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the patent system



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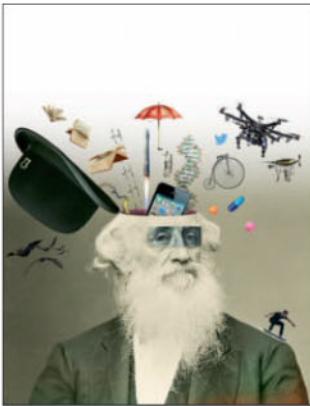
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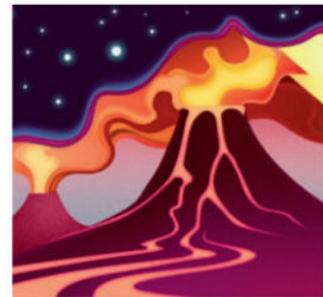
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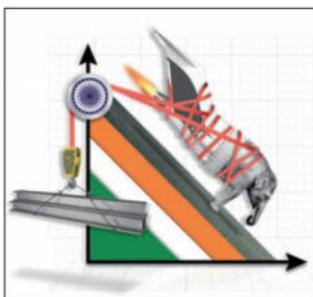
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## Politics



Shinzo Abe, Japan's prime minister, as well as Caroline Kennedy, America's ambassador to Japan, took part in a ceremony to mark the dropping of an American atomic bomb on Hiroshima 70 years ago on August 6th. At least 70,000 people are thought to have died in the explosion, and many more later.

Police in the coastal Chinese province of Zhejiang arrested seven Christians, accusing them of embezzlement and disrupting social order. They had protested against the removal of their church cross, one of many taken down by the authorities in Zhejiang in recent months.

The speaker of the Australian Parliament's lower house, Bronwyn Bishop, resigned after she had claimed thousands of dollars for the use of a helicopter to take her to a function organised by the Liberal Party, to which she and the prime minister, Tony Abbott, both belong.

Pakistan executed Shafqat Hussain, who was convicted in 2004 of killing a child. His lawyers had argued that he was aged only 14 when convicted, making him too young for the death sentence, and that his confession was extracted by torture.

There were signs of divisions among the Taliban in Afghanistan following confirmation that the group's leader, Mullah Omar, died two years ago. Some have rejected his deputy, Mullah Akhtar Mansour, as the new leader.

Najib Razak, Malaysia's prime minister, said investigators had confirmed that an aircraft part that washed up on Réunion, an island in the Indian Ocean, is from the missing Malaysia Airlines flight MH370. Separately, Malaysia's anti-corruption commission concluded that \$700m found in Mr Razak's bank account had come from a donor, and had not been transferred from a state-investment fund, as alleged in a scandal that has threatened to bring down the government.

### Extremist measures

Israel's cabinet authorised the use of tough new measures, including detention without charge, against settlers suspected of fomenting violence in the West Bank after arsonists set a Palestinian house ablaze, killing an 18-month-old baby.



Meanwhile, a 16-year-old girl was stabbed to death by an ultra-Orthodox Jew at Jerusalem's gay-pride march. The suspect had been released from prison three weeks earlier for carrying out a similar attack on the event in 2005.

In a reverse for its efforts in Syria, America disclosed that a number of rebels it has trained to fight against Bashar Assad have been kidnapped by Jabhat-al-Nusra, a jihadist group linked to al-Qaeda.

A court in South Africa rejected a case against Julius Malema, the firebrand leader of the populist Economic Freedom Fighters' party, who had been facing charges of corruption. The decision will boost Mr Malema, who said the government had fabricated the charges, though the case could yet be revived.

Sudan's army was accused by Amnesty International of committing war crimes in the South Kordofan region, near the border with South Sudan. Amnesty said that earlier this year at least 374 bombs, including cluster bombs, were dropped, killing 35 people or more. At least 1.4m people, a third of South Kordofan's population, are thought to have fled their homes.

### An October surprise?

Stephen Harper, Canada's Conservative prime minister, triggered the start of campaigning for an election to be held on October 19th. If Mr Harper is re-elected, he would be the first prime minister to win a fourth term since 1908. He faces a strong challenge from Thomas Mulcair, leader of the left-leaning New Democratic Party, which has never governed the country before.

Rubén Espinosa, a Mexican photojournalist who worked for an investigative magazine, was murdered along with four women in an apartment in Mexico City. He had recently moved from the eastern state of Veracruz, claiming he had been threatened and harassed.

Police in Brazil arrested José Dirceu, who was the chief of staff of Luiz Inácio Lula da Silva, president from 2003 to 2011. Prosecutors say Mr Dirceu helped organise the multi-billion-dollar bribery scheme through which Petrobras, a state-controlled oil company, channelled funds to politicians. He was already serving a sentence for his role in orchestrating payments to politicians to support Lula's government and was under house arrest.

### Hunted down

Russia's anti-terrorist agency said it had killed eight militants suspected of belonging to Islamic State in Ingushetia, west of Chechnya. It said one of those killed was Adam Tagilov, who was suspected of being behind an attack in Chechnya's capital, Grozny, last December that left 25 people dead.

The European Union concluded a trade agreement with Vietnam. Human-rights groups criticised the EU for failing to include more stringent requirements on Vietnam, which severely represses freedom of speech and political association.

Germany's justice minister fired the country's chief prosecutor after he complained of political interference in the investigation of two bloggers on charges of treason. The bloggers had published leaked documents regarding the budget of Germany's intelligence services. The investigation provoked widespread public outrage.

A boat thought to be carrying 600 migrants capsized off Libya's coast in the latest Mediterranean tragedy. At least 370 were rescued by coastguard ships and other vessels in the area. Over 2,000 migrants are believed to have drowned in the sea this year trying to reach Europe from north Africa.

### A (slightly) greener America



America's Environmental Protection Agency announced emission-reduction goals for each state that will reduce carbon-dioxide pollution from power stations by 870m tonnes by 2030, a drop of 32% when measured against 2005 levels. They are America's first-ever national standards for cutting carbon pollution from power plants.

Puerto Rico missed a \$58m bond payment, the island's first default, as it struggles with \$72 billion in debt. The American territory is expected to present a restructuring plan by the end of August.

## Business



The Athens Stock Exchange reopened, five weeks after trading was suspended during crunch talks over a new Greek bail-out. With capital controls still in place the share prices of **Greek banks** plunged, dragging down the main stock-market index. Meanwhile, a manufacturing survey found output from Greek factories had collapsed to the lowest level in its 16-year run of data. The government said it would finalise a rescue package with international lenders by August 18th, but it looks as if an early election will be held in the autumn, which could create further uncertainty.

**Société Générale**, a French bank, reported a 25% rise in net profit for the second quarter, to €1.4 billion (\$1.5 billion), thanks in part to brisk business in its share-trading division amid global market volatility.

### A long stretch

A former City trader was sentenced by a judge in London to 14 years in prison for his role in the **LIBOR scandal**. Although banks have been fined over LIBOR, the trial of Tom Hayes was the first time that an individual faced a jury for manipulating the benchmark interbank interest rate. His sentence is longer than those meted out in other recent high-profile cases of financial wrongdoing. The judge said he wanted to send a signal to bankers that "probity and honesty are essential" in the industry.

**HSBC** agreed to sell its Brazilian banking division to **Banco Bradesco** for \$5.2 billion, a big step in its strategy of refocus-

ing on Asia. Pre-tax profit at HSBC for the first six months of the year rose to \$13.6 billion, boosted in part by a strong performance in the bank's Asian markets.

The British government sold a 5.4% stake in **Royal Bank of Scotland**, the first time it has reduced its holding in the bank since bailing it out in 2008. The government, which still holds the majority of ordinary shares, lost money in the sale, but its priority is to restore market faith in the bank. It started selling the shares it holds in Lloyds Banking Group, which it bailed out at the same time as RBS, two years ago and at a profit.

**Alibaba**, China's biggest e-commerce company, appointed Michael Evans as its president. A former senior executive at Goldman Sachs who was once tipped to become chief executive of the bank, Mr Evans's new job will be to direct Alibaba's big push to expand outside China.

### Having a say on pay

America's Securities and Exchange Commission approved a contentious new rule, included in the Dodd-Frank reforms from 2010, that will require a company to

reveal what the **median pay** is for its workers and compare it with the chief executive's salary. Multinationals can exclude 5% of their foreign staff when calculating the earnings ratio, a much smaller percentage than many businesses had hoped for.

**Shire**, a British drug company that moved its official headquarters to Ireland because of the country's low corporate-tax rate, unveiled a hostile \$30 billion bid for **Baxalta**, which is based in Illinois. Last year Shire was itself the target of a takeover from AbbVie of Chicago, which dropped its offer when the US Treasury clamped down on acquisitions through which American companies seek to transfer their tax base away from the United States.

Three German carmakers—Audi, BMW and Daimler—joined together to secure the winning bid for **Nokia's Here**, the Finnish company's digital mapping and location-intelligence business, which is based in Berlin. Here supplies the most detailed maps available of road networks in 196 countries as well as navigation services that are essential to the future of autonomous cars. The deal is a big victory for the

carmakers, which were worried that Here's technology could fall into the hands of Uber or Google.

**Disney's** share price fell sharply, even though it reported a robust quarterly profit, when Bob Iger, the company's chief executive, confirmed investors' speculation that there have been "some subscriber losses" at ESPN, Disney's profitable cable network for sport. The strong dollar hurt earnings from Disney's international theme parks.

### Happy holidays

Netflix told its employees that from now on they could take as much **maternity or paternity leave** on full pay as they want during the first year of becoming a parent. This forms part of a small but growing trend of firms offering "unlimited vacation" in order to retain workers. But whether people will take the time off and allow work rivals to get ahead while they are away is questionable. A Harris survey last year found that the average American worker took just half the paid vacation he was entitled to; only a quarter of workers used up all their holiday time.

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



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# Time to fix patents

Ideas fuel the economy. Today's patent systems are a rotten way of rewarding them



change and a further broadening of the regime in the 1980s led neither to more private research into wheat nor to an increase in yields. Overall, the productivity of American agriculture continued its gentle upward climb, much as it had before.

In other industries, too, stronger patent systems seem not to lead to more innovation (see page 50). That alone would be disappointing, but the evidence suggests something far worse.

Patents are supposed to spread knowledge, by obliging holders to lay out their innovation for all to see; they often fail, because patent-lawyers are masters of obfuscation. Instead, the system has created a parasitic ecology of trolls and defensive patent-holders, who aim to block innovation, or at least to stand in its way unless they can grab a share of the spoils. An early study found that newcomers to the semiconductor business had to buy licences from incumbents for as much as \$200m. Patents should spur bursts of innovation; instead, they are used to lock in incumbents' advantages.

The patent system is expensive. A decade-old study reckons that in 2005, without the temporary monopoly patents bestow, America might have saved three-quarters of its \$210 billion bill for prescription drugs. The expense would be worth it if patents brought innovation and prosperity. They don't.

Innovation fuels the abundance of modern life. From Google's algorithms to a new treatment for cystic fibrosis, it underpins the knowledge in the "knowledge economy". The cost of the innovation that never takes place because of the flawed patent system is incalculable. Patent protection is spreading, through deals such as the planned Trans-Pacific Partnership, which promises to cover one-third of world trade. The aim should be to fix the system, not make it more pervasive.

## The English patent

One radical answer would be to abolish patents altogether—indeed, in 19th-century Britain, that was this newspaper's preference. But abolition flies in the face of the intuition that if you create a drug or invent a machine, you have a claim on your work just as you would if you had built a house. Should someone move into your living room uninvited, you would feel justifiably aggrieved. So do those who have their ideas stolen.

Yet no property rights are absolute. When the benefits are large enough, governments routinely override them—by seizing money through taxation, demolishing houses to make way for roads and controlling what you can do with your land. Striking the balance between the claim of the individual and the interests of society is hard. But with ideas, the argument that the government should force the owners of intellectual property to share is especially strong.

One reason is that sharing ideas will not cause as much

harm to the property owner as sharing physical property does. Two farmers cannot harvest the same crops, but an imitator can reproduce an idea without depriving its owner of the original. The other reason is that sharing brings huge benefits to society. These spring partly from the wider use of the idea itself. If only a few can afford a treatment, the diseased will suffer, despite the trivially small cost of actually manufacturing the pills to cure them. Sharing also leads to extra innovation. Ideas overlap. Inventions depend on earlier creative advances. There would be no jazz without blues; no iPhone without touchscreens. The signs are that innovation today is less about entirely novel breakthroughs, and more about the clever combination and extension of existing ideas.

Governments have long recognised that these arguments justify limits on patents. Still, despite repeated attempts to reform it, the system fails. Can it be made to work better?

## Light-bulb moment

Reformers should be guided by an awareness of their own limitations. Because ideas are intangible and innovation is complex, Solomon himself would find it hard to adjudicate between competing claims. Under-resourced patent-officers will always struggle against well-heeled patent-lawyers. Over the years, the regime is likely to fall victim to lobbying and special pleading. Hence a clear, rough-and-ready patent system is better than an elegant but complex one. In government as in invention, simplicity is a strength.

One aim should be to rout the trolls and the blockers. Studies have found that 40-90% of patents are never exploited or licensed out by their owners. Patents should come with a blunt "use it or lose it" rule, so that they expire if the invention is not brought to market. Patents should also be easier to challenge without the expense of a full-blown court case. The burden of proof for overturning a patent in court should be lowered.

Patents should reward those who work hard on big, fresh ideas, rather than those who file the paperwork on a tiddler. The requirement for ideas to be "non-obvious" must be strengthened. Apple should not be granted patents on rectangular tablets with rounded corners; Twitter does not deserve a patent on its pull-to-refresh feed.

Patents also last too long. Protection for 20 years might make sense in the pharmaceutical industry, because to test a drug and bring it to market can take more than a decade. But in industries like information technology, the time from brain wave to production line, or line of code, is much shorter. When patents lag behind the pace of innovation, firms end up with monopolies on the building-blocks of an industry. Google, for instance, has a patent from 1998 on ranking websites in search results by the number of other sites linking to them. Here some additional complexity is inevitable: in fast-moving industries, governments should gradually reduce the length of patents. Even pharmaceutical firms could live with shorter patents if the regulatory regime allowed them to bring treatments to market sooner and for less upfront cost.

Today's patent regime operates in the name of progress. Instead, it sets innovation back. Time to fix it. ■

## Polish politics

# The German test

**Poland has never been so rich, safe and free. But under Andrzej Duda its inheritance is at risk**



IT IS one of Europe's shining successes. Alone in the European Union, Poland did not suffer a recession after the financial crisis. Its economy has grown by 33% since 2007, compared with 2% for the euro zone. Its transport and energy infrastructure has been transformed. Poland has been a dependable partner for policymakers in Berlin, Brussels and Washington, DC. Even the French, ever suspicious of the EU's eastern members, have started to court the country. As president of the European Council, Poland's former prime minister, Donald Tusk, has become a central figure in European politics.

Yet Poles are fed up. President Bronislaw Komorowski, of the ruling centre-right Civic Platform party, narrowly lost a re-election vote in May. The prime minister, Ewa Kopacz, is heading for a crashing defeat in parliamentary elections in October. The danger for Poles is that, in throwing out a lacklustre government, the country may revert to a narrow, mistrustful populism, forsaking its own impressive gains.

### Back to the Kaczynski era?

The new president, Andrzej Duda (pictured), took office this week and Poland's allies are asking which face his party, Law and Justice, will present to the world. Will it retain the sensible centrism he campaigned on? Or will it fall back into the oddball prickliness of Jaroslaw Kaczynski, the party mastermind? Mr Kaczynski, whose twin brother, Lech, was president when he died in an air crash in Russia in 2010, fared poorly as prime minister in 2006-07, unleashing an arbitrary anti-corruption campaign and pursuing an erratic foreign policy. The standard-bearer for traditional Catholic values and rural interests, Law and Justice has championed countries in the Kremlin's shad-

ow, such as Georgia and Ukraine. It is mistrustful of big business and—lamentably—wants to cut Poland's retirement age. It resents outside liberal meddling on gay rights and the like.

But the central question will be relations with its neighbour, Germany. Mr Kaczynski has accused Germany of scheming to recover land it lost to Poland after the second world war and Angela Merkel, its chancellor, of being a pawn of the Stasi, the former East German secret police (see page 44). Poland has real gripes, ranging from some German politicians' softness on Russia to a lack of provision for ethnic Poles in Germany. Settling them calls for talks, not tantrums. Poland now outweighs Russia as a trading partner for Germany. That gives it influence—though this must be used wisely.

Nothing would please Russia more than a Polish-German split. And America, which Law and Justice reveres, values close ties between Berlin and Warsaw. Poland needs its friends. It wants the NATO summit in Warsaw next summer to respond to Russian threats by permanently basing troops on the eastern edge of the alliance. In the EU it—like Britain—wants assurances that the interests of countries outside the euro, the “outs”, will be safeguarded in decision-making dominated by the “ins”. It also wants a strong EU stance against Russian machinations over gas (though, as a heavy user of coal, it drags its feet on reducing carbon emissions). German support will be vital on these fronts, and is more likely if Poland looks sensible. Poland's big asset in the EU should be Mr Tusk. Yet, perversely, many in Law and Justice want him fired.

Which course Poland takes will depend much on Mr Duda, who, as president, shares responsibility for foreign policy with the government. Born in 1972, he marks a shift in Polish politics from a generation whose outlook was forged under communism. Poles' desire for political change is understandable, but their democracy needs two responsible parties, not just one. Mr Duda must prove he is not Mr Kaczynski's puppet. ■

## China's leaders

# Party on the beach

**The world should worry more about China's politics than the economy**



SUMMER holidays are always the same for China's leaders. Every year they decamp from the hot and humid capital and gather in villas by an exclusive stretch of beach in Beidaihe, a resort town of little appeal except to those Chinese who cannot afford glitzier getaways, and to Russians from Siberia who are relieved to be anywhere with sun and sand. Mao Zedong established the Beidaihe-going tradition. He is the only Chinese leader who is known to have felt sufficiently inspired by the place to write a poem about it. It was an anxiety-tinged one,

finishing with the words: “The bleak autumn wind whispers and sighs; Nothing has changed, except in the world of man.”

President Xi Jinping and his colleagues are now thought to be in Beidaihe, where they have continued Mao's practice of combining a little relaxation with weighty affairs of state—thrashing out strategy for the year ahead at seaside meetings held in utmost secrecy (see page 37). How much indeed has changed in China, Mr Xi might reflect, since he came to power nearly three years ago? The economy is on course for its slowest year of growth in a quarter of a century. The stockmarket, having risen to its highest level since the global financial crisis seven years ago, crashed last month. Once hailed as an economic miracle, China is now a source of foreboding: witness ►

► the latest falls in global commodity prices.

Mr Xi likes to describe slower growth as the “new normal”—a welcome sign that the country is becoming less dependent on credit-fuelled investment. But debates rage within the party elite over how to keep the economy growing fast enough to prevent financial strains from erupting into a fully fledged crisis. A year after he took over as China’s leader, Mr Xi promised to let market forces play a “decisive” role in shaping the economy. His government’s heavy-handed (and counter-productive) efforts to boost the price of shares have created doubts about his commitment to that aim.

### Stormy waters

During discussions in Beidaihe, some officials will doubtless point to the stockmarket as evidence of what can go wrong when markets are given free rein. Others will suggest that, on the contrary, economic reform is still badly needed to help China avoid falling into the Japanese trap of long-term stagnation. Much depends on which camp Mr Xi heeds. During meetings in Beidaihe in 1988, China’s then leader, Deng Xiaoping, vacillated in the face of a backlash against his economic reforms. By pandering to conservatives, he fuelled political divisions that erupted the following year into nationwide pro-democracy protests. The unrest, centred on Tiananmen Square, came close to toppling the party. It was not until 1992 that Deng was able to set his reforms back on track.

China’s leadership does not appear anything like as divided as it did in the build-up to the Tiananmen upheaval. But ap-

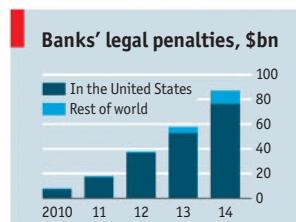
pearances may be more deceptive now. Mr Xi is a leader of a very different hue from his predecessors. He has rewritten the rules of Chinese politics, in effect scrapping Deng’s system of “collective leadership” by taking on almost every portfolio himself, while waging a war on corruption of unprecedented scale and intensity. The latest high-ranking official to be targeted, Guo Boxiong, was once the most senior general in the armed forces; he was expelled from the party on July 30th and now faces trial for graft. A dozen other generals, more than 50 ministerial-level officials and hundreds of thousands of lesser functionaries have met similar fates. That suggests Mr Xi is strong, but also that he has many enemies or is busy creating them. His rounding up of more than 200 civil-rights lawyers and other activists since early last month—the biggest such clampdown in years—hints at his insecurity.

There will be no announcement of what Mr Xi and his colleagues discuss at the beach; no hints from officials of their differences. The forces wrenching at the party will remain as dimly perceived by outsiders as the fishing boats off Beidaihe in Mao’s poem: “Screened by the vast expanse of ocean from view; Who can tell where they are?” China’s recent economic data may not be entirely comforting—nor always reliable—but at least they suggest that growth is holding up. By contrast, the murkiness of Mr Xi’s rule is of no comfort at all to a world trying to make sense of China’s rise. Those who worry about China’s development should focus less on its febrile stockmarket (the least accurate guide to the state of the economy), and more on the dangers that lurk in its politics. ■

### Financial supervision

## One regulator to rule them all

**Officials have been given enormous discretion to corral finance. That has costs**



**T**HE new masters of the financial universe are neither bank bosses nor hedge-fund titans. They are the regulators whose job it is to make finance safer. Daniel Tarullo, Andrew Bailey and Danièle Nouy, senior regulators in America, Britain and the euro zone respectively, may not have the salaries, egos or profiles of Wall Street superstars, but the decisions they and people like them make are shaping the industry. As John Mack, a former boss of Morgan Stanley, reportedly told his successor: “The government is your number-one client.” Even for those who deeply mistrust finance, that ought to give pause.

The global financial crisis made new rules inevitable and necessary. Taxpayers need protection from the risks of failure: hence a series of measures to ensure that banks finance themselves with more equity, have lots of liquid assets and will “bail in” creditors if they collapse. The disaster of 2008 persuaded officials not just to write harsher rules, but also to be more flexible. Risks can materialise in unexpected places—dull old money-market funds, for instance, proved a shocking source of vulnerability. The industry can game static, well-understood rules more easily than dynamic, fuzzy ones.

Naturally, the regulators therefore want wriggle-room. Consider Mr Tarullo, a governor at the Federal Reserve who takes

the lead on financial regulation. His responsibilities include an Orwellian-sounding group called the Large Institution Supervision Co-ordinating Committee, which organises annual stress tests at big American banks (see page 63). To prevent these tests from being gamed, the Fed has been careful not to reveal the models it uses to calculate the losses banks would suffer from hypothetical shocks. Executives, to say nothing of investors, are left largely in the dark about assumptions that determine whether banks can return money to shareholders.

Regulatory discretion extends well beyond the stress tests. Officials apply tougher standards to heftier and more interconnected institutions. The criteria by which specific companies are anointed as “systemically important financial institutions” (SIFIs) are not precise. The case for being strict with banks is that they borrow heavily, sometimes from individual depositors who can yank their money out in an instant. But as rule-makers have turned their attention from banks to other institutions and markets, things become blurred: debt levels are lower, as is the risk of runs. MetLife, an insurer, is challenging in court the decision of an American financial-stability council to call it a SIFI, arguing among other things that it has not seen the information the council used to reach its conclusion.

Regulatory agencies also have immense discretion in how they deal with wrongdoing. Officials have meted out huge fines to banks (\$87 billion in 2014 alone) as part of secret settlements that risk leaving the guilty insufficiently punished or the ►

► innocent tarnished. Few institutions have the chutzpah MetLife showed by taking on its regulator in court. Cases against individuals ought to be more common. This week was striking for the first conviction in the LIBOR-rigging scandal (see page 61). Justice behind closed doors is not the real thing.

### The fiat model

Finance is messy. Risk does not sit tamely inside one set of institutions. Ambiguity and unpredictability help keep bankers on their toes. The attitude of many is summed up by one former regulator: "The best way to regulate is to line the banks up occasionally and shoot one of them."

But regulators are not the only ones with an interest at stake. Investors in banks, insurers and the like are financially exposed to the decisions of officials. They have rights, too. Systems ostensibly designed to ensure safety can easily backfire: regulators routinely prefer credit to finance property rather than small businesses, for example. Society's interest in keeping bankers in check must be balanced against its interest in holding officials to account. The best way to manage these trade-offs is through transparency. There should be fewer settlements and more court cases. The assumptions behind regulatory decisions ought to be disclosed. Just as bankers should not be left to their own devices, neither should rulemakers. ■

### Science's unsolved mysteries

## Life, the multiverse and everything

**Science has remade the world, but scientists are not finished yet**



**I** SEEM to have been only like a boy playing on the seashore, and diverting myself in now and then finding a smoother pebble or a prettier shell than ordinary, whilst the great ocean of truth lay all undiscovered before me." Those words, ascribed to Sir Isaac Newton, might still be spoken, with the appropriate correction for sex, by any scientist today.

The discipline of natural science that Newton helped found in the second half of the 17th century has extended humanity's horizons to a degree he could scarcely have envisaged. Newton lived in a world that thought itself 6,000 years old, knew nothing of chemical elements or disease-causing microbes, believed living creatures could spring spontaneously from mud, hay or dirty bed-linen, and had only just stopped assuming that the sun (and everything else in the universe) revolved around the Earth.

Yet even today, deep problems and deeper mysteries remain. Science cannot yet say how life began or whether the universe is but one of many. Some things people take for granted—that time goes forwards but never backwards, say—are profoundly weird. Other mysteries, no less strange, are not even perceived. One is that 96% of the universe's contents pass ghostlike and unnoticed through the minuscule remaining fraction, which solipsistic humans are pleased to call "ordinary matter". Another is how, after billions of years when the Earth was inhabited only by single-celled creatures, animals suddenly popped into existence. Perhaps the deepest mystery of all is how atoms in human brains can consciously perceive the desire to ask all of these questions in the first place, and then move other atoms around to answer them.

### Known unknowns

Over the next six weeks we will be running a series of briefs that explore these unsolved scientific questions. Some are more tractable than others. Our first brief, on life's origin, looks at a chemical puzzle that may well be elucidated over the next decade or so (see page 68). The nature of the unseen 96% of the universe may start to manifest itself later this year, as the newly cranked-up Large Hadron Collider, the world's biggest parti-

cle accelerator, begins creating things massive enough to be particles of the "dark matter" that theory predicts.

Other mysteries, such as the unidirectionality of time, probably await lightning-strikes of insight of the sort that produced the theories of relativity a century ago. By contrast, discerning the early history of animals will require a lot of hard graft—the painstaking reconstruction of a jigsaw in which the pieces include palaeontology, genetics and embryology.

Some mysteries may remain so for ever. The idea of a multiverse containing an indefinite, possibly infinite, number of universes, each with its own laws of physics, is mathematically plausible and would deal with the puzzling fact that if the physical laws of the actual, observable universe were only slightly different, life could never have come into existence. With multiverses, every possible set of laws would exist somewhere. Unfortunately, unless the separate universes intrude onto one another, the idea is untestable. As for the nature of consciousness, this is one question which science has not yet fully worked out how to ask. Studying the bits of the brain that seem to generate consciousness does not answer the question of what such perception really is.

Does it all matter, a cynic might ask? Will humans really be better off for knowing such things? The answer, written on the tomb, in St Paul's Cathedral, of Newton's contemporary, Sir Christopher Wren, is: "If you seek his monument, look around you." For the monument to Newton's pebble-collecting child is no less than the modern world.

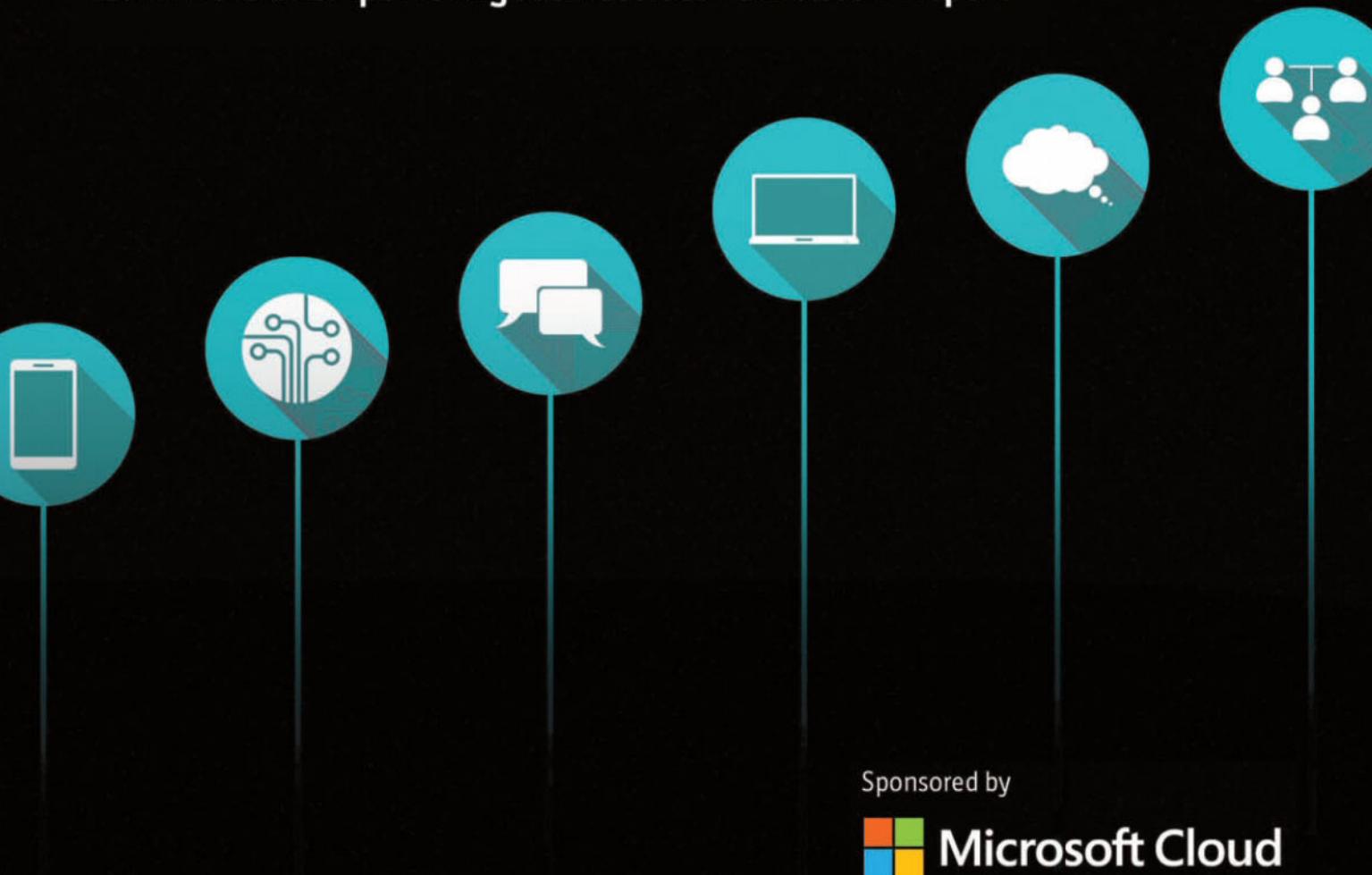
Bacteria and Brontosaurus. Oxygen and octane. Quarks and quasars. All are the offspring of Newton's child. Moreover, it is the manipulation of nature which science permits that has brought today's unprecedented plenty and prosperity. Most of all, though, science has brought self-knowledge, for it has put humans in their place in two contradictory ways. It has de-throned them as the centre of the universe, by showing that mankind is a Johnny-come-lately, living on a tiny planet orbiting an ordinary star in an unremarkable galaxy that is, itself, one of more than 150 billion such galaxies. But it has also enthroned humanity, revealing the extraordinary nature of the universe's inner workings in ways that Newton's contemporaries were only beginning to glimpse. Simultaneously demoted and exalted by science in this unprecedented era of discovery, *Homo sapiens* still has oceans to survey. ■

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**Pollard's espionage**

"Burn after reading" (August 1st) was a bit light on the reality of the consequences of Jonathan Pollard's spying for Israel. You state that "some of what he gave to Israel ended up in Soviet hands". Well, yes, a very large amount of it was used by Israel to facilitate the large emigration of Soviet Jews to Israel. This severely damaged America's cryptology system to the extent that by 1990 the damage-control bill had hit \$2.5 billion. Although this may have been judged by the Israelis to be in their national interests, it was not in the interests of the United States.

Ally? One does wonder.

KARL POLIFKA  
Deputy director of intelligence  
US Central Command 1989-91  
*Williamsburg, Virginia*

**Who will succeed Lee?**

Your special report on Singapore (July 18th) did not acknowledge the million-dollar question in the city-state's politics: who will succeed Lee Hsien Loong as prime minister? No member of the fourth-generation Lee leadership has yet been installed as deputy prime minister or headed heavyweight ministries such as defence or finance (Heng Swee Keat was appointed education minister) and there is no obvious successor. This is unprecedented in Singaporean politics under the People's Action Party. Indeed, the PAP faces a greater threat from its perceived failure to groom an obvious successor to Mr Lee than from the weakened opposition, which was the focus of your report.

By the way, Singapore has nine nominated members of Parliament appointed by the president, not seven.

KAIYAN CHAN  
*Singapore*

**Perks for procreation**

You wrote about the disincentives in the rich world to having more children ("Breaking the baby strike", July 25th). One simple way to help boost the fertility rate would be to

link parents' pension benefits to the amount of taxes paid by their children when they reach adulthood. This would give an incentive to parents to have more children. Parents would also invest in their education, as better educated people are more likely to enter well-paid jobs and yield higher taxes and benefits.

Governments should start considering seriously the alignment of costs and benefits of parenthood. Otherwise the "baby strike" may spread as more and more youngsters join its ranks.

XAVIER GÓMEZ  
*Barcelona*

Joseph Schumpeter would have lent some depth to your analysis. From "Capitalism, Socialism and Democracy": "As soon as men and women learn the utilitarian lesson and...acquire the habit of weighing the individual advantages and disadvantages of any prospective course of action, or...as soon as they introduce into their private life a sort of inarticulate system of cost accounting, they cannot fail to become aware of the heavy personal sacrifices that family ties and especially parenthood entail under modern conditions".

