insist that the Fed risks halting an incomplete recovery. Before the crisis of 2007-08, about 80% of 25-to 54-year-olds (the "prime age" population) had jobs. Today the proportion is 78%. The difference is about 2.5m potential workers, mostly not counted as unemployed because they are not looking for work. Were the Fed to aim for the nearly 82% prime-age employment

seen in April 2000, the jobs shortfall would look twice as high.

In October Ms Yellen wondered aloud whether a "high-pressure economy", and a resulting wage boom, might coax more people to seek work. This led to reports—soon corrected—that she would let the economy overheat after all. In fact Ms Yellen has long warned that many drivers of labour-force participation are beyond the central bank's control. A gentle pickup in wage growth since mid-2015 seems to support her view that unemployment is the best measure of economic slack.

Rarely has unemployment been this low without inflation taking off. Once was

in the late 1990s, when Alan Greenspan, a former Fed chairman, correctly predicted that rising productivity would stop a booming labour market from stoking inflation. Jeffrey Lacker, chairman of the Richmond Fed, recently offered another example. In 1965 unemployment fell to 4%, while inflation was only 1.5%. Yet prices took off in the years that followed: by 1968, inflation had reached 4.3%.

That is what Ms Yellen wants to avoid. But the Fed has not often managed to tighten monetary policy without an ensuing recession. Should she manage it, her tenure will go down as a great success.

That is, if she has time to finish the job. Her term ends in February 2018. If Mr Trump replaces her, she could stay on as a board member. But she would probably leave. So would Stanley Fischer, the Fed's vice-chairman, whose term expires four months later. Two of the Fed's seven seats are already vacant, and Daniel Tarullo, the de facto vice-chairman for regulation, goes in April. So Mr Trump may be able to appoint five governors, including the chairman, within 18 months of taking office.

What then for monetary policy, and for Ms Yellen's legacy? During his campaign, the president attacked the Fed for keeping rates low and said he would replace Ms Yellen with a Republican. Mooted successors include Glenn Hubbard, who advised George W. Bush; Kevin Warsh, a former banker and Fed governor; and John Taylor, an academic and author of a rule, named after him, for setting interest rates.

## A kettle of hawks

All these potential successors are monetary-policy hawks. Some versions of the Taylor rule, for example, call for interest rates more than three times as high as today's. Mr Trump, who promises revival and 3.5-4% economic growth, might not like the sound of that. If, like most populists, he wants to avoid tight money, he could appoint someone malleable to the Fed. But that would also be risky. One cause of the inflationary surge of the 1960s, notes Mr Lacker, was political pressure to keep policy loose even after ill-timed tax cuts. On one occasion, President Lyndon Johnson summoned the Fed chairman, William McChesney Martin, to berate him for raising interest rates (and to drive him around his ranch at breakneck speed).

A simpler way to keep hawkish Republicans at bay would be to reappoint Ms Yellen. With Mr Tarullo out of the frame, Mr Trump would still be able to impose his deregulatory agenda, yet keep faith with Ms Yellen to set monetary policy. Senators would struggle to come up with reasons not to reappoint a central-bank chairwoman so close to achieving her goals. Bill Clinton and Barack Obama reappointed incumbent Republican chairmen. It might be in Mr Trump's interest to reciprocate. ■

### The Federal Reserve

## The public's interest

### A critical tool for setting American monetary policy comes under fire

EVERY time the Federal Reserve has raised rates since the financial crisis, as it did on March 15th, it has done so in part by increasing "Interest On Excess Reserves" (IOER). This obscure policy rate is surprisingly controversial. Jeb Hensarling, the Republican chair of the congressional committee that oversees the Fed, has called it a "subsidy" to some of the largest banks in America.

To understand the argument, consider the Fed's year-end financial statement. In 2016 it earned \$11.1bn in interest income on its vast portfolio of securities. But it also paid JPMorgan Chase, Wells Fargo, and other mostly big banks \$12bn in interest on excess cash deposited at regional Federal Reserve banks. Such IOER payments are both woefully unpopular and critical to the Fed's monetary policy.

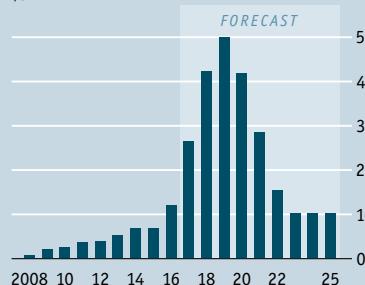
Over a decade ago, to give the Fed better control of short-term interest rates, Congress authorised it to pay interest on funds in excess of those banks need to meet reserve requirements. The policy was first used during the financial crisis in 2008. But today, IOER is the Fed's primary monetary-policy tool, essential to its setting of the Federal Funds rate.

IOER has drawn fierce flak from Congress. If banks can park their money at the Fed, they seem to have less incentive to lend to firms and consumers. About half of all excess reserves are held by America's 25 largest banks, with a third, to Congress's horror, held by foreign banks. The two groups earn roughly 85% of the Fed's interest payment.

Many analysts argue that these interest payments—amounting to less than 2% of the banks' total income—are in fact trivial. They claim banks would rather earn higher returns elsewhere, and that the real winner from the current arrange-

### Excessive?

Interest paid to banks on their excess reserves  
\$bn



Source: Federal Reserve

ment is the government. The excess reserves help finance the Fed's \$4.5tn balance-sheet, which generated almost eight times more income for the Treasury in 2016 than was paid out in interest.

This debate is likely to intensify. American banks hold over \$2.1tn in excess reserves. As rates rise, the cost of paying interest on them will climb—to \$27bn this year, according to Fed projections and \$50bn by 2019 (see chart). That may be too much. Mark Calabria of the Cato Institute, a think-tank, says that anything that can be tagged as "paying banks \$50bn a year not to lend" will be "politically unsustainable".

Meddling with the arrangement might cost even more. Without IOER, banks would try to lend their excess reserves to each other, so short-term interest rates would collapse. To keep control of monetary policy—and avert a surge in inflation—the Fed would have to sell assets rapidly to withdraw reserves from the system. The disruption, a recent analysis concluded, could prove "extremely costly to taxpayers".

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### African sovereign-wealth funds

## Buried treasure

KAMPALA

**African countries debate how to deploy their nest-eggs**

**S**CRATCHING around for money to pay for free secondary schools, a government minister in Ghana last month floated an idea: raid the Heritage Fund. At least 9% of the country's annual oil revenues are stashed there for future generations. The minister was rebuffed. But the row highlighted a trade-off: saving for tomorrow's children makes it harder to help today's.

Such dilemmas are acute in sub-Saharan Africa. The region has about a dozen sovereign-wealth funds, most of them established in the past decade. They have few models to emulate. A Norwegian approach—build a fund, invest abroad, and spend only the annual returns—works in places that are small, ageing and rich. Most African countries, unfortunately, are none of those things.

The oldest and largest African fund, Botswana's \$5.3bn Pula Fund, was created in 1994 from diamond revenues. Angola and Nigeria, the biggest oil exporters, have both established funds in the past few years; governments from Kenya to Zambia are talking of doing the same. Even Rwanda, with no great commodity riches, is soliciting patriotic donations to build its own (civil servants coughed up \$2.5m last year).

Many funds have savings mandates. Botswana's, like Norway's, hoards its wealth abroad. The Nigeria Sovereign Investment Authority (NSIA) puts 40% of its capital into a Future Generations Fund, invested in global assets with a horizon of

over 20 years. African countries should be cheered when they save, says Uche Orji, its chief executive (pictured), since they are often chastised as spendthrifts. But others say that buying foreign equities may not be the best use of scarce capital when roads and electricity are needed at home.

That explains why the NSIA allocates another 40% of its assets to domestic projects, giving priority to sectors such as power, highways and farming. In August it teamed up with Old Mutual, an investment group, to launch a \$500m property vehicle. It is not the only fund to spend locally. In January the Angola Sovereign Wealth Fund (FSDEA, from the Portuguese) announced a \$180m investment in a deep-sea port, adding to a portfolio including business hotels and 72,000 hectares of farmland. "Every investment has a private-equity logic to it," explains José Filomeno dos Santos, its chairman.

A domestic strategy could bring jobs and development. The risk is that spending is diverted from the normal budget process, dodging political oversight. In Angola critics point to the appointment of Mr dos Santos, who happens to be the president's son. One of his former business partners chairs the advisory board of the FSDEA's chosen asset manager, and also chairs the company that is building the port.

Even the best-designed institutions are no guarantee against government profligacy. Ghana's twin funds (for savings and stabilisation) are much admired, but their existence did not stop politicians from a borrowing binge. For governments facing high interest costs, a better use of oil revenues may simply be to repay foreign debt. Andrew Bauer of the Natural Resource Governance Institute, a non-profit group, says it is a "myth" that "if you have oil you need a sovereign-wealth fund."

African funds should focus on two roles, argue Anthony Venables and Samuel Wills of the Oxford Centre for the Analysis of Resource-Rich Economies. A sudden windfall can generate inefficient spending: it makes sense to "park" cash offshore until capacity is built. And a stabilisation fund, invested in liquid assets, can bolster the budget when oil prices fall.

Governments would dearly love such a boost now. Funds such as Nigeria's include stabilisation components, but most are still too small to have much effect. If sovereign wealth were shared out among citizens, Botswana would get a chunky \$2,400 each, Norwegians a mammoth \$170,000—and Nigerians less than \$7. Gulf state' funds took decades to grow, notes Mr Orji. At current oil prices, the most valued asset of all is patience. ■

**Correction.** We made a mistake in last week's article on green-shipping finance. The oxides of sulphur and nitrogen emitted by shipping are very harmful; but they are not, as we asserted, much worse for global warming than carbon dioxide. Sorry.

### Trade deals

## KORUS of disapproval

**Yet America's trade deal with South Korea has not failed**

**I**T SHOULD have been a happy anniversary. On March 15th 2012, KORUS, a trade deal between America and South Korea, came into effect. It slashed tariffs, tightened intellectual-property rights and opened up South Korea's services market. When it was signed, the head of an American manufacturing lobby hailed it as meaning "jobs, jobs and jobs". Wendy Cutler, its American negotiator, calls it "the highest standard deal we have in force".

Five years on, jubilation has given way to anxiety. On the campaign trail, Donald Trump referred to the deal as a "job-killer". On March 1st his administration's official trade-strategy document singled it out for criticism. America's trade deficit in goods with South Korea has more than doubled since 2011. "This is not the outcome the American people expected," it lamented.

Trade between America and South Korea has indeed fallen short of expectations. When the deal was signed, the United States International Trade Commission predicted that it would boost American goods exports to South Korea by around \$10bn. In fact they fell by \$3bn between 2011 and 2016. The deal suffered teething problems. As tariffs fell, American carmakers griped that South Korean regulators were erecting other barriers. Most incendiary for this administration, the South Korean government was accused of devaluing its currency for competitive advantage.

But weak exports cannot be blamed on KORUS. As it came into force global trade slowed sharply; total South Korean imports have fallen steeply (see chart). Without the deal, which slashed tariffs, American goods exports would have been even lower. American exports of services rose by almost 30% between 2011 and 2016. The ►

### Seoul traders

South Korea, merchandise imports  
2011=100



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► stock of South Korean investment in America has more than doubled.