KEVIN O'BRIEN CHANG  
*Mandeville, Jamaica*

**History that is set in stone**

I read your article on the push by civil-rights groups to erase the memorial to leaders of the Confederate states at Stone Mountain, Georgia ("Too big to veil", July 25th). The monument was started in the Jim Crow era and completed after the zenith of the 1960s civil-rights movement. Destroying it

would be the equivalent of destroying every statue of Lenin still standing today, or every Nazi gas chamber still in existence.

Yes, the sculpture is truly offensive to people who want an inclusive and kinder future for all races. Yes, it is a discomfiting shrine to a romanticised and inappropriate idea of the southern Confederacy. But visible artefacts should be held up to be scrutinised, not sandblasted away. We could use Stone Mountain as a tactile touchstone to discuss racism and historical revisionism and the way forward. The alternative is to expunge history, just like Islamic State on its cleansing rampage to destroy relics that it deems inappropriate.

CARLA ATTENBOROUGH  
*Catonsville, Maryland*

Non-southerners like myself should not feel too self-righteous about the Confederate states. The North fought against slavery, but not against racism. Union soldiers coming home after the war resented and sometimes attacked freed slaves, whom they saw as inferior and out to steal their jobs. A great deal of self-reflection is needed on both sides of the Mason-Dixon line.

DAN HART  
*Boston*

**Heading for the Brexit**

Bagehot defies the logic of his own argument by suggesting that Britain is better off in the European Union (July 25th). If Britain has commingled so successfully with its European neighbours for so many centuries without being part of an intrusive and disconnected euro state, why does it need to be part of one now? These rich and historic ties of trade, politics, culture, marriage—and sometimes war—will be only marginally affected by Britain's exit from the EU, if at all.

What Britain gains is its sovereign independence, negligently signed away after being bitterly defended for centuries against other failed attempts to create hegemonic euro states. Britain will also be able to pivot its trading atten-

tion unhindered towards the rest of the world, which is where the real future lies.

BRIAN POTTINGER  
*Launceston, Cornwall*

When I came to live in America from London a decade ago, having been merely a frequent visitor before, I realised, somewhat to my surprise, that I had more in common with other Europeans than I did with Americans, Anglophone though they be. I have expatriate friends here from Italy, Germany and France, and we all recognise a common Europeaness that transcends the differences in our nationality.

GEORGE BENNETT  
*Warwick, Massachusetts*

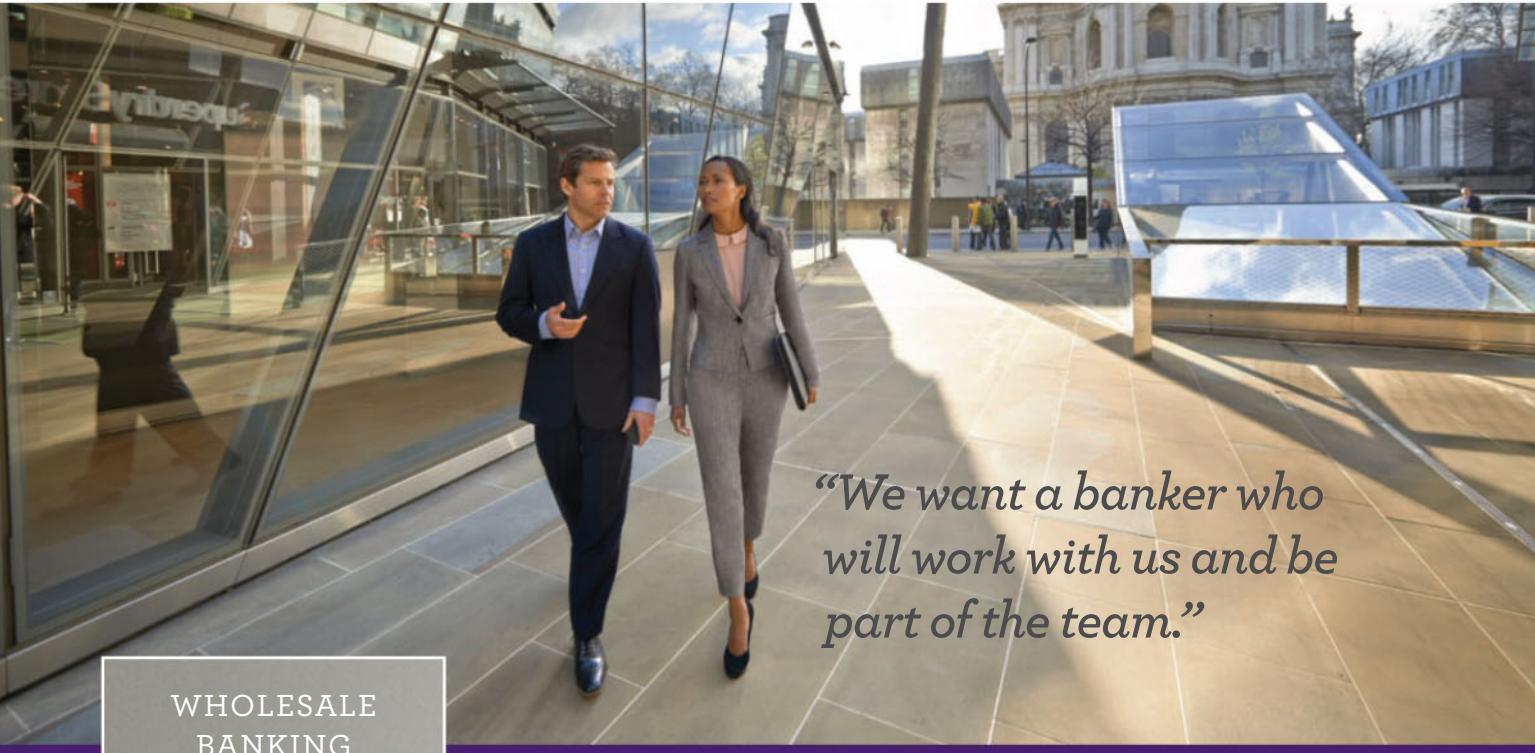
The monarchy is surely the clearest indication of Britain's European identity. Britain has been ruled by the French (Normans, Plantagenets, Angevins), a Dutchman, (William of Orange) and Hanoverian Germans. Some of them didn't speak English. British-born sovereigns generally had husbands or wives from other European countries. Queen Anne married a Danish prince and Queen Victoria her Albert of Saxe-Coburg. The royal family changed its name to Windsor less than 100 years ago.

I might add that if the English traced their origins back to the dim and distant past they might find an Angle, Jute, Saxon or Viking among their forebears, or more recently a Huguenot or two.

SIDNEY FREEDMAN  
*Valbonne, France*

The untimely demise of King Edward II, described in excruciating detail by Bagehot, is far from accepted historical fact. Many believe he may not have been killed at all and lived out his life in exile.

KENYON KIES  
*Mazomanie, Wisconsin* ■



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### Climate change and the president

## Hotter than August

New rules to curb emissions from power plants are not as bold as they seem

**I** AM convinced that no challenge poses a greater threat to our future, to future generations, than a changing climate,” declared Barack Obama on August 3rd. The president’s announcement of America’s first national standards to limit carbon-dioxide emissions from power plants had to be moved indoors to escape the sweltering weather. The response from Mr Obama’s political opponents was even hotter. Mitch McConnell, the Senate majority leader, described the new rules as, “a triumph of ideology over sound policy and honest compassion”. He encouraged states to ignore them. In political terms, Mr Obama’s new rules are momentous. As far as their likely impact on the climate or on America’s energy sector are concerned, they are more modest than the claims made by either side would suggest.

Power plants are America’s largest source of greenhouse gases, accounting for just under a third of all emissions (see chart). This plan does not touch the other two-thirds. What it does do is give orders to each state that, when taken together, should amount to removing 870m tonnes of CO<sub>2</sub> from emissions by power stations by 2030. The baseline against which this reduction will be measured is 2005. Half of the desired reduction has thus already happened, largely thanks to the switch from coal to gas. If the goals are met, the reduction between now and 2030 will be

akin to taking 80m cars off the road—worthwhile, but no transformation.

The regulations give states some flexibility over how and when to cut emissions. Each state is required to submit plans by 2018 and to show some movement by 2022. States can combine the enforcement of emissions standards at power plants with greater investment in renewables to meet their targets. Improving efficiency and establishing cap-and-trade programmes will probably prove necessary, too. Because some renewable technologies need reliable backup for when the wind drops and the sun is shrouded, gas will become even more important than it already is. Paul Bledsoe, a former climate-change aide in Bill Clinton’s White House, thinks that the result is a hybrid system that makes use of market mechanisms.

There is little to encourage new investment in nuclear power. That means asking renewables to do even more just to maintain emissions at today’s levels. A new incentives programme, not promoted in previous drafts, provides carrots encouraging states to turn to wind and solar power, to go with the raised sticks. The Environmental Protection Agency (EPA) will award pollution credits to states that increase energy efficiency and move quickly to generate power from renewable sources. These can then be used to offset emissions released at a later date. Such incentives, according to

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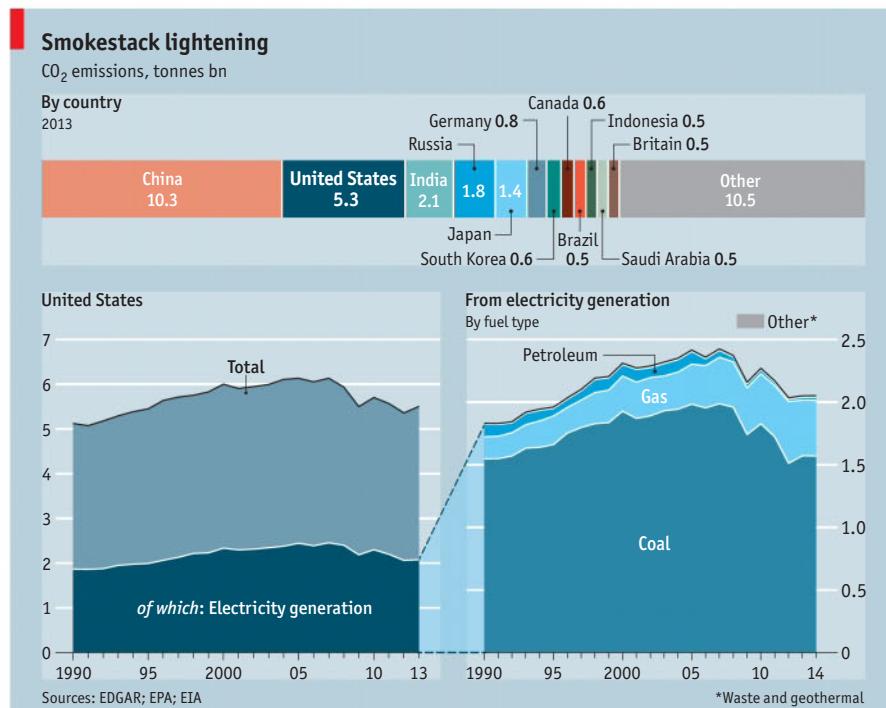
Ethan Zindler of Bloomberg New Energy Finance, a research firm, should bring comfort to an industry that is at the mercy of federal tax subsidies. The new plan also gives states more freedom to pursue carbon trading among themselves. The EPA thinks the share of American power generated by renewables will swell to 28% by 2030, from around 13% now.

If the Republicans have their way, such projections will soon be irrelevant. One useful means of subversion would be to elect a Republican president in 2016, who could scrap the EPA’s rules. Even if that fails, the EPA faces a protracted battle in the courts. Patrick Morrisey, West Virginia’s attorney-general, believes the plan exists thanks to “radical bureaucrats” and relies on an “obscure” provision of the Clean Air Act. Mr Morrisey plans to challenge Mr Obama’s measures alongside at least 14 of his fellow attorneys-general.

### The fine print

The legal basis for the EPA’s action lies in a 2007 ruling by the Supreme Court, which deemed carbon dioxide a pollutant, thereby placing it under the EPA’s remit. That obscure provision of the Clean Air Act, section 111(d), is controversial. Opponents argue it permits the EPA to set standards only for individual power plants, not for plants across America. The agency has also been rebuffed recently for its overreach: in June the Supreme Court chastised it for regulating mercury, arsenic and other toxins emitted by power plants without taking proper account of the costs.

If both those ideas fail, the Republicans have two more. One is for states with Republican governors to ignore the EPA. As with the Affordable Care Act, that would probably have a perverse result: states jealous of their autonomy would give up the ►



► opportunity to design their own plans to reduce emissions and be forced to accept a version designed in Washington. The other sniping idea is to convince Americans that the president is raising their electricity bills and harming the country's competitiveness. The White House claims the latest standards for carbon dioxide should save families \$85 on their annual power bills by 2030. Republicans say the opposite. Both may be correct, reckons Bob Perciasepe from the Centre for Climate and Energy Solutions, a think-tank. While the unit cost of energy may well rise, more careful use, possibly through better home-insulation and energy storage, should mean that households use less overall.

The argument will continue through 2016 and beyond. Republicans enjoyed success in West Virginia and Kentucky, two big coal producers, in 2014 with rhetoric about the "war on coal" (a McConnell bumper sticker for the Kentucky Senate seat read simply, "Coal. Guns. Freedom."). But voters cross about dwindling coal production can hardly become any angrier. Weaker international demand and a supply glut have halved the price of coal in the past four years. Over three dozen American coal firms have gone bust since 2012, including Alpha Natural, one of America's largest, which filed for bankruptcy on August 3rd. Mr Bledsoe believes the coal lobby may eventually press for subsidies to support carbon capture and storage schemes at coal plants. The technology could eventually save jobs while significantly reducing America's emissions. But if shale gas stays as cheap as it is now, clean coal will remain a dream.

The Clean Power Plan touches only one

sector of the economy. But though hardly dramatic, it goes some way to making possible the overall cuts that Mr Obama undertook in his climate deal with China last year, an agreement crucial to the worldwide deal both nations want to see emerge from the UN climate negotiations in Paris this December. That deal will not ensure that the world limits its warming to less than two degrees; more drastic action from America and everyone else would be necessary for that goal to be met. But in America and elsewhere the appetite for such action is limited. Economy-wide legislation, such as a carbon tax, remains a political impossibility in Congress. Mr Obama's plan is necessarily pragmatic, and thus tellingly modest. ■

### The wisdom of crowds

The first Republican primary debate was due to take place in Cleveland shortly after *The Economist* went to press. Those candidates who made the cut for the main debate were selected according to how they fared in an average of five polls in which voters were asked whom they would vote for. This is the most common polling question, but it does not have much predictive power so early in the contest. A more telling answer comes when pollsters ask who the likely winner of the primary will be, as our YouGov poll does. The main effect of this change in wording is to drop self-publicists such as Donald Trump, Mike Huckabee and Ben Carson down the list and to promote professional pols in their stead.

### Gay marriage: the aftermath

## To have and to hold

CENTREVILLE, ALABAMA

**Opponents of gay marriage have not given up**

JERRY POW's 15-year stint as probate judge of Bibb County, Alabama, is ending ran-corously. Overseeing weddings used to be enjoyable; then, in June, the Supreme Court legalised gay marriage throughout America. Judge Pow decided that "the craziness has gone too far"; he told his staff they were "out of the marriage business".

Few of gay marriage's opponents are directly affected by it: one reason much of the antipathy is odd. The judges (or, in some states, county clerks) who issue marriage licences and conduct ceremonies are an exception. Citing loose language in state law—which say probate judges "may" issue licences, rather than "shall"—around a dozen in Alabama are still declining to sell them to anyone, gay or straight, thus avoiding charges of discrimination while honouring their consciences. To do otherwise, Judge Pow thinks, would be a sin: "I do enough bad without adding to it." He says the residents of Bibb County (served by over 50 churches, counting only the Baptist ones) support him.

The holdouts have champions in Montgomery, the state capital. A proposed state bill would replace marriage licences with contracts, which squeamish judges would merely have to register. The Alabama Supreme Court, which has attempted to thwart prior decisions on gay marriage by federal judges, is still purporting to consider its position after June's ruling. History is prominent in the arguments before it. Ultraconservatives adduce the Fugitive Slave

Voting intention\*  
National polling average %

RealClearPolitics

	The Economist/YouGov
Donald Trump	23
Jeb Bush	13
Scott Walker	11
Mike Huckabee	7
Ben Carson	7
Ted Cruz	6
Marco Rubio	5
Rand Paul	5
Chris Christie	3
John Kasich	3

Likely winner of Republican presidential nomination\* %

The Economist/YouGov

	The Economist/YouGov
Jeb Bush	36
Scott Walker	11
Donald Trump	10
Marco Rubio	7
Ted Cruz	4
Rand Paul	4
John Kasich	3
Ben Carson	2
Chris Christie	2
Lindsey Graham	1

Sources: *The Economist*/YouGov; RealClearPolitics \*Aug 4th 2015

► Act, a 19th-century statute that required non-slaveholding states to help return escapees, as an example of an unjust law that states legitimately flouted. Those who see this as a case of federal authorities foisting progress on retrograde states invoke the decision of 1967 that invalidated bans on interracial unions.

Alabama's recalcitrance is unsurprising: polling on gay marriage suggests that it and Mississippi are the most sceptical states in America's most sceptical region. Roy Moore, the state's grandstanding chief justice, has form: in 2003 he was ousted after refusing to remove a huge granite monument of the Ten Commandments from the rotunda of his courthouse. "We have always been a state that insists on being kicked and dragged into the next century," says Benjamin Newbern of Equality Alabama, a lobby group. But a similar, spotty pattern obtains elsewhere in the South, too.

Some officials in nearby states have quit rather than facilitate gay marriages. A rejectionist county clerk in Kentucky is being sued. Politicians there are considering legislation that would protect such people—emulating North Carolina, which got its revenge in before the Supreme Court ruled, passing a law that exempts officials with religious objections from conducting weddings. Diverse legislation to shield the faithful is in the works elsewhere.

For advocates of gay marriage, all this is good news. Much of the residual resistance is a function of superlocal politics, in places where judges and clerks are elected and those elections revolve around which church the candidate attends. By contrast, the governors of most southern states have bowed to the Supreme Court's verdict, if grudgingly; some seem quietly grateful to leave behind an awkward subject, which pinioned them between their conservative supporters and the wider electorate, which is rapidly embracing gay marriage. And, despite the odd hiccup, gay couples everywhere are getting hitched. "It was a beautiful ceremony," says Keith Ingram of the wedding that he and his husband finally celebrated, after being refused a licence five times, in Dothan, a town in southern Alabama.

### Skirmishes or war?

The picture at local and state level—islands of intransigence in a sea of acquiescence—is replicated in Washington. Immediately after the Supreme Court ruled, some blustered about amending the constitution to reaffirm the old conception of marriage. Now the mood is calmer. Raúl Labrador, a Republican congressman from Idaho, is co-sponsoring a bill that would protect the tax-exempt status and federal grants and contracts of religious organisations with traditional views. "The bedrock of our country is religious freedom," Mr



"To the counsellors of peace is joy": Proverbs 12:20

Labrador says. Other gathering rows focus on whether pious bakers, florists and photographers must cater for gay weddings, and if devout employers must extend health-care benefits to gay spouses.

Critics think the alleged threats to religious liberty are imaginary, and that these initiatives are meant to defend not faith but prejudice. Either way, the friction will surely increase if gay Americans belatedly secure the broad federal protection against discrimination that other groups have enjoyed since the Civil Rights Act of 1964; a bill to that effect was introduced in July. If passed (for now, a distant prospect), it would rectify the current topsy-turvy situation whereby, in 28 states, homosexuals are free to marry yet can legally be sacked and evicted from their homes because of their sexuality.

Charlie Dent, a Republican congressman from Pennsylvania, thinks these demands can be reconciled. He has proposed an alternative bill that would both safeguard religious organisations and ensure equal treatment in employment and housing. Most Americans, he reasons, favour both initiatives. Whether that compromise finds support in Congress remains to be seen. So does a more fundamental issue: whether these ructions—inevitable, perhaps, after a change as seismic as gay marriage—will fade or endure.

The focus has already shifted at warp-speed from the people doing the marrying to those who officiate and do the catering. Maybe those subsidiary concerns will abate quickly, too. Marc Solomon of Freedom to Marry, another lobby group, notes that approval of gay marriage tends to rise after it is legalised, partly because observers see the joy it confers on couples and their families. On the other hand, these

may turn out to be the opening skirmishes in the sort of rearguard guerrilla struggle that has long bedevilled other social reforms. Some judges in Alabama, for instance, denied marriage licences to mixed-race couples for several years after the Supreme Court deemed that unconstitutional. When Alabama's citizens eventually voted on the state's old prohibition of such unions, 41% wanted to keep it. That was in 2000. ■

### The western drought

## Concrete oasis

LAS VEGAS

**Why Las Vegas has coped well with drought so far**

ON THE hot, empty road that leads from Las Vegas to the shocking beauty of Red Rock Canyon National Conservation Area sits Cactus Joe's nursery. Cacti, yucca plants, ornamental rocks and various sorts of garden furniture sprawl over seven acres. Business is booming, says Yucca Lou, the sunburnt, cowboy-booted former engineer who took over from Cactus Joe a few years ago. "Traditionally, people in Las Vegas outfitted their homes with tropical plants, lots of foliage, all very water-intensive," he explains. "But now people are getting rid of the grass, they're putting in rocks and they're buying cacti."

Cactus Joe's success helps to explain why Las Vegas has not—so far—been crippled by its drought, at least compared with neighbouring California. To the casual observer, with most of the West parched, Las

Vegas's water use seems astonishingly wasteful. Visitors flying in see acre on acre of suburban houses, a good proportion of them with pools. Those staying on the Strip find abundant fountains, enormous swimming pools and palm-lined boulevards, all in the middle of the desert. And yet beneath this mirage, quietly, Sin City has proven remarkably effective at managing its water, even as its population booms. If its success is to continue, it will have to get better still.

Las Vegas sucks up a lot of water. In 2010, the latest year for which nationally-comparable figures have been released by the US Geological Survey, each resident of Clark County, which covers the entire urban area of Las Vegas and its suburbs, used 234 gallons of water every day. In California, the figure was 181 gallons. But in recent years southern Nevada has dramatically cut its water use. Between 2002 and 2014 the region's consumption of Colorado river water fell by 30%, even as Clark County added half a million residents.

Unlike southern California, which has other sources (such as groundwater), Las Vegas gets almost all its water from Lake Mead, the vast reservoir that sits behind the Hoover Dam and is filled by the Colorado river. This year the water level is as low as it has been since the dam's completion in 1936. An unsightly "bathtub ring" of bleached rock reveals how much it has sunk; the dam's water-intake towers are now almost fully exposed. To get its supply, the city relies on two pipes, or "straws", which draw in water. In September, a third will open to ensure that even with the lake at a lower level, the city can continue to slake its thirst. It cost \$87m to build.

Under the law of the river—the various agreements between the states of the Colorado basin about how to divide up the water—Nevada gets 300,000 acre-feet (enough water to fill one acre to the depth of a foot) each year, about 10% of Arizona's allocation and 7% of California's. Nevada's share is low thanks to a quirk of history: in 1922, when the first Colorado River Compact was agreed to, the state had fewer than 100,000 people and was mostly empty desert. "No one ever expected that Las Vegas would be what it is today," says Buzz Thompson, an environmental law expert at Stanford Law School.

Yet, curiously, that limited supply may help to explain why Las Vegas is coping relatively well. The hard limit on Nevada's supply from the Colorado river gave the city an incentive to hold down its use long before it became urgent. Water-conservation policies in Las Vegas are more advanced than in surrounding states, particularly when compared with California, where the drought this year has caused chaos and wild fires (more than 20 were burning at last count) led the governor, Jerry Brown, to declare a state of emergency.



That thrifty water use in full

Since 1999 the Southern Nevada Water Company has paid residents to tear up their lawns. New houses, of which Las Vegas still builds many even after a catastrophic property slump began in 2006, are banned from including front lawns. As the success of Cactus Joe's shows, most these days are designed with "desert architecture" style, surrounded by cacti, brown rocks and yucca plants. Cutting outside water use is more efficient than preventing the use of showers and the like, as water flushed down drains is treated and re-

turned to Lake Mead.

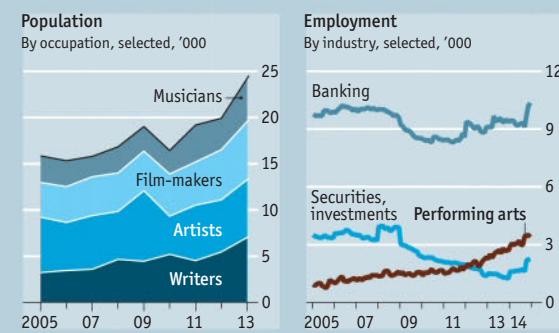
Las Vegas's many golf courses may seem wasteful, but their water use is strictly rationed: greens remain grassy, but golfers who fail to stay on the fairways find their balls in desert rock. Much of the water the courses use is non-drinkable "brown water". They use slightly less water—7% of Las Vegas's total consumption—than casinos, which too have got more efficient. At the Bellagio, a hotel and casino with a grandiose fountain at its front, the water used comes from a well of non-drinkable water, rather than the lake. On July 25th, a massive fire broke out on the roof of the Cosmopolitan hotel—artificial plants helped to fuel the blaze.

Water use is now tightly metered on a four-tiered scale: as households use more water they are charged more per gallon. That means that people who insist on keeping their palm trees and lawns must pay hefty sums for that privilege. In California, laws prevent many municipal water suppliers from charging any more than enough to cover their costs—which means that high prices cannot be used to encourage more frugal behaviour.

All this has made it possible for Clark County to grow from around 750,000 people in 1990 to over 2m now, without running out of water. The trouble for Las Vegas is that it is a city that feeds on endless growth—eventually, the easy pickings of efficiency will run out. "They just issued a few thousand residential building permits around here", complains Yucca Lou. "Why are we doing this to ourselves?" And yet the newcomers are his customers. ■

### Brooklyn, the myth

"It is now well-documented that some of Brooklyn's much-written-about creative class is being driven out of the borough by high prices and low housing stock," wrote the *New York Times* in July. Earlier in the year mysterious adverts sprang up in the city urging Brooklyn's *nouveaux-pauvres* to move to Detroit. The next iteration of this—reports that the Motor City is being ruined by a phenomenon called Brooklynisation—is already under way. The numbers say it isn't so. Musicians, filmmakers and other wistful folk who subsist on craft ale and eschew gears on their bicycles are in fact multiplying in Brooklyn. What about the labour market? Here too the picture is not what might be expected. The number of jobs in banking is where it was a decade ago. The number working as securities traders has fallen while the number in the performing arts has increased (a direct switch, perhaps?). The Brooklyn exodus is a myth.



Ferguson a year on

## Some kind of normal

FERGUSON, MISSOURI

A city that became famous for all the wrong reasons is improving

JEROME JENKINS was sitting in the library at the University of Illinois at Urbana-Champaign in 1989, pondering his future, when he picked up a book that described Ferguson, on the outskirts of St Louis, as one of the most diverse and integrated cities in the country. It sounded so good that he decided to move there from Gary, Indiana after graduating from college. "How ironic is that?" asks the black entrepreneur, throwing up his arms in mock horror.

Twenty-five years later, Mr Jenkins still lives in Ferguson. He seems to be thriving as the owner, with his wife Cathy, of a chemicals business and two restaurants, Cathy's Kitchen and J & C BBQ and Blues. They are both on South Florissant Road, right next to the police department, in a city of 21,000 people that has just been through the most traumatic year in its history, in which it became an international symbol of racial strife and of bitterness between the police and blacks.

Weeks of rioting and civil unrest followed the shooting on August 9th last year of Michael Brown, an unarmed black teenager. It was fuelled by what protesters perceived as the systematic harassment of young black men by the police. Darren Wilson, the officer involved, faced charges ranging from first-degree murder to involuntary manslaughter, but a grand jury in St Louis County decided not to indict him. This sparked the worst night of rioting, arson and destruction in the city's history.

### Miss-demeaning

In the months that followed, Ferguson seemed unable to settle down. In March an investigation by the Department of Justice (DOJ) concluded that it could not disprove Mr Wilson's claim that he acted in self-defence when he killed Brown. In a separate investigation, published the same day, the DOJ also concluded that under instructions from the city the police in Ferguson engaged in something much like extortion to plug a hole in the city's finances with traffic fines and court fees.

That triggered the resignation of the police chief, the city manager and the municipal judge, who had appeared to conspire to find ingenious ways to extract revenue from a population whose median household income is less than \$37,000. Blacks, it was found, were twice as likely as whites to be searched, receive a ticket or get arrested by police during a traffic stop, which of-



**Let us cultivate our garden**

ten resulted in a vicious spiral of unpaid fines, suspended drivers' licences, more fines and, in many cases, time in jail.

"Ferguson's court is running a debtors' prison," says Brendan Roediger at Saint Louis University School of Law, who is one of a group of civil-right lawyers suing the city. In 2013 the city collected \$2.6m in court fines and fees, mainly for traffic violations, which amounted to 13% of its total revenue. Mr Roediger concedes that other cities in the county are even more prone to over-eager petty policing. There are 490,000 outstanding arrest warrants (often three or four for the same person) in St Louis County, compared with 40,000 in Cook County, which includes Chicago and is the second-most populous county in America. St Louis County has 81 part-time municipal courts; Mr Roediger says these should be replaced by a much smaller number of full-time courts, where judges are less likely to have conflicts of interest.

The DOJ report triggered some progress in the running of the city. At the start of the riots the mayor, city manager, police chief, five of six city-council members, six of seven school board members and 50 of 53 police officers were white. Today the new interim police chief, Andre Anderson, the new interim city manager, Ed Beasley, as well as Donald McCullin, the new municipal judge, are black. In the now 50-strong

police force, five are black. And after municipal elections last April half of the members of the city council are black.

Yet changing the skin tone of the people running the city or the police is not sufficient to transform racial problems, as Baltimore (which had a black mayor and police chief when rioting broke out earlier this year) has found out. The most important change in the wake of the Ferguson riots (and the unrest that spread to other cities) is the way America as a whole looks at police shootings. Until then no institution even kept track of the number of people killed by the police. After Ferguson, every controversial incident—the killing by police in November of Tamir Rice, a 12-year-old in Cleveland who was pointing a toy gun; the shooting death in April of Walter Scott as he was running away from a police officer in South Carolina; the death, also in April, of Freddie Gray in a police van in Baltimore; the suicide of Sandra Bland in a jail cell in Texas in July, after a traffic stop; and the fatal shooting in the same month, also after a traffic stop, of Samuel DuBose by a cop in Cincinnati—have received widespread national scrutiny.

Ferguson now requires police officers to wear body cameras, a practice that is gaining popularity across the country. A new Missouri law limits municipal-court revenue. And in May the federal government banned the transfer of some military equipment to local police departments.

Dominica Fuller, who in May became the first black woman in Ferguson to be promoted to police sergeant, finds these changes positive. "I love the body camera and feel more confident with it," she says. The focus, she says, should now be on 18-to-24-year-olds, who need to understand that "we are here for you"—especially during the Ferguson Uprising Commemoration Weekend, which is nervously awaited by city officials. A silent march and a day of "civil disobedience" are among the planned events. Police across the county will be on high alert.

Business owners such as Mr Jenkins are nervous, too. Several businesses were burnt down and looted during the riots, and to this day a few have boarded up windows. But Ferguson has made a big effort to spruce up. Around 400 volunteers spent July 27th weeding, picking up rubbish and scrubbing off graffiti. Although several businesses have decamped since the riots, a few others have decided to invest in Ferguson, including Starbucks, which will set up shop on West Florissant Avenue. A new community centre, financed by QuikTrip, a chain of convenience stores, and other businesses will be built on the site of the QuikTrip shop that was burnt down during the riots. The anniversary weekend will be a test of something even more important: whether Ferguson's residents think their city has changed. ■

# Lexington | The politics of the Iran deal

**Barack Obama is braced for a stormy month ahead of a crucial vote in Congress**



THE job of American president offers many perks: taking languid summer holidays is rarely one of them. Still, Barack Obama's August looks a bit cheerless. Aides have let it be known that, during his planned two-week stay in Martha's Vineyard (expect images of bicycle rides, ice-cream outings and lots of golf), the president will be on standby to defend his nuclear deal with Iran, ready to make phone calls to members of Congress with questions about his diplomacy. Some calls may be terse. As Congress heads off on its August recess, many members face intense lobbying by rival groups that oppose or support the Iran deal. Tens of millions of dollars in Iran-themed advertisements are booked to run on tv. Thousands of phone calls have flooded the offices of such politicians as Senator Charles Schumer of New York, a prominent supporter of Israel tipped to lead Democrats in the Senate after 2016. Campaign groups are urging supporters to track down politicians rash enough to host public meetings.

In September both the House of Representatives and the Senate must vote to approve or condemn the agreement to curb Iran's nuclear ambitions, as brokered by America and five other world powers. To kill the deal outright, opponents (who include almost all Republicans) would have to recruit enough Democrats to muster a two-thirds majority in each chamber of Congress, in order to override Mr Obama's veto powers. But even a narrower congressional rebellion would be a blow. It would weaken a big plank of Mr Obama's foreign-policy legacy if he had to impose it on an overwhelmingly sceptical Congress, or see it passed without a single Republican vote.

Mr Obama's first task is to convince Congress that his pact, on balance, is the best available way to restrain Iran's nuclear ambitions. To do that he must take on critics, starting with Israel's prime minister, Binyamin Netanyahu, who say that it would be possible to broker a better, tougher nuclear deal by imposing still tougher sanctions. Mr Obama dismisses such claims, arguing instead that if America walks away from today's deal international unity over sanctions would unravel. He has hosted White House briefings for Democratic members of Congress to make his case. He talked Iran to a congressional delegation that he took to Africa aboard Air Force One, among them Senator Jeff Flake of Arizona, a Republican seen as a possible supporter of his nuclear deal.

But as members of Congress begin meeting constituents face-to-face, a separate challenge is visible. For many Americans, the Iran nuclear deal is not only about Iran; it is about their own domestic politics, and their ideological take on how America should exert influence in the world. On August 4th Lexington headed to Millburn, New Jersey, for a recess "town hall meeting" centred on Iran, hosted by a Republican member of Congress, Leonard Lance. The meeting was packed to capacity with more than 100 constituents, though a lovely evening beckoned outside. Mr Lance is an old-fashioned moderate, who calls Eisenhower a role model. His suburban district, 40 minutes by train from Manhattan, is affluent, educated and includes some 46,000 Jewish residents, many of them rather liberal (with the exception of orthodox Jews, most Jewish-Americans lean Democratic).

Mr Lance calls Mr Obama's Iran deal dangerous and insists that America could drive a harder bargain. That prompted strikingly high-minded debate. There were arguments about whether Israel's security establishment agrees with Mr Netanyahu about Iran policy, and even about specific radioactive isotopes (a question from a retired radiologist). Though most opposed Mr Obama's agreement, it was not a bellicose crowd. There was loud applause when a speaker urged America to avoid war with Iran, arguing: "We don't know what we're doing in the Middle East."

Revealingly however, real division and anger was sparked when talk turned to whether Iran is, broadly, a rational adversary or a wicked regime that America should seek to contain indefinitely. One man asked whether a Republican president and Congress, after 2016, could scrap the deal and then unilaterally sanction countries that do business with Iran. (Mr Lance was not sure that would work.) Several people expressed disgust at the idea of unfreezing billions of dollars that Iran might use to sponsor terrorists. "This agreement is not about terrorism," objected an Obama supporter, prompting a chorus of: "Yes it is," and "Idiot!"

## Ayatoldyouso

In an age of "Astroturf lobbying", as artificial grass-roots campaigns are nicknamed, such live discussions carry unusual weight with politicians. Many phone calls to congressional offices are generated by internet sites which patch Americans through to their own local representative with a few clicks of a mouse. In contrast, Mr Lance's rule of thumb is that, for every person willing to come to a public meeting on a hot summer evening, "1,000 more" constituents share those views.

With polls showing many Americans unsure about the technical merits of the Iran deal, Republicans have seized a chance to frame Mr Obama as an appeaser. Senator Ted Cruz of Texas, with typical restraint, says that lifting sanctions would make the Obama administration the leading financier of Islamic terrorism. Several House Democrats, notably from districts with many Jewish voters in such states as Florida, New Jersey or New York, have come out against the deal. Mr Schumer is under extraordinary pressure to oppose it. But a congressional rebellion would be followed by further votes on whether to uphold or overturn Mr Obama's veto: for a Democrat to oppose his or her own president at that point would be a dramatic act. Mr Obama is not shy about making this a test of partisan loyalties, saying in a speech on August 5th that many who oppose his Iran deal are the same people who argued for invading Iraq in 2003. There is a good reason why Mr Obama is willing to spend his holiday lobbying Congress: in the end, it may be domestic politics that saves his global legacy. ■

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### Canada's election campaign

## Long, but not boring

OTTAWA

**Stephen Harper wants a fourth term as prime minister. He faces a tough fight**

THE hard-nosed, frontiersman's personality of Stephen Harper has dominated Canadian politics for a decade. However it turns out, therefore, the federal election on October 19th will be fateful. If the Conservative prime minister wins a fourth consecutive term in office, he will be the first leader to do so since 1908. If he loses, it will be the end of an era, and what comes next will be very different. The election might well bring to power the left-wing New Democratic Party (NDP), which has never governed Canada before.

To forestall that prospect, Mr Harper triggered the campaign earlier than he had to. On August 2nd he asked the governor-general to dissolve parliament, giving his Conservative Party 11 weeks to put its case to the voters. That is double the length of recent election campaigns.

He needs the extra time. The slogan emblazoned on the Conservative campaign bus is "Safer Canada/Stronger Economy". Although the country feels relatively secure, its economy is hardly vigorous. As the world's fifth-largest producer of oil, Canada has been hurt by the collapse in prices. The economy contracted in the first five months of 2015. Confidence among consumers and small businesses is sinking. The Conservatives may break their promise to balance the budget after seven

years of deficit. All this has handed a cudgel to the opposition: the NDP and the centrist Liberals.

The politician best placed to wield it is Thomas Mulcair, who leads the NDP. Formed in 1961 from a merger of socialist and union groups, the party has governed five provinces but was thought to lean too far left to win a federal election. That changed in May, when it won power in Alberta, Mr Harper's political home, ending four decades of rule by the Progressive Conservatives, a provincial party much like the prime minister's. The Conservatives' fortress in western Canada no longer looks impregnable. Polls suggest that the Conservatives and the NDP are running neck and neck, with the Liberals trailing.

The NDP would bring change, though just how much is unclear. It would raise taxes on big companies and makes vaguer promises to support the manufacturing sector. It would finance 1m child-care places rather than support families directly, as the Conservatives have done. Mr Mulcair, a veteran of Quebec provincial politics, has proved himself a political scrapper. As leader of the opposition in the House of Commons, he has exploited ethical lapses under the Conservatives. The campaign may offer more opportunities: the trial of a senator in an expenses scan-

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dal is likely to embarrass the ruling party, even though he resigned from the Conservative caucus in 2013. But the hot-tempered Mr Mulcair has yet to show that he is prime-ministerial material. He fluffed his answer to an easy question about corporate taxes, and has sent confused messages about whether he supports an east-west pipeline to transport Alberta crude.

Similar doubts surround the other opposition contender, Justin Trudeau. A year ago he seemed likely to win. That would have been a return to normality: the Liberals governed Canada for most of the 20th century, most memorably under Mr Trudeau's father, Pierre. But Conservative adverts attacking the son as inexperienced proved effective (even though, at 43, he is just three years younger than Mr Harper was when he became prime minister). Mr Trudeau hurt his standing with civil libertarians by backing tough security legislation proposed by the government while promising to soften it after winning the election. In an attempt to win back support from left-of-centre voters, he is advocating the legalisation of marijuana and the imposition of a price on carbon (also backed by the NDP). His relative youth may appeal to ballot-shy younger voters.

Two-thirds of Canadians say they want a change of government. Mr Mulcair has offered to govern in coalition with the Liberals, if necessary, to bring that about; Mr Trudeau has so far been cool to the idea.

Despite the anti-incumbency mood and the weak economy, Mr Harper brings formidable weaponry to the contest. He has been building the country's most effective political machine since 2003, when he united Canada's various right-leaning parties under the Conservative ➤

banner. He imposed iron discipline on three successive governments, the first two of which lacked a majority in the House of Commons. Backbenchers were kept in line, rivals disposed of. Luck played a part in Mr Harper's longevity. The Liberals put up ineffectual leaders in earlier elections and the commodity boom spared Canada the worst effects of the financial crisis. But Mr Harper's skill mattered as much.

Now, with characteristic belligerence, he has seized the initiative. By calling the election early, he has silenced unions and other anti-government groups, which had launched a barrage of hostile adverts in preparation for the poll. Now that the campaign is officially on, they will be subject to much stricter spending limits than parties. The Conservatives, meanwhile, can ramp up spending; they have more cash than the NDP and the Liberals.

Mr Harper will use it to appeal to the groups he has assiduously courted throughout his time in office, such as Ukrainian immigrants and Jews. On a campaign stop in Mount Royal, a largely Jewish area of Montreal, he flaunted his support for Israel and criticised Muslim women who veil their faces at citizenship ceremonies (though the Conservatives are generally pro-immigration). The economy may be wobbling, but Conservatives will ask: can Canadians really trust the excitable Mr Mulcair, or the callow Mr Trudeau, to steady it? The race may be long; it is unlikely to be boring. ■

#### Pollution in the Great Lakes

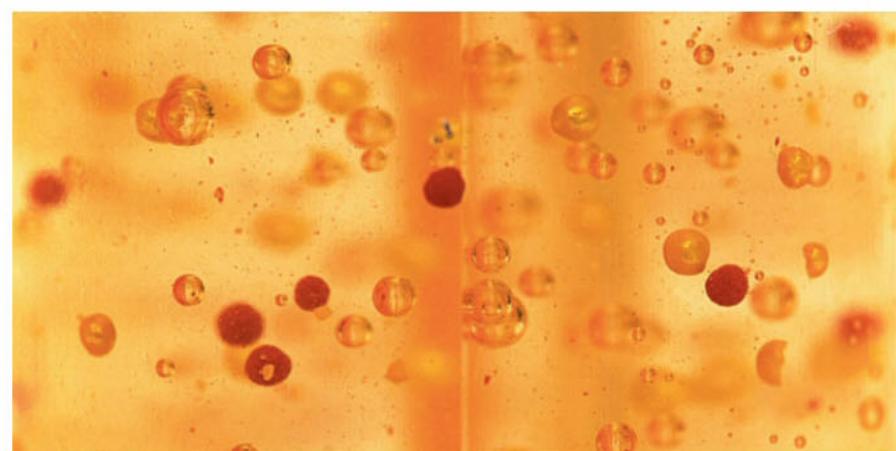
## Evil orbs

FREDONIA, NEW YORK AND MONTREAL

#### Abrasives in toiletries are poisoning fish. Governments are banning them

**A**NTHONY RICCIARDI, a scientist at McGill University, was looking for evidence that an invasive Asian clam had colonised a warm spot in the St Lawrence river when a member of his team made a more headline-worthy discovery. Peering through a microscope at sand scooped up from the riverbed, the student saw hundreds of tiny plastic spheres that stood out for their unnatural roundness and vivid colours.

Microbeads, widely used as an abrasive in toothpaste and face soap, are common in the world's oceans, lakes and rivers. Scientists had assumed that they floated in fresh water and were flushed downriver to the sea. Now Mr Ricciardi has shown that some sink to the bottom of lakes and rivers, where they are eaten by bottom-feeding fish, some of which, such as yellow perch, end up on dinner plates.



Microbeads, macroproblem

This finding adds to alarm over plastic pollution in the Great Lakes, which contain a fifth of the world's fresh surface water. Sherri Mason, a chemist at the State University of New York in Fredonia, found 1m plastic particles per square kilometre in Lake Ontario. According to a team from the University of Waterloo, the Great Lakes have as much debris as ocean gyres (rotating currents), where the problem is better known. Industry and governments are beginning to tackle it.

"Ugelstad spheres", named after the Norwegian who invented them in 1976, have uses in cancer research, the treatment of HIV and the manufacture of flat-panel televisions. Only in the past decade has the cosmetics industry discovered how useful they are for scrubbing teeth and faces.

Too tiny to be caught by municipal water filters, they flow into lakes and rivers. New Yorkers rinse 19 tonnes of microbeads down drains each year. In water they can break down, releasing toxins that are used in their manufacture, or become coated with other poisons, such as PCBs. Fish that eat them develop diseases. Less is known about what happens to people who eat the fish. Dentists report finding the tiny orbs in patients' gums.

Makers of toothpaste and facial scrubs have started to take action. Unilever and Colgate-Palmolive have stopped using microbeads; Procter & Gamble and Johnson & Johnson say they will follow in 2017. Loblaws, Canada's largest retailer, will remove them from its in-house brand. But these companies want governments to ban the use of microbeads by all manufacturers, so that none has an unfair advantage.

On July 30th Canada's labour minister announced by the shores of Lake Ontario that the government would declare microbeads to be a toxic substance and prohibit the manufacture, import and sale of "personal-care" products that contain them. Eight American states have passed bans, starting with Illinois in 2014. The Illinois ban does not apply to biodegradable microbeads, whose safety is unproven (it is

unclear whether or not Canada's will). California and New York are considering tougher restrictions. Four European countries, led by the Netherlands, are pressing the EU to prohibit their use in cosmetics.

Scientists have moved on to investigate other worrying materials. Mr Ricciardi's team has found microfibres from synthetic textiles in the digestive tracts of fish. If brushing your teeth is bad for wildlife, doing your laundry could be worse. ■

#### Brazil's space programme

## Ten, nine, ten...

SÃO JOSÉ DOS CAMPOS

#### Rocket science is hard. Rocket diplomacy is harder

**R**USSIA had *Sputnik* and Yuri Gagarin. In 2003 China put a man in space. Even India is exploring the heavens: last September an Indian probe began circling Mars. Brazil thinks of itself as the peer of these big emerging economies (all are members of the BRIC grouping). But when it comes to space, its efforts are earth-bound. It has put up just six smallish, non-commercial satellites, four built with Chinese help and launched on Chinese craft.

Brazil's space programme suffered a blow in July when President Dilma Rousseff scrapped an 11-year-old agreement with Ukraine to launch satellites aboard Ukrainian Cyclone-4 rockets from Brazil's Alcântara spaceport in the northeastern state of Maranhão. The official explanation implied that the much-delayed project, which had been budgeted at 1 billion reais (\$290m), had become too expensive. Brazil may also fear that Ukraine will not fulfil its part of the deal, not least because its space industry is located near Donetsk, which is controlled by Russian-backed separatists.

Brazil started well. In the 1950s and 1960s it sent rockets to the upper atmo-

sphere. Its National Institute for Space Research runs a world-class satellite-testing facility in São José dos Campos, 100km (62 miles) from São Paulo. But Brazil's attempts to construct its own satellite-bearing rocket were tragically interrupted in 2003, when a prototype exploded in Alcântara hours before a planned launch, killing 21 people.

As hard as rocketry is, space diplomacy is harder. Brazil's record of sharing know-how with dodgy regimes makes the United States nervous. In the 1980s it helped Iraq double the range of its Scud missiles. The Americans coaxed France and Germany not to share rocket technology with

Brazil. In 2000 the then-president, Fernando Henrique Cardoso, negotiated an agreement to safeguard American technology, but Congress did not ratify it. His successor, Luiz Inácio Lula da Silva, killed it off. Instead, he signed the agreement with the Ukrainians, which offered the protections he denied to the United States.

On her recent trip to the United States Ms Rousseff visited a NASA research centre, prompting speculation that Brazil may again be keen to co-operate. But the Americans won't budge until safeguards are in place. In the meantime, Russia and France are eyeing Alcântara, one of the world's

best spots from which to lob satellites into orbit (sitting on the equator, it takes full advantage of Earth's spin).

Brazil's own extraterrestrial ambitions remain grounded. Even before recent budget cuts, its government planned to devote barely 9 billion reais to space-related activities in 2012-21. Frugal India—whose Mars mission cost less than half what Hollywood spent on the space movie "Interstellar"—spends that much in less than three years. If only Brazil had a nuclear-armed neighbour like Pakistan, muses one senior space bureaucrat. That might spur it to infinity, and beyond. ■

## Bello | An edifice in search of a function

### The South American Union faces a test in Venezuela

**A**T MITAD DEL MUNDO ("Middle of the World"), a park in an Andean valley outside Quito, Ecuador's capital, a stone monument marks the line of the equator. Just a couple of hundred metres to the south rises a striking new building clad in silver and black glass, its two cantilevered wings describing a U. It is the headquarters of the South American Union, or Unasur, opened last year.

The host government of Rafael Correa, then flush with oil money, agreed to finance the planned construction cost of \$66m. It is a grand architectural statement. But it is still half-empty, and its splendid conference rooms are sparsely used. The building poses a question: just what is the point of Unasur?

Formed in 2008, its origins lie in the South American Community, a Brazilian-inspired push to merge Mercosur and the Andean Community, two would-be common markets, and to develop cross-border infrastructure linking the countries of South America. Under the influence of Hugo Chávez, Venezuela's socialist strongman, the group changed both its name and its purpose. It shed its economic mission in favour of "political co-operation". The more or less explicit aim was to displace the Organisation of American States (OAS), whose members include the United States and whose headquarters are in Washington.

Unasur has set up ministerial councils on issues such as defence and health. It has dispatched a dozen missions of electoral "accompaniment", which are less intrusive and rigorous than the observers sent by the likes of the OAS or the European Union. It facilitated talks between government and opposition in Bolivia in 2008 and in Venezuela last year. And it blessed, without investigation, the narrow victory of Nicolás Maduro, Chávez's

heir, in Venezuela's presidential election of 2013, a result questioned by the opposition.

Ernesto Samper, a former president of Colombia who became the organisation's secretary-general last year, says Unasur reflects "a political scenario" in which most South American leaders are "socialist, left or progressive". Its job is to promote three goals: keeping South America a region of peace, avoiding "democratic ruptures" and defending human rights, understood to include "socioeconomic rights" and the fight against poverty and inequality. Thus the group's "democratic clause" is not linked to respect for the separation of powers, but rather to "the real validity of social rights".

To its critics, that looks like an apology for the autocratic regimes of the left in Venezuela, Bolivia and Ecuador, which have seized control of their countries' courts, electoral authorities and other formally independent institutions. "None of them is prepared to stand up to Venezuela," says José Antonio García Belaunde, a former foreign minister of Peru. The scope for political co-ordination is minimal, he adds, because South American countries agree about so little. "They don't share a mission

or a vision." In practice, the seeming left-wing consensus to which Mr Samper refers conceals big differences of outlook.

Its defenders argue that, by eschewing public criticism of member states, Unasur manages to keep open doors that would otherwise be closed to dialogue. Brazil, for example, sees Unasur as "a low-cost, low-maintenance forum" to prevent disputes in its continent from getting out of hand, according to Matias Spektor of the Fundação Getúlio Vargas, a think-tank.

Unasur now faces the biggest test of its short life. If previously reliable opinion polls are to be believed, Venezuela's opposition should easily win a parliamentary election on December 6th. It is not hard to see why: thanks to Mr Maduro's mismanagement, incomes are plunging, many goods are in short supply and the health service is collapsing. Since the regime has jailed some of its leaders and barred others from standing, the opposition fears that the government will steal the election. Mr Maduro has refused an offer by the OAS's new secretary-general, Luis Almagro, to send observers.

Unasur claims credit for persuading the government to fix a date for the election (though others, including the United States, which has been holding sporadic talks with Venezuelan leaders since April, also pushed for this). It plans to send a mission of officials from the continent's electoral authorities ahead of the poll. But how robust will it be?

There is still time for Unasur to staff its mission with people of recognised independence and clout. Mr Samper should seize it. If Unasur ends up whitewashing electoral fraud, its fate will be to join the long list of Latin American organisations that eke out a bureaucratic half-life of irrelevance. The trouble with "political scenarios", after all, is that they can change.





**North Korea's new monied classes**

## Bread and circuses

PYONGYANG

**Propaganda in the socialist theme park is relentless. So is the march of money**

**P**EALS of laughter rise from the front-row seats of the capital's Pyongyang Circus. Army troops have been treated to its signature slapstick: a Korean peasant posing as a mannequin torments an American soldier (big-nosed, blond-wigged). Troops are the state's ready labour, and the show is their reward after being ordered to do months of toil on the city's newest construction sites.

Since Kim Jong Un came to power following the death of his father in December 2011, North Korea's Young Leader has shown a passion for construction projects, with the emphasis on leisure—a pursuit he promised his subjects early on, along with prosperity. Mr Kim swiftly ordered the renovation of Pyongyang's two main funfairs. A new water park, a 4D cinema and a dolphinarium have followed, along with riverside parks, residential skyscrapers and a new airport terminal, which opened last month. Now an underground shopping centre in the heart of the capital is being constructed to cater to a small class of newly monied Pyongyangites.

At its apex sit the *donju*, wealthy traders whose investments have been fuelling a retail and construction boom in Pyongyang and a few other cities. Informal trading has been a feature of North Korean life since markets arose as an unplanned response to widespread famine in the late 1990s and the collapse of the state's public distribution system, through which nearly all goods were apportioned. Now some

*donju* run businesses within North Korea's state-owned enterprises, quasi-autonomous ventures that a bankrupt state tolerates in exchange for a chunk of the profits.

It is starting to change the face of the capital. Work on a cluster of new high-rise apartments was finished in around a year near Changjon Street, a quarter that local diplomats now refer to as Pyonghattan. Successful *donju* own some of the foreign cars on the city's busier streets. Others ride in its expanding fleet of taxis. Most own smartphones, making calls and surfing a heavily monitored intranet through Koryo-link, a joint venture between the state and Orascom Telecom, an Egyptian firm.

This growing segment of the popula-

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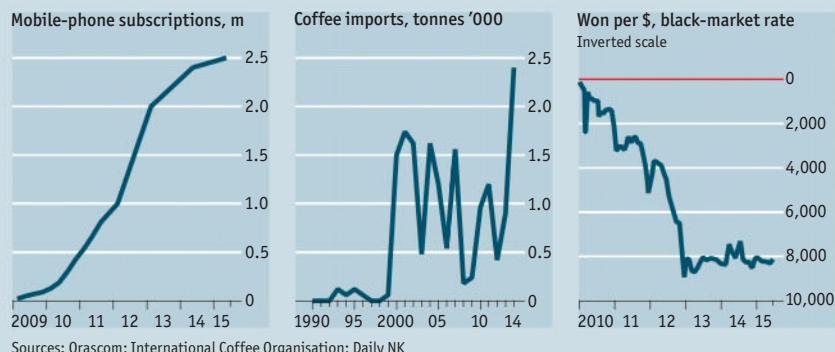
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tion is already visible on Pyongyang's streets as young women shrug off dowdy outfits for fitted jackets, bolder colours and sunglasses (long the mark of female villains in North Korean films). Coats with a discreet Burberry pattern on the lining are popular. One North Korean in her 30s was recently sporting a large diamanté Chanel brooch directly above her obligatory pin of the Kim rulers. A woman was even spotted carrying a tiny pet dog in her designer handbag—a sight common enough in Tokyo or Seoul but improbable in Pyongyang even five years ago. High heels have appeared, some in leopard print or silver.

The country's dictator always weighs in sooner or later on matters of import, usually in pieces of set-theatre in which Mr Kim is seen to be delivering "on-the-spot guidance". So it should have been no surprise that Mr Kim was recently giving guidance about high heels at a state-run shoe factory, and urging a cosmetics firm to compete with foreign luxury brands. (Besides, in the matter of fashion, Ri Sol Ju, Mr Kim's young wife, is seen as something of a trendsetter.) It is even tantalisingly possible that state in- ►

### The lifestyle economy

North Korea



Dustry is responding to market trends. Kwangbok department store in west Pyongyang sells colourful waterproof jackets, pink popcorn and a copy of a South Korean chocolate biscuit stick, all made locally. One of 310 exhilarating slogans published by the regime this year enjoins: "Resolutely thwart the sanctions schemes of the imperialists by effecting a great upswing in light industry!"

Entrepreneurs are looking to set trends. At a three-day training workshop for businesswomen in Pyongyang run by Choson Exchange, a non-profit group based in Singapore, a government employee in her late 20s said she wanted to open the city's first dessert shop, or a manicure salon. Through informal market research, she saw huge potential for both. Other female participants were running coffee shops, saunas and restaurants.

At the weekend *donju* families make their way to Sunrise Coffee, a lounge and pastry shop, for black-forest cake, ice cream or even an Old Fashioned. As at many other restaurants and shops now, customers can pay with a cash card, called a Narae card, that may only be loaded with foreign currency. It was introduced in late 2010 by North Korea's foreign-trade bank—a neat way for the state to amass hard currency. An espresso is priced at 360 North Korean won, which really means it costs \$3.30 at the official rate of 109 won to the dollar.

On paper, cocktails for four (4,000 won) are the equivalent of a civil servant's monthly state wage. In practice, nearly all workers earn a second income in the unofficial economy. Some reports even suggest that the state has started to pay some workers at the real, black-market rate of around 8,000 won to the dollar. That slow, unheralded recognition of the market economy is evident at Kwangbok department store, a joint venture with a Chinese trading company. Unlike at Sunrise Coffee, all goods are marked and sold at prices close to the black-market rate.

During a Friday lunchtime the Kwangbok store is humming. Goods from North Korea, China, Vietnam and Singapore vie on the shelves. A bottle of Chivas Regal Scotch whisky sells for 272,000 won, about \$34. L'Oréal Garnier shampoo is 40,000 won. A pack of Chinese-made sanitary towels is priced at 10,500 won. Tellingly customers must pay for all these in won—the government may have made that a proviso of the joint venture, deeply embarrassed that North Koreans buy and sell in dollars (though euros and Chinese yuan are now more popular). A booth near the checkout tills exchanges foreign banknotes for domestic currency, at around the black-market rate.

For all the change in Pyongyang, this kind of shopping remains within the reach only of a select few. Income inequality appears to be growing rapidly between those

living in Pyonghattan and those in the city's shaggiest districts, between those who own cars and those who cannot yet afford a smartphone. But the starker contrasts are with the North Korea beyond the capital's checkpoints. If the North Korean economy has grown—by about 1% a year since 2011, according to South Korea's central bank—few outside Pyongyang and a handful of other cities would know it. Top-down experiments to allow farmers to sell more of their own crop for private profit have yet to take root. A severe drought this spring has squeezed already meagre electricity and food rations, and prompted the government to mobilise subjects to work extra hours on collective farms.

The sights on the country road to the town of Pyongsong, an hour's drive north of the capital, tell of little change: a lorry powered by gas from burning wood chugging past men who are walking oxen through fields; women washing their clothes in a stream. To them and millions of others, Mr Kim's trumpeted promises of a new era of prosperity and leisure must still sound hollow. ■

### Politics in Australia

## Choppergate

SYDNEY

**The prime minister feels the heat after his hand-picked speaker quits**

AUSTRALIA'S Parliament is about to reconvene with a prominent officeholder gone. On August 2nd the speaker of the lower house, Bronwyn Bishop, resigned over revelations that she had spent taxpayers' money on helicopters, aircraft and limousines. "Choppergate" has roiled the conservative government and raised fresh questions about the judgment of Tony Abbott, the prime minister.

Mr Abbott nominated Mrs Bishop for the speaker's job after he led the Liberal-National coalition to power in 2013. The two represent neighbouring constituencies in Sydney's rich northern suburbs and were allies from his Liberal Party's right wing. Mr Abbott once called himself the "ideological love-child" of Bronwyn Bishop and John Howard, a longserving former prime minister and perhaps Mr Abbott's most ardent champion.

Mrs Bishop has generated controversy since she entered parliament 28 years ago, grilling senior civil servants with unusual bellicosity over government spending. In 2013 the prime minister argued she would bring "dignity" to the post of speaker. Yet in the job Mrs Bishop played the partisan warrior. Ignoring the speaker's supposed independence, she attended meetings of

Liberal parliamentarians. Of her 400 ejections of members from the chamber during parliamentary debates, 393 were of opposition Labor Party politicians.

The travel row erupted with reports on July 15th that Mrs Bishop had spent A\$5,227 (\$3,800) last November chartering a helicopter to fly from Melbourne to Geelong, two cities little more than an hour's car ride apart; she was attending not parliamentary business but a party fund-raising event. At first Mrs Bishop agreed to repay the money but not to apologise. The outcry, she complained, had "taken the heat off" Bill Shorten, the Labor leader.

A stream of disclosures followed about Mrs Bishop charging taxpayers thousands of dollars for travel to weddings of Liberal colleagues, cultural events and a visit to Europe. Before the Abbott government's first, cost-cutting budget last year the Treasurer, Joe Hockey, lectured Australians about thrift. "The age of entitlement is over," he declared, while "the age of personal responsibility has begun."

Ordinary Australians have little truck with hypocrisy. But, five days into the storm, Mr Abbott said merely that Mrs Bishop was "on probation". That was mild rebuke. As opposition leader in 2012 he had demanded that the speaker, Peter Slipper, resign for abusing A\$954-worth of taxi charges. Mr Slipper did indeed promptly step down. He was later convicted of dishonesty, but appealed and won.

Mr Abbott allowed Choppergate to drag on for almost three weeks before Mrs Bishop finally apologised to Australians for "letting them down". By then, even the government's strongest supporter, Rupert Murdoch's media empire, was demanding that she go. Indeed on August 1st the *Daily Telegraph*, a Sydney tabloid owned by Mr Murdoch, published fresh claims that Mrs Bishop had spent A\$6,000 to charter an aircraft to another Liberal event.

The next day Mrs Bishop resigned. Yet ►



**Mrs Bishop lives by the sword**

► the prime minister still seemed intent on shielding her from blame. The problem, he told the press, was "not any particular individual," but rather "the entitlements system more generally." Mr Shorten ascribed the problem to "Mrs Bishop's addiction to privilege". Yet the Murdoch papers revealed on August 5th that Tony Burke, a fierce Labor critic of Mrs Bishop, himself had claimed almost A\$13,000 for a visit to

central Australia in his capacity as a minister in the former Labor government, taking his family along. Mr Burke claimed he had travelled "in accordance with the rules". Politicians from all parties support a review of politicians' entitlements ordered by Mr Abbott.

Whoever succeeds Mrs Bishop, Mr Abbott's allowing personal loyalty to Mrs Bishop to override public outrage will fo-

cus attention on his management of government. In private senior ministers fume at the damage from Choppergate. Early this year, Mr Abbott survived a bid by some Liberal parliamentarians to open the party's leadership to a ballot. The government faces crucial decisions, especially on economic reform, before an election due in 13 months. Mr Abbott has little room for more mistakes. ■



#### History wars in Taiwan

## Examiner examined

TAIPEI

Revolted students and their supporters bring the government to book

**I**N TAIWAN as elsewhere in East Asia fights over history are really all about laying claim to the future. After weeks of protests in Taipei, the capital, hundreds of high-school students and supporters stormed the education ministry on July 31st and staged a sit-in. Their anger was motivated by the China-friendly government's changes to the country's school curriculum and history textbooks. They claim the changes are designed to indoctrinate young Taiwanese to support unification with China.

Eventual unification is something Ma Ying-jeou, now in his final year as president, is assumed to espouse. The Kuomintang (KMT) which he leads fled to Taiwan from China in 1949 after losing the civil war there to the Communists. When Chiang Kai-shek was Taiwan's dictator, history textbooks insisted that the island was part of China. Taiwan later embraced democracy and once-suppressed notions of a specifically Taiwanese identity flourished. Textbooks adapted. Mr Ma now wants textbooks to reflect his party's roots more.

Above all, the new guidelines recast Japan's colonial rule from 1895-1945. Unlike many who came to Taiwan with the KMT, Taiwanese with deeper roots on the island often emphasise the Japanese contribution to Taiwan's modernisation. And even when they acknowledge Japa-

nese colonial cruelty, the violence of Chiang's regime after Japan's surrender often overshadows it. The new guidelines insist that what was known as "Japanese rule" be referred to as "Japanese colonial rule"; Taiwanese women forced to serve in military brothels should be properly acknowledged. That is only right. But what sticks in the craw of native Taiwanese, given the brutality of Chiang's dictatorship, is that the KMT's occupation of Taiwan should be described as a "glorious retrocession".

On August 3rd a confrontation took place between emotional student representatives and the education minister, Wu Se-hwa. He refused to bow to the students' demands to retract the guidelines and resign. But he did offer a concession in emphasising that high schools could have the freedom to choose textbooks that adhered to either the old guidelines or the new ones. Officials added that the most-contested aspects of the new guidelines would not form part of Taiwan's national examinations. And Mr Wu promised more transparency in drawing up guidelines in future. On August 4th Taiwan's parliament also ordered a review of the high-school history curriculum. This has not been enough for the students, who say they will not end their protest until the new guidelines are suspended or revoked.

#### India's north-east

## The spoils of peace

DELHI

Is the country's longest-running ethnic insurgency over?

IT IS understandable that India's prime minister should celebrate a "historic" accord to end a bloody ethnic insurgency in the remote north-east of the country, announced on August 3rd. "The Naga political issue had lingered for six decades, taking a huge toll on generations of our people", said Narendra Modi, as his government signed an agreement with the main Naga insurgent group, the National Socialist Council of Nagaland (NSCN).

In practice much has yet to be worked out. Decades of rumbling violence by secessionists; murderous clashes between rival Naga tribal groups; extortion by former rebel fighters; and repressive laws, especially the Armed Forces Special Powers Act: all have fostered instability and discouraged investment. Today Nagaland is much poorer than most of India. For young Nagas and other north-easterners, the surest route to success is to leave.

Most of the serious fighting in Nagaland, a state of about 2m people, ended in 1997, when guitar-strumming rebels agreed to a ceasefire and quit guerrilla life in the forest for comforts in town, where many are lauded like rock stars. Talks over a final agreement dragged on because insurgency leaders stuck to demands for either full sovereignty or, failing that, an expanded Nagaland to include fellow Nagas in neighbouring states, notably Manipur.

Since the details of the new accord are not yet public, the capital of Nagaland, Kohima, has seen neither protests nor celebrations. But redrawing state borders is out of the question. Manipur's government, for one, has previously made clear its refusal to cede any meaningful authority over its territory to autonomous Naga councils. To clinch a deal the ageing and frail NSCN leaders, many in their 80s, have presumably softened long-held demands and been rewarded with promises of political positions inside Nagaland itself, along with plenty of central-government cash. ►



► Whether the rumbling conflict is really over now depends on reactions from smaller insurgent outfits, especially a breakaway Naga faction, the NSCN-Khaplang. It draws much of its support from Nagas living across the border in Myanmar and has good relations with the government there. India's intelligence agencies previously backed it, to weaken the main insurgency, but in March it broke the ceasefire and in June ambushed an army convoy near the Myanmar border, killing 18 soldiers. That attack, the worst on the army anywhere since the Kargil war against Pakistan in Kashmir in 1999, was a gruesome message that Khaplang's leaders expect their share of the spoils from peace.

A previous deal with the Nagas, the Shillong Accord of 1975, failed after breakaway factions took to the hills. Now there are better hopes for a wide-ranging peace. Ajai Shukla, a writer on defence, calls the main NSCN a "mother group" that has trained, advised and influenced other insurgent outfits across the north-east. Its fighters seem unwilling to give up urban life with all its fripperies such as smartphones for the hardships of the forest.

More negotiations between states and insurgent groups are presumably under way, or soon will be. Their responses will determine whether a historic change has really been achieved. Also needed is an end to often bloody rivalries among over 20 Naga tribal groups within Nagaland and several more in Manipur. The Baptist church, active in the north-east, has been leading a tribal reconciliation process.

Since coming to office last year Mr Modi has spent an unusual amount of time on north-eastern affairs. This week he lauded "Naga courage" and tribal "sensitivity to Mother Nature". With peace, his aim is to spread economic development by building roads, railways and airports. Then he wants to encourage trade, mainly via Myanmar, with South-East Asia, part of his "Look East, Act East" policy of expanding Indian influence in the region. And, not least, he hopes to raise the brand of his ruling Bharatiya Janata Party in states where it has previously been irrelevant—with luck helping to entrench a Modi raj. ■

## Religion in Indonesia

# With God on whose side?

JAKARTA

### Indonesia's guarantee of religious freedom looks hollow

LAST month, just days before Idul Fitri, marking the end of the holy month of Ramadan, worshippers at the An-Nur mosque in southern Jakarta, Indonesia's capital, had a problem: a mob was blocking them from entering. The worshippers were members of a 400,000-strong Ahmadiyya community in Indonesia—followers of a peaceable school of Islam holding that a 19th-century Indian, Mirza Ghulam Ahmad, was a prophet and messiah. Ahmadi Muslims believe in the separation of religion and the state, and they forswear jihad. Many other Muslims consider them to be heretics or non-Muslims.