At least Philip Seng, chief executive of the United States Meat Export Federation, a trade body, remains pleased with KORUS. American exports of chilled beef to South Korea have risen by 152% over the past five years. The tariff cuts have offset the strong dollar. "We are now the number-one supplier of beef," he says proudly. And by 2026 the duty is due to be phased out entirely.

If American export performance overall has been disappointing, then dawdling by its trade negotiators could also be to blame, says Jeff Schott, an economist and

trade-deal veteran. Nine months before KORUS came into force, a deal between the EU and South Korea gave European companies a head start.

In South Korea fears of what an "America first" agenda might mean are in the air. Some potential candidates in the forthcoming South Korean presidential election have suggested pre-emptively renegotiating the deal on their own terms. Meanwhile, the South Korean government is playing down talk of a renegotiation. Since no tweak to KORUS could produce the trade balance that the Trump administration wants, this seems wise.

A sensible upgrade to the deal is possible. A revised version might include new rules on digital trade and e-commerce, and more transparency over currency intervention. But its terms would then look remarkably similar to the Trans-Pacific Partnership (TPP), a 12-country trade deal that the Trump administration has scrapped. (South Korea was not in TPP, though it had not ruled out joining, and took part in a trade summit on March 14th-15th in Chile devoted to Pacific integration.) For now, though, the Trump administration's aggressive bilateralism seems more likely to promote rancour than trade. ■

## Buttonwood | Building a beta mousetrap

**Investors are trying to find new ways to beat the market**

**I**N THE world of investing, everyone is always looking for a better mousetrap—a way to beat the market. One approach that is increasingly popular is to select shares based on specific "factors"—for example, the size of companies or their dividend yield. The trend has been given the ugly name of "smart beta".

A recent survey of institutional investors showed three-quarters were either using or evaluating the approach. By the end of January some \$534bn was invested in smart-beta exchange-traded funds, according to ETFGI, a research firm. Compound annual growth in assets under management in the sector has been 30% over the past five years.

The best argument for smart-beta funds is that they simply replicate, at lower cost, what fund managers are doing already. For example, many fund managers follow the "value" approach, seeking out shares that look cheap. A computer program can pick these stocks more methodically than an erratic human. A smart-beta fund does what it says on the tin.

But does it work? The danger here is "data mining". Carry out enough statistical tests, and you will always find some strategy that worked in the past. It may be that stocks beginning with the letter "M" have outperformed other letters of the alphabet; that does not mean they will do so in future. According to Elroy Dimson of Cambridge University and Paul Marsh and Mike Staunton of the London Business School, researchers have found 316 different factors that might form the basis for a successful investment strategy.

The best-known fall into four groups—size, value (including dividend yield), momentum (buying stocks that have risen in the recent past) and volatility (buying less-risky shares). Research by Messrs Dimson, Marsh and Staunton shows that



the size, value and momentum effects have worked across a wide range of markets over many decades. The low-volatility effect (for which fewer data are available) has worked in America and Britain over an extended period.

In the case of momentum, the effect is very large. In a theoretical exercise (see chart), an investor identifies the best-performing stocks over the previous six months, buys the winners and sells short the losers (ie, bets that their prices will fall). The exercise assumes it takes a month to implement the strategy each time. In some countries, the return is more than 1% a month; globally, it is 0.79% a month, or nearly 10% a year. That is more than sufficient to make up for any transaction costs.

This is a bit of a mystery. Even if markets are not completely efficient, it seems hard to understand how outsize returns can be achieved by looking at something as simple as recent price movements, without clever traders taking advantage until the

anomaly vanishes. One explanation may be that the effect can go sharply into reverse; in 2009 a broad-based momentum approach would have lost 46% in the British stockmarket and 53% in America. Any hedge fund that used borrowed money to exploit the momentum effect would have been wiped out.

Similarly, smaller companies and value stocks have beaten the market over the long run. Nevertheless, there have been times when such shares have been out of favour for years. The returns from such strategies have been much lower than from momentum (2-4% a year): not enough, perhaps, to induce a patient buy-and-hold strategy among those willing to ride out the bad times.

The obvious answer is to select the right factors at the right moment. The obvious question is how to do so. Relying on past performance is risky. A study\* by Research Affiliates, a fund-management group, found that a factor's most recent five-year performance was negatively correlated with its subsequent return. This is probably a case of reversion to the mean. Stocks that perform well over five years are probably overvalued by the end of that period; those that perform badly for the same period are probably cheap.

Indeed, the publicity given to smart beta, and the money flowing into these funds, will lead to upward pressure on shares exposed to the most popular factors. (Add an extra layer of irony when this applies to momentum stocks.) Investors who believe in the beta mousetrap may find that the rodents have already escaped with the cheese.

\* "Forecasting factor and smart beta returns" by Rob Arnott, Noah Beck and Vitali Kalesnik

**Oil prices**

# Full tank

HOUSTON

**Why is so much oil sitting in storage?**

IT SOUNDS like a scene from "The Big Short", a film about financial speculation. Light aircraft fly photographers close to America's oil-storage facilities, using infra-red imaging and photographs to gauge the rise and fall of levels of crude in 2,100 storage tanks, in an attempt to work out whether oil futures are overvalued or not.

In fact, it is less mischievous than that. The intelligence-gatherers work for a company, Genscape, that sells the information to traders everywhere, giving them a few days' jump before storage surveys are published by the government.

These data are particularly useful at a time when near-record levels of oil inventories in America are weighing on oil prices and frustrating attempts by OPEC, the producers' cartel, to prop up the market. The high level of inventories is vital to an understanding of why crude prices suddenly plummeted this month, according to the International Energy Agency (IEA), a forecaster. West Texas Intermediate is back below \$50 a barrel, its level before OPEC in November agreed to cut output (see chart).

Three reasons explain why the tanks are so full. Firstly, OPEC's agreement with non-members such as Russia to cut production from January 1st set off a flurry of hedge-fund buying, pushing oil prices higher. American shale producers were quick to take advantage of higher prices by pumping more oil. The number of American oil rigs has risen to 617 from 386 a year ago, producing 400,000 barrels a day more than at the lows in September. Much of that has gone to storage terminals like Cushing, Oklahoma.

Second, OPEC has been hoisted by its own petard. In the months before it started cutting output, it sharply raised production

and exports. After weeks of trans-Atlantic travel, this oil is showing up in higher American imports, put into storage when refineries were idled for maintenance.

The third factor is the shape of the curve of futures prices, which is closely related to the level of inventories. When OPEC orchestrated the January cut, it hoped to rebalance supply and demand by mid-year, and push the futures market into "backwardation", meaning prices in the long term were at a discount to short-term prices. Backwardation reflects the market's willingness to buy oil and use it rather than storing it. The strategy worked for a while.

But since the release of bearish American inventory data on March 8th, the market slipped back into "contango", the name for the discount at which near-term prices trade to longer-term ones. Contango makes it more worthwhile to buy oil and store it. Hillary Stevenson of Genscape notes that the storage costs in tanks in Cushing are about 41 cents per barrel of oil per month, compared with a one-month contango of about 65 cents.

Contango can be a self-fulfilling prophecy, because the more oil is stored, the lower short-term prices go. So OPEC's challenge is to try and break the loop, possibly by promising to extend its output cuts beyond June. But in that case, the shale drillers are likely to add yet more wells. And so the merry-go-round will continue. ■

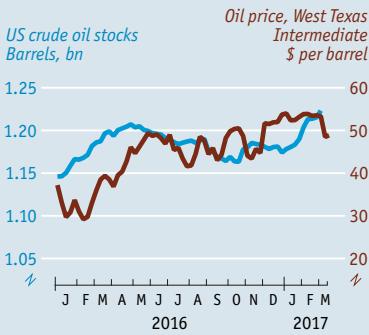
**Hope springs eternal**

which at the time amounted to 40% of GDP. Even the IMF, usually in favour of more orthodox free-market policies, supported the move. The country nonetheless experienced a severe recession, with GDP falling by more than 10% that year.

Eight years on, things look rosier. The IMF loan was repaid early, in 2015. GDP rose by 7.2% in 2016, boosted by an explosion in tourism: visitor numbers are expected to exceed 2m this year, seven times the population. As the economy has recovered, capital restrictions have been eased. It is hoped the latest liberalisation will cool the economy a little, says Jon Danielsson of the London School of Economics. By stopping investment abroad, capital controls may have inflated domestic asset prices; house prices have climbed by around 16% in a year. Outflows should also reduce pressure on the krona, which rose by 16% against the euro in 2016, but has fallen by 3.5% since the announcement.

Iceland's problem is that its economic cycle is out of sync with other rich countries, says Fridrik Mar Baldursson of Reykjavik University. Before the crisis investors sought to profit from the gap between high Icelandic interest rates and lower rates elsewhere, by borrowing abroad to invest in Iceland. With the krona interest rate now at 5%, that "carry trade" has resurfaced. The central bank is hamstrung: if it lowers rates to deter foreign money, it risks stoking up the domestic economy further.

So though controls on capital outflows were lifted this week, those on inflows were tightened. They try to dim the attraction of investing in Iceland by making investors keep 40% of their money in non-interest-bearing accounts for at least a year. Determined speculators, Mr Danielsson fears, will always find a way in. But the measure is at least a step towards avoiding a rerun of the 2008 saga. ■

**Shale or return?****Iceland's capital controls**

## The end of a saga

**Capital controls imposed at the height of the crisis have been lifted**

IT WAS one of the worst-hit casualties of the financial crisis of 2007-08, but Iceland this week took steps that symbolised its recovery. The last remaining controls on capital outflows were lifted, allowing pension and investment funds to invest their money abroad. And the central bank struck another deal with offshore holders of frozen krona-denominated assets—buying more of them back at a discount.

The country's crisis experience was a cautionary tale of an over-exuberant financial sector. Three of its banks, with assets worth 14 times GDP, keeled over within a week; the krona fell by 70% on a trade-weighted basis in a year; Iceland was the first rich country since Britain in 1976 to need an IMF rescue.

To stem capital outflows and further falls in the krona, the government in 2008 slapped restrictions on money leaving the country. The measures also froze offshore holdings of krona-denominated assets,

# Free exchange | The best policy

## Honest campaigns for immigration would advocate much more of it

**“WE CAN’T** restore our civilisation with somebody else’s babies.” Steve King, a Republican congressman from Iowa, could hardly have been clearer in his meaning in a tweet this week supporting Geert Wilders, a Dutch politician with anti-immigrant views. Across the rich world, those of a similar mind have been emboldened by a nativist turn in politics. Some do push back: plenty of Americans rallied against Donald Trump’s plans to block refugees and migrants. Yet few rich-world politicians are willing to make the case for immigration that it deserves: it is a good thing and there should be much more of it.

Defenders of immigration often fight on nativist turf, citing data to respond to claims about migrants’ damaging effects on wages or public services. Those data are indeed on migrants’ side. Though some research suggests that native workers with skill levels similar to those of arriving migrants take a hit to their wages because of increased migration, most analyses find that they are not harmed, and that many eventually earn more as competition nudges them to specialise in more demanding occupations. But as a slogan, “The data say you’re wrong” lacks punch. More important, this narrow focus misses immigration’s biggest effects.

Appeal to self-interest is a more effective strategy. In countries with acute demographic challenges, migration is a solution to the challenges posed by ageing: immigrants’ tax payments help fund native pensions; they can help ease a shortage of care workers. In Britain, for example, voters worry that foreigners compete with natives for the care of the National Health Service, but pay less attention to the migrants helping to staff the NHS. Recent research suggests that information campaigns in Japan which focused on these issues managed to raise public support for migration (albeit from very low levels).

Natives enjoy other benefits, too. As migrants to rich countries prosper and have children, they become better able to contribute to science, the arts and entrepreneurial activity. This is the Steve Jobs case for immigration: the child of a Muslim man from Syria might create a world-changing company in his new home.

Yet even this argument tiptoes around the most profound case for immigration. Among economists, there is near-universal acceptance that immigration generates huge benefits. Inconveniently, from a rhetorical perspective, most go to the migrants themselves. Workers who migrate from poor countries to rich ones typically earn vastly more than they could have in their country of origin. In a paper published in 2009, economists esti-

mated the “place premium” a foreign worker could earn in America relative to the income of an identical worker in his native country. The figures are eye-popping. A Mexican worker can expect to earn more than 2.5 times her Mexican wage, in PPP-adjusted dollars, in America. The multiple for Haitian workers is over 10; for Yemenis it is 15 (see chart).

No matter how hard a Haitian worker labours, he cannot create around him the institutions, infrastructure and skilled population within which American workers do their jobs. By moving, he gains access to all that at a stroke, which massively boosts the value of his work, whether he is a software engineer or a plumber. Defenders of open borders reckon that restrictions on migration represent a “trillion dollar bills left on the pavement”: a missed opportunity to raise the output of hundreds of millions of people, and, in so doing, to boost their quality of life.

## We shall come over; they shall be moved

On what grounds do immigration opponents justify obstructing this happy outcome? Some suppose it would be better for poor countries to become rich themselves. Perhaps so. But achieving rich-world incomes is the exception rather than the rule. The unusual rapid expansion of emerging economies over the past two decades is unlikely to be repeated. Growth in China and in global supply chains—the engines of the emerging-world miracle—is decelerating; so, too, is catch-up to American income levels (see chart). The falling cost of automating manufacturing work is also undermining the role of industry in development. The result is “premature deindustrialisation”, a phenomenon identified by Dani Rodrik, an economist, in which the role of industry in emerging markets peaks at progressively lower levels of income over time. However desirable economic development is, insisting upon it as the way forward traps billions in poverty.

An argument sometimes cited by critics of immigration is that migrants might taint their new homes with a residue of the culture of their countries of origin. If they come in great enough numbers, this argument runs, the accumulated toxins could undermine the institutions that make high incomes possible, leaving everyone worse off. Michael Anton, a national-security adviser to Donald Trump, for example, has warned that the culture of “third-world foreigners” is antithetical to the liberal, Western values that support high incomes and a high quality of life.

This argument, too, fails to convince. At times in history Catholics and Jews faced similar slurs, which in hindsight look simply absurd. Research published last year by Michael Clemens and Lant Pritchett of the Centre for Global Development, a think-tank, found that migration rules tend to be far more restrictive than is justified by worries about the “contagion” of low productivity.

So the theory amounts to an attempt to provide an economic basis for a cultural prejudice: what may be a natural human proclivity to feel more comfortable surrounded by people who look and talk the same, and to be disconcerted by rapid change and the unfamiliar. But like other human tendencies, this is vulnerable to principled campaigns for change. Americans and Europeans are not more deserving of high incomes than Ethiopians or Haitians. And the discomfort some feel at the strange dress or speech of a passer-by does not remotely justify trillions in economic losses foisted on the world’s poorest people. No one should be timid about saying so, loud and clear. ■

### Coming to America

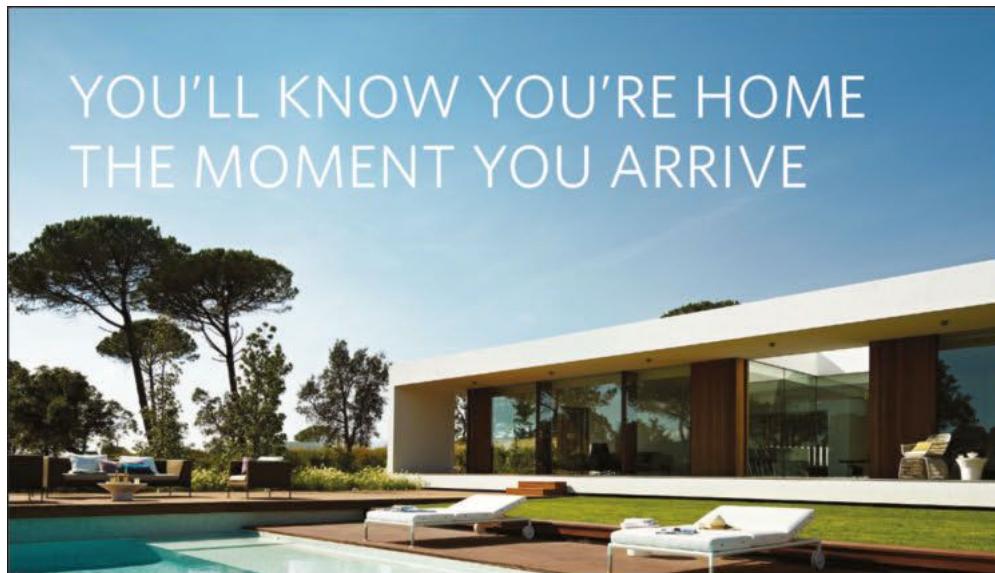
Multiple by which a worker’s income\* could increase by moving to America  
Jan 2009



Sources: “The place premium: wage differences for identical workers across the US border”, Harvard Kennedy School; IMF

Emerging-market real GDP per person as % of US real GDP per person  
PPP† terms







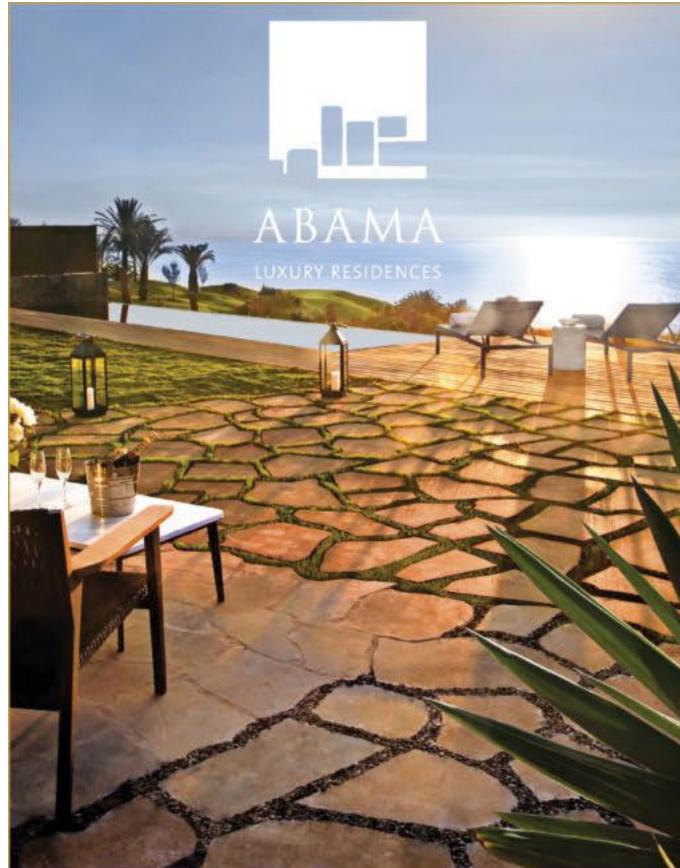

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Yellow fever in Brazil

## Monkey business

SANTA MARIA, ESPÍRITO SANTO

**Yellow fever is bad for people. For wild primates, though, it can be catastrophic**

"**A**LL gone," sighs Valmir Rossman as he scans the jungle surrounding his holding outside Santa Maria, a village in the state of Espírito Santo, north-east of Rio de Janeiro. Mr Rossman is a coffee farmer. Afternoons at his plantation used to echo to the calls of howler monkeys (pictured above) proclaiming their territories to potential interlopers. Since mid-February, however, he says he has neither heard nor seen a single one of them—except for two fresh carcasses he stumbled across where the coffee bushes give way to Atlantic rainforest, in the hills that mark the plantation's edge.

Espirito Santo's howler-monkey population is crashing. Mr Rossman's corpses are two among 900 found this year by Sergio Mendes, a primatologist at the state's federal university (UFES), and his team. In a typical year Dr Mendes would have expected his searchers to come across perhaps half a dozen such bodies during the same period. And something similar is happening in Minas Gerais, Espírito Santo's inland neighbour. Analysis of the remains suggests the culprit is yellow fever.

It is easy to think of yellow fever, a mosquito-transmitted viral infection, as being just a human disease, but other primates can catch it, too—and New World monkeys suffer particularly badly. That is because, until the European discovery of the Ameri-

cas, yellow fever was confined to the Old World. Animals there co-evolved with the virus that causes it, and thus developed a degree of inherited immunity. Their New World brethren had no such opportunity. The outbreak now raging in Espírito Santo, Minas Gerais and parts of other, adjoining states is affecting both monkeys and people. But it is monkeys who are, at least at the moment, suffering more.

### Reality bites

The idea that wild animals are reservoirs of pathogens which go on to infect humans is well known, but not well studied. The Brazilian yellow-fever outbreak is an opportunity to put this right: to understand better the two-way pathogenic traffic involved, and also the fact that outbreaks can harm species other than *Homo sapiens*.

From a human point of view, Brazil has dealt well with yellow fever. It kills about half a dozen people a year. By comparison, dengue kills between 300 and 800. Crucially, after a big vaccination campaign in the 1930s, the last recorded case in the country of "urban-cycle" yellow fever was in 1942. The urban cycle is the usual mode of transmission in the Old World. It involves a mosquito called *Aedes aegypti*, which is also responsible for transmitting dengue, Zika and West Nile virus, and which arrived in the Americas at the same

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time as the virus itself. In urban-cycle yellow fever *Aedes* bites an infected human being and then carries the virus to another, possibly uninfected, human. In essence, this is human-to-human transmission.

As far as can be ascertained, all Brazilian cases since 1942 have been "wild-cycle" infections. These involve two other mosquito genera, *Haemagogus* and *Sabathes*, which are native to the Americas. Normally, these mosquitoes spend most of their time in tree canopies, sipping on monkey blood. From time to time, though, they bite a human instead—for example, when loggers bring those canopies crashing to the forest floor. If the insects doing the biting are carrying the virus, such bites will pass it on to those who are unvaccinated. But, since *Haemagogus* and *Sabathes* do not live routinely in human habitats in the way that *Aedes* does, and vaccination programmes now concentrate on areas where wild-cycle infection is a risk, these canopy-dwelling mosquitoes rarely transmit yellow fever from person to person.