Across Indonesia, where Sunni Muslims are in the majority, Ahmadis have been threatened and attacked, and their mosques forcibly closed. In 2011 a 1,500-strong mob attacked an Ahmadi mosque in western Java and fell upon worshippers with machetes and sticks, killing three. Attacks, blockades and bureaucratic opposition remain common: An-Nur was told to shut after a local official said it lacked the required permits to operate as a mosque.

Jakarta's governor, Basuki Tjahaja Purnama, an ethnic-Chinese Christian better known as Ahok, promised to help it reopen. It was a rare show of courage from an Indonesian politician.

Indonesia is not the only place where Ahmadis face violence. In Pakistan a gruesome assault by the Pakistani Taliban in 2010 left 95 Ahmadis dead at a mosque in Lahore. The Islamic republic's constitution declares Ahmadis not to be Muslims. Pakistanis applying for a passport must sign a declaration affirming that Ghulam Ahmad was an "impostor".

But Indonesia is not an Islamic republic, and its constitution is less doctrinaire. Though it forbids atheism—Pancasila, Indonesia's ruling ideology, mandates a belief in one God—it enshrines the right of Indonesians "to worship according to their own religion or belief". Indonesia recognises six official religions: Islam, Catholicism, Protestantism, Buddhism, Hinduism and Confucianism. By law followers of those six faiths ought to be free to worship as they choose.

In 2006, however, the government of the then-president, Susilo Bambang Yudhoyono, issued a decree requiring any believers wanting to build a house of worship to obtain the approval of the local religious-affairs office, as well as the signatures of 90 members of their faith and 60

other community members. Two years later it forbade Ahmadis from proselytising; violating this decree remains punishable by five years in prison for blasphemy. In the wake of these national decrees, local governments have passed similar ordinances. They have been enforced not just against Ahmadis, but also against Shia and Bahai believers.

And Christians in Bogor and Bekasi, on the edge of Jakarta's urban sprawl, also face harassment. Local governments have blocked construction of their churches, despite Indonesia's Supreme Court ruling that they may be built. These Christians have been holding services across from the presidential palace in Jakarta to draw attention to their difficulties at home. (Majoritarian regulations can on occasion cut both ways: in majority-Christian Papua last month, Muslims defied a letter demanding that they not hold prayers on their religious holiday; the ensuing clash left one dead and a mosque razed.)

Plenty of Indonesians say they should not have to wait for more enlightened local politicians like Ahok: a push for more religious freedom should come from the top. Many hoped that President Joko Widodo, or Jokowi, who entered office last October, would expand protection of religious minorities. At Indonesia's largest Muslim organisation, Nahdlatul Ulama, he called this week for "moderate, tolerant, peaceful and progressive Islam". But Jokowi has said nothing in support of personal religious freedom. Nor has he annulled the decrees by the government of Mr Yudhoyono, his predecessor. ■



Ahmadi: always under threat

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the outside in

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# Banyan | The 70-year itch

America struggles to maintain its credibility as the dominant power in the Asia-Pacific



**S**TILL on crutches after a cycling accident, and with less good news to report than he must have hoped when his speech to a university in Singapore was scheduled, John Kerry, America's secretary of state, was this week a study in embattled optimism. Ministers from the 12 countries, including his own and Singapore, which are negotiating a much-vaunted trade agreement, the Trans-Pacific Partnership (TPP), had just failed to clinch an expected deal. And China was refusing even to discuss its controversial island-building in the South China Sea at a regional summit in the Malaysian capital, Kuala Lumpur. Mr Kerry's speech was defiantly upbeat. But America's prestige in the Asia-Pacific has been dented of late. On the 70th anniversary on August 15th of Japan's surrender and the end of the second world war, the American-led order in place since then looks rather brittle.

America itself has turned the TPP into the gauge by which its leadership in the region is measured. Officials and politicians from President Barack Obama down have portrayed it as the most important aspect of America's "pivot" or "rebalancing" to the Asia-Pacific, and of its determination to help set the rules there rather than let China write them. Mr Kerry spoke positively of the progress made at the TPP talks in Hawaii, conceding only that "there remain details to be hashed out." Ministers at the talks claimed that the deal was "98%" done. But the devil is in those details, and in any complex negotiation, the last bit is the hardest.

What appear to be the main remaining bones of contention are varied and tricky. Canada, where an election has just been called for October, does not want to open up its market for dairy products—a priority for New Zealand, one of TPP's originators a decade ago. Liberalising Japan's agricultural market, notably for rice, remains acutely sensitive politically. Mexico objects to the amount of content from countries not in the TPP that Japan wants allowed into its exports of lorries. America protects its sugar producers. And it wants its pharmaceutical firms to enjoy 12 years of patent protection on new biologic drugs, which most of the other 11 countries find several years too long.

Yet hopes had been high that the Hawaii talks might bring this marathon negotiation to the finishing line. They were the first between ministers since the American Congress narrowly voted to give the president "fast-track" Trade Promotion Authority (TPA),

meaning that Congress could no longer unpick a trade agreement clause by clause, having to approve or reject it as a whole. Without TPA, other countries had been unwilling to make their best offers. Now, however, some speculate that, in the intense haggling to secure passage of TPA through Congress, the administration made promises that have hamstrung its negotiators. Another reason for believing the Hawaii round might be crucial was the pressure of the American political calendar. The administration has to give Congress at least 90 days' notice before signing a trade agreement. So time is already running out if TPP is to be sealed before becoming embroiled in next year's presidential election campaign. Even some of the most optimistic TPP supporters think a deal may now not happen until 2017 at the earliest.

After losing one battle in economic diplomacy to China by failing to persuade some close allies to reject China's invitation to join a new Asian Infrastructure Investment Bank, America needs the TPP. Without an economic leg, other aspects of America's rebalancing towards Asia, such as its military role, would become even more important. Many countries in the region are alarmed by what they see as an assertive, bullying China. They welcome America's military might, and its willingness to project it across Asia. But China's frenzied construction spree in the South China Sea presents America with a dilemma, even if, as China's foreign minister said this week, the reclamation has now ended. America says it takes no position on the many overlapping territorial disputes there, the most active of which pit China against the Philippines and Vietnam; and it insists on asserting the "freedom of navigation" including of its navy and air force. Under the law of the sea, the artificial islands China has built on rocks and reefs that are submerged at high tide have no territorial waters.

Yet China is behaving as if they do—and so, perversely, is America. China insists the series of bilateral disputes in the South China Sea is none of America's business and is not a topic for discussion at regional forums such as a 27-country one just hosted by the Association of South-East Asian Nations (ASEAN) in Kuala Lumpur. America, of course, disagrees, and has the backing of much of ASEAN for that. But it knows that if it does start testing Chinese resolve by sailing into or flying over China's notional territorial waters, it could soon be seen as reckless and provocative, and find its regional support evaporate. So America's inaction makes China's new facts in the water look even more permanent and fosters the notion of relative American decline.

## A TiP-ping point

That impression is heightened by the sense that America is less strident than it was in upholding its values of human rights, freedom and democracy. Cynics have always suspected that these ideals were subject to political exigencies. Last month they pointed to new evidence of this when the State Department promoted Malaysia from the bottom tier of countries listed in its annual Trafficking in Persons (TiP) report. It insisted this was because Malaysia was indeed cracking down on traffickers. Most Malaysians (and Thais, whose country was denied a similar upgrade) saw it as political: under American law a bottom-tier ranking would have meant that Malaysia would have to be excluded from TPP. The perception that TPP is so important to America to lead it to such distortions is damaging. It makes it look as if "the stable, transparent and rules-based" order Mr Kerry said America was promoting 70 years on from the war is one where America not only sets the rules, but twists them when they get in the way. ■



### Beidaihe summit

## Silent waves

BEIDAIHE

**China's leaders take to the beach to ponder an unsettled economy**

**I**N THE dog days of August, Beidaihe is a sea resort unlike any other. Swimmers, waddling through the streets with flotation rings around their waists, pause at road crossings as paramilitary police, in tight single-file with ramrod straight backs, march past. Visitors entering town are stopped at checkpoints. Cars require special certification. And tourists know their fun can only go so far: just beyond the westernmost public beach, guards stop anyone approaching a tree-lined boulevard leading to villas where very important people are, apparently, discussing very important matters.

Exactly who these people are is a secret. China's leaders—President Xi Jinping; the prime minister, Li Keqiang; ministers, provincial bosses and retired senior officials—are probably all now at the resort on Bohai Bay, two hours from Beijing by high-speed train. But ordinary citizens will not find out. Since the earliest years of Mao's rule, the government has never published a list of attendees at these annual conclaves.

Warm breezes and shaded gardens are thought conducive to debates about policy. "Top leaders have the luxury of time to discuss serious issues," says Wu Jinglian, an economist who attended Beidaihe meetings in the 1980s. Yet state media will not confirm that the gathering—informally known as the "summer summit"—has taken place, let alone what was on the agenda. In a political system short on transparency, this is one of the darkest corners.

Despite the opacity, there are indications that this year's Beidaihe summit is unusually important. Normally the meetings start in the second week of August and run for seven days or so. This year they started a week early and may span 13 days, according to reports in overseas Chinese media. Local shop-owners and hoteliers say the police presence seems larger, as do the convoys of black sedans with tinted windows cruising to the guarded villas.

There is plenty to debate this year. Officially, growth is in line with the government's target of "about 7%". That is probably a slight embellishment, and in any case the data belie the economy's fragility. Were it not for an unsustainable boom in financial services, resulting from a stockmarket bubble that has now popped, growth would have been a fair bit lower. Regulators' hapless rush to rescue the stockmarket has cast doubt on their competence in managing an increasingly complex economy. Meanwhile, the transition from investment-led growth to a consumption-driven model, though welcome, is causing serious pain in parts of the country. In nominal terms, the economy of Shanxi province in the north—the heart of coal country—actually shrank by 4.7% in the first half of the year as energy demand slowed sharply.

This is putting pressure on the government to do more to prop up growth. In the days before the Beidaihe gathering, rumours swirled that officials were prepar-

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#### 38 Ill-drained cities

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ing a big, new stimulus package. That would be dangerous. China is still labouring under debts stemming from a spending spree launched in late 2008; total debt is now about 250% of GDP. It would also damage Mr Xi's image as a leader who is willing to tolerate short-term pain to build a better future for the country.

Now halfway through his first five-year term, Mr Xi is also facing calls for progress on his promised reforms, even if that causes discomfort. Early in his tenure he vowed to let market forces play a "decisive role" in allocating resources. Moves to free interest rates and ease capital controls have helped. However, liberal economists are ➤

### Beiwatch

Selected events at Beidaihe



**Late 19th century** Beidaihe established as a summer resort for wealthy Chinese and foreign diplomats

**1954** Party leadership launches annual summer summits at Beidaihe

Mao Zedong pens a poem in praise of the resort

**1958** During a stay, Mao decides to shell Jinmen Island, a Kuomintang base close to the Chinese mainland

**1966-76** Cultural Revolution causes party leadership to halt summer meetings

**1971** Lin Biao, a marshal who helped found the People's Republic of China, plans his defection at a villa in Beidaihe

**1974-75** George H. W. Bush holidays several times at the resort during his time as chief of the US Liaison Office in China

**1992** Deng Xiaoping pays his last visit

**2000** CBS journalist Mike Wallace interviews President Jiang Zemin in Beidaihe

**2003** President Hu Jintao cancels Beidaihe meetings due to a SARS epidemic

**2005** President Hu Jintao meets Lu Zhengcao, a former PLA general aged 101

**2014** Erection of 18.8-metre-high tablet with the words "Chinese dream" and "Core socialist values" inscribed upon it

Source: *The Economist*

frustrated by a lack of progress in reducing the power of inefficient state-owned companies and strengthening the fiscal discipline of local governments. "Financial risks will continue to build up," says Tao Ran of Renmin University.

Beyond the immediate challenge of balancing growth and reform, leaders at Beidaihe will mull over their 13th five-year economic plan. An outline will be unveiled at a Communist Party plenum in October. China's earlier plan focused on promoting domestic consumption. Advisers say this one will highlight innovation—a fraught topic, because shrinking the state to create space for entrepreneurs has to be part of the mix.

The new plan will represent a milestone, even if the party-controlled media will avoid saying why. The Soviet Union, the intellectual forebear of China's five-year plans, did not survive to see its 13th plan to completion. China's party now has a chance to set a new communist record. That would mean a lot to Mr Xi, who has devoted much of his effort so far to making sure that China does not follow the Soviet path: hence his efforts to strengthen the party by cleansing it of rampant corruption and inspiring it with pithy catchphrases (a towering golden monument to his favourite one, the "Chinese dream", was erected in Beidaihe last year). The meetings in Beidaihe are a sign of Mr Xi's grip on power. His predecessor, Hu Jintao, appeared less keen on the summer summits, fearing they would give retired party elders an opportunity to wield influence. In 2003, after an outbreak of SARS, he declared they would no longer take place, though they continued less formally.

Mr Xi, apparently, has little such concern. Last year official media reported on a visit by his wife, Peng Liyuan, to a summer camp for AIDS orphans in Beidaihe—indirect confirmation that Mr Xi himself was at the beach and feeling confident enough about it to put his family on display. He enters this year's meetings with an even stronger hand, having just laid corruption charges against Guo Boxiong, once the most senior ranking official in the army. Many observers had expected the anti-graft campaign to peter out by now. Instead, there are rumours that Mr Xi is eyeing an even bigger target, perhaps taking on the coterie of officials once close to Jiang Zemin, a former party chief.

Mr Xi's strength could well boost the importance of Beidaihe meetings. This year they might resemble those of the 1950s, which Mao used to cut through bureaucracy. Scott Kennedy of the Centre for Strategic and International Studies, an American think-tank, says the meetings will allow Mr Xi "to make sure everyone is on the exact same page as him."

The Maoist past is still omnipresent in Beidaihe. Its streets are full of sanatoriums

for government agencies and state-run companies. The People's Daily, the banking regulatory commission and the armed forces' General Armament Department are among the dozens that maintain resorts, weathered by years in the humid torpor. Residents keep their noses out of the murky politics around them. "They don't tell us who's here," says Mr Lou, a shopkeeper. "And we don't ask." ■

tims, calling the charity drive an attempt to cover up officials' failings.

That disaster focused a bit more government attention on the problem. But improvements have not been obvious. In June a downpour in Shanghai inspired Uber, a taxi service, to change the images on its app for the city from cars to boats. Most drains are still unable to cope with even a moderate storm of a kind that can be expected once a year or so. Cheng Xiaotao of the China Institute of Water Resources and Hydropower Research in Beijing says that between 2006 and last year the number of cities with inadequate flood-control measures rose from 170 to 284. He blames a failure to build drains fast enough to cope with urban sprawl.

Fixing this will be costly and disruptive: expanded drains have to compete for underground space with other necessities such as power lines, heating pipes and internet cables. But the government is eager to boost economic growth by spending more money on public-works projects. On July 28th the prime minister, Li Keqiang, said that poor underground pipes were a "big dragging force" on urbanisation. He called for greater effort to improve them. Ten cities have been chosen as pioneers: they are due to spend more than 35 billion yuan over the next three years on upgrades of all kinds of pipes, including drainage ones. In Beijing there are plans to build underground storage tanks to capture rainwater—each at a cost of about 100m yuan.

Another approach was suggested by President Xi Jinping in 2013, when he said cities should be built like "sponges": capable of absorbing rainwater rather than causing it all to pour into drains and overwhelm them. This year a "sponge city" pilot programme was rolled out in 16 cities. The idea is to enable them to soak up 70% of rainwater; methods include the use of permeable material in paving and the creation of storage ponds and areas of wetland. It is intended that water thus stored could be used for purposes such as street-cleaning and firefighting. Many of the cities affected by flooding—including Beijing—are desperately short of water. ■

### Urban floods

## At sea in the city

BEIJING

### When building cities, someone forgot the drains

MANY Chinese cities offer "sea views", but of a kind that arouse fear and anger rather than raise spirits. The term is often used scornfully by Chinese media to describe the floods that render roads impassable and sometimes kill people during heavy downpours. They are largely the product of woefully inadequate drains. Urban areas have more than doubled in size since 1998, but officials have scrimped on arrangements for keeping them dry.

During the summer rainy season, the complaints of urban residents swell as fast as the foul water in the streets. They are targeted at the government. Even the state-controlled press joins in. On July 28th *China Youth Daily* said it was "beyond understanding" that city planners should give priority to high-profile "vanity projects" while ignoring the need for storm drains and the like. "Money doesn't seem to be a problem," it said. Residents of Beijing still harbour bitter memories of flooding in 2012 that killed 79 people (mostly outside the urban core) and caused 12 billion yuan (\$1.9 billion) in damage. Much of the mayhem was caused by the flooding of underpasses with inadequate drains. Beijingers vented their fury online when the city government tried to raise money to help vic-



City rapids



## Public services in the Arab world

### Do-it-yourself

CAIRO

#### The region's people are turning to the private sector for the bare necessities

THE Lebanese have had a stinky summer since rubbish collection ground to a halt last month. Several days into the crisis, caused by an overflowing landfill site shutting its gates, many took matters into their own hands. Some burned their refuse. Others dumped it outside the parliament building. Twenty-five years after their civil war ended, the Lebanese have got used to doing things for themselves: hooking up to diesel generators and calling out a water tanker when the taps run dry. Yet the country is no longer an anomaly. Across the region Arabs are turning to the private sector and NGOs for basic services that faltering states do not provide.

There are extreme cases like Syria where war has destroyed services that, as in much of the region, were almost universal albeit not of high quality. Today the UN says at least a quarter of the country's schools have been destroyed and only 43% of hospitals are fully operating. Yemen, the region's poorest state, has long been dependent on foreign aid, but the latest outbreak of war is finishing off what little public infrastructure it had.

Decades of neglect are to blame, too. Egypt is a glaring case. Take education: although public spending on schooling has risen in nominal terms, it dropped from 5.1% of GDP in 2003 to 3.6% in 2013, according to government figures. The World Eco-

nomic Forum ranks Egypt's primary schools as the third worst in the world. Too many students cram into dirty classrooms. Parents say teachers often do not bother to turn up, or demand bribes to give the children a passing grade when they do.

Little wonder that tutoring is almost as widespread as school attendance: up to 70% of secondary school students by some estimates. Tasnim, a housewife, says she and her husband, a bank teller, spend almost 20% of their annual income of 200,000 Egyptian pounds (\$25,500) to send their two sons to a private primary school. More parents are opting for home schooling, a new idea to the region.

A group of Egyptian doctors recently showed why Arabs have long shunned government hospitals. They posted photos of cats in wards and faeces on the floors of ward bathrooms. Other countries may not plumb such unhygienic depths, but even in relatively wealthy Tunisia and Saudi Arabia locals have long paid to see private doctors when sick.

Over in Iraq, locals are protesting about power and water cuts as the summer temperatures soar to 50°C. Generators are now as ubiquitous in Baghdad as in Beirut despite the country's oil wealth. In equally well-endowed Saudi Arabia an official earlier this year warned that the days of 24-hour power will end if consumption con-

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tinues to rise at today's rate. Access to services is worse outside big cities or in informal areas that have built up around them. In Morocco, a relative success story, almost half of rural inhabitants said they didn't have access to running water in 2012. Further shortages loom since the Arab world includes 14 of the 20 most water-stressed countries; Jordan, which is struggling under the weight of Syrian refugees, is among the worst-off.

It wasn't always this way. After independence, much of the Arab world laid on services for all its citizens; doing so was a priority for socialists such as Gamal Abdel Nasser in Egypt and Syria's Hafez al-Assad. But the regimes were corrupt and often incompetent. Their sluggish economies did not generate enough cash. As the region's populations grew rapidly, few governments could keep up.

#### Abuse of power

One problem is that many of them do not levy income tax. Instead, authoritarian states tend to treat services as a way of currying favour. Gulf royals offer liberal pay rises and grants to citizens on the understanding they will not hanker after a vote. Wars and turmoil have set things back, too. Today the average Arab sees the bureaucracy as a problem to navigate rather than a source of help.

Another woe is growing inequality: shoddy services are left for the poor while the rich pay to go private. The UN says Iraq's scarcity of public services is feeding corruption as Iraqis pay bribes to jump the queue for access. But the quality of private services is patchy even for those who can afford it. And often there is no incentive to improve things. Lebanon's generator businesses lobby against better state electricity. ►

In many places, those running private services are the same people as, or closely connected to, those in government.

As security worsens, people increasingly rely on private policing; in turn further undermining the state. A Syrian food manufacturer pays local rebels to guard his factories. Egypt's increasing reliance on informal justice rather than overburdened courts embeds discrimination. Minorities, such as the Copts, often lose legal protection as a result. Even when a court rules on something, police often have to be paid to carry out its orders. Religious groups prosper, too. In Lebanon Hizbullah runs services for the poorest of the Shia commu-

nities in its southern stronghold. The Muslim Brotherhood for years did the same in Egypt and elsewhere.

Since the Arab spring, rulers are paying more heed to keeping their citizens happy, if only because they fear for their own tenure. Egypt's Abdel-Fattah al-Sisi has created the post of minister for urban renewal and is promising to extend services to informal settlements. The jihadists of Islamic State (is) have taken note too. Is has tried harder than other factions to keep water, power and telecoms going. Syrians living under their brutal rule say that at least there are basic services in the "caliphate"—unlike in areas held by other militias. ■

Jewish kingdom. Israel has faced this kind of threat before: in the early 1980s a group of settlers placed explosives in cars of Palestinian mayors. An offshoot of the same group planned to blow up Palestinian businesses and destroy the much-revered mosques on the Temple Mount in Jerusalem.

One of the three interned Israelis is suspected of connection to the Douma attack and another, Meir Ettinger, is the alleged leader of the Revolt. Whether they represent a new wave of messianism or are just leaders of a small group of impressionable youths, it is hard to ignore the permissive culture in which they have operated. Senior police and soldiers have complained for years that their hands are tied by political and legal constraints in dealing with violence and incitement to violence by settlers. When charged, suspects have been let off by courts, or given lenient sentences.

Mr Netanyahu's record on all this is mixed. He immediately condemned the murder and visited the Dawabsheh family in hospital. But he recently promoted one of his political lieutenants, who in the past leaked word of police raids to radical settlers. Ministers and coalition members of parliament have expressed support in recent weeks for violent demonstrations against the demolition of homes deemed illegal in the Beit El settlement. The politicians have not been sanctioned for it, and the prime minister has authorised the building of 300 new housing units in Beit El in compensation.

On election day in March Mr Netanyahu warned of Israeli Arabs "flocking to the ballot boxes." He has since expressed regret for his words. Now he seems to be cracking down hard on extreme settlers. So as well as being loathed by Palestinians, he must contend with radical Jews, who now see him as a traitor to the cause. ■

## Israel and the West Bank

# Cracking down on the settlers

JERUSALEM

### Binyamin Netanyahu's double game

IT TOOK the death of a baby to push the Israeli government to get tough on Jewish extremism. Eighteen-month-old Ali Dawabsheh was killed on July 31st in an arson attack carried out by Jewish vigilantes in the Palestinian village of Douma in the West Bank. Two days later the Israeli security cabinet approved "special measures" against Jewish terrorism suspects. These include the detention without trial of suspected extremists, a holdover from the pre-1948 British Mandate; three suspects were swiftly interned for six months. Government sources say that the security services have also been given the power to use a limited degree of physical coercion in interrogation, something permitted by Israeli courts in "ticking bomb" cases.

This is not the first time the Israeli government has sanctioned the extreme measures that are routinely used against Palestinian groups for Jewish militants. For instance, a number of extremists were rounded up without trial on the eve of Israel's withdrawal from Gaza in 2005.

In recent years there have been dozens of arson attacks, though not fatal ones, on Palestinian homes, mosques and churches. These did not lead Binyamin Netanyahu's cabinet to unleash the full weight of the security services, until the toddler was burnt alive and his brother and parents critically injured. Human-rights groups and law enforcement officials will feel vindicated: they have long accused the government of pandering to the Jewish settlers on the West Bank.

There are two views in the security establishment about how much of a threat Jewish extremists now pose. One sees the recent attack as just the latest, albeit by far

the nastiest, "price tag" reprisal, a term used to describe attacks carried out by extreme settlers in retaliation for the dismantling of those outposts in the West Bank that are considered illegal by the Israeli authorities. (All settlements there are considered illegal under international law.)

A darker view is that a new and fiercer strain of Jewish messianism is emerging. Shin Bet, the internal security service, believes the arsonists were part of a group named the Revolt. This group supposedly wants to foment a wider religious conflict between Israelis and Palestinians, and eventually cause the downfall of the elected government and its replacement by a



Requiem for a toddler

## Yemen's civil war

# Raising the stakes

## The Saudi-led coalition's commitment of ground forces is a risky gamble

THE civil war in Yemen, in which a Saudi-backed coalition has been battling Iranian-supported Houthi rebels, took a new twist this week. On August 2nd the coalition landed at least one armoured brigade at the southern port of Aden. According to reports, the 3,000-strong combined Saudi and UAE force, equipped with French Leclerc main battle tanks, Russian BMD-3 infantry fighting vehicles and American mine-resistant troop carriers, then set off for the Houthi-held military base at al-Anad, some 40 miles (65km) to the north.

Two days later, bombarded from the air and heavily outgunned, the Houthis had fled into the surrounding hills and pro-government forces were back in charge of the strategically important base from which America had until recently flown drone strikes against al-Qaeda in the Arabian Peninsula (AQAP). The fall of al-Anad follows the expulsion of Houthi rebels from Aden two weeks earlier. Al-Anad is the biggest air base in Yemen and, once repaired, can be used by Saudi and UAE transport aircraft and fighter-bombers to widen the scope of the offensive and drive the Houthis out of much of the south.

Despite official claims that the Saudi and UAE forces are only there to help train local anti-Houthi fighters, there is little doubt that the high-tech weaponry is being operated by professionals. They are being helped by tribal fighters who support the internationally-backed government that the Houthis drove out. They know the territory and can hold ground once it has been taken. But it now looks as if the coalition has decided that only well-equipped regular forces and commandos can bring the campaign against the Houthis to a conclusion.

This is both a major escalation and a military gamble. While the Houthi insurgents have nowhere near the quantity or quality of weaponry now being deployed against them, the history of conventional foreign forces fighting in conditions of chaotic irregular warfare is not encouraging. Early gains are all too often followed by military stalemate and quagmire.

Another unknown is how the Houthis' Iranian backers will respond if their clients are seen to be facing defeat. Iran, whose involvement is anyway limited, can do little to resupply the Houthis, whose airports have been bombed and ports blockaded. Besides, it is already fully stretched in its

## Egypt

# A bigger, better Suez Canal

CAIRO

## But is it necessary?

**A**S a feat of brawn it is impressive. In just one year, a third of the time engineers wanted, Egypt has shifted enough sand to allow more and bigger ships to pass more swiftly through a crucial artery of global trade. As a political stunt it is big, too. Since coming to power in July 2013 President Abdel-Fattah al-Sisi has offered an unspoken bargain: in exchange for shrinking political freedoms he would bring stability and progress. Small wonder his government declared a holiday for the lavish opening on August 6th of the New Suez Canal, as it dubs its project; to bolster pride in the achievement, its religious-affairs ministry instructed mosque sermons to cite the Prophet Muhammad's digging of a trench to defend Medina from attackers.

In economic terms, however, the expansion of the Suez Canal is a questionable endeavour at a time when the government is struggling to provide adequate services to its citizens. True, the channel is a significant source of revenue. Last year it pumped \$5.5 billion into an economy weakened by years of turmoil. But both this sum and the number of ships transiting the canal have been flat since 2008.

Egyptian officials claim that the \$8.2

billion project, which expands capacity to 97 ships per day, will more than double annual revenues to some \$13.5 billion by 2023. That, however, would require yearly growth of some 10%, a rosy projection given that in the entire period from 2000 to 2013 world seaborne shipping grew by just 37%, according to UNCTAD. A recent forecast from the IMF suggests that in the decade up to 2016 the annual rate of growth for global merchandise trade will have averaged 3.4%.

Before its expansion the Suez Canal was operating below its capacity of 78 vessels a day. It could already handle all ships except the very biggest oil tankers. By the estimate of one Egyptian economist, the maximum growth of revenue that the new dredging now allows from the passage of slightly bigger oil tankers amounts to just \$200m a year. Boosters say more ships will flock to the canal because new bypasses permit faster two-way traffic. Economists counter that for ships that already save as much as ten days at sea by using Suez instead of sailing around Africa, a few hours less transit time through the canal will make little difference.

One clear plus for the debt-strapped Egyptian government is that the project is domestically financed: thousands of Egyptians last year snapped up nearly \$9 billion in special investment certificates paying 12% interest. The downside for punters is that they are in local currency, in a country where inflation is currently running at over 10%. But there may be another long-term plus. Egypt's government plans to turn the whole canal zone into a giant logistical, ship-servicing and manufacturing hub. If that ambition comes true, mosque-goers will truly take heart from the government's scripted sermon which divines "useful lessons from the Prophet's example of innovative leadership, among them the unity and continuity of command, mutual love between the commander and his soldiers, and wariness of naysayers."



fight against Islamic State in Iraq and Syria; this is not the moment to turn a small-scale proxy war into an open conflict with the Gulf Arabs.

Even if the Iranians show restraint, the Saudi coalition could get itself into trouble in other ways. It has made some unlikely allies in its effort to crush the Houthis in the form of al-Qaeda and the Muslim Brotherhood, which is treated with suspicion at

home. Friends like that also call into question the continued support of the Americans, who consider AQAP the most deadly al-Qaeda franchise, and Egypt's President, Abdel-Fattah al-Sisi, who regards the Brotherhood as a much greater threat than the Houthis. With the humanitarian situation in Yemen also increasingly desperate, the chances of anyone emerging a winner from the conflict are remote. ■



### South Africa and its courts

## Judges uncowed

JOHANNESBURG

**The judiciary has refused so far to toe the government's line**

WHEN Jacob Zuma named Mogoeng Mogoeng as chief justice of the Constitutional Court, ignoring controversy stirred up by his lack of experience and conservative Christian beliefs, many feared the president had planted a yes-man atop one of South Africa's most revered institutions. This newspaper described Mr Mogoeng's appointment in 2011 as "not encouraging" in view of existing tensions between the ruling African National Congress (ANC) and the courts. Instead, unlike other appointees of Mr Zuma, Mr Mogoeng appears to have defied the critics. He is proving to be a feisty defender of judicial independence at a time when the courts sorely need a champion.

South Africa's police and national prosecuting authority are widely considered compromised by political interference. By contrast the judiciary, in particular the Constitutional Court, is still seen as squeaky clean and independent. Last month, however, Mr Mogoeng took the highly unusual step of holding a news conference, flanked by 26 other senior judges, to criticise the government for interfering in the judicial process. In a statement he spelt out his view of the role of the courts and the law under South Africa's progressive post-apartheid constitution. "The rule of law is the cornerstone of our constitutional democracy," he declared. "As a nation, we ignore it at our peril." He also

### Saving the rhino

## A dilemma of horns

### Growing efforts to reduce rhino poaching

**P**OACHING rhinos is a grisly business. Rather than attract attention with gunfire, many poachers prefer to use a tranquilliser dart to immobilise the rhino and then hack off a chunk of its face to pull out the horn. The beast usually dies of blood loss or suffocation within hours. But the work is lucrative; booming demand in China and Vietnam has pushed the price of rhino horn over \$65,000 a kilo in some markets.

Last year 1,215 rhinos were poached in South Africa alone, up from 13 in 2007. The best way to turn the tide is to reduce demand, some conservationists reckon. In 2012 WildAid of San Francisco began campaigns to convince Chinese and Vietnamese people that consuming ground rhino horn is a cruel and ineffective way to relieve a hangover, break a fever, kindle sexual desire, or heal disease; in a survey in Hanoi and Ho Chi Minh City in 2013, 37.5% of respondents said that rhino horn can help treat cancer.

But since rhino poaching isn't slowing, horn "unmarketing" must become more aggressive. A cunning approach has been devised by a South African firm, Rhino Rescue Project (RRP). For about \$600 per beast, RRP drills two holes into a sedated rhino's horn and pumps in a secret cocktail of toxins into its fibres. Consume powder from that horn and expect a migraine, nausea, vomiting, diarrhoea, or, after a big serving, permanent twitching due to nerve damage, says RRP's co-founder, Lorinda Hern. Signs warn of the dangers of illegal horn. RRP has treated more than 300 rhinos in South Africa since 2010. Since the horn is dead material, the firm says there is no danger to the animal.

A private reserve near the northern South African town of Phalaborwa paid

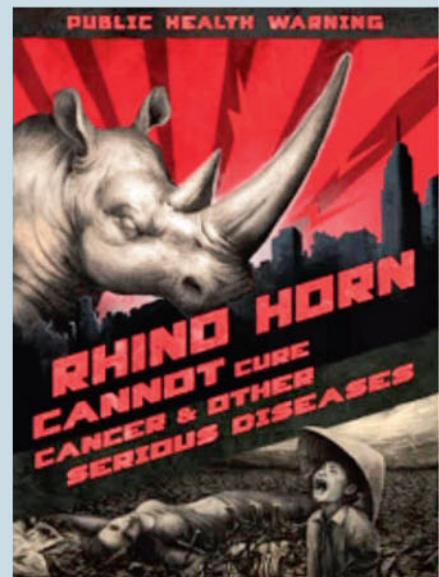
asked that a meeting with Mr Zuma, which he is due to hold on August 27th, discuss "the dangers of the repeated and unfounded criticism" of the judiciary.

The ANC's contempt of the courts, illustrated by the debacle over the visit of Sudan's president, Omar al-Bashir, is especially alarming. When Mr Bashir attended an African Union summit in Johannesburg in June, the government ignored a High Court order and let him leave South Africa despite a warrant for his arrest issued by the International Criminal Court in The Hague. The international outcry was followed by numerous barbs from senior ANC politicians aimed at South Africa's

RRP to treat about 30 rhinos. "We're trying anything," says one of the owners. Locals were invited to watch so word would spread. Poacher incursions dropped from about two a month to just four in two years, with no losses.

An American startup, Pembient, offers a different way. Next year it will begin selling synthetic rhino horn for \$7,000 a kilo. This will undercut the market for the real stuff, says CEO Matthew Markus. Others, though, fear that advertising synthetics may boost sales of real horn.

Those eager to trash rhino horn's market image face another obstacle. Many South African officials want to see a legal trade in non-poached horn, so that government stockpiles can be sold. It is perhaps telling that the South African government has not hired RRP.