Those who are bitten and infected can, however, transmit it to other parts of the country which, because they have been free of the disease, may not have been heavily vaccinated. In 2000, for example, strains matching those from an outbreak in Pará, a state in northern Brazil, were found in areas as much as 2,000km (1,200 miles) away. That, reckons Pedro Vasconcelos of the Evandro Chagas Institute, a government laboratory in Pará, is too far for the virus to have moved without help from mechanised transport.

Occasionally, yellow fever alights in this way in an area with a large monkey population that has had no recent exposure to it, and has therefore acquired no immunity. The upshot can be devastating. ►

► Nine years ago 2,000 monkeys are thought to have perished close to Brazil's border with Uruguay. In 2000 a similar number may have died in the centre-west of the country, one of the places to which people brought it from Pará.

The flare-up in Espírito Santo and Minas Gerais seems fiercer. According to Dr Mendes, yellow fever can wipe out 80-90% of a monkey population that lacks immunity—which the animals in these two states do lack, since the disease has previously been absent, and their immune systems have had no chance to learn how to respond. The body count, he reckons, could reach tens of thousands. And this time, people are dying as well. Since December, 371 human cases, a third of them fatal, have been recorded. The reason is similar to the cause of the toll in monkeys: lack of an appropriate immune response. The absence of urban-cycle disease means that local vaccination campaigns have wound down.

The health authorities are now on high alert, though. They have dispatched vaccine to the affected areas with commendable speed. That should stop the revival of urban-cycle transmission. Entomologists from UFES are also setting traps to catch mosquitoes, to try to find out which species are carrying the virus—forest insects or *Aedes*. The trapped mosquitoes are being sent to the Evandro Chagas Institute for identification—of both them and of any viruses they may be harbouring.

At the moment, researchers suspect that the virus causing this outbreak originated from monkeys in either Amazonia or the *cerrado*, Brazil's savannah area. If that is confirmed, it will be a textbook example of disease in an animal reservoir spilling over to affect human beings. And it is a reservoir from which the disease is impossible to eradicate.

That leaves the authorities with two possible responses. The first is the one they have adopted: to react to outbreaks when they occur and accept the consequent casualties. The second is to return to mass, pre-emptive vaccination, which would be costly and run the risk of people dying, as a handful probably would, from reaction to the vaccine. That second approach is unlikely in the face of a lone outbreak, but if others follow as loggers push deeper into the rainforest, it might have to be considered. In the case of this particular outbreak, the authorities' swift response means the chances are that it will be contained and then stamped out quickly—at least as far as people are concerned. How long it will be before Mr Rossman hears his howler monkeys again is anybody's guess. ■

**Correction.** In "A clever solution" (March 11th), we misnamed Riptide Autonomous Solutions as Riptide Autonomous Systems, and also gave the wrong actual and hoped-for ranges for its underwater drones. These are, respectively, 100 and 1,000 nautical miles.

## Optics

# The bug-eyed view

### An insect's eye inspires a new camera for smartphones

MALES of a species called *Xenos peckii* have an unusual eye for the ladies. *X. peckii* is a member of the Strepsiptera, a group of insects that parasitise other insects. Its victim of choice is the paper wasp, inside the abdomen of which it develops from larva to adult by eating its host from the inside. Females of the species are blind—there is, after all, little to see in their abode. But males have a pair of eyes (see picture below) that are unique to the Strepsiptera, and vital for one brief and important task. When he matures, a male *X. peckii* must leave his host and find a mate quickly, because he will die within a few hours. A group of researchers working for the Fraunhofer Society, a German government research organisation, have now copied the way male *X. peckii* eyes work, and used the method as the basis of a new miniature camera for smartphones.

Many animals (human beings and octopuses are good examples), have eyes that use a single lens to focus light onto a sheet of receptor cells at the back of the eye, called a retina, to form an image. This is similar to the way that a digital camera's lens focuses such an image onto a retina-like light-sensor made up of millions of individual detectors. Other creatures, though—insects among them—have compound eyes. These are composed of units



Ready for my close-up

called ommatidia. Each ommatidium consists of a tiny lens, called a facet, and a few receptor cells. The eye itself is a bulbous structure composed of many of these ommatidia arrayed together. Individual ommatidia detect points of light, which act as the pixels from which the creature's brain weaves a complete image. Compound eyes generally have worse resolutions than single-lens eyes, but their shape provides a wider field of view, which is useful for spotting food and predators.

The eyes of *X. peckii*, however, are a compromise between these two extremes. They have a few, large facets and instead of detecting points of light the ommatidia each create an actual image of part of the eye's field of view. The resulting mosaic of slightly overlapping images is then stitched together by the insect's brain. This unusual arrangement results in both high resolution and a broad view of the world, using a pair of eyes that do not take up much space.

### Compound interest

That is great for finding a mate. It is also exactly what makers of smartphones want for their cameras. At the moment, smartphones often have what is known as a "camera bump"—a bulge in the case to house the optics. Build a camera that mimics *X. peckii*'s eye and you could remove that bump. Which is what the Fraunhofer team hope to do.

Fraunhofer is an organisation with institutes all over Germany. In this case the lead is being taken by the Institute for Applied Optics and Precision Engineering, in Jena, though other sites are involved as well. So far, the project's researchers have succeeded in making a camera with 135 facets that is only 2mm thick but has a resolution of one megapixel.

True, that resolution is dwarfed by the 12 megapixels available on the latest iPhone 7, but the iPhone's camera still requires a bump even to fit into the generous dimensions of the phone's 7.1mm-thick case. And one megapixel is only a start. The group believe that their facetVISION camera, as they call it, can be boosted to four megapixels. At that resolution it would be good not only for leisure use, but also for a number of industrial and medical applications. Besides phones, it might be fitted to probes, to small sensors and even to robots, to give them vision.

The initial facetVISION camera was made using a vapour-deposition process similar to the one employed to make computer chips. This has limitations, and is expensive for mass-production. For high-volume applications, such as smartphones, the researchers are therefore trying to adapt the process to the way cameras for phones are made at the moment. This employs injection moulding to form the lenses; those lenses are then placed over the light-sensors in a separate operation. ►

► Using this production technology the group think it will be possible to build a *Facetvision* camera that has several small lenses placed next to each other. The result would be around 3.5mm thick, so would fit easily inside the case of the thinnest smartphone—and, by being able to use more powerful sensors, would boast a resolution greater than ten megapixels.

A smartphone using this camera would

have to run special software to combine the images—much as *X. peckii*'s brain does. But elaborate image-processing already happens in such phones, so that should not be hard. Moreover, since the multiple lenses each capture slightly different aspects of the image being snapped, lots of other tricks might be possible, too. Watch out, then, for a bug's eye view on Facebook, Snapchat or Instagram. ■

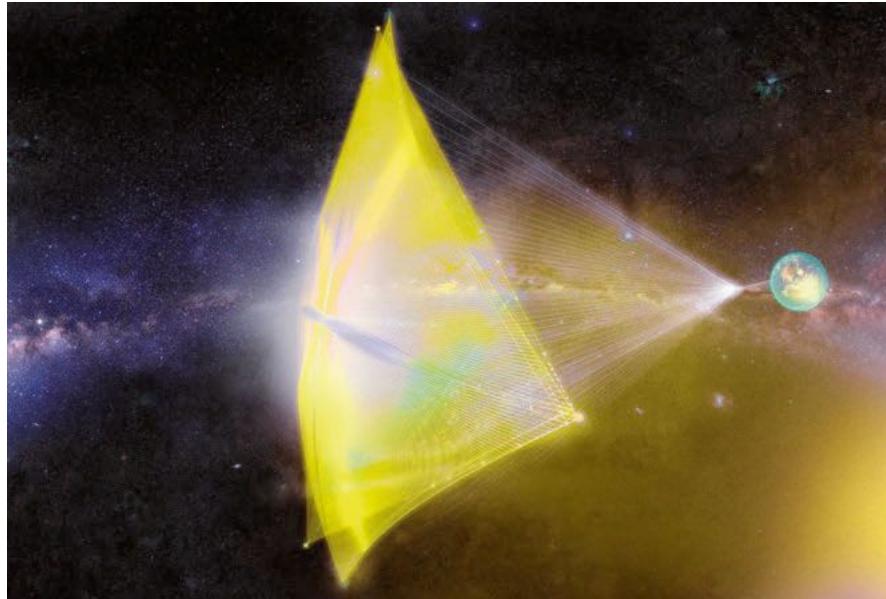
motor must carry its fuel with it. Fuel has mass. That mass must be moved by more fuel—which adds more mass to the craft, which thus needs still more fuel. And so on. For this reason, 90% or more of a conventional rocket's launch mass is its fuel.

It is possible, though, to separate the fuel from the craft. That is the principle behind a solar sail, which employs the gentle pressure exerted by sunlight to propel a vehicle. A nippier alternative is to use focused light beams to provide the pressure. Yuri Milner, a Russian billionaire with a long-standing interest in science, is paying for research into such a machine. He proposes to drive a tiny probe to Alpha Centauri, one of Earth's nearest stellar neighbours, using banks of powerful lasers.

Dr Lingam and Dr Loeb suggest FRBs might be the result of vastly bigger takes on the same principle, except that they employ the radio portions of the electromagnetic spectrum rather than visible light. The two researchers have worked out what would be needed if the transmitter behind such a burst were solar-powered. They calculate that the amount of sunlight falling onto a planet about twice the size of Earth, and at the right distance from its star to have liquid water on its surface, would yield enough energy to accelerate a spaceship weighing a million tonnes or so to a speed close to that of light before the propulsion beam became too attenuated to propel it any faster. This would be perfect for ferrying large numbers of beings from one star system to another, as long as there was an equivalent device at the other end to slow the craft down again.

To check whether such a machine is technologically plausible, the two researchers calculated that the necessary planet-sized array of radio transmitters could be kept cool by nothing more exotic than ordinary water. So, as far as they can see, while building such a machine would be a heroic feat of engineering, nothing in the laws of physics actually forbids it.

Saying that the features of FRBs are consistent with their being signs of an alien space-propulsion system is not, of course, the same as saying that this is what they actually are. One early explanation of pulsars—regular cosmic radio signals first observed in 1967 was that they were alien radio beacons. They later turned out to be caused by fast-spinning neutron stars. For physicists, though, that explanation was almost as interesting. A neutron star is one whose protons and electrons have merged with each other to create neutrons. These, together with the star's pre-existing neutrons, result in an object that has no atoms in it. Since atoms are composed mostly of empty space a neutron star, instead of being star size, is just a few kilometres across. If FRBs turn out to be even a fraction as curious as that, most astronomers would forgive them for not being artificial. ■



## Astronomy

# Flashes of inspiration

## A batch of strange signals from the sky might, just possibly, be signs of aliens

ON AUGUST 24th 2001 the Parkes Observatory, in Australia, picked up an unusual signal. It was a burst of radio waves coming more or less from the direction of the Small Magellanic Cloud, a miniature galaxy that orbits the Milky Way. This burst was as brief as it was potent. It lasted less than 5 milliseconds but, during that period, shone with the power of 100m suns. It was, though, noticed by astronomers only in 2007, when they were poking around in Parkes's archived data. As far as they can tell, it has never been repeated.