Just say no

own judiciary. Blade Nzimande, a cabinet minister and head of the ANC-allied South African Communist Party, accused it of "overreaching" and encroaching on the territory of the executive. Gwede Mantashe, the ANC's secretary-general, accused some sections of the judiciary of wanting to "create chaos for governance".

Another concern is over judicial appointments: certain lawyers, worthy of promotion but suspected of being too independent, are being overlooked by the body responsible for vetting candidates. The bench is pushing back against the ANC; but the resilience of South Africa's courts cannot be taken for granted. ■



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**Post-post-nationalist Germany**

## Strict order

BERLIN AND KNOSSOS

**Europe fears German nationalism. Germany says it is simply enforcing the rules**

**E**VERY summer, southern Europe's tourist spots look forward to the arrival of planeloads of Germans on holiday. But this year encounters between Germans and their hosts have become loaded. In Knossos, in Crete, Giorgios Papadopoulos, a tour guide, interrupts his explanation of Minoan matriarchy to ask a visitor from Berlin about the relationship between Germany's finance minister and its chancellor: "What's up between Schäuble and Merkel?" Like many Europeans after July's bitter bail-out negotiations over Greece, he has become intrigued by the internal workings of a country he sees as trying to "dominate" the European Union.

To Germans such outside fascination with their domestic politics is new, and it makes them uncomfortable. America, as a superpower, may be used to foreign scrutiny. But the rise of "Berlinology" frightens Germans. They have no appetite for becoming Europe's "leader" (the German word is *Führer*). Given their past, Germans do not want to seem domineering.

Yet they often do. The anxiety stems from a summit on July 13th, when Germany led euro-zone countries in forcing Greece to accept tougher reforms and more austerity in exchange for a third bail-out—even though Greeks had just rejected them in a referendum. Wolfgang Schäuble, the finance minister, suggested a "temporary" Greek exit from the euro. Both he and An-

gela Merkel, the chancellor, ruled out a haircut of Greek debt, claiming it would violate euro-zone rules. Germany was thus seen to use the power of its purse to force its vision on weaker members.

The reaction was swift. Op-eds decried German bullheadedness. On social media, the hashtags #ThisIsACoup and #BoycottGermany began trending, while others revived accusations of a "Fourth Reich". It was a "public diplomacy disaster," thinks Thorsten Benner, director of the Global Public Policy Institute (GSSI), a Berlin think-tank. "Germany is seen as the harsh, heartless hegemon of the euro zone, ready to bully small countries into submission."

Mr Benner's worries may be overblown: not all foreigners fear German strength. The negative view is sharpest among an odd alliance of Anglo-American economists and European leftists sympathetic to Greece's Syriza party. France, however sceptical of austerity, wants to preserve its position alongside Germany in the EU's "tandem". The Spanish and Portuguese governments took Germany's side regarding austerity, having survived it themselves. And northern and eastern Europe are in many ways more Germanic than the Germans. The Baltic states, Slovakia and Slovenia have had to cut their own budgets sharply, and think the Greeks should too. Threatened by Russian intervention in Ukraine, even Poland has

yearned lately for a more assertive German role. Many Britons are hoping for Mrs Merkel's help in reforming the EU. In short, there is no crisis in Europe that can be solved without Germany.

Nonetheless, Berlin's ministries react to any suggestion of German hegemony with vehement head-shaking. Since the 1950s "all the EU's institutions were designed to assure that no country could dominate", notes one official defensively—especially not Germany. Germans observe that Mrs Merkel must constantly compromise with her counterparts—even on July 13th, when François Hollande, France's president, made her forswear Grexit to reach a deal. Their mighty Bundesbank gets the same single vote on the European Central Bank's governing council as every other euro-zone country, and often fails to impose its will. To its own citizens Germany is, at best, first among equals.

To many Germans this situation seems familiar. It is the same dilemma the historian Ludwig Dehio described after the country was first unified in 1871. Germany became "too big for a balance of power in Europe and too small for hegemony," he wrote; "not powerful enough to impose its will on the continent, but at the same time powerful enough to be perceived as a threat by other powers." After reunification in 1990, German historians worried that this pattern could repeat itself.

If it did not, it was because Germany under Chancellor Helmut Kohl still thought of itself as it had since its resurrection after the second world war: as a "post-national" society. Thomas Mann articulated this attitude in a famous lecture in 1953, arguing that Germany's young people must "dispel the mistrust" by coming out "not for a German Europe, but for a European Germany". In the 1980s Hans-Die-►

► trich Genscher, then foreign minister, argued that (West) Germany had no national interest other than the EU's.

What has changed recently is that this “post-national mentality” has gone, worries Jürgen Habermas, a philosopher. During the July summit, the country “gambled away in one night all the political capital that a better Germany had accumulated in half a century,” he thinks. Many on the centre-left fear that Germany is now “post-post-nationalist”. Joschka Fischer, foreign minister from 1998-2005, laments that “from now on Germany will primarily pursue its national interests, just like everybody else.”

Many Germans on the centre-right deny such a turn to realpolitik. They think they are just insisting on following common EU rules, and find nothing nationalist about that. Indeed, it implies that Germany and other countries should cede more sovereignty. Mr Schäuble, the German most vilified in Greece, has argued since 1994 that some member states should

form a federal “core”. He now advocates giving the euro zone a common finance minister and budget.

But others in his camp, the Christian Democrats (CDU), assert a more naked self-interest. Each time the party submits a Greek bail-out to the Bundestag, the number of defectors increases; one in five voted against the July compromise. Bild, Germany's largest tabloid, stokes German resentment that foreigners are exploiting their past guilt to “blackmail” them.

Germany is not imposing its will on Europe. If it were able to do so, Greece would probably no longer be in the euro zone. The question is just how happy Europe ought to be about this. Germany is back in its old dilemma: too weak for hegemony, too large for balance. No other country can think of imposing solutions, but Europe will not allow Germany to do so either. That may mean that the EU's biggest challenges—from immigration to preventing a British exit and fixing the euro—will continue to go unmet. ■

## Digital liberty in Germany

# Wiki treason

BERLIN

**State secrets and press freedom in the internet era**

**I**N FEBRUARY and April the German blog Netzpolitik.org published two posts with leaked information about the plans of Germany's secret service to expand its digital-surveillance budget. They received little attention, in part because of a surfeit of German media coverage about government snooping in the aftermath of Edward Snowden's revelations. In the context, Netzpolitik's scoop seemed small.

But on July 24th the blog's publishers, Andre Meister and Markus Beckedahl (pictured), received a letter from Germany's federal prosecutor saying that they and their anonymous sources were being investigated—for treason. This pressed not one, but two German panic buttons: data privacy and press freedom.

Postwar Germany's democracy, many feel, was really born in 1962 with the Spiegel Affair. An article in *Der Spiegel*, a weekly magazine, questioned West Germany's ability to defend itself against a communist attack. The defence minister had its editorial offices raided and several editors arrested. Just 17 years after the end of the Nazi era, Germans took to the streets in spontaneous rage. The defence minister resigned, the editors were freed and German society proudly declared press freedom sacrosanct.

Netzpolitik is no Spiegel Affair. Nonetheless, news of the investigation brought thousands of Germans on to the streets.



**“Enemies of the state”, in Merkel pose**

Angela Merkel, the chancellor, and Heiko Maas, the justice minister, distanced themselves from the prosecutor, Harald Range. The case will probably be dropped. But in an August 4th press conference Mr Range attacked Mr Maas for “meddling in the independent judiciary”. Mr Maas quickly fired Mr Range.

It would appear that press freedom has won again. Yet the issue will persist. In the information age both government spying and the ability to publish leaked secrets have expanded enormously. Finding the balance between protecting secrets, and over-reacting with treason charges, will occupy governments for some time. ■

## Poland's Law and Justice party

# Less crazy after all these years

WARSAW

**After eight years out of power, the opposition looks more credible**

**A**NDRZEJ DUDA, who took office as Poland's president on August 6th, says he prizes Poland's relationship with Germany. That marks a welcome change for his right-wing Law and Justice (PiS) party, which is favoured to defeat the governing Civic Platform (PO) in the general election on October 25th.

PiS's previous stint in power, in 2005-2007, was marred by paranoia at home and abroad, particularly the embarrassing anti-German antics of its leader, Jaroslaw Kaczynski. This time Mr Kaczynski is lying low, leaving the spotlight to milder figures. Still, liberals and centrists worry that PiS could harm Polish-German relations and squander the country's painstakingly accumulated credibility in Europe.

There is some cause for concern. In a recent interview with *Rzeczpospolita*, a daily, Mr Duda's adviser on foreign affairs, Krzysztof Szczerski, haughtily set out four “conditions” that Germany must meet to preserve good relations. They included respecting the rights of Poles in Germany, letting Poland take part in the peace talks in Ukraine, dropping opposition to NATO bases in Poland, and relaxing EU climate policy to accommodate the country's reliance on coal. Mr Szczerski harped on the need to be considered “equal partners”.

For Polish liberals, such talk revives the spectre of the resentful religious nationalism that characterised PiS a decade ago. On Poland's far right, cultural battles over gay rights or war guilt still sometimes mix with conspiracy theories about German plots to retake territory lost after the war. Adam Michnik, the veteran editor of *Gazeta Wyborcza*, a liberal daily, says the right suffers from a “combination of an inferiority and superiority complex” that sustains anti-German resentment.

The party insists fears of a breakdown in relations with Germany are unfounded. There is “no revolution ahead”, says Paweł Kowal, who served as deputy foreign minister in Mr Kaczynski's government; the watchword in the party is “realism”. In a speech on August 5th, Mr Duda called Germany a “major partner” that should be “respected”. He promised a more assertive diplomacy towards eastern Europe, but without any sudden changes. If the party embraces such pragmatism, a PiS victory may not cost Poland its credibility. It could even enhance it by giving Polish politics something it has long lacked: two parties responsibly contending for power. ■

Doping in sport

## All that glisters

Suspicious blood-test results are leaked

**W**ITH two weeks until the Athletics World Championships in Beijing, fans of track and field are looking forward to an opportunity to marvel at sporting prowess. But they have just received a reminder that performances that seem too good to be true may be just that.

On August 2nd the *Sunday Times*, a British newspaper, and ARD/WDR, a German broadcaster, released an analysis of leaked results of 12,000 blood tests carried out by the International Association of Athletics Federations (IAAF) from 2001-12. It found that one in seven athletes' tests showed results "highly suggestive of doping" and that a third of medals in endurance events were won by competitors whose tests raised suspicions. Robin Parisotto, a scientist consulted by the news groups, called the most extreme results "downright dangerous" to athletes' health, and said the IAAF had "sat by and let this happen".

The IAAF, whose members will choose a new president in August, has come out swinging. Sebastian Coe, one of the candidates, described the leak as a "declaration of war on my sport". Lamine Diack, the outgoing president, claimed that "behind all this there is a desire to redistribute medals". The IAAF says it runs sport's most rigorous blood tests, notes that it has stripped medals from many athletes and accuses the media of confusing tests that raise red flags (perhaps because of illness or altitude training) for definitive positive results.

The controversy is sure to cast a shadow over the IAAF's signature event later this month. However, fans of Jamaica's Usain Bolt (a likely star in Beijing) can rest easy: all the record-holding sprinter's tests in the database were clean. ■



Lightning fast, squeaky clean



Turkey's fractious politics

## Fighting on two fronts

ANKARA

A caretaker government attacks the Kurds, abroad and at home

**T**WO months ago Selahattin Demirtas, the leader of Turkey's left-wing, pro-Kurdish People's Democratic Party (HDP), was celebrating his party's success in its first-ever national election campaign. The HDP won 13% of the vote and cost the pro-Islamist Justice and Development (AK) party control of parliament. Last week, Mr Demirtas and his fellow HDP deputies sent the government an unusual request: to lift their parliamentary immunity. The previous day Turkey's president, Recep Tayyip Erdogan, a co-founder of AK, had demanded the arrest of parliamentarians with "terrorist links". The HDP wanted to show it had nothing to hide. "We have never supported violence, terrorism or racism," said Mr Demirtas. "We won't bow to pressure and blackmail."

Mr Erdogan's demands are part of a strategy to gain political advantage by marginalising Turkey's Kurds. Last month, when Turkey began bombing Islamic State (IS) and allowing NATO warplanes to use its air bases for attacks, Western allies hoped Mr Erdogan had understood the gravity of the IS threat. But Mr Erdogan has used bombing IS as cover for much heavier air strikes against the Kurdish Workers' Party (PKK) in northern Iraq. Peace talks launched over two years ago have in effect ended. Hundreds of Kurds have been arrested. The PKK, which has fought intermittently for Kurdish autonomy in Turkey for decades, has resumed killing Turkish policemen and soldiers. The PKK's attacks

play into Mr Erdogan's hands; many believe it, too, is escalating the conflict to undermine the HDP's moderates.

Mr Erdogan's goal is to help AK hold on to power. The party's caretaker government seems uninterested in forming a coalition. It has started negotiations with the secular Republican People's Party, but the two parties have little in common, and only two weeks remain before the deadline. If no government is formed by August 23rd, the president could call elections for 90 days later. In the meantime a government involving all parties would run the country. AK, which has ruled alone since 2002, is unlikely to welcome that.

One possibility floated by Mr Erdogan would be a minority AK government. To win a vote of confidence, a Turkish government needs only a majority of MPs present. The hard-line Nationalist Action Party (MHP) could help by staying away; parliamentary arithmetic would then work in AK's favour.

But a new election might not produce the result AK wants. In June's election many conservative Kurds switched from AK to HDP, provoked by AK's increasingly strident tone. Escalating violence in the

**Correction** In *The World* If supplement published last week, the scenario on NATO ("Article of faith", August 1st) included a misleading reference to the number of "Russian-speakers" in Estonia and Latvia. "Russians", broadly defined, make up roughly a quarter of the population in both countries. We also said the NATO Response Force has 13,000 troops; in fact the number has now been raised to 40,000.

► south-east will only strengthen this trend. AK might hope to win votes by tapping into anti-Kurdish sentiment, never far from the surface. Devlet Bahceli, the leader of the MHP, rails against the affluent Turks "sipping whisky in Bosphorus mansions" who voted for HDP. AK's leaders also believe such tactical voting played a part in HDP's success.

Meanwhile, Mr Erdogan's pursuit of political advantage has cost him years of progress towards a settlement with Turkey's Kurds. "Erdogan was in a position to perform miracles on the Kurdish front," laments a Western diplomat. Yet Western friends have been cautious in their criticism, respecting Turkey's right to defend itself against PKK terrorism. Johannes Hahn,

the European Union's commissioner for enlargement, notes only that Turkish action must be "proportionate, targeted and by no means endanger the democratic political dialogue in the country."

The great divide in Turkish politics was once that between the secular army and the Islamist-minded AK. Mr Erdogan's enlistment of the army in his new campaign to crush the Kurds shows that he has bridged this gap. The HDP must now hope that voters will reward transparency over nationalist fervour. "They want to criminalise us, they want to marginalise us," says Ayhan Bilgen, the party's spokesman. "If political parties are involved in violence, we want parliament to investigate it. We are not afraid." ■

The second lesson is that many migrants will take big risks to reach one European country over another. Most of the Jungle's inhabitants have trudged right across Europe, taking advantage of its Schengen passport-free rules, to arrive in Calais. As they slipped through rich countries with an obligation to consider asylum claims, refugees in effect became economic migrants. Asif, an enterprising Afghan who has set up a small grocery shop in the camp, says he has already been granted asylum in Italy. Yet he was unable to find work there, and so he, along with most of his fellow Jungle-dwellers, will continue to seek a brighter future in Britain.

Brussels should take note. Under a new EU proposal to lift the burden from frontline countries, from this autumn asylum-seekers from Syria, Eritrea and Iraq who arrive in Italy or Greece will be relocated to other European countries to have their claims assessed. But the condition of asylum will be an obligation to stay put. None of the migrants your correspondent spoke to had heard of the EU plan. Nor did they seem keen on the idea of a forced move to countries they may not have heard of, even if it comes with a home and benefits attached. One migrant who claims to have been mistreated by Bulgarian police sniffs at the idea of being sent back there: "Why would I want to live in a poor country when I've already left one?" But the EU's plan will only work if such "secondary migration" is kept to a minimum.

For now, the inhabitants of the Jungle are locked in a familiar game of cat-and-mouse. The security measures the French and British governments have deployed will put some off. They may also deter those who remain undeterred: Médecins du Monde, a charity, says its efforts are increasingly devoted to healing the hand and foot wounds of those who have tried to scale fences and chase lorries. ■

### Migrants in Calais

## Learning from the Jungle

CALAIS

**The camp at the Channel's edge is a sideshow in Europe's migrant crisis, but it offers important lessons**

**A**TINY African girl breaks into a jig as an Arabic pop song gives way to the cheerful soul of Pharrell Williams's "Happy", scourge of parents everywhere. It is an incongruous sound for the Jungle, a squalid migrant camp on the outskirts of Calais. But the Jungle is an incongruous place: a shanty-town of thousands of the earth's wretched, assembled with the tacit approval of local authorities in one of the richest parts of the planet. "You're telling me this is Europe?" says a frustrated Syrian teenager, gesturing at the filth before him.

Along with most of the Jungle's inhabitants, he has his eyes on Britain, across the English Channel. A recent spike in the number of migrants in Calais attempting to clamber onto trains or lorries bound for Britain has spooked politicians on both sides of the water. Fences have been erected and extra police dispatched. A dozen migrants have died attempting to make the crossing since June. For some, Calais is a microcosm of the migration crisis that has erupted across Europe this year, from Greek islands to Hungary's border with Serbia. (In the latest disaster, scores are feared to have died after a boat capsized off the Libyan coast on August 4th.)

Yet if the Jungle is an example, it is not a particularly telling one. The estimated 3,000 people in the camp amount to between 1% and 2% of the illegal immigrants who have reached the European Union by sea this year alone. Volunteers in the camp say its overall size has not grown appreciably, even as record numbers reach Europe. Migrants crossing the Mediterranean are more likely to head for countries like Ger-

many or Sweden. By no conceivable measure is either France or Britain on the front line of Europe's migration crisis.

Yet as Europe's leaders scramble to assemble a migration policy, they could draw two lessons from Calais. The first is that even small numbers can cause big political headaches at pinch points. The few hundred that try (and usually fail) to sneak across the Channel each night pale next to the numbers of illegal immigrants in Britain who have overstayed their visas. But the dramatic images suggest that politicians are not in control of their own borders, a message toxic enough to force changes in government policy.



Crashing Britain's gates



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## Interest rates

## The only way is up

**Tighter monetary policy is on the way. Borrowers tremble—but the end of cheap credit is not all bad news**

WHEN the Bank of England last raised interest rates, most people had never heard of subprime mortgages; the Chinese economy was half its current size; and the iPhone was only a month old. Since July 2007 the only changes to the base rate of interest have been downward, and since March 2009 the bank has made no adjustments at all, keeping rates at 0.5% for 77 consecutive months, the longest period of stasis since the second world war (though things were even quieter in the 18th century—see chart). On August 6th the bank's monetary-policy committee (MPC) voted to hold rates steady again. But with more of its members striking a hawkish tone, many pundits expect an increase by the turn of the year. What will it mean when rates rise at last?

It strikes many as odd that rates rises are on the cards. Inflation is stuck at zero, far below the bank's target of 2%. Wages are growing faster than at any time since 2010, but it is far from certain that such increases will continue. And when central banks have raised rates too early—as the Euro-

### A borrower, not a lender be

Household debt and savings  
As % of disposable income



Source: Thomson Reuters; *The Economist*

pean Central Bank did in 2011—they have done such harm that they have been forced to reverse course. Nonetheless, hawkish members of the MPC argue that unless rates rise soon, inflation will break through the 2% target before long.

Among those who are nervous about higher rates are mortgage-holders. According to the European Mortgage Federation,

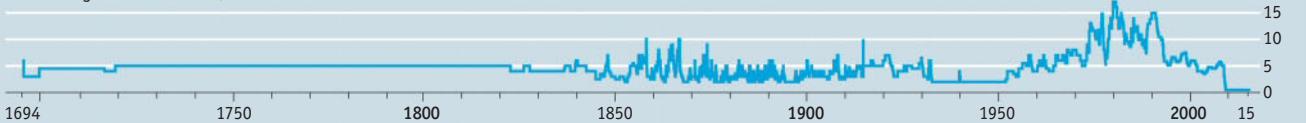
an industry body, in 2013 Britain had residential-mortgage debt worth 81% of GDP, the joint-third-highest in Europe. Worse, more than half of outstanding mortgages in Britain are variable-rate, meaning that they follow the Bank of England's interest rate. If that were to rise by two percentage points, someone with a 75% mortgage on a house worth £400,000 (\$625,000)—the average price of a pad in London—would see their annual repayments increase by £4,000, equivalent to 6% of the pay of the median mortgage-holder in the capital.

But higher repayments will not necessarily lead to a wave of defaults. Standard & Poor's, a rating agency, points out that mortgage-interest payments as a percentage of income are at their lowest since records began, at 10.6%. Across the country only about 4% of mortgage-holders are really vulnerable, with their total mortgage repayments exceeding 40% of their gross income. As house prices have soared, a Bank of England report suggests, those borrowers who would otherwise have taken on the most debt have decided to rent instead. At the same time, stricter rules that came into force last year have curbed excessive lending.

Things will not get much worse for some time. Rates are unlikely to rise steeply, given the fragility of the world economy. And the government's fiscal austerity programme will encourage the bank to keep rates low, lest demand fall too far. Mark Carney, the bank's governor, reckons the ➤

### What goes down...

Bank of England interest rate, %



► base rate will settle at a level "about half as high as historical averages", or about 2%. Add to that Britain's shortage of homes, and the housing market does not look vulnerable. Standard & Poor's predicts that house prices will rise by 5% next year and by 2.5% in 2017.

Higher interest rates will affect different households in different ways. Total personal debt remains higher than the stock of savings (see chart 2 on previous page). So, overall, higher debt-servicing costs will outweigh the extra money that savers will reap. Worse, wealthy people—ie, those with plenty of savings—have a low marginal propensity to consume, meaning that they spend little of any extra income they receive. All this crimps consumption on two fronts, pulling down overall demand. But in Britain the effect may be muted. To understand why, consider demography.

#### Age shall not weary them

In demographic terms, Britain is one of the most unequal countries in the rich world. The wealth of the average 55- to 64-year-old household head in Britain is over five times that of the average 16- to 34-year-old; in Italy the oldies are only three times as rich as the young. On the other side of the balance-sheet, the household debt of British twenty-somethings is about five times that of those in their 50s and 60s. Broadly speaking, old people will gain from interest-rate rises since they are net savers, whereas young people will lose out because they are net borrowers.

Wonks reckon that the elderly have a high marginal propensity to consume: they blow extra money on cruises rather than putting it in the bank. The young are more likely to stash away extra cash for the future. Since the gains from higher interest rates will flow disproportionately to oldies, who have the most savings, they are more likely to be spent. Though analysis by the Bank of England suggests that this effect will be small, it may mean that higher rates will not crimp consumption as much as they would in other rich countries.

The end of ultra-low interest rates may bode ill for the productivity of British businesses, which is already poor. Output per hour is still lower than before the crisis of 2007, whereas in America and even France it has grown. Tight monetary policy should be bad for productivity, since it makes business investment more expensive. As the cost to businesses of borrowing has fallen by more than half since 2008, investment by firms has risen by 20%. The worry now is that dearer borrowing will curb the investment binge, making productivity even more dismal.

Yet there is another side to the productivity equation. Kristin Forbes, a member of the MPC, points out that, as in Japan in the 1990s, cheap borrowing may allow inefficient "zombie firms" to survive for lon-

#### The establishment

## See no evil

#### Claims of long-ago child sex abuse reach Downing Street

THOSE following the news would be forgiven for thinking that a few decades ago the British establishment was run entirely by paedophiles. They are said to have held places in the cabinet, the BBC and the intelligence services, while the rest of Britain—police, social workers, hoteliers—covered their tracks. In the past four years over half-a-dozen major inquiries into past child sex abuse have been opened: five television personalities have been convicted; four former politicians have been named as under investigation. On August 3rd a former prime minister joined the list of the accused.

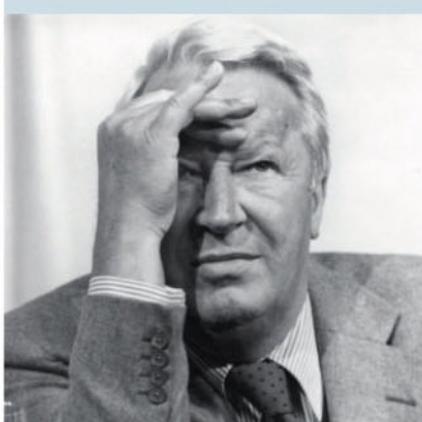
At least four police forces are investigating claims that Edward Heath, the prime minister in 1970-74, who died in 2005, sexually abused children. A retired policeman claims that in 1992 a prosecution against a brothel-keeper was dropped after she threatened to expose Heath's alleged crimes. (The madam, now retired, denies this.) A 65-year-old man says that Heath raped him in the 1960s. Police on the island of Jersey are pursuing claims that Heath sexually

abused boys from Haut de la Garenne, a now-closed children's home notorious for child abuse. No firm evidence for any of these claims has been made public.

For three years similar rumours have swirled around many public figures. In some cases, such as that of Lord McAlpine, a Conservative peer who died last year, they were found to be false. Others turned out to be true. The first and most explosive revelation, in 2012, that Jimmy Savile, an eccentric television personality, abused a vast number of children, pulled at a thread that now threatens to unravel half the establishment.

Some say all this shows that Britain has become progressive and open enough to air these shameful secrets. A few decades ago those who viewed children sexually were surrounded by a permissiveness that would shock modern folk. In the 1970s the "Paedophile Information Exchange", a paedophile-rights group (their letterhead a line-drawing of children on a rock), gave interviews to the media and appeared at university conferences. The end of this tolerance, and the erosion of deference to authority in general, may only recently have given victims the confidence to name their powerful abusers.

Yet Britain's sexual morals may not have moved on as much as it likes to think. Some newspapers expressing outrage at the alleged crimes carry their own drooling coverage of young girls. Nor is the abuse confined to the past: in June there were reports that an unnamed serving Labour MP abused boys less than two years ago. Strict libel laws are one reason why accusations are often aired publicly only when alleged perpetrators—and witnesses—have died. The tragedy of this, for both victims and the falsely accused, is that in many cases the truth will therefore never be known.



Edward Heath: malign or maligned?

ger than they normally would. In Britain interest payments as a share of profits have fallen from about 25% in 2009 to 10% today, bringing down company liquidations with them. As they stagger on, zombie firms hold down average productivity levels in their industry and, as a result, put a lid on wage growth. Rising interest rates could slowly start to sort the wheat from the chaff.

Especially if the Bank of England tightens the monetary screws faster than America's Federal Reserve, the pound may appreciate rapidly, making firms' exports

more expensive. This, too, will help to zap the zombies, but all exporters will suffer. And the rises in productivity as the inefficient firms go under will come at the expense of higher unemployment in the short term. The end of cheap money is a worry for households and businesses. But as rates move upwards, there will be some upsides too. ■

**Correction** A rogues' gallery accompanying last week's story on the House of Lords ("The rotters' club") included Charles Nall-Cain, Third Baron Brocket. He is indeed a convicted fraudster, as we said, but is no longer a member of the Lords. Sorry.

# Bagehot | Jeremy Corbyn: closet conservative

Labour's prospective next leader may be on the party's hard left, but he is no radical



**A**LTHOUGH Tony Blair heaved the Labour Party back to the political centre—and electability—in the 1990s, he never entirely finished off its hard-left wing. It lived quietly on in pub corners, in parts of declining trade unions, among MPs on the party's eccentric fringes; a mostly male, white and increasingly aged world slipping slowly into irrelevance.

At least, so Bagehot thought—until, one recent evening, he found himself in Camden Town Hall in London, at a rally in support of Jeremy Corbyn's bid for the Labour leadership. There they were on the platform: the lefties from the public bar, those for whom no dog-eared old cause is too sentimental, no tax too high, no anti-American autocrat too distasteful. But where once there was a bored landlord wiping glasses, they now faced a fizzing throng of supporters. These booed Mr Blair's name and roared their approval as a slightly stooped man, sporting a white beard, a crumpled shirt and a bemused expression, hustled up to the stage: Mr Corbyn, a political footnote suddenly turned headline.

Strange events are abroad in British politics. In May the Labour Party lost an election in which, under Ed Miliband, it was generally considered too far left of voters. In the race to replace him Mr Corbyn, a veteran socialist (and teetotaller), has outperformed his three opponents, and his own expectations, energising the party's grass roots and inspiring thousands of new members to join up. He commands the support of more local branches than any of his rivals, the endorsements of the country's two biggest trade unions and, polling suggests, a lead among Labour's overall electorate. His rallies are massively oversubscribed; the one in Camden so much so that Mr Corbyn had to address those waiting in the street outside from atop a fire engine.

How to explain Corbynmania? Labour's messages, and with them its membership, tilted left during the Miliband years. The unions expanded their sway over the party. Meanwhile Blairites drifted away. Although it clashes with lessons of Labour's election campaign, Mr Corbyn's leadership bid has thus found a receptive audience. He has been lucky in his opponents, too. Liz Kendall, of Labour's liberal right, lacks experience. Andy Burnham, of the soft left, is opportunistic and dreary. Yvette Cooper, in the middle, is credible but robotic. One Corbyn supporter, a don at Oxford University, claims it is as easy to sift the straight-talking

Mr Corbyn from his rivals as it is a first-class student from his mediocre contemporaries on the first day of a new academic year.

At the rally in Camden, Bagehot could not help but see her point: the man knows his mind and speaks it. He proffered no direction-of-travel indicators, threatened to empower no communities of stakeholders and refrained from reconnecting with any hard-working families. But most striking was that the political credo he so straightforwardly expressed was utterly at odds with the fizz and optimism of the crowd ("Jez we can!" they chanted). For Mr Corbyn is a conservative.

## Pessimism of the intellect

He does not look like one because his electoral strategy is bold to the point of fantasy. He and his supporters see British history not as a long process of mostly organic social and economic change, but as a succession of lurches forward propelled primarily by concerted vanguards of campaigners. Thus they are convinced that an electorate that just rejected a moderately left-wing programme in favour of a Conservative one can be induced to support a much more socialist platform. All Labour must do is shift the nation's "Overton window"—the frame describing that which is politically mainstream and acceptable—leftwards through vim, organisation and assertion. They find inspiration in the example of Margaret Thatcher, insisting that her outspoken ideological confidence moved the British consensus to the free-market right (a reading that conveniently overlooks both the canily compromising reality of her premiership and the vast socio-economic shifts roiling 1980s Britain). In other words: they believe willpower can overcome political gravity.

This is radicalism, albeit of a myopic sort. But the wistful prospectus to which it is yoked is anything other. Mr Corbyn proposes to remove private providers from the National Health Service, return autonomous schools to local authority control, renationalise the railways, reinflate the welfare state and "reindustrialise" the economy. Parts of his speech could have been given at any time in the past half-century. "I was there in 1984 standing alongside the miners," he recalled, "and judging by the appearance of some of you, you were there with me. Welcome back!" Corbynism, in short, is the choice not to create something new but to shore up an old status quo; of reinstatement over reinvention.

All of which gives his whole circus the air of a wasted opportunity. The MP for Islington North has the attention of many, including young voters otherwise disengaged from politics. These people, surely, deserve ideas responding to the convulsions—digitisation, automation, globalisation—through which they are living. Others on the left are thinking big about these. Roberto Unger, a Brazilian theorist, imagines a drastically less centralised and more experimental state. David Graeber, an anarchist, has interesting things to say about democracy and power in the age of the Occupy protests. Paul Mason, a British journalist, has just published a book on "postcapitalism". Bagehot would not vote for the programme Mr Mason articulates, but admires him for grappling with trends like free information (think Wikipedia) and the "sharing economy" (think Airbnb), along with the explosion of data and networks that they symptomise.

Yet Labour's supposedly radical man of the moment offers no such analysis. The defensive nostalgia of the grizzled blokes in the pub has consumed a movement that could have been forward-looking and original. Mr Corbyn is unelectable. Even less forgivably, he is boring. ■



### Intellectual property

## A question of utility

**Patents are protected by governments because they are held to promote innovation. But there is plenty of evidence that they do not**

THE Great Exhibition, staged in London in 1851, was intended to show off the inventive genius of Victorian Britain. In doing so it sparked a hardfought debate on intellectual property. On one side were public figures horrified at the thought of inviting the whole world to see the nation's best ideas, only to have most of it go straight home and copy them. They called for the patent system to be made cheaper and easier to navigate, and for the rights it conferred to be more forcefully upheld. These demands, though, were met with a backlash. Supported by economic liberals who had successfully fought for the repeal of the protectionist Corn Laws a few years earlier, this side of the debate argued that free trade and competition were good for the economy; that patents were a restraint on both; and that therefore patents should be not reformed, but done away with.

The Economist, founded by opponents of the Corn Laws, was an enthusiastic promoter of this abolitionist movement. A leader in our July 26th issue that year thundered that the granting of patents "excites fraud, stimulates men to run after schemes that may enable them to levy a tax on the public, begets disputes and quarrels betwixt inventors, provokes endless lawsuits [and] bestows rewards on the wrong per-

sons." In perhaps our first reference to what are now called "patent trolls", we fretted that "Comprehensive patents are taken out by some parties, for the purpose of stopping inventions, or appropriating the fruits of the inventions of others."

Arguing that patents "rarely give security to really good inventions" and fail at their job of encouraging innovation by rewarding inventors for their efforts, we backed the abolitionists in a debate over patent reforms then in Parliament. Our knockout argument: most of the wonders of the modern age, from mule-spinning to railways, steamships to gas lamps, seemed to have emerged without the help of patents. If the Industrial Revolution didn't need them, why have them at all?

### From Trevithick to trolls

The debate raged on for years and through several changes of government. In 1883, though, Parliament decided that instead of killing patents, it would improve them. The struggle has been taken up again at various times and places. In the first half of the 20th century, for example, many Americans worried that patents were helping corporations such as AT&T monopolise whole industries. In 1938 the Federal Communications Commission urged Franklin

Roosevelt to replace them with compulsory licensing. But whenever the issue comes up, lawmakers conclude that the patent system can be perfected and another round of reforms is all that is needed.