Similar unrepeated signals have since been noted elsewhere in the heavens. So far, 17 such “fast radio bursts” (FRBs) have been recognised. They do not look like anything observed before, and there is much speculation about what causes them. One possibility is magnetars—highly magnetised, fast-rotating superdense stars. Another is a particularly exotic sort of black hole, formed when the centrifugal force of

a rotating, superdense star proves no longer adequate to the task of stopping that star collapsing suddenly under its own gravity. But, as Manasvi Lingam of Harvard University and Abraham Loeb of the Harvard-Smithsonian Centre for Astrophysics observe, there is at least one further possibility: alien spaceships.

Specifically, the two researchers suggest, in a paper to be published in *Astrophysical Journal Letters*, that FRBs might be generated by giant radio transmitters designed to push such spaceships around. With the rotation of the galaxies in which these transmitters are located, the transmitter-beams sweep across the heavens. Occasionally, one washes over Earth, producing an FRB.

This idea is not completely mad. Human rocket scientists have toyed with something similar, in order to overcome one of the biggest problems of spaceship design: that a craft propelled by a rocket

## Mapping subterranean resources

# DNA goes underground

**A new job for nature's favourite information-carrying molecule**

**W**HAT lies beneath? It is a pressing question for those prospecting for oil, planning shale-fracturing or seeking geothermal-energy sites. Underground reservoirs of water, oil and gas are connected in extensive, circuitous networks that can change with time or with drilling. Knowing those networks' particulars can make a big difference to beliefs about how much can safely be extracted from them.

To acquire such knowledge, drillers often use tracers. These are materials that can be injected into the ground in small amounts at one point and then detected reliably if they turn up in other places—thus showing that those places have subterranean links to the point of injection. The supply of decent tracers, however, is limited. About 100, mostly dyes or mildly radioactive materials, are in routine use. This constrains the number of possible injection points in a particular area, and thus the amount of tracking that can actually be done. Yet in many cases—for example, a long well that runs horizontally through a particular rocky stratum—more than 100 injection points might ideally be required. The numerical constraint on tracers extends, moreover, into time, as well as space, for injecting one poisons the well, as it were, thus confusing future attempts to employ the same agent.

The problem would go away, though, if a tracer could be found that was essentially the same with every use, and would thus behave in a predictable way, but was different in detail on each occasion, so that both the time and the place of its injection could be known reliably when it turned up elsewhere. And such a substance exists. It is called DNA. The four types of chemical "letter" of which this molecule is composed can be written in any order you like, giving infinite variety to individual batches of the stuff. Unfortunately, DNA is a delicate molecule, ill-equipped to survive the extreme temperatures and stresses found inside boreholes. Attempts in the 1990s, by Statoil, Norway's state-owned fossil-fuel company, to use it as a tracer failed. But technology has moved on, and others are now trying again.

One such is BaseTrace, in North Carolina. This firm's engineers exploit the fact that some DNA sequences are more stable than others. Such relative stability comes from the various ways that different DNA molecules fold up—their so-called secondary structures. But any given secondary

## Animal behaviour

# Spider bites

## The world's spiders eat as much animal food as all of the humans on Earth

**A**RACHNOphobia is a common and powerful fear. Spiders sit high in the pantheon of species that have an outsized terror-to-danger ratio. But, unsettling though they may be, the eight-legged do excel at keeping six-limbed pests in check. They prey upon insects in vast quantities, while, for the most part, leaving people alone. Indeed, in 1957 William Bristowe, a British arachnologist, wondered whether British spiders might kill prey equivalent in mass to all of the people then living in Britain.

In research published this week in the *Science of Nature*, Martin Nyffeler of the



A light snack

University of Basel, in Switzerland, and Klaus Birkhofer of Lund University, in Sweden, attempt to put some numbers on spiders' dining habits. Starting with the available data on the mass of spiders found per square metre in Earth's main habitat types—forests, grasslands, fields of crops and so on, they calculated the amount of prey required in each habitat to support the weight of spiders there, based on spiders' known food requirements per unit of body weight. That done, they extrapolated their habitat-based results to the whole planet, in light of what is known about the total areas of such habitats.

Their conclusion was that there are 25m tonnes of spiders around the world and that, collectively, these arachnids consume between 400m and 800m tonnes of animal prey every year. This puts spiders in the same predatory league as humans as a species, and whales as a group. Each of these consumes, on an annual basis, in the region of 400m tonnes of other animals.

Somewhere between 400m and 500m tonnes is also the total mass of human beings now alive on Earth. Approximately speaking, then, Bristowe was right. Arachnophobes, meanwhile, should consider this: without spiders, there would be an awful lot more other creepy-crawlies around.

structure can have numerous underlying sequences, so there is plenty of room for multiple tracer molecules that have the same properties of stability. BaseTrace has used this to develop algorithms which work out what sequences are best for the stresses a given application presents. It has recently moved from courting the oil industry to nuclear energy, where conditions of wastewater are at their most extreme.

Another approach to protecting tracer DNA is encapsulation. Well Genetics, a Norwegian firm, wraps the molecules in polymer coatings. The company has been testing these tiny capsules, in collaboration with oil- and gas-production companies drilling in a North Sea oilfield and in a shale-gas field in Texas. Tracesa, a British company, is also developing polymer-coated DNA. And Haelixa, a firm spun out from the Swiss Federal Institute of Technology, in Zurich, is encapsulating DNA using a different material: glass.

Haelixa is not, however, always aiming for perfect protection. The company's researchers have shown that the amount of

damage DNA undergoes, if held in glass particles that have had holes etched in them, is a precise measure of the temperature that those particles have encountered in their underground journey. They have also gone on to show that such particles can measure acidity, too.

These results have caused interest in the oil and gas industries, which currently lack means of taking readings of this sort beyond the limits of their boreholes, and among geothermal-energy types, the success of whose ventures depends on exploiting the varying temperatures at a given site. Last month, in partnership with Clariant Oil Services, another Swiss firm, Haelixa started testing its technology in an American oilfield.

Haelixa's inventive approach—turning tracers into sensors—opens a new avenue of research. Mapping what is going on underground has always been hard. Yet underground is where most natural resources lie. A better understanding of the subterranean will help those resources to be extracted more cheaply and cleanly. ■

## 20th-century poetry

# The art of losing

A new biography sheds light on one of America's finest poets

**E**LIZABETH BISHOP did not like to give much away about herself. While others were writing confessional poetry, she ensured that she wrote at a distance. Poems which in original drafts mentioned characteristics of a lover were revised, sometimes as many as 17 times, in order to make the final work as polished and as impersonal as possible. She was a lesbian who never publicly admitted to the term, even as younger gay poets in the 1970s embraced it (partners were friends or even a "secretary"). She was an alcoholic who was ashamed of her drinking, but never sought long-term treatment. Poetry was a way of "thinking with one's feelings", but those feelings were often obscured, hidden within a parenthesis or written from the perspective of someone very different from herself. This is why she makes a fascinating subject for a biographer.

"A Miracle for Breakfast", the first full-length biography in two decades, ably manages to bring Bishop to life. Megan Marshall, who was taught by the poet at Harvard in 1976, recalls how she could seem prim and aunt-like to her students: "a grimmer, grayer, possibly even smaller woman than I'd remembered...dressed smartly but uncomfortably."

Yet beneath this prim veneer of control was a rich, turbulent personality. Bishop herself was aware of the contrast, writing to one lover while she was teaching at the University of Washington in 1966: "Everyone treats me with such respect and calls me Miss B—and every once in a while I feel a terrible laugh starting down in my chest...how different I am from what they think, I'm sure."

Bishop's past was indeed more complicated than many knew, even those close to her. Ms Marshall has had access to a previously unknown trove of letters that Bishop wrote to her psychiatrist and to various lovers, which became available after the death of her executor and last lover, Alice Methfessel, in 2009. These depict an unsettled, unhappy

**Elizabeth Bishop: A Miracle for Breakfast.** By Megan Marshall. Houghton Mifflin Harcourt; 365 pages; \$30

childhood. When Bishop was just three her mother was hospitalised for mental illness. She was brought up by a series of relatives. One uncle molested her and was violent, grabbing her by the hair and dangling her over of the railing of a second-floor balcony. "Maybe lots of people have never known real sadists at first hand," Bishop later wrote to her psychiatrist. "I got to thinking that they [men] were all selfish and inconsiderate and would hurt you if you gave them a chance."

Bishop's adult life was no less tumultuous. A man she briefly dated committed suicide a year after she rejected his marriage proposal. He sent her a postcard as a suicide note: "Elizabeth, Go to hell." One of her lovers managed to crash a car carrying Bishop and one of her friends (whom

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she was also in love with); Bishop and her lover were fine, but her friend, who had been a painter, lost her arm and could not paint again. Bishop often drank herself into a stupor, starting "the hour before dawn" and sometimes continuing even until she was hospitalised. Her partner of over a decade, Lota de Macedo Soares, a Brazilian self-taught landscape designer, overdosed after a breakdown partly caused by Bishop's infidelity.

Ms Marshall's skill prevents this narrative from becoming depressing. The Bishop that emerges from her telling may be at times morose or ashamed of her drinking (wishing, as she wrote to Methfessel, that she could be more like writers who "drink worse than I do, at least badly & all the time, and don't seem to have any regrets or shame—just write poems about it"). But she also appears vivacious, attractive and full of life. Even the worst heartbreak brought out wonderful poetry, such as her most famous poem, "One Art", which starts: "The art of losing isn't hard to master;/so many things seem filled with the intent/to be lost that their loss is no disaster."

Three relationships in particular illuminate a lighter side to Bishop: her time with Soares in Brazil, which inspired some of her finest work ("Hidden, oh hidden/in the high fog/the house we live in,/beneath the magnetic rock..."); her later years with Methfessel; and her friendship with Robert "Cal" Lowell, the one other writer with whom she immediately felt at ease.

Bishop first met Lowell in 1947 at a dinner party in New York. They stayed in touch for the rest of their lives, writing over 400 letters to one another. Lowell supported her and helped her find grants and postings, and praised her work. He carried around a poem of hers in his wallet as a talisman. They were so different; Lowell wrote hundreds of confessional poems, often quoting from other people's letters to him.

The relationship between ►



Elizabeth Bishop and Robert Lowell: life's a beach

► the two is one of the joys of this book. As Ms Marshall puts it: "Elizabeth would always remember the younger poet's endearingly 'rumpled' dark-blue suit and the 'sad state of his shoes' on the night of their first meeting, how handsome he was despite needing a haircut, and, most of all, 'that it was the first time I had ever actually talked with someone about how one writes poetry'."

Ms Marshall intersperses chapters about Bishop with chapters of memoir, which touch upon her time as Bishop's student. This gives the biography a sense of authenticity, but it interrupts the flow of the narrative. It also seems in sharp contrast with her intensely private subject. But this is a small price to pay for a biography which at last illuminates one of America's finest, and most elusive, poets. ■

#### Popularity

## Recipe for success

**Hit Makers: The Science of Popularity in an Age of Distraction.** By Derek Thompson. Penguin Press; 352 pages; \$28. Allen Lane; £20

**W**HAT makes a hit? Many assume it has to do with artistry or luck. Not so, says Derek Thompson, a writer and editor at the *Atlantic*. In his first book, "Hit Makers", he analyses the psychology and economics of pop culture and argues that "hits"—the things that get everybody talking—are based on three rules that rely on more than creative genius alone.