During all this time the conceptual and geographical domain of the patent-clerk has expanded. The ability to patent has been extended from physical devices to software and stretches of DNA, not to mention—notably in America—to business processes and financial products. The fear of international competition that came to the fore at the time of the Great Exhibition has seen the system spread around the world, typically as the price that smaller or poorer nations pay for access to the markets of the richer and more lawyered-up. It was this sort of international pressure that brought the Netherlands' 19th-century experiment with patent abolition to an end. It has been the lure of membership of the World Trade Organisation that has pushed patent rights into emerging economies such as China's. One of the reasons why talks on the proposed Trans-Pacific Partnership, a trade deal involving countries which produce 40% of the world's economic output, ended inconclusively last month was the strong patent protection Western countries wanted for biotech-based drugs.

One argument backers like to make is that patents serve the public good. That was not their original purpose. As one of Britain's 19th-century abolitionists, John Lewis Ricardo, a telegraph entrepreneur and a nephew of David Ricardo, a leading economist, noted in Parliament, sovereigns first introduced them as nice little earners; in the early 17th century King James I was raising £200,000 a year from ➤

granting patents. But over time they came to be seen as beneficial to the people as well as to the monarch—a tool with which to “promote the progress of science and useful arts”, as the American constitution puts it.

The public-good position on patents is simple enough: in return for registering and publishing your idea, which must be new, useful and non-obvious, you get a temporary monopoly—nowadays usually 20 years—on using it. This provides an incentive to innovate because it assures the innovator of some material gain if the innovation finds favour. It also provides the tools whereby others can innovate, because the publication of good ideas increases the speed of technological advance as one innovation builds upon another.

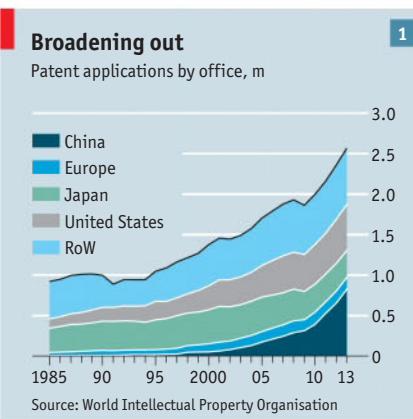
This sounds plausible. But is it true? There is much room for doubt. The evidence that the current system encourages companies to invest in research in a way that leads to innovation, increased productivity and general prosperity is surprisingly weak. A growing amount of research in recent years, including a 2004 study by America's National Academy of Sciences, suggests that, with a few exceptions such as medicines, society as a whole might even be better off with no patents than with the mess that is today's system.

### The post-hoc patent

Michele Boldrin and David Levine, two economists, pulled all this research together in “The Case Against Patents”, a book published in 2008 and updated in a 2012 paper for the Federal Reserve Bank of St Louis. They argue that patents are neither as good at rewarding innovation nor as helpful in propagating it as claimed.

Take, first, the idea that patents give you a higher rate of innovation. If you look at things such as the number of inventions presented at international fairs, the evidence suggests that 19th-century countries that lacked patent systems were no less innovative than those which had them, though they did innovate in somewhat different areas. Reviewing 23 20th-century studies Mr Boldrin and Mr Levine found “weak or no evidence that strengthening patent regimes increases innovation”—all it does is lead to more patents being filed, which is not the same thing. Several of these studies found that “reforms” aimed at strengthening patent regimes, such as one undertaken in Japan in 1988, for the most part boosted neither innovation nor its supposed cause, R&D spending.

An exception to this general finding reveals another interesting point. A study of Taiwan's 1986 reforms found that they did lead to more R&D spending in the country and more American patents being granted to Taiwanese people and enterprises. This shows that countries whose patent protection is weaker than others' can divert in-



vestment and R&D spending to their territory by strengthening it. But it does not demonstrate that the overall amount of spending or innovation worldwide has been increased.

If patents encourage worthwhile innovation, then you might expect expansions of the patent system to bring about more of it. Studies from plant breeding suggest this is not so. In 1970 America expanded patent protection to crops that reproduce sexually; subsequent studies on wheat, which is such a crop, showed neither greater research spending nor an increase in the rate at which yields improved. Patent protection on biotech products of all kinds was expanded in the 1980s; as with the change made in 1970, the productivity of American agriculture rose at more or less the same rate after the expansion as before.

When changes in the rate of innovation do occur, they seem to have little to do with patents. Mr Boldrin and Mr Levine observe that in industries from chemicals to car-making to computer software, waves of innovation began with a surge in inventiveness with lots of participants. Patents only started to be filed years later, once the innovation had died down and the incumbents in the maturing industry were seeking to exclude new entrants, as well as to protect themselves from their rivals' lawsuits. Patents were a result of successful innovation; its cause was competition.

This is not to say that patents offer no

genuine benefits, especially to parties with little access to capital but some ideas. But in many mature, complex manufacturing businesses— aerospace and carmaking, for example—control of the underlying intellectual property is only a small part of what is needed to create and market a world-beating, innovative product. If that were not the case, China's makers of cars and planes, which have been given a free hand—a helping hand, some competitors say—by their government to pinch Western technology, would be vying with rich-country rivals such as BMW and Boeing. They are not.

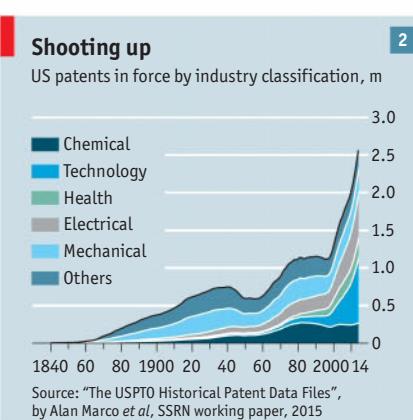
In one of the world's most important businesses, software, there has been something of a backlash against close-held intellectual property. Proprietary software normally does not allow the user access to the source code it depends on; open-source software gives them access to everything as long as any modification they make is made similarly accessible. This can work on a large scale—witness Android, the world's most successful smartphone operating system.

### Pitfalls and piracy

Leaving aside the spurring of innovation, what of the route patents are supposed to provide for its diffusion? That, too, is hard to spot. Mr Boldrin and Mr Levine argue that patent filings tend to be carefully written so as to obscure how the patented idea works even from experts in the field. In his history of intellectual property, “Piracy”, Adrian Johns of the University of Chicago notes that such shenanigans were already under way in the 18th century, with inventors taking care to leave out as much detail as possible from their applications. A counterpart to this defensive ploy is the filing of “submarine” patents: vague and speculative applications made by parties who then try, through various ploys, to keep the application from being granted until other people seem to be making progress on the technology in question. At that point the submarine surfaces with a view to demanding licensing fees.

If patents do not hold many advantages, why do they persist and indeed multiply? In some industries and countries they have become a measure of progress in their own right—a proxy for innovation, rather than a spur. Chinese researchers, under orders to be more inventive, have filed a flurry of patents in recent years (see chart 1). But almost all are being filed only with China's patent office. If they had real commercial potential, surely they would also have been registered elsewhere, too.

Another reason people might file patents that they don't need—thus explaining why anything between 40% and 90% of all patents issued are never used or licensed by their owners—is self-defence. In much of the technology industry companies file ►



► large numbers of patents (see chart 2 on previous page), but this is mostly to deter their rivals: if you sue me for infringing one of your thousands of patents, I'll use one of my stash of patents to sue you back. Such stand-offs make life hard for newcomers: a 2001 study found that fledgling microchip makers were having to spend up to \$200m licensing intellectual property that might not be much use to them just to fend off lawsuits. This sort of situation might be good for the incumbents, if not for competition and the public interest; but there is a fair chance it is not good even for them. Some studies have found "thickets" of patents that make it harder for all companies to launch new products.

Even if many industries do not really need patents—and a fair few might be better off without them—there is still a strong belief that in some businesses they are vital. The example always touted is pharmaceuticals. Drugs have to undergo exceptionally expensive and long-drawn-out testing procedures to demonstrate that they are safe and effective. And once a company has laboriously demonstrated that a molecule does its job with few or manageable ill effects, its rivals could make far cheaper copies were it not for patent protection. That is why proponents of patents see it as reasonable to let Bristol-Myers Squibb have a temporary monopoly on Opdivo, its new melanoma drug, and to charge \$120,000 per course of treatment in America. If the company could not do so, the argument goes, it would not have spent a fortune on getting the drug and its complex manufacturing process approved.

### The Bayer necessities

However, the history of the industry raises doubts about such arguments. Until 1967 German drug companies could only patent the way they made drugs, not the formulae of the drugs themselves. Anyone could sell copies of the medicines if they found another method of making them. Yet Mr Boldrin and Mr Levine say German drugmakers produced more innovations than British ones (remember where aspirin was invented). Another interesting case is Italy, which had no patent protection for drugs until 1978. One study showed it invented a larger proportion of the world's new medicines before that date than afterwards. Before the "reform" it had lots of copycat firms, but the biggest of these also did research on drugs of their own. They were largely wiped out once they had to pay royalties on their copycat drugs.

It is true that, encouraged by the prospects of patents, pharma companies do a lot more research today than in the 1960s and 1970s. But it is also true that they are not alone in their endeavours. Public support for biomedical research has soared over past decades; the budget of America's National Institutes of Health is five times



what it was in 1970. Mr Boldrin and Mr Levine reckon that once subsidies and tax breaks are accounted for, American private industry pays for only about a third of the country's biomedical research. In return the patent system provides them with a great deal of income.

The drug companies claim this is a good deal; that the short-term gains a spate of cheap drugs would bring right after a putative abolition would be overshadowed by the long-term losses due to a dearth of new drugs. Looking at one industry-funded study that reaches this conclusion, though, Mr Boldrin and Mr Levine found it quite sensitive to the discount rate applied to future benefits. In 2005 Dean Baker, an economist at the Centre for Economic and Policy Research, a think-tank in Washington, DC, took a much simpler, but still rather striking, approach: he just compared the costs imposed by the patent system with the innovation that system bought.

America's health systems, he noted, spent \$210 billion on prescription drugs that year. Based on how much cheaper generic drugs were than patented ones, Mr Baker calculated that a competitive patent-free market might have provided the same drugs for no more than \$50 billion. That represented a saving of \$160 billion.

The drug companies reckoned at the time that they were spending \$25 billion on R&D; the government was spending \$30 billion on basic medical research. The money it would have been able to save buying drugs for Medicare and Medicaid in a patent-free world have allowed the government to double that research spending, more than replacing industry's R&D, while still leaving \$130 billion in public benefit.

With America's prescription-drug bill

now \$374 billion, the opportunity looks all the greater, even though the companies now say they are putting \$51 billion a year into R&D. Imagining that the government could spend R&D money as effectively as the corporate sector may sound like a stretch. But a government which simply wanted to make drugs available for competitive manufacture might find various ways to get innovative results from contract research companies. Joseph Stiglitz, an economist at Columbia University, and others have suggested encouraging teams of autonomous scientists to develop new breakthrough drugs by offering those that succeed big prizes.

After a promising drug was found the final, most expensive stages of clinical trials, which measure the efficacy of a drug that has already been shown to be safe, could be publicly funded, using another portion of the huge potential savings from cheaper drugs, and conducted by independent laboratories. Once a medicine was validated, any drug company would be allowed to make it. Alternatively, the trials could be made smaller, with companies required to earn the right to manufacture a drug that had been shown to be safe by scrupulously collecting and publishing data on how the drug compared with other treatments once it was in use.

This is not as strange as it may sound. Many drug startups see their exit strategy as being bought up for a billion dollars or so by a big pharma company when their projects start to look promising. Billion-dollar prizes would provide similar incentives. Nor is it all that new: Robert MacFie, a leading Victorian patent-abolitionist, also favoured prizes.

Six bills to reform patents in some way (including in one case by overturning an earlier reform) have been proposed to the current American Congress. None seeks abolition: any lawmaker brave enough to propose doing away with them altogether, or raising similar questions about the much longer monopolies given to copyright holders, would face an onslaught from the intellectual-property lobby.

But a top-to-bottom re-examination of whether patents and other forms of intellectual-property protection actually do their job, and even whether they deserve to exist, is long overdue. Simple abolition raises problems in terms of the ethics of property rights (see leader). But reductions in the duration of exclusive rights and differentiations between those rights for different sorts of innovation are possible, and could be introduced in steps over a number of years, allowing plenty of time for any ill effects to surface. Experiments with other forms of financing innovation could be run alongside the patent system. If defenders of the patent system really seek to foster innovation, they should be prepared to do so in their own backyard. ■



### The hotel industry

## Life is suite

NEW YORK

**Hotel chains are thriving, for now, thanks to innovation and a bit of luck**

THE 41-storey clock tower at Five Madison Avenue was once the domain of insurance clerks working for Metropolitan Life. Now, the building in New York is a swanky hotel, called the Edition, where beautiful people air-kiss in the lobby. The hotel sector has undergone a similar switch from toil to glitz of late. Arne Sorenson, boss of Marriott, an American hotel firm that owns the Edition brand, says that business has rarely been better.

The hotel industry ought to be in a worse state than a hung-over guest who has drained the minibar. The financial crisis caused commercial-property prices to collapse and rooms to remain vacant. Hotels have suffered relentless disruption from the internet. Online travel agents, such as Expedia, take hefty commissions for bookings and sharing-economy upstarts such as Airbnb offer a cheap alternative. Yet the large American and European hotel firms are thriving.

The industry's favoured measure of success, revenue per available room (RevPAR, revenue divided by rooms available in a given period), has climbed for the past five years in America, surpassing peaks in 2000 and 2007, according to Smith Travel Research. Meanwhile, money is pouring in from private-equity firms and Chinese and Middle Eastern investors, keen to take advantage of the growth. Properties worth

\$42 billion changed hands worldwide in the first half of 2015, a 56% jump over the same period last year, according to JLL, a property broker.

How have they done it? Hoteliers are nimbler and more resilient than they were two decades ago. For one thing, they own fewer hotels. Of the 4,942 hotels operated by InterContinental, a giant British firm, it owns just eight. The "asset-light" approach brings in franchising and management fees. Investors like this, explains Smedes Rose of Citigroup, a bank, as the firms can concentrate on operations without worrying about seesawing property prices. And by leaving expensive upgrades to owners,

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they can pay more dividends.

Hotel firms have also broadened their base of customers in two ways. First, they have created a variety of lodgings for different travellers. The top five hotel companies have more than 60 brands between them, serving everyone from families to thrifty businessmen and health nuts. Second, the big chain hotels are courting more travellers around the world. International brands swiftly moved to control about half of the rooms in fast-growing markets such as China and India. Relinquishing property ownership has helped. Firms can speedily export their management model while local partners do the riskier work of building the hotels.

The downturn after the financial crisis proved the power of this transformation. Room prices and occupancy rates collapsed. But property owners suffered most while hotel firms continued to receive fees from them. A diverse selection of accommodation, at a wide variety of prices and in locations across the globe, helped hotel firms survive and then rebound.

What has recently supercharged the industry, however, is a stroke of luck—an unanticipated shortage of rooms in America. Investors expected success in emerging markets but slowing growth and a strong dollar are depressing revenues. In America, where the big firms still earn most of their profits, business is booming. The supply of new rooms grew slowly after the downturn. But demand has picked up along with the economy. Occupancy rates sank to a low point in 2009. They are now expected to reach a record high this year.

Investors have begun to wonder how long this can last. Shares in four of the five largest hotel firms have slipped in recent months despite rumours of dealmaking. ►



► On July 30th InterContinental denied reports that it might buy Starwood, an American rival; its target is now reportedly Fairmont, another chain.

The foreboding reflects two threats. The first is cyclical. Demand moves quickly. Supply is sticky. This mismatch has helped hotels so far, but it could turn against them. Soaring demand is encouraging new building. By the time properties are finished and a slew of new rooms are available, demand may have ebbed. In the past, RevPAR has plummeted as supply has risen (see chart on previous page). Steven Kent of Goldman Sachs, another bank, argues that supply is poised to outpace demand.

The second, more structural threat is technology. The candid reviews on sites like TripAdvisor make controlling customers' views of hotel brands much harder, points out Mr Kent. Online travel agencies, such as Priceline and Expedia, want to win a bigger share of bookings. That worries hoteliers, who often pay commissions of 20% or more. Expedia's clout may grow—it is trying to buy Orbitz, a rival.

Room-sharing sites such as Airbnb are another menace. Hoteliers tend to shrug off such concerns by pointing out that

Airbnb serves few business travellers, the main customers for hotels. But Airbnb offers not only low prices but access to more than 1.5m rooms, roughly double what InterContinental offers. The headaches from online travel agents, room-sharing sites and review websites will probably intensify as the three start to overlap. TripAdvisor, for example, now has a booking system and has bought four companies that specialise in renting homes online.

Faced with these challenges, hotel companies are adapting, yet again. Accor, a French firm, is trying to fight online travel agents by beefing up its own booking system and opening it to independent hoteliers. Hyatt, an American firm, has invested in Onefinestay, a rival to Airbnb. Marriott has said it will go into partnership with TripAdvisor, using its booking platform to get more information about customers, so it can market to them more effectively.

Hotel firms' ability to change will keep being put to the test. They are helped by a simple fact—they are selling access to a physical product in a fixed location. As Mr Sorenson puts it, "a hotel room is one of the few things in the world that you cannot deliver to someone in a box." ■

menting into incompatible versions but also serve to promote Google's app store and mobile services, such as e-mail and maps, which allow it to sell advertisements and collect user data. (The firm's chairman, Eric Schmidt, is a member of the board of The Economist Group, which owns this newspaper.)

Cyanogen is best seen as an attempt to unbundle this package. Upstart handset-makers, such as Micromax in India and Kazam in Europe, want to stop competing mainly on price and tailor their products to specific markets, for instance by integrating local mobile services. The model is China: most of Google's services are banned or unavailable there and manufacturers use their own Android versions, a big factor in the rapid rise of Xiaomi, a local firm.

Mobile carriers, for their part, would welcome more variety in handsets and a less dominant Google; Telefónica, a global telecoms operator, participated in Cyanogen's latest funding round. Makers of popular apps, such as Facebook and Twitter, worry that Android will give Google an unfair advantage in mobile services, where most of the industry's profits will be made; Twitter too is an investor in Cyanogen. Poor countries could benefit as well: smartphones adapted to local tastes are likely to spread faster.

Then there are the regulators, which have shown increasing interest in Android. In April the European Commission began a formal investigation. This scrutiny, says Mr McMaster, will keep Google from using hardball tactics against his firm.

Micromax and a few others are already selling smartphones powered by Cyanogen; more are likely to follow. Mr McMaster has also signed deals with several app vendors, including Microsoft. It will make the mobile version of Office and related services available on the Android clone.

Yet success is by no means guaranteed. It is unclear, for instance, whether Cyanogen will be able to make much money: it intends to take a cut from the revenues generated by the services it builds into its program. It may not be able to do so without Google's mobile services, at least in rich countries, where they are already dominant, points out Geoff Blaber of CCS Insight, another market researcher.

Mr McMaster seems unfazed. His goal, he says, is not to replace Google's services, but to create a level playing-field. But he is already plotting his firm's next move: combining all the services built into Cyanogen and the data they generate into clever new offerings, such as a field in a phone's dialler app which tells users whether an incoming call is from a telemarketing firm, based on feedback from other users. Google would not be able to do the same, because many big service providers simply don't trust it, he argues. "We are the Switzerland of the mobile world." ■

## Mobile operating systems

# Alpine Android

PALO ALTO

## Cyanogen plots to unseat Google's platform

KIRT MCMASTER has the right stuff to be a successful software boss. He talks a mile a minute with a booming voice. And he projects inevitability: "We're creating something everybody wants." But communication skills are not the only reason why his firm may succeed where others, including Amazon and Samsung, have failed: establishing a third mobile-computing platform to compete with Google's Android and Apple's iOS, which have market shares of 78% and 18% respectively.

Most previous efforts to launch a new mobile platform were controlled by a single company or a consortium, so they were either supported by few others or were hampered by complex decision-making. What is more, new operating systems require makers of apps to rewrite their programs—a costly undertaking with an uncertain outcome. Cyanogen has avoided these pitfalls, says William Stofega of IDC, a market-research firm. It was born in 2009 as an open-source project. The platform is fully compatible with Android but is also more customisable and boasts more features, such as better privacy settings. Although installing it is tricky and often voids



the device's warranty, around 50m smartphone owners worldwide have done so.

Mr McMaster convinced Steve Kondik, its founder, to turn it into a business in 2012. Initially, investors were reluctant. But Cyanogen has since raised \$110m, with several big Silicon Valley venture-capital firms getting involved. Although Android is open-source too, Google's official version comes with licensing strings attached. These have kept the platform from frag-

**Bosses' pay**

# Who gets what?

NEW YORK

## The politics of remuneration and envy

**F**Ights over splitting the loot have gone on for as long as there has been loot to split. In America, those brawls are now part of the remit of the Securities and Exchange Commission (SEC). After heated arguments and a vote that passed by three ballots to two, on August 5th the SEC approved rules (themselves tied to provisions in the Dodd-Frank act of 2010 that overhauled financial regulation) which will require public companies to publish the ratio of their chief executive's pay to that of their median earner, starting in 2017.

"To say that the views on the pay-ratio disclosure requirement are divisive is an obvious understatement," acknowledged Mary Jo White, who chairs the SEC. A mind-boggling 287,400 letters commenting on the proposals were sent. In a reflection of how the issue had become the subject of an organised political campaign, only 1,500 of these were unique.

Shareholders have an interest in compensation, in as much as it is a significant cost under management control. Pay therefore raises issues of "agency" that arise from the delegation of power by shareholders to bosses. That, at least, is the pretext for squeezing the issue into the SEC's jurisdiction under its authority to protect investors. The reality is that the proposal was included in Dodd-Frank after lobbying by trade unions aiming to shame bosses into paying themselves less and lowlier workers more. A broader debate on inequality has added to the momentum.

Commissioners supporting the rule said they had no choice but to put into effect the provisions of Dodd-Frank; and that the rule would provide valuable information that could be used for the "say-on-pay" provisions permitted in proxy votes, as well as generating insights into a company's governance and health. It will allow investors to see, says Commissioner Kara Stein, "how a company manages human capital".

Dissenters characterised the vote as a capitulation to interest groups who have no interest in protecting investors nor, for that matter, orderly markets and capital formation (the SEC's other goals). Critics reckon that the information will be expensive to collate (an unpersuasive argument) and unhelpful in identifying corporate excess (a more convincing one). An investment bank, where pay is generally high, may appear far more egalitarian than, say, a cleaning company with predominantly

**Iran's car industry**

# Snapping into gear

CAIRO

## Carmakers will profit from a deal on Iran's nuclear programme

**T**EHRAN'S clogged streets hint at one industry poised to profit from the lifting of some sanctions on Iran after a deal to curb its nuclear programme. Foreign manufacturers are set for a race into Iran to take advantage of a car-hungry population of nearly 80m. Its huge domestic market is the largest in the Middle East after Egypt's.

The timing of Iran's re-opening is a boon for the world's big carmakers. Sales in America are at or near a peak and Europe's rapid rebound may be coming to an end. Meanwhile big emerging markets such as China and Brazil are slumping. Sanctions hit Iran hard. Vehicle sales, which hit a peak of 1.6m in 2011, halved by 2013 as sanctions tightened. Then, as relations thawed, the market grew steadily again. It should surpass 1.3m vehicles this year before bouncing back to 1.6m by 2016, according to IHS, a consulting firm.

French carmakers, once the market leaders in Iran, are seeking to re-establish their grip. PSA Peugeot Citroën, which alone accounted for around a third of sales in 2011, and Renault are well-placed, given their pre-sanctions presence, to join forces with the domestic carmakers that

now account for most sales. Indeed Peugeot has agreed to restart production with Iran Khodro, its former partner. Renault is discussing buying a minority stake or factories from Pars Khodro, another local firm. French government ministers, never shy to press the case of domestic firms abroad, have rushed to Tehran to smooth the way.

They will have their work cut out. The Iranian government is displeased with France's hardline stance over the nuclear deal. Peugeot's rapid exit from the country in 2012, after joining an alliance with General Motors, still rankles. That could leave the door ajar for Chinese carmakers, which have set up a network of importers despite the sanctions. But Chinese models have a well-earned reputation for poor quality.

Competition from other carmakers will be intense, too. Iran is an inviting country—and not just for sales. European firms in search of low-cost production invested first in Spain, then Eastern Europe and have now turned to north Africa. Peugeot has a new plant in Morocco, Renault has set up in Algeria. It will take a while but Iran, a promising market in a fast-growing region, could be next.

**We need more cars**

low-paid staff and a modestly-paid boss.

As well as the battles over principle, there were grittier fights over how the data would be derived. The final version of the rules seems riddled with potential loopholes. Companies will be able to use statistical sampling to derive median pay. Firms will also be allowed to exclude 5% of non-American employees. Allowances will be made for differing costs of living in foreign countries and for countries banning the

collection of data. Meanwhile, foreign, private and even some publicly-listed American companies will be exempt.

The AFL-CIO, America's labour federation, said the new rules would "shame" firms into cutting bosses' pay. Not everyone agrees on the likely losers. "The real-world effects, if any," says James Copland of the Manhattan Institute, a think-tank, "will be for managers of public companies to offload lower-cost employees." ■

## Business and the law

# Taking the gangster rap

The power and reach of America's racketeering law make its frequent use in commercial settings a big deal for business

**E**ARLIER this year the founder of Medical Marijuana of the Rockies, Jerry Olson, was selling his firm's dope for \$120 an ounce, half the average retail price for good gear. He had fallen victim to the Racketeer Influenced and Corrupt Organisations Act (RICO) and had to liquidate his inventory. The nascent firm had been targeted by an anti-drugs group, which complained that its presence on the high street in Frisco, Colorado, was putting guests off going to a nearby hotel. A RICO suit was filed against a bank, a bonding company and others that were planning to service the business. They backed away, fearing portrayal as accomplices to racketeering.

This is "clearly not what RICO was intended for", according to Adam Wolf, Mr Olson's lawyer. With medical marijuana legal under state law, and the federal government happy to turn a blind eye, the lawsuit is "a political crusade by those who have lost on the legislative front", says Mr Wolf. Congress passed RICO in 1970 to go after organised-crime syndicates that were infiltrating legitimate businesses. It was named after a gangster played by Edward G. Robinson in a 1931 film, "Little Caesar", and used to pursue big mafia families.

From time to time, courts have clipped the wings of over-eager plaintiffs. But the statute is still widely used (see chart) and is set to undergo what Jeffrey Grell, a follower of its ups and downs, calls "a RICO renaissance", as foreign parties increasingly turn to American courts, deemed relatively plaintiff-friendly, to pass judgment on international business cases.

RICO can be used against anyone alleged to have been part of a criminal enterprise—defined as anything from a small, loosely connected group of individuals to a huge firm—that commits a "pattern" of racketeering activity. The list of "predicate" (underlying) crimes that count towards a pattern is long, and includes mail and wire fraud—potentially ensnaring anyone who sent an e-mail or made a phone call linked to the alleged activity.

RICO's attractions are that it is broad and powerful. It carries prison terms of up to 20 years and offers a way around statutes of limitations: as long as prosecutors can show that at least two people committed one of the many predicate offences, no matter how minor, the statute of limitations for all other offences connected to it, stretching back years, is in effect waived. This leeway is being used to target bribe-

takers extending back to the early 1990s at FIFA, which oversees world football.

The flow of criminal RICO cases has been slow and steady. These mostly focus on drugs, gangs and public corruption. Most of the action, though, is on the civil side. RICO is rare among federal criminal statutes in that it allows private parties to bring civil cases. They can claim triple damages—hence RICO's popularity with the plaintiffs' bar. Also rare in American justice, they can make the other side pay their costs if they win. RICO gives courts strong powers to seize property.

After an explosion of civil RICO cases threatened to overwhelm courts in the 1980s, the Supreme Court limited its application. Other adverse rulings have kept the overall number of cases from rising but lawyers say the variety of cases in which the law is used to target mainstream firms has steadily broadened. The result has been a "RICO-isation of business and consumer-fraud litigation", says Randy Gordon of Gardere Wynne Sewell, a law firm.

RICO suits filed in the past few years have spanned a broad spectrum, from cases against firms involved in the Gulf of Mexico oil spill, or in hiring immigrant labour (brought by domestic workers alleging immigration fraud that threatens their jobs and amounts to racketeering), to a case in which a group of Atlanta teachers and school administrators received sentences of up to seven years for test-score manipulation. Sheldon Whitehouse, a US senator, has suggested using RICO to charge fossil-fuel companies and climate-change deniers, on the ground that they are engaged in a conspiracy of lies. If that seems a stretch, RICO has been used against senior Catholic clergymen over sex

abuse committed by their priests.

RICO is riding the anti-corporate-corruption wave, with companies caught up in foreign bribery cases being accused if the alleged palm-greasing was more than an odd isolated case—and thus arguably amounted to a pattern of racketeering. Pemex, Mexico's state oil firm, for instance, is suing HP in connection with "influencer fees" that the tech firm allegedly paid in Mexico to firms linked to corrupt officials to help it win contracts. In this and all the other live cases in this article, the defendants reject the accusations of racketeering and are contesting them.

Though big businesses moan about RICO they sometimes use the law. Corporations have filed suits against all manner of tormentors. Chevron is suing a plaintiff lawyer the oil firm accuses of shaking it down in connection with environmental damage in Ecuador. Multinationals use the law to attack each other: Rio Tinto has a RICO suit against Vale in a dispute over mining rights in Guinea. Firms are also going after trade unions, claiming that the pressure they exert to allow them to organise, and muscular anti-corporate campaigns, amount to offences under RICO.

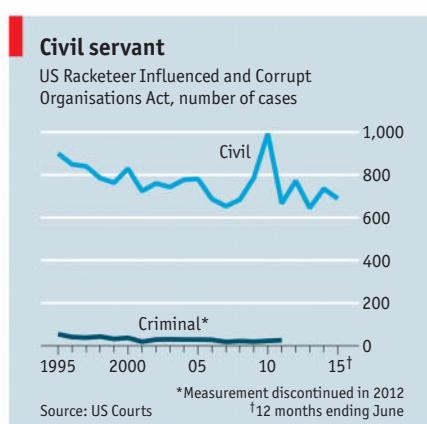
RICO is also being used in family disputes. The scorned spouse of a hedge-fund manager claimed her husband was a racketeer because he had engaged in legally questionable short-selling. The ex-wife of Gaston Glock, who founded the gunmaker named after him, has filed a RICO claim for \$500m, alleging that he illegally siphoned that sum out of the business. Mr Glock denies all wrongdoing.

## A RICO without borders?

An area in which RICO is particularly controversial is the extent to which it can be used to target conduct largely occurring outside America. The general rule is that it does not apply extraterritorially. But in recent years cases with only a tenuous domestic link (an e-mail here, an American bank account there) have been allowed to proceed. Some lawyers fret that using RICO this way could end up harming American justice, if America is seen to be playing the role of global policeman without a solid claim to jurisdiction.

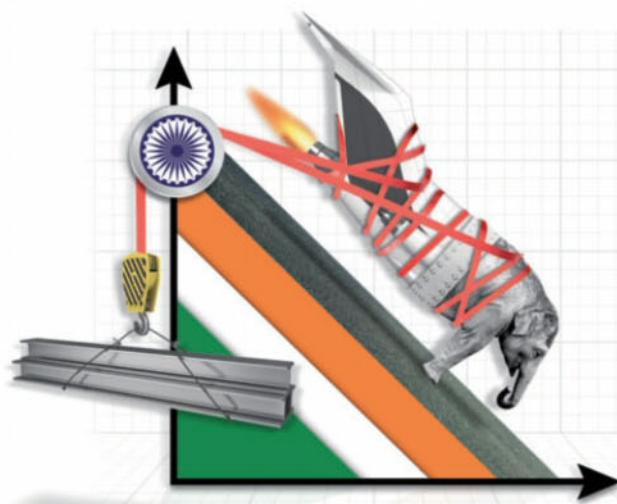
Another worry is that RICO cases clog up America's court system. The potential for new types of civil suit is vast. One study predicts that cases linked to pharmaceutical fraud, such as promoting prescription drugs for uses that have not been approved by regulators, could be a new frontier. Some recent rulings appear to have loosened restrictions on RICO class actions, notes Mr Gordon, paving the way for a possible resurgence of such cases.

At the end of "Little Caesar", Robinson's character is gunned down. His final words are "Mother of mercy, is this the end of Rico?" Far from it. ■



# Schumpeter | Stuck on the runway

**Indian manufacturing peaked in the mid-1990s. Can its decline be reversed?**



INDIA is not the place most people would expect to find precision engineering. Yet Guillaume Capato is on the shop floor of the Mahindra Aerospace factory, an hour's drive from Bangalore, explaining the complexity of an aluminium halter, used to reinforce the fuselage on a jet aircraft. Formed from a single piece of metal into a U-shape using a press, each side is of a different size and shape and drilled with holes of varying dimensions so that the part will precisely match all the other bolt holes around it. The halter is accurate to an exacting degree: it only makes sense to add weight to an aircraft's structure if it also adds strength. That principle is lost in India, where the weight of regulation has sapped the strength of manufacturing.

Mahindra Aerospace is the sort of modern, jobs-rich enterprise that Narendra Modi, India's prime minister, probably had in mind when he launched his "Make in India" drive a year ago. Components produced here must meet the strict standards of the global aircraft industry. In June the firm, an offshoot of a family business better known for rugged SUVs, won a landmark order from Airbus. Mr Capato, who worked at the European plane-maker for 14 years, helped set up the factory two years ago. It is full of spiffy kit—from giant ovens for heat-treating metals to fluorescent light chambers to help check for scratches (a tiny nick means a part is junked). Each bit of equipment requires a matching skill. Mr Modi wants more of this and has criss-crossed the world pitching the idea of manufacturing in India. It is a tough sell. The share of manufacturing in the economy peaked in the mid-1990s. It will take more than the glad-handing of world leaders to revive it.

The roots of the malaise go back to 1991, when India opened up markets for goods to competition, including from imports, but left its "factor" markets for land, labour and capital unrefomed. Indian-based factories suddenly needed to be bigger and better-equipped to compete in a global market. But the cost of capital, high in inflation-prone India, was forced still higher because of the trouble banks had in pursuing deadbeat borrowers through clogged courts. Complex laws made it tricky to acquire farmland for industry or infrastructure. Baffling labour laws, written largely in the 1940s, piled onerous regulations on manufacturers. Because they made it hard to lay off workers, few were hired.

For these reasons the standard-bearers for post-liberalisation India have not been widget-makers but capital-light IT-services companies such as Tata Consultancy Services, Infosys and Wipro, untroubled by India's factory laws or congested ports. Such brainwork cannot provide for all the 1m, mostly unskilled, youngsters who join India's labour force each month. More factories would help. But India let its industrial base wither while China was busy building one. And export-led growth is now a harder trick to pull off, not least because global trade has slowed to a standstill. Meanwhile India is stuck in heavy industries, such as steel, that are chronically oversupplied.

There are beams of light amid the gloom. Mahindra shows that Indian manufacturers can break into a prestigious global supply chain. The firm entered the aerospace business in 2006 when it acquired Plexion Technologies, an engineering-design outfit. It soon spied an opportunity in orders for single-aisle passenger jets, which were mounting fast at Airbus and Boeing. This was the sort of bet a family-owned firm could make: a steep up-front investment but with a steady long-term payoff for a job well done. After two more acquisitions it signed a technology-transfer agreement with Aernnova, a supplier to Airbus based in Spain. The factory near Bangalore was built in ten months. Land was no problem, says Arvind Mehra, boss of Mahindra Aerospace. The state of Karnataka offered a choice of business-ready sites with room to expand from its land bank. The firm is building links with colleges to ensure a supply of skilled workers. The factory layout is designed to diffuse know-how. Specialist engineers sit in a glass cabin at its centre so that advice to—and feedback from—the shop floor flows freely.

## Prime factories

Optimists point to this and other high-profile investments in India. Foxconn, a Taiwanese contractor that is the biggest private-sector employer in China, recently announced plans to open as many as a dozen mega-factories in India by 2020. In March, Ford opened a 400-acre car factory in Gujarat, the business-friendly state run for 13 years by Mr Modi before he became prime minister. Last month the state of Telangana granted approval for a new factory to Micromax, an Indian handset-maker. BMW and Mercedes are using more components from local firms for their Indian-assembled saloons. Volvo says it will soon sell Bangalore-made buses in Europe for the first time. A fast-growing local market of 1.25 billion people is a big draw. Transport costs should encourage manufacturers who wish to serve Indian consumers to shift production there. Even Mahindra Aerospace indirectly benefits from local demand. A large order received by Airbus, its prized client, is from Indigo, India's leading low-cost airline.

Yet for all these bright spots, it is hard to imagine a manufacturing renaissance in India without significant reforms to make factories easier to set up and run. Mr Modi has pledged to vault into the top 50 countries in the World Bank's ease-of-doing-business rankings (India is 142nd). But his reform programme has stalled. His government has been forced to abandon changes to a land-acquisition bill in the face of protests. A bill to put in place a nationwide goods and services tax, to replace a myriad of state and federal levies, remains stuck. A plan to streamline India's labour laws is bitterly opposed by trade unions. The problems that have weighed on Indian manufacturing since the 1990s remain. Until they are tackled, successes like Mahindra's aircraft venture will remain all too rare. ■

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## Spain's economy

## Back on its feet

MADRID

## Growth has returned, but dangers still lurk

**A**MID the drama of the past few months over a possible Grexit, it has been easy to overlook that other parts of southern Europe have been recovering—just as Greece itself would have done if politics had not got in the way. The revival of Spain's economy is especially important because it is the fourth-biggest in the euro area and the one whose troubles seemed most likely to prompt a break-up of the single-currency club only three years ago. For some, the Spanish rebound is proof that structural reforms pay off. Yet so deep was the downturn that Spain is still far from regaining all the ground it lost. Moreover, it is not clear how much the recovery has to do with Spain's vaunted policy shifts.

The Spanish economy has been growing for two years, following the extended double-dip recession in 2008-13 (see chart). The recovery was initially lacklustre but it picked up in the spring of 2014 and has sparkled particularly this year, with growth of 0.9% in the first quarter (an annualised rate of 3.8%) and 1% in the second quarter. Unemployment remains troublingly high, at 22.5% in June, but has fallen sharply from its peak of 26.3% in early 2013.

The Spanish economy has been benefiting from a general cyclical upturn in the euro area. The sharp fall in energy prices caused by the collapse of the oil price has been acting like a tax cut; the European Central Bank's adoption of quantitative

easing has been a further fillip. Yet Spain has been doing considerably better than the single-currency bloc as a whole, which grew in the first quarter of 2015 by a more sedate 0.4%. Indeed Spain's recent growth rate is among the highest in the euro area.

For the government, led by Mariano Rajoy, the recovery is a vindication of the reforms it has pursued since taking office in late 2011. Much is made of a shake-up in 2012 of Spain's labour market, which tackled two dysfunctional features. One was the divide between cosseted permanent workers and temporary employees who took the brunt of lay-offs during the downturn. The other was collective pay-setting

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arrangements within industries between employers and trade unions that were imposed upon individual firms. The reforms sought to make it less expensive for employers to dismiss permanent workers by reducing severance payments. Companies were also allowed to opt out of the sectoral agreements and to strike their own bargains with workers.

Other reforms have sought to encourage enterprise. In particular the government has made it easier to start a business, reducing the number of procedures involved from ten to six between 2013 and 2014. It is also striving to unify regulations across Spain's regions. Corporate-income tax has been lowered this year from 30% to 28%, and will fall to 25% in 2016. Encouragingly, Spain has moved up the World Bank's "ease of doing business" rankings, from 52nd two years ago to 33rd in 2014 (out of nearly 190 economies).

The verdict on the reforms and their impact is mixed, however. Rafael Doménech, an economist at BBVA, Spain's second-biggest bank, argues that they help to explain why Spain has been doing better than other countries on the periphery such as Italy. He estimates that if the labour-market reforms had been in place during the crisis, unemployment would have peaked at 20% rather than 26%, sparing a third of the rise in the jobless rate.

But Juan José Toribio of the IESE business school in Madrid counters that the source of the recovery has not been structural reforms but rather the adjustments forced upon businesses and workers in coping with the severe recession, in particular through lower wages. He also attaches importance to the clean-up of the banks, which was facilitated by a European bailout of Spain's struggling financial sector in the middle of 2012.



► It is in any case important to put the Spanish recovery in perspective. It follows a decline of 8% in GDP between its peak in the spring of 2008 and its trough five years later. The economy may now be growing fast, but it is still 4% smaller than seven years ago, a bigger shortfall than that of the euro area as a whole, whose GDP is about 1% below its peak. Despite the decline in unemployment, the jobless rate in Spain is still the second-highest in Europe, exceeded only by Greece's.

Moreover, the recovery has become over-reliant on domestic demand, especially consumer spending. Although Span-

ish exporters did well during the second dip of the recession in 2011-13, mitigating the severity of the downturn, net trade has faded as a source of growth despite a strong performance in tourism. Spain's poor public finances are another concern. The budget deficit was a swollen 5.8% of GDP in 2014 and is forecast by the European Commission to be 4.5% this year. Private and public debt are worryingly high in relation to GDP.

The biggest concern is that the recovery has done little to heal the wounds opened up in the years of crisis. Santiago Fernández Valbuena of Telefónica, one of Spain's

largest companies with a big presence in Latin America, worries about the uneven pattern of the recovery, in which mainly younger temporary workers have had a far tougher time than permanent staff, despite those labour-market reforms. Greece's fledgling recovery in 2014 did not prevent the election of Syriza, which gave voice to the losers in the preceding depression. Spain's recovery has lasted longer and its recession was not as severe as Greece's (where the peak-to-trough fall in output was a huge 27%), but with an election due to be held later this year, it too remains vulnerable to political upheaval. ■

## Buttonwood | Advancing, not retreating

### Forecasts of the decline of capitalism are premature

**B**IG crises can lead to big political upheavals. Think of the Depression and the subsequent rise of fascism in Europe and the New Deal in America. What is remarkable about the financial crisis of 2008 is the limited nature of the reaction.

Protest parties of the left and right have gained ground, but only in Greece have they gained power. The biggest policy change has been the introduction of quantitative easing, a technical shift that arouses few passions on the street.

This lack of action is a source of frustration on the left, for whom 2008 seemed to herald capitalism's collapse. Some, including Paul Mason, the author of a new book called "Postcapitalism", still hold out that hope. They view the "sharing economy", in which outright ownership of goods is less important (think car clubs and "freecycled" furniture), as a sign of capitalism's impending demise. Jeremy Rifkin, in his book "The Zero Marginal Cost Society", talks about "the internet of things, the collaborative commons and the eclipse of capitalism".

However, if you define capitalism as the interaction of individuals with a market economy, the system is advancing, not retreating. New-economy websites such as Airbnb and Etsy allow people to earn money in new ways—renting out their homes while they are on holiday, or selling arts and crafts. In the past, homeowners might have struggled to find renters and hobbyists to find buyers; aggregator websites make the task much easier.

It is true that some of these new websites undermine existing business models, just as file-sharing wrecked music publishing companies. But investors expect most of these companies to be profitable eventually, judging by the valuations they attract. Google started as a free internet-search business but has found a

way to monetise its reach. The move from an economy based on physical goods to one based on software and intellectual property seems to be allowing higher returns on capital than before. The internet has been in wide use for 20 years or so, and corporate profits are close to a post-war high as a proportion of American GDP.

By reducing the cost of information, the internet kills some business models. But not all. New models will appear and people will always be willing to pay for products that convey status, whether luxury watches or fast cars or branded clothing. They can stream music for nothing, but people will spend vast sums to hear rock bands play live.

Another new-economy effect is that the old idea of lifetime employment is fading. More people will follow "portfolio careers", switching from one employer, or even industry, to another as the economy changes. This will require them not just to learn new skills as they age, but to monitor the economy for new opportunities.

Many more people are likely to be self-employed, offering services to a wide range of customers. In a sense, they will be

artisans, not employees. Activities such as sales, marketing and accounting—matters that salaried employees leave in the hands of specialist colleagues—will become the responsibility of the individual. Such workers will have to be more, not less, sensitive to the market economy than the typical office drone.

And then there are pensions. Two decades ago, many workers could rely on a paternalistic system under which companies provided a retirement income linked to their final salary. New private-sector workers merely build up a savings pot, which they must use to see them through their retirement years as best they can.

In Britain this pot used to be converted into an annuity, a guaranteed income for life, another paternalistic solution. Instead, Britons must now guess at their likely longevity, calculate their spending over two decades or more while allowing for the effect of inflation, decide on the asset allocation for their funds, assess the merits of rival providers and adjust for the impact of their fees. These are decisions that might defeat the brightest hedge-fund manager. Again, people will have to be more sensitive to the minutiae of the markets than in the past.

It could be that this process will turn workers in a left-wing direction; they will demand more government protection from the economic cycle. But things may shift the other way. New-economy pioneers may be socially liberal, but their economic views tend to the libertarian right. The individuals who sell stuff on eBay, or run bed and breakfasts, are capitalists too, even though they may not think of themselves that way. And they tend not to like more government regulation, or higher taxes on their earnings.



## Puerto Rico's finances

# Hurricane warning

**A government agency's missed bond payment heralds a messy bankruptcy**

IT WAS barely a month ago that Alejandro García Padilla, the governor of Puerto Rico, first asserted that the American territory's \$72-billion public debt was unsustainable. At the time, his warning that the only alternative to a comprehensive restructuring was a "unilateral and unplanned non-payment of obligations" was seen by most as a spur to negotiations with creditors. But on August 3rd Puerto Rico's Public Finance Corporation (PFC), a government agency, failed to make a \$58m payment to bondholders. "We don't have the money," explained Víctor Suárez, the governor's chief of staff.

The PFC depends on the island's legislature to appropriate funds to service its debts. But following a decade of uninterrupted recession, lawmakers were unwilling to extract more revenue from taxpayers. A loss of faith among investors, meanwhile, has left them unable to tap the capital markets. As a result, the PFC only managed to send off \$628,000. Moody's, a rating agency, promptly announced that it considered the bond in default.

The PFC's missed payment is unlikely to set off an immediate cascade of lawsuits or further defaults. Its bonds are technically nothing more than a "moral obligation", without any legal mechanism to enforce payment. The government insists that the failure to pay should not be considered a default at all, since the bond's terms only oblige the PFC to pay what the legislature has appropriated.

Just three days before the PFC stiffed its creditors, the Government Development Bank, another official agency, made a \$170m payment on its debts. And if other bits of Puerto Rico's government default, over \$10 billion of its liabilities are backed by municipal-bond insurers, which say they have ample reserves to keep creditors paid on time.

Nonetheless, the PFC's default accelerates Puerto Rico's debt crisis. It extinguishes any hope that the island's creditors might somehow avoid losses. It also ends whatever access to commercial finance the government might still have had.

Provoking a sense of urgency may well have been Mr García Padilla's intention. Puerto Rico's awkward status within the United States leaves it in an unenviable position. Because it is not a state, but rather a self-governing territory, its agencies cannot use the portion of federal bankruptcy law that pertains to the public sector, known as



Rainy days ahead

Chapter Nine. This has been used by insolvent governments on the mainland (such as the city of Detroit) to reduce their liabilities. But after the island's legislature passed its own version of Chapter Nine last year, federal courts struck it down on the ground that only Congress can alter

## Fourteen years' hard LIBOR

You could keep a brothel, deal in firearms and engage in "wanton or furious driving", all at the same time, and still end up with a shorter prison sentence than that received by Tom Hayes, a former investment banker who on August 3rd got 14 years for market-rigging. Mr Hayes was found guilty of eight counts of fraud by a court in London. The judge, Jeremy Cooke, called him "the hub of the conspiracy" to rig LIBOR, a benchmark interest rate. The nature of his offence is less easy to explain than, say, burglary, making explosives or cannabis-peddling—other offences that carry 14-year sentences in Britain. He made his employers—UBS and then Citi—hundreds of millions distorting LIBOR to suit his trading positions. Interest rates on lending worth trillions, from mortgages to corporate loans, were swayed by Mr Hayes's schemes to bolster his bonus.

The sentence is steep by financiers' standards, too. Beyond Bernie Madoff, the Ponzi-schemer who copped 150 years in American jail, few white-collar criminals spend more than a year or two behind bars. Other crooked traders, including Kweku Adoboli, a former colleague of Mr Hayes at UBS, got off much more lightly.

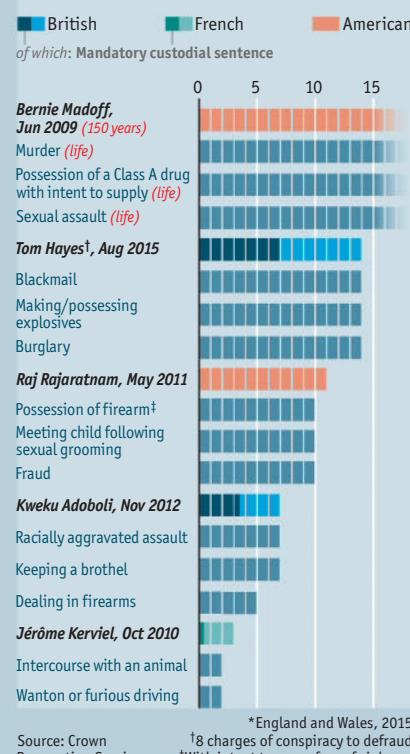
bankruptcy laws. That left the governor with no choice but to beseech Congress to amend the law to allow territories such as Puerto Rico to invoke Chapter Nine, a plea that has so far fallen on deaf ears.

By missing a relatively insignificant payment, Puerto Rico has made immediate the previously remote spectre of a chaotic, piecemeal default among its many different agencies and types of bond. That may increase the odds of congressional action, as well as encouraging litigation-shy creditors to negotiate.

Even if such brinkmanship succeeds, however, the extension of Chapter Nine would not be a cure-all. It would not help with Puerto Rico's \$13 billion of "general obligation" bonds, which are protected by a clause in the island's constitution that guarantees their holders first claim on all "available revenues".

Should Congress fail to act, precious little time remains to work out a contingency plan. Puerto Rico is not even planning to make an initial offer to its creditors until August 31st, and is due to make payments of \$1.3 billion (1.5% of the island's output) in December and January alone. The island's biggest creditors, fund managers such as Oppenheimer and Franklin Templeton, have shown little willingness to cut a deal. Puerto Rico is prone to hurricanes. The PFC's default puts a destructive legal and financial storm squarely on the horizon. ■

Maximum prison-sentence lengths by offence\*, and selected individuals' sentences for financial crimes  
Number of years



## Asian currencies

# Plunging like it's 1998

SINGAPORE

**The rupiah and ringgit plumb depths unseen since the Asian financial crisis**

**N**O T since Bill Clinton was president and Barack Obama was a law professor with a sideline in local politics have the beaches of Bali and Langkawi looked so inviting to Americans. Four years ago, a dollar fetched just over 8,500 Indonesian rupiah, and just under three Malaysian ringgit. Today a dollar is worth nearly 14,000 rupiah and almost four ringgit. Both currencies hit 17-year lows this summer, and kept falling (see chart on next page).

In one sense, Indonesia and Malaysia are far from unique: declining commodity prices, the slowdown in China and the growing likelihood of an interest-rate rise in America have combined to make 2015 a miserable year for emerging-market currencies. Brazil and Russia are in recession, sending the real and the rouble falling. Turkey, with its slowing economy, huge current-account deficit and growing political instability, has seen the lira decline steeply; the Chilean, Colombian and Mexican pesos have all drooped.

But in Asia the rupiah and ringgit lead the race downwards, having fallen by 8.4% and 9.8% against the dollar this year—much further than the Thai baht (6.4%) and the Philippine peso (2.2%). Their problems are exacerbated not just by the Indonesian and Malaysian economies' heavy dependence on commodities, but also by political ructions in both countries.

Start with commodities. The halving of oil prices over the past year has harmed Malaysia, which depends on oil for about 30% of its revenue. Indonesia is a net importer of oil, but other commodities still comprise around 60% of its exports—a worry, given that *The Economist's* commodity index, which excludes oil, has declined by almost 20% over the past year. Thailand and the Philippines, in contrast, both have sizeable advanced manufacturing sectors: their top exports are computers and electronic components.

China's slower growth and waning appetite for commodities have also been a drag on Malaysia and Indonesia. China is the top destination for exports from the Philippines too, but remittances from the millions of Filipinos working abroad have helped prop up domestic demand, thus cushioning the blow of falling income from exports.

Indonesia's current-account deficit and the big share of its government debt in foreign hands will make it particularly susceptible to capital outflows in the event of

## Distracted teens

# The dreamboat next door

**It's official: having friends of the opposite sex is bad for children's grades**

**D**O FRIENDS of the opposite gender distract teenagers, hampering their academic performance? It may seem obvious, at least to paranoid parents, and yet it is hard to prove. Simple analysis of a survey of American schoolchildren conducted in 1995, for example, suggests no link between the proportion of a girl's friends who were boys and her grades. Boys with lots of female friends actually achieved better results than those with fewer.

A new paper\* by Andrew Hill of the University of South Carolina, however, digs deeper into the data, and comes to a different result. Friendship groups are not random, which makes it tricky to isolate the effect of fraternising with the opposite sex on school performance. Pushy parents, for instance, may both encourage after-school activities (hotbeds of hobnobbing across the gender divide) and help out with homework. By the same token, the sort of boys who do not find it embarrassing to join a clique composed mainly of girls may also be more studious.

Mr Hill gets around this by looking at



a rate rise in America. (Foreigners also own a lot of Malaysia's debt.) Even more worrying, much Indonesian borrowing, both corporate and sovereign, is dollar-denominated, meaning that as the rupiah falls the cost of debt service rises.

In response to these woes, Indonesia has fallen back on protectionism, as usual: in July it imposed import tariffs on a range of consumer goods, including coffee, cars

the proportion of schoolmates of either sex living near each student. He reasons that parents do not choose where to live based on the sex of their neighbours' children. The gender mix of near-neighbours should therefore be unrelated to the invisible factors that influence both friends and grades. But the mix of neighbours does influence friendship groups in school, since children are much more likely to befriend other children who live close by.

Mr Hill calculates the share of boys and girls among each child's 20 closest neighbours and uses this to identify random differences in friendship groups. He can then isolate the effect of having more friends of the opposite gender on school performance. He finds that for every 10% more children of the opposite sex among a student's friends, his or her grade-point average (GPA) declines by 0.1 (GPAs range from 0 to 4).

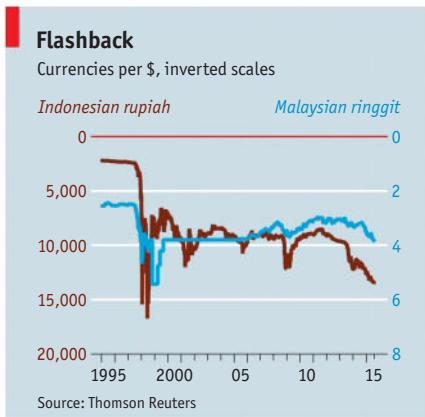
Below the age of 16, the effects are restricted to science and maths, but beyond 16 they spill over to English and history as well. Girls seem to be more prone to distraction, though Mr Hill cannot muster the statistical power to be certain. This tentative result is consistent with other studies that find that girls gain more from moving to single-sex schools.

Readers rushing to remove their children from co-ed schools should know, however, that Mr Hill's results came with a twist. Having more friends of the opposite sex may be bad for grades, but it has other effects, too. Among the children from the original survey who were successfully re-interviewed 14 years later, those whose grades had been dragged down by friends of the opposite gender were more likely to be (or have been) married. Traditionalists worried about a child mooning over the hearthrob next door may comfort themselves with that.

\*“The girl next door: The effect of opposite gender friends on high school achievement”, *American Economic Journal: Applied Economics*, July 2015.

and condoms. Despite much talk from the president, Joko Widodo, about upgrading his country's infrastructure, little has been done. He came into office nearly a year ago with great promise, but some investors have started to wonder whether he is up to the job of pushing through the reforms his country desperately needs.

As for Malaysia, its foreign reserves look set to drop below \$100 billion, depriv-



ring it of a much-needed buffer, and suggesting the government may have tried to prop up the ringgit. The woes of its prime minister, Najib Razak, who for months has been trying to dispel allegations of corruption, may intensify investors' jitters.

The question now, for both countries, is how long the pain will last. Many predict that commodity prices will rebound; fewer predict when. In the meantime, depreciation should make their exports more competitive, but low commodity prices seem to be offsetting that gain. Indonesia is growing at the slowest pace since 2009. The falling currencies in both places are also stoking inflation. Whenever the Fed gets around to raising rates, these ailments will presumably worsen. ■

#### The Federal Reserve

## The Tarullo show

NEW YORK

**The Fed's broad but woolly powers give its senior officials vast discretion**

IT IS the job of the Federal Reserve, according to the law that created it in 1913, to supervise banks and "to furnish an elastic currency", among other things. Those tasks, it turns out, are quite elastic themselves. The Dodd-Frank act of 2010, which overhauled America's financial regulations in the wake of the crisis, requires the Fed to write no fewer than 58 new regulations. It gives the Fed a say in everything, from how much collateral firms trading certain derivatives should provide their counterparties, to the "diversity policies" of financial institutions.

Dodd-Frank also creates a new position within the Fed, a vice-chairman responsible for regulation, to oversee many of those new rules. The president has never nominated anyone to fill that post, perhaps for fear of the awkward debate that would doubtless ensue during confirmation hearings in the Senate, about how ap-

propriately the Fed was exercising its new powers. In fact, two of the seven seats on the Fed's board are currently vacant. In the meantime, the administration of the Fed's ever-expanding powers has fallen, more often than not, to Daniel Tarullo, a former law professor whom Barack Obama appointed to the board days after taking office in 2009.

Mr Tarullo sees Dodd-Frank as reversing three decades of deregulation. So far, the Fed and others, he says, have focused on the biggest problem created by this laissez-faire approach: the emergence of financial institutions that are too big to be allowed to fail and yet are far from failure-proof. But the regulators' intention, he continues, is to tackle weaknesses throughout the financial system, not just at big banks.

At first glance, for all the Fed's new powers, not much has changed. Big banks are bigger than ever. Officially, indeed, the number of too-big-to-fail entities has expanded in recent years, as the Fed has declared several insurers to be "systemically important"—its euphemism of choice.

Yet the Fed's leverage over big banks, in particular, is enormously enhanced. It administers annual "stress tests" that not only examine the quality of loans and of management, but also determine what share of profits, if any, can be distributed to shareholders. Last year, for instance, the Fed blocked planned dividends and buybacks at five big banks. Banks must also submit "living wills" to the Fed. These are intended to ensure that firms can be easily sold or closed if they fail, but, by extension, allow the Fed to dictate what businesses banks should be in. New rules on funding, in addition to those on capital, allow the Fed to influence how banks raise their money, as well as how they invest it.

The staff of the Fed's supervision division in Washington, DC has expanded by almost two-thirds since 2007. The heart of the division is a new unit, supervised by Mr Tarullo, with a suitably vague and intimidating name, the Large Institution Supervision Coordinating Committee (LISCC), the mere mention of which sends a shudder down the spine of any bank executive. Meanwhile, the Fed's regional branches, which played a central role in banking supervision prior to the crisis, now take a back seat.

This has widened the distance between regulators and the regulated, to both good and bad effect. The boards of the regional reserve banks are typically populated by bank executives, and so are often seen as insufficiently independent. But the new, Washington-based, system is often disparaged as reliant on intricate models that do not really grasp how banks serve their clients and the economy.

The Fed will continue to tweak the rules for banks, Mr Tarullo says, to encompass

more economic scenarios, to bring about changes in the legal structures of banks and possibly even to make them more efficient. But the big changes that are still to come, Mr Tarullo says, are in "lacunas" in the regulatory system, where risk can fester unobserved. Using woolly phrases such as "prudential market regulation" and "systemic policy", the Fed is claiming the right to interfere in any corner of finance, not just banks.

In particular, the Fed is now focusing on institutions which have leverage and funding sources susceptible to runs. Bond funds, which give investors the right to sell up instantly but which invest in illiquid securities, are a potential target of new regulation. This, though, is just the beginning. Markets are dynamic, Mr Tarullo says, and as a result regulators will have to revise and expand their rules constantly.

To many, this is the only way of ensuring a sound financial system. To others, it leads to a world in which a deluge of incomprehensible rules gives distant central bankers control over the allocation of capital. The sceptics are not just bankers, and not just opponents of regulation. David Skeel, a law professor at the University of Pennsylvania, is an enthusiastic supporter of the Fed's efforts to rein in the big banks, but is critical of how opaque the new rules are. In his view, the Fed's vague mandates and the enormous discretion they put in the hands of its officials undermine the rule of law. At the least, it is ironic that the system that the likes of Mr Tarullo are so carefully constructing could easily be undone by successors with a different view. ■



The book of Daniel

# Free exchange | Rule it out

## Setting interest rates according to a fixed formula is a bad idea

**S**HOULD experts in the public service follow rules, or rely on their own judgment? The answer is crucial for many areas of public policy, including criminal sentencing, immigration and education. It is also of pivotal importance to monetary policy.

Central bankers usually have discretion over how to use interest rates to achieve their goals. Yet it is easy to see the problems that result, as analysts pore over every word any central banker utters and markets see-saw in response. This tendency is becoming more frenzied as America's Federal Reserve prepares to raise rates, issuing tantalisingly vague statements along the way. Some Republicans in Congress think it would be better if the central bank's actions were more predictable. Jeb Hensarling, who heads the committee that oversees the Fed, frequently urges it to set interest rates using a simple formula.

The debate about rules versus discretion is an old one. In 1977 economists Finn Kydland and Edward Prescott—who went on to win the Nobel prize for their work—showed how too much tinkering with interest rates can be harmful.\* In a simple model of the economy, two things determine inflation: the expectations of workers, who must decide how much pay to ask for, and the interest rate. Wage contracts last for a while, but policymakers can change interest rates at any time. If policymakers prefer lower unemployment than is natural—ie, a rate that causes some inflation—they will be tempted to cut rates when wage growth is moderate. Foreseeing this, workers expect high inflation to begin with. Policymakers would do better if they could credibly promise to sit on their hands. Most economists reckon this cycle helps to explain the high inflation of the 1970s.

Making central banks independent helps solve the problem. Public-spirited central bankers with a clear mandate are less likely to seek to inflate the economy artificially. But some think an algorithm could do their job even better. In 1993 John Taylor of Stanford University showed that the Fed typically behaves as if it follows a simple rule anyway.

Mr Taylor's recipe for rates is as follows. Take the long-run real interest rate, which Mr Taylor assumed to be 2%. Add inflation. Then, adjust for your economic goals. For every 1% that inflation is above target, raise rates by 0.5%. For every 1% that economic growth falls short of its potential, cut rates by 0.5%.

This formula is remarkably good at predicting the Fed's behaviour (see chart). Moreover, the Fed's few deviations from the rule have not always been a success. Mr Taylor thinks the low rates of

the early 2000s, for instance, inflated America's housing bubble.

Monetary policy based on rules has one main advantage: transparency. The policy works by changing the cost of saving and borrowing. When rates go up, people are more inclined to save; when rates fall, they are more likely to borrow. When making these decisions, people care about tomorrow's interest rate as well as today's. The more they can predict how the central bank will act, the better they can plan—and the more likely they are to behave in the way that the central bank wants.

The benefit of transparency explains the policy of "forward guidance"—pledges by central banks, in the aftermath of the financial crisis, to keep rates low. Yet central bankers do not like having their hands tied. The Bank of England, for instance, listed no fewer than four reasons why it might abandon its own guidance, including runaway inflation and financial instability.

The need for such get-out clauses demonstrates the pitfalls of monetary rules. It is easy to see the optimal interest rate in an economic model (especially with the benefit of hindsight). It is much harder to understand how best to react to unexpected economic conditions. In 1987 the Fed deviated from the Taylor rule when stockmarkets crashed. From 2009 it deviated because it could not cut interest rates below zero, as the rule recommended. Research also suggests that the trade-off between inflation and unemployment evolves as the economy changes. If so, then any rate-setting formula would also need to change.

## A recipe for disagreement

Mr Taylor's rule is less clear than it seems. Take the long-term real interest rate, which he assumed to be 2%. Today, many economists suspect this rate is permanently lower as a result of chronically weak demand and low productivity growth. This would mean that interest rates should be lower than the Taylor rule suggests. Yet there is no more consensus about what the long-term real interest rate is than about where the Fed should set short-term rates.

A similar problem arises with potential growth. Debate rages about the amount of slack left in Western labour markets. Economists do not agree on how much wages are constrained by part-time workers who want more hours, or on how much the labour-force participation rate, as well as unemployment, varies with demand. Estimates of slack are themselves the product of qualitative judgment. Plugging them into a rule would give a spurious impression of objectivity.

Those calling for a Taylor rule acknowledge these uncertainties. They stress that it would not have to be binding: the Fed could override it. But doing so would be to court controversy. Fed chairmen might not want to stick their necks out by deviating from a rule for too long. They are therefore right to see one as an unnecessary constraint on their autonomy.

If the public—or financial markets—cannot predict interest rates, it is because setting them is difficult. There is no overcoming that. If politicians want more scrutiny of Fed policy, the opinion of a well-staffed shadow body would make a better comparator than a formula. Until the day the economy is fully understood, human judgment has a crucial role to play. Algorithms are replacing many jobs, but they should not supplant central bankers. ■

### Dropping stitches

Federal funds rate, %



Source: Brookings Institution

\* Studies cited in this article can be found at [www.economist.com/taylor15](http://www.economist.com/taylor15)



## The home of the future

### Summon the comfy chairs!

#### Domestic furniture may soon have a mind of its own

WALT DISNEY'S film version of "Mary Poppins" features a scene in which, at a click of the protagonist's fingers, cupboards, drawers, bedside tables and trunks fly open and her young charges' clothes and toys leap inside them. Self-tidying clothes and toys are still some way away, unfortunately. But furniture that collaborates, Poppins-like, with its owners may be just around the corner. If groups of researchers working on the idea in America and Europe have their way, you may soon be able to call a robot footstool, so that you can put your feet up at the end of a long day, make use of a robotic toolbox when doing-it-yourself of a weekend and even—yes—install a robot toybox in the nursery that will encourage your children to tidy up after themselves.

These devices and others like them will, their inventors hope, plug a gap in the market between basic robotic appliances such as Roomba, an autonomous vacuum cleaner made by iRobot, and multipurpose 'droids like Pepper, a humanoid domestic servant launched recently by Softbank. The secret of success, they believe, is not just to devise furnishings that will do what they are told, but to give them personalities, convincing their owners that communication with them is a two-way process. At the moment, only prototypes are available—and, for reasons of safety, these are

ultimately under the control of human supervisors, rather than being fully automatic. But trials suggest some forms of robotic furniture like this would, indeed, find a ready market.

#### **Supercalifragilisticexpialidocious**

One device with obvious commercial potential is a robot rubbish bin that can tour places like fast-food restaurants, soliciting trash. This was invented by Wendy Ju and David Sirkin, of Stanford University. Tests have shown it to be popular with customers. The robot approaches a table and wiggles on the spot to gain attention. People quickly get the idea of what they are supposed to do, and respond accordingly—even looking around for extra rubbish to feed the robot.

Francesco Mondada, of the Swiss Federal Institute of Technology, in Lausanne, has used a similar approach to encourage children to tidy up their toys. His mobile toybox is a wheeled crate adorned with rotating eyes and colourful lights. It wanders around a room until it spots a toy on the floor. It then stops, appears to look at the toy with its eyes, and wiggles and flashes to prompt the miscreant who has left it there to put it into the crate.

Another piece of robot furniture, this time a toy rather than a toy-tidier, is being developed by Aaron Steinfeld and his col-

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leagues at Carnegie Mellon University in Pittsburgh, in collaboration with Disney. It is a mobile, talking, one-metre-high robotic chest of drawers, nicknamed Chester. One of the drawers sports an animated face that entertains groups of children by regaling them with stories. Other drawers open at appropriate moments, to offer the audience paintings and photographs.

Chester is clearly just for fun. Whether a similar device being developed by Dr Ju at Stanford falls into the same category depends on your view of DIY. Her robotic chest of drawers cannot talk, but it might be able to help the home craftsman make things more easily.

Dr Ju's cabinet is intended to assist by opening the drawer that contains the right tool at the correct moment. Its drawers have been motorised and put under computer control, so that they open and close in expressive ways. A drawer can, for instance, move in and out slightly to indicate it may contain something pertinent to the task. The plan is that appropriate hand gestures by the user would then tell the drawer to open completely, if its contents are required, or to close, if not. Once the user has finished his masterpiece, Dr Ju jokes, the chest might even applaud with a Mexican wave of individual drawers opening and closing in sequence.