First, consumers crave "familiar surprises". Studies show that people opt for things they recognise over things they do not. Maybe there is an evolutionary explanation for this: survival taught humans that if they had seen an animal before, it had not killed them yet. This familiarity was comforting. The evidence for people's response to recognition is everywhere: the Star Wars franchise, for example, is an amalgam of characters and themes from older films. But it remains a fine balance, as people enjoy thinking they have found something new—the "aha" moment, as Mr Thompson calls it.

Second, going "viral" overnight is a myth. Hits rely on a series of closely connected events: a celebrity picking up a tweet and sharing it with countless followers, for example. Friends and family alone are unlikely to help you reach the scale you need (unless, of course, they are extremely influential). "Rock Around the Clock", a rock'n'roll classic, floundered when it was first released. Yet thanks to one music-obsessed teenager and his movie-star father, the song was picked as the opening

track to a notorious film called "Blackboard Jungle", which helped it achieve international renown.

Third, technology may evolve, but people's longing for the popular does not. Music labels used to bribe radio stations to play their songs, thus ensuring their success. This meant the labels could dictate the hits. Today the internet offers a seemingly infinite repertoire of readily available music, yet people tend to stick to songs that other people like. One study from Columbia University found that a song at the top of the charts stayed there precisely because people assumed it was good. When the charts were inverted, those previously at the bottom achieved similar success. The quality of the song is not as important as its perceived popularity.

Mr Thompson's thesis might seem obvious—a fact he readily admits. Exposure and connections are important. But the extent to which nearly all blockbusters and pop sensations owe their success to this may be less clear-cut than is generally believed. Mr Thompson's knack for supporting each point with colourful tales and examples helps make the book worthwhile. He explains how "Bal du Moulin de la Galette" by Pierre-Auguste Renoir, which is revered as one of the masterpieces of the Impressionist movement, would not have been so without Gustave Caillebotte, a fellow artist. Caillebotte died at 45 and left nearly 70 of his friends' paintings to the French state, including several by Renoir, thus helping ensure his exposure and eventual critical acclaim.

Readers may despair at the injustice of publicity bearing more fruit than pure talent, but there are enough unlikely examples to foster hope. Indeed, in theory, anyone with the right mix of "optimal newness", wide reach and repeated exposure can get their lucky break. Better still, it might just be a hit. ■



Objects of adoration

#### Fiction

## Black door

**Exit West.** By Mohsin Hamid. Riverhead; 240 pages; \$26. Hamish Hamilton; £14.99

**I**F THE history of human civilisation is of the collapse of distance—from walking to horses to carriages to motorised transport to jet engines—then what happens when you take that thread to its logical conclusion, when it becomes possible to move from any one place on Earth to another simply by walking through a door? This is the central conceit of "Exit West", Mohsin Hamid's fourth novel, which is set in a world wracked by war and poverty, a world not unlike our own, in which mysterious doors allow passage from London to Namibia or from Amsterdam to Brazil.

In an unnamed country at war with itself live Saeed and Nadia, who in the span of a few short chapters see their world transform, without fuss, into a barbarous place of violence and brutality. When they hear about secret black doors that will spirit them away, they take their chance, arriving first at a refugee camp on the Greek island of Mykonos, and later in London, where they share a house with others fleeing third-world problems. There is not much by way of plot except constant movement and a tender—and, given the circumstances, surprisingly familiar—love story of coupling and conscious uncoupling. But plot, as has become a habit with Mr Hamid, is just scaffolding.

It is tempting to characterise "Exit West" as magic realism. But it is better read as a sharply pointed story of migration. No matter how long the coils of razor wire or how beautiful the walls or how legion the border guards, migrants will continue to move around the world, Mr Hamid seems to be saying with his black doors. And no matter how persistent the efforts at integration or how good the intentions of migrants or how recently settled the local population, those who see themselves as natives will always see their homes and their way of life as under threat. In one of the book's most elegant diversions, a woman is born and brought up, orphaned and married and widowed in the same house in Palo Alto. But in the course of her lifetime a new industry grows up around her, old neighbours move out and new ones move in, and she becomes the outsider, the migrant, without ever moving. Migration is not only a physical state or a voluntary one, but a universal experience.

"Everyone migrates," writes Mr Hamid, "because we can't help it." Despite the black doors of "Exit West", the world it depicts is less magical than it is real. ■

## The human imagination

# Inside your head

**The Creative Spark: How Imagination Made Humans Exceptional.** By Agustín Fuentes. Dutton; 340 pages; \$28

OF THE millions of animal species on Earth, only one has built a spaceship and flown to the Moon. In "The Creative Spark", Agustín Fuentes, an anthropologist at the University of Notre Dame in Indiana, argues that it is the power of imagination, more than anything, that has made humans unique among the planet's beasts.

That is a controversial case to make. Man's distinctiveness has been attributed to an aptitude for violence, exceptional intelligence or a preternatural ability to co-operate. Mr Fuentes contends that this fails to take into account the full range of evidence available to researchers. Instead, he turns to niche construction, a relatively recent idea in evolutionary science that emerged in the 1980s, but one which, he says, can offer the basis of a more complete account of humanity's ingenuity. The ecological niche that an organism occupies is the sum total of all the interactions that it has with its environment. Altering that environment, as beavers do when they build dams, for example, is niche construction. Humans, Mr Fuentes says, are "niche constructors extraordinaire".

The author ranges across the creative history of the human race to look at how the species has reshaped its surroundings to edge ahead of its competitors. He begins with ancient toolmaking: the slippery art of smashing particular kinds of rock together to make sharp flakes of stone. That complex process gave humans access to new sources of food. But it must also have required extensive co-operation, so that those noisily crafting the tools would not be eaten by predators.

For those who see "man, the hunter" and "woman, the nurturer" when they imagine life in the distant past, Mr Fuentes points out that there is no evidence from archaeology to support the idea that roles were assigned according to gender or age. He also disputes a view, recently popularised in "The Better Angels of Our Nature" by Steven Pinker, that mankind has a natural lust for violence which has only recently been tamed. Proponents of that notion have largely ignored evidence more than 14,000 years old, according to Mr Fuentes. He concludes that, on the contrary, the incidence of murder and warfare has increased over the past 5,000 years.

Mr Fuentes's discussion of the ancient origins of science is, perhaps, the weakest part of his book. He asserts that early hu-

mans must have had a primitive understanding of the laws of physics to throw a spear accurately. Yet no one ascribes scientific thinking to archerfish because they are able shoot down insects by spitting jets of water at them. Other examples of early scientific thinking could better be described as forms of engineering, a process of trial and error that has altogether more ancient roots. The book's final chapter, on what humans today can learn from the species' creative past, is also a little glib. Overall, its central thesis—that the power of the imagination alone is responsible for human success—is not entirely convincing.

That said, "The Creative Spark" is strong on man's imaginative accomplishments and offers an important corrective to the skewed debate on human nature. A species that, uniquely, ponders its own exceptionality will surely be fascinated by it. ■

## Music from the Middle East

### High notes

**How civil war is helping spread Syrian music across the globe**

"WE LEFT our native land, completely unaware of the biggest gift our country had bestowed on us: the gift of music." So said Basel Rajoub, a Syrian composer and saxophone-player, when he and his ensemble, Soriana, launched their first CD in exile in 2013. A graceful meld of jazz and Middle Eastern improvisation, it was posted online so that fans could stream it free of charge. A neater expression of the truth that music lies at the heart of the Syrian psyche would be hard to find.

Six years after pro-democracy demonstrations plunged Syria into civil war,



Louai Alhenawi and his ney

many of its musicians have fled abroad where they are propagating their musical culture. The Morgenland festival in Osnabrück, in north-west Germany, has long been powered by Syrian stars such as Kinan Azmeh, a clarinettist, Muslim Rahal, a ney flautist, and a mesmerising singer named Ibrahim Keivo. On March 16th they unveiled a three-day festival of Syrian music at the new Elbphilharmonie concert hall in Hamburg. The city has a large population of Middle Eastern immigrants, and Christoph Lieben-Seutter, general director of the Elbphilharmonie, is determined to make them feel welcome.

The festival, entitled "Salaam Syria", is a bold experiment in cross-cultural collaboration. A German-Syrian choir specially created for the event sang in an Arabic folk style. The NDR Bigband, a famous brass ensemble, shared the stage for a jazz-fest with the Syrian Bigband, which combines Western brass with the oud lute, ney and qanun zither. Meanwhile fusions of Western jazz and Middle Eastern folk music have united leading instrumentalists such as Michel Godard, a French tuba-player, and Djivan Gasparyan, a master of the duduk oboe whose mournful sound can be heard all round the eastern Mediterranean. But the Trump travel ban also had an effect: one concert had to be cancelled because its Syrian musicians, who are based in America, did not dare leave for fear of not being allowed back into the country.

"The Voice of Ancient Syria" concert included Mr Keivo's celebrated "Lamento" in his own variant of *maqam*, the musical style that links Syria with the rest of the Middle East. *Maqam* is microtonal music, which allows the pitch to slide between the Western intervals in a way that lends itself readily to surges of emotion. Mr Keivo is from an Armenian family that left Turkey in 1915, and he grew up in a part of northern Syria where many cultures mingled. He trained in Aleppo, and only fled Syria in 2014 when it was approaching his village and his family were put in danger. Accompanying himself on the lute, his singing pours out with ecstatic power in a mixture of Arabic, Kurdish and Armenian.

The other high point of this concert came when Dima Orsho, a Syrian composer-soprano, was joined by Kai Wessel, a German countertenor, for a performance of her deeply moving symphonic poem, "Those Forgotten on the Banks of the Euphrates", accompanied by musicians from Hamburg with players from the Syrian Expat Philharmonic Orchestra. Created in Germany in 2015, but drawing its players from the Syrian diaspora throughout Europe, the orchestra is further evidence of Syrian musicians' adaptability. The same is true of "Refugees for Refugees", a CD from the Belgian Muziekpubliek label that brings together virtuoso musicians in flight from countries across the Middle East and ►

► Central Asia, half of them from Syria.

Meanwhile, Tafahum, a Syrian “contemporary fusion” ensemble has been formed in London, under the direction of Louai Alhenawi, a composer and maestro of the *ney*. Conservatoire-trained on the Western flute as well as on its Oriental equivalent, he is making a point of marrying the two traditions. His dazzling party piece—now imitated by other virtuosi—is to play “Flight of the Bumblebee” by Nikolai Rimsky-Korsakov on the valveless, and much more difficult, *ney*. The flute’s icy purity is replaced by the richer timbre of the wooden *ney*.

Syrian instrumentalists who have been trained in the Western classical tradition have one obvious escape route—they can pick up orchestral jobs anywhere in the Western world. And if they are soloists, like Syria’s star pianist Riyad Nicolas, they can give recitals; he is now championing the music of Syrian composers in America, and performing on behalf of refugee charities. And despite all the odds, Western classical music also lives on in Syria. Until 2011, Damascus was the most liberally multicultural city in the Middle East. The Syrian National Symphony Orchestra has inevitably lost many of its players, but under its

conductor, Missak Baghboudarian, it still flies the flag. Last month he presided over a weeklong organ festival in Damascus, followed by a choral festival of Western music with choirs from five Syrian cities.

Syrian music, even at its best, was never one of the pre-eminent genres during the “world music” CD boom of the 1990s. It was always upstaged by flashier stuff from Mali and Cuba. But in *maqam*, its purest form, it has a richness and integrity which sets it apart from other national styles, and those same qualities are also to be found in Syrian performances of music in the Western classical tradition. ■

## Johnson | Subversive facts

**Describing language objectively need not mean doing so dispassionately**

**S**AMUEL JOHNSON, the lexicographer after whom this column is named, famously defined his profession as being that of “a harmless drudge”. In fact, he was neither harmless nor a drudge, but a wit unafraid to provoke, debate and irritate in the course of writing the first great dictionary of the English language.

But Johnson’s fame has never dispelled the idea that the lexicographer is a humdrum, bookish type who reads for precision and who dutifully approves the “right” meanings of “good” words while preventing “wrong” definitions and “bad” words from entering the dictionary. Lexicographers still struggle, largely in vain, to dispel this myth about their role. They put the words that people actually use into the dictionary, good ones and bad ones, new ones and old ones.

In a new book, “Word by Word”, Kory Stamper, a lexicographer for Merriam-Webster, a reference-book publisher, duly carries on the tradition, reminding readers that a lexicographer is a chronicler, not a guardian. She says that a chronicler (like Johnson) need not be meek and dispassionate. Foul-mouthed, opinionated and funny, Ms Stamper has for years written a witty blog called “Harmless Drudgery”. “Word by Word” devotes chapters to each element of a lexicographer’s work, from defining politicised words (like “marriage”) to dealing with irate readers (who never tire of asking why this or that word was let into the dictionary) to dealing with vulgarity, in a chapter named after a female dog.

What is clear is just how often lexicographers must make hard calls about unclear facts. The reader expecting august authority will be disturbed to find that it is not always clear even what part of speech a word belongs to. “But” is usually a conjunction, yet Ms Stamper is not fully



sure that it is still one in the sentence “What can they do but try?” A colleague confidently proclaims “but” to be a preposition here. Senior editors sigh, ruling that definitions are more important than grammar in a dictionary, and (rightly) noting that the eight parts of speech into which words are sorted in traditional grammars are not enough for English.

Lexicography is hard. If it were easy, no one would need a dictionary: meaning and use would be obvious to all. But even after years of reading and defining—or as Ms Stamper would put it, especially after years of reading and defining—the lexicographer finds out how slippery language can be. It constantly confounds prejudices (including the lexicographers’ own) and refuses to be pinned down. All dictionary-writers can do, in the end, is work hard to describe how a word is used out in the world. If they tried to let their own personal sense of right and wrong come into it,

there would be no way of judging between two editors who disagree, or knowing what to do when an old belief runs against the evidence.

Yet judgment has its place. Ms Stamper frequently makes online videos for Merriam-Webster’s “Ask the Editor” series. One of these is about the plural of “octopus”. Many people will rush to show off their Latin: it must be “octopi”. In fact, the -us ending is misleading; “octopus” originally comes from Greek (*pous* is foot). If you really want to flaunt your classics training, you should call the eight-footed creatures “octopodes”. But the best bet is to use English’s own rules for creating plurals, and call them “octopuses”, Ms Stamper rules, and don’t let anyone call you “an ignorant slob” for doing so.

Ms Stamper has found the right company to work for. Merriam-Webster’s young social-media team has carried on a kind of subversive empiricism. Its Twitter account, which normally tweets out randomly chosen definitions, will occasionally weigh in on the day’s news. When Kellyanne Conway, a senior adviser to Donald Trump, explained in January that the president sometimes avails himself of “alternative facts”, Merriam-Webster slyly tweeted its definition of “fact”. When Mr Trump tweeted first “I hear by demand”, then quickly changed that to “I hear by demand”, Merriam-Webster simply tweeted its definition of “hereby”.

Lauren Naturale, who runs Merriam-Webster’s social-media accounts, says that the newly popular Twitter feed reflects the tone of the office: “wildly enthusiastic about language; jokey, friendly, but nobody’s fool”. That is the best way to go about language punditry generally. Sticking relentlessly to facts doesn’t make you a drudge; much less does it make you harmless. Facts can be subversive things.

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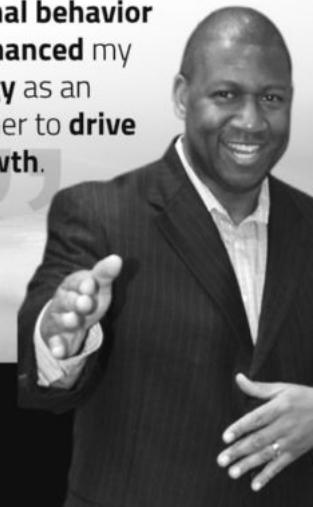
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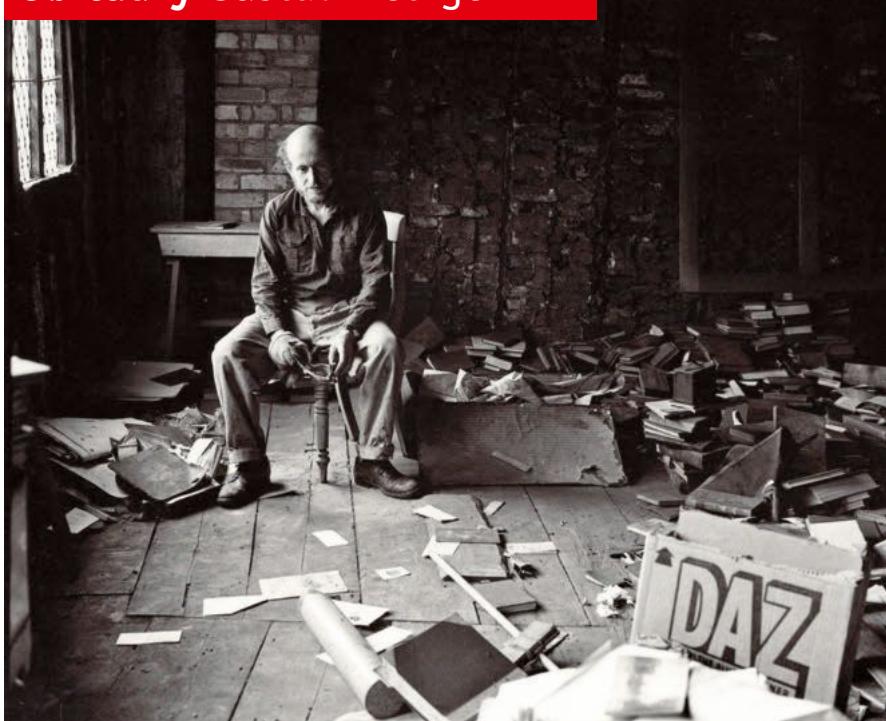
% change on year ago

	Gross domestic product			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 \$ Mar 15th	Year ago		
	latest	qtr*	2017†					latest	% of GDP 2017†						
United States	+1.9	0.4	+1.8	+2.3	nil	Jan	+2.7 Feb	+2.3	4.7 Feb	-476.5 Q3	-2.8	-3.5	2.59	-	-
China	+6.8	0.4	+7.0	+6.5	+6.3	Feb	+0.8 Feb	+2.3	4.0 Q4§	+210.3 Q4	+2.0	-4.1	3.06§§	6.91	6.51
Japan	+1.6	0.4	+1.2	+1.1	+3.7	Jan	+0.5 Jan	+0.8	3.0 Jan	+186.5 Jan	+3.6	-5.4	0.08	115	113
Britain	+2.0	0.4	+2.9	+1.6	+3.2	Jan	+1.8 Jan	+2.6	4.7 Dec††	-138.1 Q3	-4.4	-4.0	1.24	0.82	0.71
Canada	+1.9	0.4	+2.6	+1.9	+2.6	Dec	+2.1 Jan	+1.8	6.6 Feb	-51.2 Q4	-2.8	-2.9	1.76	1.35	1.34
Euro area	+1.7	0.4	+1.6	+1.6	+0.6	Jan	+2.0 Feb	+1.6	9.6 Jan	+399.5 Dec	+2.9	-1.7	0.41	0.94	0.90
Austria	+1.7	0.4	+2.0	+1.5	+2.1	Dec	+2.0 Jan	+1.7	5.7 Jan	+8.0 Q3	+2.6	-0.9	0.66	0.94	0.90
Belgium	+1.2	0.4	+2.0	+1.3	+9.5	Dec	+3.0 Feb	+2.0	7.7 Jan	+3.4 Sep	+0.9	-2.7	0.89	0.94	0.90
France	+1.2	0.4	+1.7	+1.3	-0.4	Jan	+1.2 Feb	+1.3	10.0 Jan	-34.5 Jan‡	-0.9	-3.1	1.10	0.94	0.90
Germany	+1.8	0.4	+1.7	+1.6	nil	Jan	+2.2 Feb	+1.8	5.9 Feb	+287.1 Jan	+8.3	+0.5	0.41	0.94	0.90
Greece	-1.4	0.4	-4.8	+1.2	+7.3	Jan	+1.3 Feb	+0.8	23.1 Dec	-1.1 Dec	-1.2	-6.4	7.33	0.94	0.90
Italy	+1.0	0.4	+0.7	+0.8	-0.5	Jan	+1.6 Feb	+1.2	11.9 Jan	+50.7 Dec	+2.4	-2.4	2.30	0.94	0.90
Netherlands	+2.3	0.4	+2.0	+1.9	+1.5	Jan	+1.8 Feb	+1.1	6.4 Jan	+57.1 Q3	+8.4	-0.9	0.55	0.94	0.90
Spain	+3.0	0.4	+2.8	+2.5	+7.2	Jan	+3.0 Feb	+2.2	18.2 Jan	+24.6 Dec	+1.5	-3.3	1.87	0.94	0.90
Czech Republic	+1.9	0.4	+1.6	+2.5	+9.6	Jan	+2.5 Feb	+2.3	5.1 Feb§	+2.3 Q4	+0.7	-0.5	0.87	25.4	24.3
Denmark	+1.9	0.4	+0.9	+1.3	+2.5	Jan	+1.0 Feb	+1.2	4.2 Jan	+25.3 Jan	+6.8	-1.9	0.71	6.99	6.71
Norway	+1.8	0.4	+4.5	+1.8	+0.6	Jan	+2.5 Feb	+2.4	4.4 Dec‡‡	+18.1 Q4	+5.3	+2.8	1.81	8.60	8.55
Poland	+3.2	0.4	+7.0	+3.2	+9.0	Jan	+2.2 Feb	+1.8	8.5 Feb§	-2.5 Dec	-1.3	-3.2	3.75	4.06	3.87
Russia	-0.4	0.03	na	+1.4	+2.3	Jan	+4.6 Feb	+4.7	5.6 Jan§	+22.2 Q4	+2.8	-3.0	8.18	59.1	71.0
Sweden	+2.3	0.4	+4.2	+2.4	+1.3	Jan	+1.8 Feb	+1.6	7.3 Jan§	+23.7 Q4	+4.9	-0.4	0.76	8.96	8.31
Switzerland	+0.6	0.4	+0.3	+1.4	-1.2	Q4	+0.6 Feb	+0.2	3.3 Feb	+68.2 Q3	+9.6	+0.2	nil	1.01	0.99
Turkey	-1.8	0.03	na	+2.4	+4.2	Jan	+10.1 Feb	+8.8	12.7 Dec§	-33.2 Jan	-3.4	-2.2	11.30	3.72	2.90
Australia	+2.4	0.4	+4.4	+2.6	+1.0	Q4	+1.5 Q4	+2.1	5.9 Feb	-33.1 Q4	-1.4	-1.8	2.92	1.32	1.34
Hong Kong	+3.1	0.4	+4.8	+1.7	-0.7	Q4	+1.3 Jan	+1.8	3.3 Jan‡‡	+13.6 Q3	+4.2	+0.9	1.94	7.77	7.76
India	+7.0	0.4	+5.1	+7.2	+2.7	Jan	+3.7 Feb	+4.8	5.0 2015	-11.1 Q3	-1.1	-3.2	6.83	65.7	67.4
Indonesia	+4.9	0.4	na	+5.2	+4.5	Jan	+3.8 Feb	+4.2	5.6 Q3§	-16.3 Q4	-2.0	-2.1	7.28	13,364	13,178
Malaysia	+4.5	0.4	na	+4.4	+3.5	Jan	+3.2 Jan	+3.2	3.5 Dec§	+6.0 Q4	+3.1	-3.1	4.15	4.45	4.13
Pakistan	+5.7	2016**	na	+5.2	+7.0	Dec	+4.2 Feb	+4.9	5.9 2015	-4.9 Q4	-1.7	-4.8	7.59†††	105	105
Philippines	+6.6	0.4	+7.0	+6.4	+9.3	Jan	+3.3 Feb	+3.3	6.6 Q1§	+3.1 Sep	+0.8	-2.6	5.10	50.4	46.8
Singapore	+2.9	0.4	+12.3	+2.1	+2.2	Jan	+0.6 Jan	+1.1	2.2 Q4	+56.7 Q4	+19.3	-1.0	2.43	1.41	1.38
South Korea	+2.3	0.4	+1.6	+2.5	+1.7	Jan	+1.9 Feb	+1.7	5.0 Feb§	+96.8 Jan	+6.2	-1.0	2.27	1,144	1,188
Taiwan	+2.9	0.4	+1.8	+1.8	+2.8	Jan	nil Feb	+2.1	3.8 Jan	+70.9 Q4	+11.5	-0.7	1.20	30.9	32.8
Thailand	+3.0	0.4	+1.7	+3.4	+1.3	Jan	+1.4 Feb	+1.3	1.2 Jan§	+46.4 Q4	+11.6	-2.0	2.73	35.2	35.1
Argentina	-3.8	0.03	-0.9	+2.7	-2.5	Oct	— ***	—	8.5 Q3§	-15.7 Q3	-2.9	-4.1	na	15.6	14.6
Brazil	-2.5	0.4	-3.4	+0.7	+1.4	Jan	+4.8 Feb	+4.5	12.6 Jan§	-23.8 Jan	-1.6	-7.7	9.95	3.16	3.73
Chile	+1.6	0.03	+2.5	+1.8	-0.9	Jan	+2.7 Feb	+3.0	6.2 Jan‡‡	-4.8 Q3	-1.2	-2.1	4.33	668	686
Colombia	+1.6	0.4	+4.0	+2.4	-0.2	Jan	+5.2 Feb	+4.2	11.7 Jan§	-12.5 Q4	-4.0	-2.8	6.99	2,971	3,178
Mexico	+2.4	0.4	+2.9	+1.6	-0.1	Jan	+4.9 Feb	+4.9	3.6 Jan	-27.9 Q4	-2.6	-2.5	7.33	19.4	17.9
Venezuela	-8.8	0.04~	-6.2	-5.8	na	na	+652	7.3 Apr§	-17.8 Q3~	-1.3	-19.5	10.43	9.99	6.31	
Egypt	+4.5	0.02	na	+3.8	+16.0	Jan	+30.2 Feb	+19.2	12.4 Q4§	-20.1 Q4	-4.7	-10.9	na	18.1	8.95
Israel	+4.3	0.04	+6.5	+4.2	-1.2	Dec	+0.4 Feb	+0.7	4.3 Jan	+12.4 Q4	+3.7	-2.4	2.30	3.65	3.90
Saudi Arabia	+1.4	2016	na	+0.8	na	na	-0.4 Jan	+2.0	5.6 2015	-46.8 Q3	-2.1	-7.3	na	3.75	3.75
South Africa	+0.7	0.04	-0.3	+1.2	+0.5	Jan	+6.6 Jan	+5.7	26.5 Q4§	-12.3 Q3	-3.4	-3.1	8.66	13.0	15.9

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. \*\*\*Official number not yet proved to be reliable; The State Street PriceStats Inflation Index, Jan 29.53%; year ago 30.79%. †††Dollar-denominated bonds.







## Art as weapon

**Gustav Metzger, inventor of auto-destructive art, died on March 1st, aged 90**

IN A puffy bomber-jacket and a gas mask, Gustav Metzger started on his work of art on London's South Bank in 1961. He had written out his own terse orders: "Acid action painting. Height 7ft. Length 12ft. 6in. Depth 6ft. Materials: nylon, hydrochloric acid, metal. Technique. 3 nylon canvases coloured white black red are arranged behind each other, in this order. Acid is painted, flung and sprayed onto the nylon which corrodes at point of contact within 15 seconds." That was it. The small curious crowd then dispersed, reminded—he hoped—of the transience of art and the mindless violence of man.

Even simpler was "Construction with glass". "Materials: glass, metal, adhesive tape. Technique. The glass sheets suspended by adhesive tape fall on to the concrete ground in a pre-arranged sequence." Crash, the end. His dreams were longer-term, though. He would get large, thin steel sheets made in a factory, then installed outside where, over ten years, they would rust away. Or he would build a structure of 10,000 geometric forms from which, continuously, one form would be removed...

Art that consumed itself, auto-destructive as he called it, was his own idea. It led on to an outbreak of performance art that is still lively, as well as to the briefer punk fashion for smashing guitars onstage. But

he insisted, whatever the many scoffers said, that it was not just about destruction. It was also about creating ideas beyond the chaos of "the obscene present". His acid action painting, for example, had revealed through the shredded canvases (in anarchy's colours) new views of St Paul's. "Construction with glass" had made new patterns from random breakages. Through the 1960s and 1970s he worked with heat-sensitive liquid crystals and compressed air, showing how dissolution and fresh formations existed side by side.

That said, there was a lot of anger in him. His soft German accent did not suggest it, but his eyes burned. He was furious at consumerism, capitalism, governments, scientists, economists and all war-makers. He hated man's despoiling of the planet (hence much work with cardboard, rubbish and found objects) and despaired at the threat of nuclear obliteration. Against all this he had tried civil disobedience, joining the anti-nuclear movement in the late 1950s and going to prison for it, but at the same time—influenced by his artist-teacher David Bomberg—he was realising that art itself could be a social force. It could be a way of fighting, perhaps now the only one dissenting humans had. The last paintings he did, before he turned to sharper materials, were of a household table grad-

ually morphing into a mushroom cloud.

The roots of all this lay in his first 12 years. He had spent them as a Jewish boy in Nuremberg, the city of Nazi rallies, where the polished parading grew more menacing each year. As his rejection of militarism grew, he found refuge in the forests round the city: Nature against the forces of destruction. Spirited away in the Kindertransport in 1939, while most of his family were killed in Buchenwald, he became a stateless person, wandering round England while filling his brain with Trotsky. He would be a roving revolutionary, he thought. The thought persisted; he remained stateless, never married, tended to vanish, had no telephone, carted round carrier bags full of papers, and with his straggly beard and bald head could well be taken for an anarchist, or a Bolshevik.

The art establishment largely ignored him until the mid-1990s, when his work began to seem influential. To him the art market was the sworn enemy, a place where modernism was manipulated for profit. In 1974 he called for an artists' strike, and in 1977 stopped working or promoting his work for three years. No one joined him. In 2007 he demanded that artists should stop flying to biennales abroad. Though he had often depended on private shows and supporters himself, it was uncomfortable. As a last-minute, desperate, subversive act against human stupidity and cruelty, art had to be public. Everyone had to see it.

He was one of the first to try art with computers, but soon fell out with them. Cybernetics interested him more. One of his last works involved a robot taking instructions from electrical readings in his brain; the robot bored a neat hole in a block of stone. This intrigued him, because he was increasingly concerned by the void, physical and mental, that could follow destruction. He fretted that, because of pollution and development, children and artists of the future would not know forests as he had done. They would not even have the memory to comfort or inspire them.

### Memory and shock

To battle this not-knowing he produced two particular works. "Flailing Trees" featured 21 willows stuck in concrete upside down, their dead roots screaming ecological disaster. "Historic Photographs" was a series of over-familiar images of death and war, each one hidden behind a curtain, wooden slats or a steel plate. One image, of Jews on their knees scrubbing the streets of Vienna, could be seen only by crawling over it. Another, of the ramp at Auschwitz, was so enlarged that the viewer was left, like the new arrivals, fearful and confused. He meant the images to shock and challenge all over again: as if the public, like him, had passed through pain themselves, rather than through art. ■

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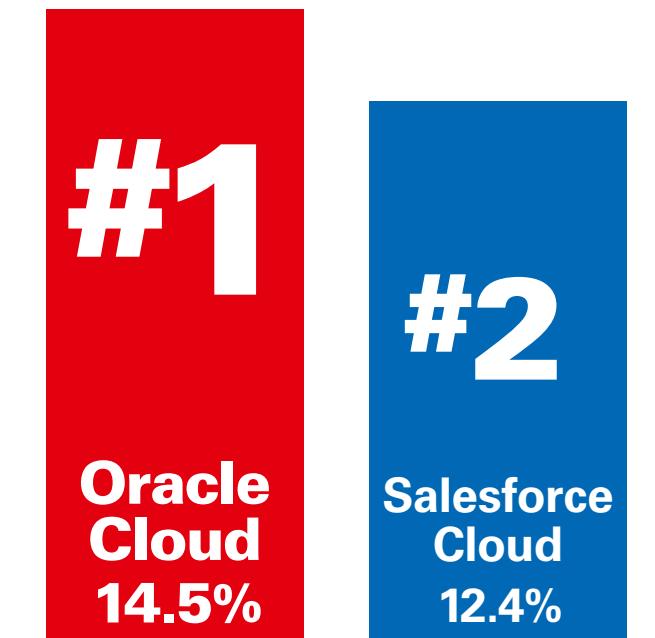


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