The programs that will permit the tool chest to follow the progress of the person it is trying to help have yet to be written. But the idea is plausible in principle. Object-and movement-recognition software, including software that can understand emotions, is improving by leaps and bounds. If fitted with a suitable camera, a piece of furniture with appropriate programming ➤

.....  
Watch robotic furniture in action at [Economist.com](http://Economist.com)

► could recognise the stages involved in, say, making a picture frame—and even work out how much anguish the framemaker was experiencing.

Whether the average bogger will actually want a robot toolbox observing him at work is a moot point. But the *pièces de résistance* of Dr Ju's suite of mobile chattels, a couchbot and a robotic footstool, may be welcome in many homes.

The idea of a chair that can move around on command—and also get out of the way automatically when the Roomba comes out at night to clean up the day's mess—might take a little getting used to, it is true. But who could resist the idea, once he has sat down in it, of whistling for a footstool and having it trundle over from its lair in the corner, to place itself in exactly the right spot to receive a pair of weary feet. ■

#### Ebola fever

## Cluster bombing

**There is now a vaccine that works against the deadly virus**

THE outbreak of Ebola fever in Guinea, Liberia and Sierra Leone, which has killed more than 11,000 people, has dropped out of the news as it has been brought under control. Although new cases are now measured in dozens, rather than hundreds, a week, the disease has not been stamped out—and a new epidemic could flare up somewhere else at any time. A vaccine against the virus responsible would be of enormous value. And a paper in the *Lancet* suggests one is now available.

The vaccine, developed by the Public Health Agency of Canada and called rVSV-ZEBOV, smuggles one of the Ebola virus's coat proteins into a person's body in a Trojan horse called a vesicular stomatitis virus. This horse-and-cattle virus does not cause human illness, but its presence is enough to activate the immune system, which learns to recognise and react to the Ebola coat protein—and thus, the vaccine's inventors hope, to clobber Ebola if it should encounter it.

The trial that the *Lancet* reports was conducted on more than 7,600 people in Guinea by a group of researchers led by Marie Paule Kiely of the World Health Organisation and John-Arne Rottingen of the Norwegian Institute of Public Health. It involved a procedure called ring vaccination, in which clusters of people who were particularly at risk were offered the chance to be vaccinated. A cluster included everyone who had been in contact with a confirmed victim of Ebola, and everyone who had in turn been in contact with one of those peo-

#### AI and the fine-wine market

## Quants and quaffs

**Artificial intelligence may beat connoisseurship**

THE term "alternative assets" encompasses all manner of offbeat investments. Philatelists delight in rare stamps; petrol-heads in classic cars; oenophiles in that most liquid of assets, fine wine. The wine futures market, though, is pretty inefficient. Prices hinge on tastings of stuff that is still in the barrel, long before it reaches its fullest bloom.

This *en primeur* pricing is set on the basis of experts' palates, not through the equations of quants. Tristan Fletcher, of University College, London, is among those who wish to change that, by applying artificial intelligence to the matter.

Previous attempts to tame the fickle wine market with mathematics have relied on linear regression models. These take the untidy spray of data points about a given vintage—the particulars of the weather that year, the vineyard's history of medallion-winning and so on—and use them to draw the straight line that has, over the course of time, most closely approximated the price. Pick the point on this line where a particular vintage lies, and out comes a price prediction.

Such efforts have produced mixed results, however, and Dr Fletcher thought he could do better. Instead of regression, he applied a form of artificial intelligence, well known among prognosticators of other asset classes, called machine learning. This is able to ferret out correlations (perhaps a great many of them, some weak or transient) that standard regression models gloss over. Rather than a simple straight line, the result is a price curve that snakes through the data, thus yielding, if the particulars of the calculation have been set up properly, stronger predictions than regressions can manage.

Dr Fletcher and his colleagues started with wines in the Liv-ex 100 (a kind of fine-wine FTSE) and looked only at the historical data on prices. They first ran an "autocorrelation test"—a way to quantify

how calm or unruly prices had been in the past. As they report this week in the *Journal of Wine Economics*, they found two distinct groups. Half of the wines they looked at seemed to fluctuate in price over short periods, settling towards the mean return quickly. The other half trended up and down more wildly, over longer periods.

The team then ran two types of machine-learning algorithm on each group. For wines in the calmer group (in which the market was, presumably, behaving more efficiently), these algorithms outperformed the regression method by only a little. For those with more untamed price histories, though—ie, the ones on which most money could, in principle, be made—machine learning roundly won. That the wines should fall into two groups, for which the technique's benefits differ, is curious. It is, of course, a matter for further study—perhaps over a bottle of Château Palmer.



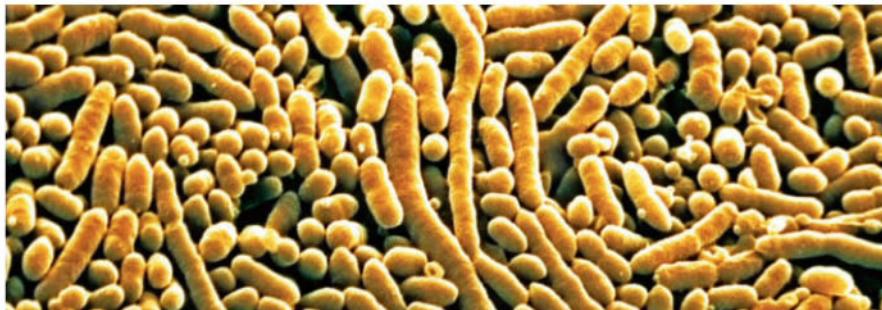
**But the old way is more fun**

ple. Most adults in each cluster were eligible for vaccination (the exceptions were women who were pregnant or breast-feeding) and the majority volunteered. Each cluster was assigned, at random, to one of two groups, known as arms. Those in one arm were offered the vaccine immediately. Those in the other were offered it after a three-week delay.

Ebola's incubation period is ten days. In the case of those in the arm in which vaccination was delayed, there were 16 cases between the moment ten days had elapsed

and the moment, 11 days later, when participants were vaccinated. No one who had been vaccinated in either arm of the trial contracted the disease once ten days had subsequently passed. The vaccine, in other words, seemed 100% efficient.

In light of this result, every new cluster involved in continuing trials will receive the vaccine immediately. If it continues to prove efficacious, approval for general use will no doubt follow, and the vaccine will spread to the other two affected countries. That may end the epidemic for good. ■



### Antibiotic resistance

## Zoology to the rescue

### Evolution causes resistance. Understanding evolution may deal with it

MUCH is made, in academic circles, of the virtues of interdisciplinary research. Its practice is somewhat rarer. But fresh thinking and an outsider's perspective often do work wonders, and that may just have happened in the field of antibiotic resistance.

Adin Ross-Gillespie of Zurich University is a zoologist, not a physician. But his study of co-operative animals such as meerkats and naked mole rats has led him to think about the behaviour of another highly collaborative group, bacteria. He and his colleagues have just presented, at a conference on evolutionary medicine in Zurich, a way of subverting this collaboration to create a new class of drug that seems immune to the processes which cause resistance to evolve.

Antibiotic resistance happens because, when a population of bacteria is attacked with those drugs, the few bugs that, by chance, have a genetic protection against their effects survive and multiply. As in most cases of natural selection, it is the survival of these, the fittest individuals, that spurs the process on. But Dr Ross-Gillespie realised that, in the case of bacteria, there are circumstances when the survival of the fittest cannot easily occur.

One of these is related to the way many bacteria scavenge a crucial nutrient, iron, from the environment. They do it by releasing molecules called siderophores that pick up iron ions and are then, themselves, picked up by bacterial cells. In a colony of bacteria, siderophore production and use is necessarily communal, since the molecule works outside the boundaries of individual cells. All colony members contribute and all benefit.

In theory, that should encourage free riders—bacteria which use siderophores made by others without contributing their own. In practice, perhaps because the bacteria in a colony are close kin, this does not

seem to happen. But inverting free riding's logic makes the system vulnerable to attack, for a bug that contributes more than its share does not prosper.

Following this line of thought Dr Ross-Gillespie turned to gallium, ions of which behave a lot like those of iron and can substitute for them in a siderophore, making it useless to a bacterium. In fact, siderophores bind more effectively with gallium than with iron, hijacking the whole process. A judicious dose of gallium nitrate can thus take out an entire bacterial colony, by depriving it of the iron it needs to thrive.

The crucial point is that, because siderophores are a resource in common, a mutated siderophore that did not bind preferen-

### Asexual discrimination

This curious, fernlike fossil is a rangeomorph, a member of a group believed (though no one is quite sure) to have been sedentary animals. They lived on the seabed during the Ediacaran period, which preceded the explosion of animal life during the Cambrian period. The specimen shown, which is 565m years old, is part of a study led by Nick Butterfield of Cambridge University, just published in *Nature*. Dr Butterfield and his colleagues wondered if they could work out how rangeomorphs reproduced. They looked at three places in Newfoundland where large fields of the fossil creatures are exposed, and mapped the precise locations of individual specimens using the Global Positioning System. The pattern suggested rangeomorphs lived in groups that grew, by asexual reproduction, from a single individual (as a beech tree might put out suckers that grow into a copse). The founding individuals themselves, by contrast, grew from "propagules" that drifted through the ocean, as the larvae of many modern sea creatures do.

tially to gallium would be swamped by the others, would fail to benefit the bug that produced it, and therefore would not be selected for and spread. At least, that was Dr Ross-Gillespie's theory.

To test this theory out, he and his colleagues grew cultures of an infectious bacterium, *Pseudomonas aeruginosa* (pictured). They then exposed these cultures either to ciprofloxacin, an antibiotic, to gentamicin, another such, to both drugs at the same time, to saline as a control, or to gallium nitrate.

As they expected, both the antibiotics and the gallium nitrate curtailed the growth of *Pseudomonas* to start with. As they also expected, resistance to both of the antibiotics built up steadily over the 12-day course of the experiment. But nothing similar happened in the cultures exposed to gallium nitrate. These continued to be suppressed. And when the researchers took a closer look at what was going on, they found that not only were the bacteria in their gallium-laced samples starved of iron, but the bugs were also responding to the crisis by pouring their energy into producing more and more siderophores, thus hastening the colony's demise.

What makes all this more than just a laboratory curiosity is that gallium nitrate is already an established drug. It has been used safely, and for a long time, to treat certain cancers and bone diseases. This suggests (though tests would need to be done) that it might be safe for use against infection. Dr Ross-Gillespie's evolutionary analysis of how to attack antibiotic resistance might therefore have provided the breakthrough the field needs. ■



## Science brief



How did biology begin?

### Life story

In the first of a series of six briefs looking at unsolved scientific mysteries we ask how living things got going and whether they exist elsewhere than Earth

**O**N ONE wall of *The Economist's* science office is a picture taken by *Hubble*, an American space telescope. It is called the Extreme Deep Field. Looking at it is a good way to get a visceral appreciation of the sheer scale of the universe. The image shows a patch of sky less than 1/150th the size of a full moon. This speck of space contains more than 5,000 galaxies. Multiply that across the heavens and you realise that the visible universe contains somewhere north of 150 billion galaxies. Each of those, in turn, contains billions of stars.

Anyone who has pondered such immensity will surely have wondered whether, somewhere else in the vastness of the cosmos, other forms of life might be crawling, flying or hopping around—perhaps pondering exactly the same question themselves. No one knows. But in 1961 Frank Drake, an American astronomer, came up with a good way to think about the problem. He pointed out that the number of life-bearing planets must be a function of how many stars are available to host them, how many planets have actually formed around those stars, what fraction of those planets are suitable for life, on what proportion life has actually begun, and so on. The Drake equation (see chart on following page) codifies this intuition. Gather enough information and extrapolate it to the universe at large and you could come up with an answer.

The physical terms of the equation are fairly easy to fill in. Thanks to pictures like the Extreme Deep Field, researchers have a good idea how many stars exist. The study of exoplanets—those that orbit stars other than the sun—has more recently armed them with data about planets, too. Extrapolating from the 2,000 or so known exoplanets suggests that most stars have them. Estimates of how many are habitable are less certain, mainly because of arguments about the definition of “habitable”. But even the lowest are of the order

of billions of such worlds in the Milky Way alone.

Filling in the biological parts of the equation is much harder. Science has but a single example—that of life on Earth—to extrapolate from. But if researchers can work out how life gets going, they will acquire an idea of how likely or unlikely that process is, and what sorts of conditions might be needed for it to happen. That would be progress. And the question of how life got started on Earth is an important one in its own right.

#### Meet the ancestors

There are two ways to answer this question. One is to work up from basic chemistry. The other is to work down from existing cells.

Modern cells rely on long strands of DNA to encode their genetic information, shorter strands of RNA to carry that information around, and proteins, made using that information, to run the chemical reactions they require to live. It is implausible that such a trifold system sprang into being fully formed. However, one of its components, RNA, is able to carry out the functions of the two others, and may thus predate them. Like DNA, RNA can store genetic information in the order of its component bases. And like proteins, it can catalyse chemical reactions—including its own duplication.

Clues within modern cells suggest they may indeed be descended from RNA-based life. Almost all possess a structure called a ribosome, a molecular factory that strings proteins together from chemicals called amino acids. The structure of something so vital is likely to have been conserved, even over billions of years. And the business end of a ribosome, the part that actually does the assembling, is a single long strand of RNA. Modern cells also sport chemicals called ribozymes—enzymes made from RNA rather than from proteins—which perform various important cellular functions. Like the ribosome, they may be biochemical fossils from the earliest era of life.

Such an “RNA” world, in which small strands of the stuff copied themselves and sometimes mutated, may be theoretically plausible. But it throws up another question—where did the RNA came from? To try to answer that, other researchers have taken the opposite approach—start with chemistry and see what you can build.

The most famous such experiment was performed in 1952 by Stanley Miller (see picture) and Harold Urey. They filled a flask with water, hydrogen, ammonia and methane—a mix of chemicals thought to be roughly representative of Earth's early atmosphere. Adding energy in the form of electrical sparks (to stand in for lightning, although ultraviolet sunlight may also have provided the necessary kick) persuaded those chemicals to combine into longer, more complicated varieties that stained the bottom of the flask with thick, tarry brown stuff. When this sludge was analysed it turned out to contain, among other things, several types of amino acid.

The “primordial soup” hypothesis Miller and Urey were testing has since fallen from favour. Critics point out that, even with enormous amounts of lightning, the rate of chemical synthesis would be agonisingly slow. Nor is it clear how the components of the soup could come together. But there are other ideas on the



Is anybody in there?



▶ menu. Michael Russell, a researcher at NASA, argues that life may have started in underwater towers called “white smokers”, built by volcanically heated, mineral-laden water bubbling up from beneath the ocean floor. Such smokers have a honeycomb structure, and experiments by Nick Lane of University College, London, show that the pores in this honeycomb could act as primitive cells, concentrating organic material inside themselves, and even setting up electrical gradients like those which power modern cells.

With no fossils left over from the earliest era of life, such theories are ultimately arguments about plausibility. One thing researchers can do, though, is try their hands at creating simple life themselves, in a laboratory. Jack Szostak, a biologist at Harvard University, is attempting to do just that. He combines the top-down and bottom-up approaches by trying to create proto-cells which could have formed from simple precursor chemicals, but that provide an environment in which small strands of RNA can catalyse their own replication.

Dr Szostak and his team have already created proto-cells from blobs of the sorts of oily molecules, called lipids, that form the outer membranes of real living cells. These proto-cells are sufficiently robust to isolate any RNA they contain from the effects of the outside world.

### Is anybody out there?

The other way to find out how easily life can get started is to search for it elsewhere. Fifty years ago this week James Lovelock, a British scientist, published a paper in *Nature* called, “A physical basis for life-detection experiments”. It was the first suggestion of how to conduct such searches from afar, and placed emphasis on looking for unstable mixtures of chemicals in planetary atmospheres.

Then, in the 1970s, a pair of American probes to Mars, the Viking landers, found some odd chemistry, but no clear signs of life. Some researchers nevertheless continue to hope Martian life may turn up. Though liquid water is essential for every known form of life, and modern Mars is a frozen desert, the evidence indicates it was warmer and wetter in its youth. Ancient river channels can be seen from orbit and sedimentary rocks litter the surface.

If life on Earth did begin in a primordial

soup—or, for that matter, a white smoker—their Martian equivalents may have offered odds that were as good as terrestrial ones. And it is just about conceivable that Martian creatures cling to existence today, buried in places where small reservoirs of liquid water remain. Indeed, with a whole planet to hide on, it is hard to see how the idea of reclusive Martian bugs could ever be comprehensively refuted.

Alien hunters might, though, have better luck elsewhere in the solar system, at places that still have water in abundance. Two such are Europa and Enceladus, moons of Jupiter and Saturn respectively. Both are icy worlds that seem to have vast underground oceans, kept warm by heat generated as they are kneaded by the gravity of their parent planets.

Enceladus sports plumes of water that spray out into space. In 2008 Cassini, a probe belonging to NASA, flew through those jets and reported that they contained carbon-based molecules (the sort known to chemists as “organic”, regardless of whether their origin is biological). Enceladus, then, has all the basic building blocks of life—water, organic chemicals

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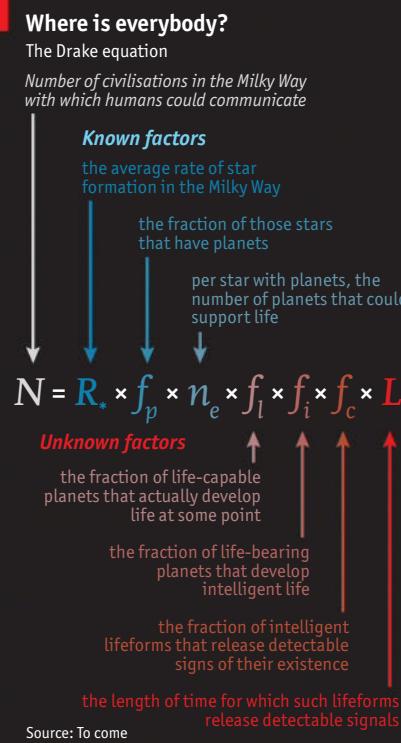
and energy. Various robotic missions are now being discussed, that might take a closer look.

Even if the solar system does prove barren, though, it may soon be possible to detect life—or at least, heavy hints of it—in other solar systems altogether. Most planets in such systems are spotted by looking for the tiny dimming of a star’s light that happens as one of its planets moves between it and Earth. When this occurs an even tinier fraction of starlight passes through the planet’s atmosphere. The gases therein will absorb specific parts of the starlight, leaving holes (which show up as black lines) in its spectrum. That pattern of lines would reveal the atmosphere’s composition.

A gas of particular interest is oxygen. In the solar system, only Earth has much free oxygen in its atmosphere, because life—or at least, the bacteria and plants that engage in photosynthesis—generates enough of the stuff to match the rate at which it is removed from the air by reactions with other gases, such as methane. If an alien planet had both oxygen and methane in its atmosphere the mixture would have Dr Lovelock’s crucial property of instability. This would suggest something there was generating a fair amount of oxygen, and it is hard to see how any process other than photosynthesis could do this over long periods.

Conclusive proof, though—as opposed to highly suggestive evidence from atmospheres—will be hard to come by. The only definitive demonstration of life’s existence would be to see it in the flesh (as might happen with microbial Martians) or, if it is intelligent, to detect any deliberate communications, something that a project called the Search for Extraterrestrial Intelligence has been trying for decades with no luck.

Perhaps Earth really is unique—an improbable conjunction of circumstances that spawned an improbable, self-replicating chemistry unknown elsewhere. But the measurable terms of the Drake equation make that unlikely. Just because alien life has not yet been detected does not mean it does not exist. Perhaps it will be there in the next star system to be studied. Or perhaps, one day, Dr Szostak will walk into his laboratory and see something that was not there the day before swimming around in one of his flasks. ■





### The Arab autocracies

## Burning down their house

**Blame dictatorship, not democracy, for the unravelling order in the Arab world**

THE Arab spring unleashed more than hopes for change in one of the world's most politically repressive regions. It also inspired a wave of books heralding the freedom and democracy about to engulf the Middle East. Now, as the tide of history has gone out with a vengeance, exposing violent ideologies, raging civil wars and renewed despair, comes a sobering reappraisal of where it all went wrong.

Among authors trying to make sense of why the uprisings of 2011 largely failed, Jean-Pierre Filiu stands out. His new book combines passion, scholarship and insight to present a convincing explanation of the deep malaise afflicting the Arab world. Despite being a professor of Middle Eastern studies at Sciences Po in Paris, Mr Filiu is mercifully disdainful of academic jargon. What the Arabs are experiencing right now, he says bluntly, is a brutal counter-revolution, "this systematic war of the Arab regimes against their people".

This judgment may sound overly sweeping and dramatic. The spate of tragedy in the Middle East—the ghastly carnage in Syria, the violent fragmentation of Libya and Yemen, the calculated barbarism of gangs such as Islamic State (is), the retrenchment of army-backed rule in Egypt—obscures a more complex regional picture. After all, Tunisia, where the Arabs' dictatorial dominoes began to topple in December 2010, has enjoyed a mostly orderly and fairly convincing transition to democracy.

**From Deep State to Islamic State: The Arab Counter-Revolution and its Jihadi Legacy.** By Jean-Pierre Filiu. Oxford University Press; 311 pages; \$24.95. Hurst; £15.99

Countries such as Jordan and Morocco, as well as the rich Gulf monarchies, never experienced revolution in the first place. Their political formula, of limited civil rights in exchange for relative security and rising prosperity, endures pretty much unchanged.

But Mr Filiu suggests that this bargain is not, in the long term, sustainable. The underlying compact that has allowed narrow elites—whether ruling families, political parties such as the Baath in Iraq and Syria, or military cliques like those of Egypt or Algeria—to dominate post-independence Arab states has at times brought a semblance of stability. But in all too many cases the price has been too high. Mr Filiu argues persuasively that one of those costs has been the rise of radical and violent strains of political Islam. Jihadist groups such as is, he says, should not be blamed on democratic uprisings but rather on dictatorships "that played with *jihadi* fire to deny any substantial power-sharing."

More a historian than a political scientist, Mr Filiu delves both into the past and more widely afield to explain how this came to be. There are two chief villains in

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his story. One of them is what Mr Filiu, borrowing a term coined to describe the opaque matrix of army, intelligence and business interests that long dominated Turkey, calls the Deep State. The other is what he describes as neo-Mamluk forms of government. The reference is to a caste of slave soldiers who rose to power in Egypt and Syria in the mid-13th century, and lingered as an exclusive and repressive ruling class for 500 years.

These are not new ideas, but Mr Filiu expounds on these analogies with a wealth of illuminating detail. In countries such as Algeria, Egypt, Syria and Yemen, coups in the 1950s and 1960s brought junta of army officers to power. Like the Mamluks, who first claimed legitimacy as defenders of the Arabs from invading Mongol hordes, these military cliques cloaked their predatory rule with anti-Western and anti-Israeli rhetoric combined with populist economics. Leaders such as Egypt's Gamal Abdel Nasser or Houari Boumedienne of Algeria first nationalised chunks of their economies in the name of socialism and progress and independence, handing management to colleagues, friends and cronies. In later privatisations the same privileged groups, in effect a mafia, gained far more lucrative personal control of the spoils.

Oil was a useful source of income for some of these regimes, but they were quick to profit from other resources. One of these was Western donor governments' fear of Islamist extremism. Mr Filiu cites the case of Yemen, whose president-for-life before being toppled in 2011, Ali Abdullah Saleh, placed relatives in charge of American-supplied counter-terrorism forces even as he quietly worked with the local branch of al-Qaeda. One uncle, in command of a force "protecting" oilfields, pressed Western oil firms to hire his own clansmen. In doing so he angered local tribes, guaran-

► teed their hostility and thus ensured the oil companies' need for more "protection".

A similar dynamic can be seen in Syria, whose leader, Bashar Assad, carefully stoked the sectarianism and Islamic radicalism he now claims to be defending against. Before and after the stillborn 2011 "revolution", Egyptian governments have also posed as a last-line defence against extremism, requiring frequent doses of foreign aid to shore up the ever-leaking dykes.

In fact, brutal measures wielded against dissidents only provoked increasingly extreme forms of dissent. Yet the eventual collapse of many of these countries into civil strife did not unseat rulers so much as tighten their grasp. To the adage that wars make states, says Mr Filiu, "one might add that for the Arab Mamluks 'civil wars make (and strengthen) Deep States.'"

His book makes for grim reading. But for anyone interested in a brisk yet thorough and penetrating survey of how the Arab world got to its present sad state, Mr Filiu's is an excellent introduction. ■

#### Genetics

## Breaking the code

**Life's Greatest Secret: The Story of the Race to Crack the Genetic Code.** By Matthew Cobb. Basic Books; 434 pages; \$29.99. Profile Books; £25

IN 1953 James Watson and Francis Crick, with the help of Rosalind Franklin and Maurice Wilkins, described the structure of the molecule at the heart of life. Deoxyribonucleic acid, better known as DNA, was, they said, a double helix, two spirals joined across the middle by pairs of four chemical bases, like a twisted ladder. That work earned Messrs Crick, Watson and Wilkins a Nobel prize and a place in the history books. The image of the double helix now often stands for biology, or even science, itself.

But this was merely the most visible breakthrough in a long struggle to understand the engine of life—how traits are inherited, mutated and weeded out by natural selection, and how the whole mysterious process works at the biochemical level. It is that lesser-known history that Matthew Cobb, a professor of animal behaviour at the University of Manchester, aims to sketch in his book, which has been shortlisted for the Royal Society's Winton prize for science writing.

The result is a fascinating reminder of just how hard-won are the seemingly obvious facts of modern biology. The development of genetics was a tale of confusion, accident, frustration and the occasional

#### New American fiction

## Searching and slouching

**Book of Numbers.** By Joshua Cohen. Random House; 580 pages; \$28. Harvill Secker; £18.99

**W**EIGHING in at nearly 600 pages, "Book of Numbers" is an unabashedly ambitious novel. It considers some of the most pressing concerns of this technology-fuelled era, such as the illusion of privacy and the loneliness of hyper-connectedness. It features not one but two characters with the same name as the author, Joshua Cohen, which has become a favourite device of writers keen to seem playful by toying with meta-narrative profundities. Sprawling and messy, spanning continents and styles, the book is already being heralded as a "Ulysses" for the digital age.

This would all seem a bit much, and yet there is indeed something remarkable about Mr Cohen's prose. From the first page it tumbles forth in a heady, headlong rush, the rhythmic sentences crammed with sharp observations, obscure allusions and deliciously unique language. The book's plot, such as it is, is about a frustrated sad-sack of a writer named Joshua Cohen who must ghost-write the autobiography of a tremendously successful tech magnate with the same name, who is keen to tell the full story of his company, an internet-search firm that bears a striking resemblance to Google. The job takes the two Cohens from New York to Palo Alto, Abu Dhabi, London and Paris, and gives the author the chance to ponder and skewer everything from the world of publishing to the culture of Silicon Valley (where "wastefulness" is "spun as ethical consumption", and a "chillionaire" might praise a party for having "mad fucking latency to it").

Mr Cohen's writing is sure and often deliriously entertaining. It is populated by "elongated attenuated marfanoid" flunkies in "black slacker jeans" and the

flash of insight. It was, says Dr Cobb, as important as the Manhattan or Apollo projects, but with no government support and little money, carried out by scientists interested in the question for its own sake.

The researchers started from almost total ignorance. William Harvey, better known for describing the circulation of the blood, wondered in the 17th century what could explain why children's skin colour was often a blend of their parents', whereas they share a sex with only one, and can

occasional "bland white guy whiteguying" in flip-flops. He is clearly enjoying himself. But like the seemingly endless desert wandering of the novel's biblical namesake, this book includes directionless ramblings that could have used the divine guidance of a wise editor. After the rush of the first section, the book loses some momentum. Aspects of the plot build some suspense (such as a development involving a character named Thor Ang Balk, who is obviously inspired by Julian Assange), but the plot is not the point. Mr Cohen is more interested in big ideas and punchy sentences than the mechanics of storytelling.

There are good reasons why Mr Cohen is now being compared to other critically acclaimed and notoriously unwieldy authors, such as Thomas Pynchon and David Foster Wallace. With "Book of Numbers", his fourth novel and the first from a big publisher, he has proven himself to be a bold and fearless writer. And at 34, he may only just be getting started.



have an eye colour different from either.

In the late 19th century a monk, Gregor Mendel, established, through experiments on pea plants, the basic rules of inherited traits. A Danish biologist, Wilhelm Johannsen, coined the term "gene" in 1909 to describe whatever it was that Mendel had found. But as late as 1933 scientists were still debating whether genes were physical things or just useful abstractions, and how they could transmit traits. Scientists knew that DNA existed, but many considered it a ➤

► boring bit of scaffolding in the cell. Proteins, which come in zillions of different varieties, were seen by many as the only things exciting enough to account for all the diversity seen in life.

After the second world war, ideas from information theory, arising out of wartime work on computers and automation, percolated into biology. Once the structure of DNA had been established, those ideas helped crack the problem of how the four chemical bases do their job. Proteins are built by stringing together 20 different sorts of amino acid. Strings of three bases within a DNA molecule represent these amino acids, but with 64 such triplets, there is much redundancy which information theory alone could not fully explain. Years of painstaking lab-work were needed to reconcile theory with reality.

Dr Cobb is good on the human side of the story, showing science as fuelled by rivalry, jealousy, competitiveness and wonder. The only downside is that he must marshal hundreds of scientists across several disciplines into around 300 pages of narrative. The results can sometimes be dense, and readers without a command of biological jargon will frequently find themselves consulting the glossary for guidance. But the cracking of the code of life is a great story, of which this is an accomplished telling. ■

#### Myanmar's political opening

## With a cause

**The Rebel of Rangoon: A Tale of Defiance and Deliverance in Burma.** By Delphine Schrank. *Nation Books*; 312 pages; \$26.99 and £17.99

THE story of Myanmar's astonishing political transformation since 2011 is usually told as a kind of top-down revolution. An army, having ruled the country brutally, ineptly and corruptly for half a century, decided to embrace change. The role of the opposition in this version of events tends to be described in terms of individual heroism: the patient, steadfast, impeccably moral stand of its leader, Aung San Suu Kyi, through her long years of house arrest and confinement.

Delphine Schrank's remarkable book is a reminder that this analysis is flawed in two ways. Miss Suu Kyi was the figurehead for a movement with deep roots in Burmese society, in which generations of heroes had risked their freedom and lives to defy and undermine military rule. Secondly, the 2011 decision by Miss Suu Kyi's party, the National League for Democracy (NLD), to rejoin politics and contest elections, was



Heroic, but hardly alone

as big a concession as that made by the generals in holding them.

The rebel of her title is indeed not Miss Suu Kyi, but one of a group of young pro-democracy activists, whom she gives the pseudonym "Nway". Ms Schrank followed him and his comrades for four years as a visiting foreign correspondent in Myanmar for the *Washington Post*. The activists live in the shadows, dodge the pervasive "dogs", as they call the secret policemen keeping tracks on them, make furtive trips across the border to Thailand, and organise free schools and small demonstrations. They have thrown away the chance of a respectable career, jeopardised their families' safety and pitted themselves against a regime that used torture less as a means of interrogation than as a reflexive demonstration of who was in charge. In describing all this, Ms Schrank sometimes devotes too much space. One reason repression survives, as reporters haranguing jaded editors have long known, is that it is repetitive. Tyranny can grow tedious after a while.

What Ms Schrank has written, however, is not a conventional journalist's lament about an appalling regime. It reads like a novel, from the lush (sometimes too lush) prose of its descriptions to the omniscience of its narrator, whose main characters speak and think for themselves (Ms Schrank herself appears only a few times, in the third person). The notes to the book make clear that this is tribute not to Ms Schrank's powers of imagination but to a massive and meticulous feat of reporting, including hundreds of hours of recordings. It is an attempt to tell the story from the insiders' perspective, and it works.

She has a flair for loading description with more than visual imagery. A family of Burmese migrants fleeing across a river to Thailand on the inner tube of a tyre are "sopping and stick-thin, with nothing left to their name but résumés of cheap sweat".

Of the leader of a dissident NLD faction that broke with Miss Suu Kyi and took part in an election in 2010 despite the party's boycott, she writes, accurately: "Still, in a starched shirt and deep green longyi [Burmese sarong], his thick hair neatly parted, his body lithe and taut, he conveyed to the outsider the spotlessness of a man of stature, or at least of one who had learned too well that when they took the rest away, all you had left was dignity."

The book gives a gripping account of the party's debate over whether to take part in that election, under an undemocratic constitution that left the army with the final say. Less persuasive is her account of its decision to backtrack on the boycott the following year, joining by-elections in 2012 and a general election due this November, under the same constitution: "the clincher ...had been a private meeting" between Miss Suu Kyi and Thein Sein, the general-turned-civilian-president. It is true that he has kept some of the promises he is assumed to have made then. Hundreds of political prisoners have been freed; censorship has been eased; the NLD swept the 2012 by-elections; the "dogs" roam less freely. But Miss Suu Kyi's volte-face remains mysterious: a genuine transfer of power has still not taken place. Ms Schrank's rebels always understood this was to be a long battle. ■

#### Mozambican fiction

## Of lions and men

**Confession of the Lioness.** By Mia Couto. Translated by David Brookshaw. *Farrar, Straus and Giroux*; 192 pages; \$25. *Harvill Secker*; £16.99

MIA COUTO'S writing fuses stark and rich imagery and is steeped in the history, superstitions and political turmoil of his native Mozambique. In his latest novel, "Confession of the Lioness", his characters—and by extension, readers—are forced to sift shaky facts and conflicting testimonies to get the full, devastating picture.

The novel comprises two alternating narratives. One follows Mariamar Mpepe in her village of Kuluman. After the horrors of Mozambique's civil war (fighting stopped in 1992) comes new danger in the form of marauding lions. For her safety, Mariamar's father locks her up, leaving her with little to do but reminisce about her sunny childhood with her grandfather, and about her relationship with a hunter 16 years ago.

The exploits of that hunter, Archangel "Archie" Bullseye, constitute Mr Couto's second narrative strand. A lovesick Archie ►

► returns to Kulumani with a ragtag entourage to eliminate the lions, vowing it will be his last hunt.

As the hunting begins, Mr Couto expertly sprinkles hints as to the real source of the recent savagery. The darkest threat, it transpires, may not be lurking out in the bush but festering deep within the village. The reader is made to wonder whether Archie has lions or people in his sights.

Inspired by real events, this remarkable novel impresses on many levels. There is the ghostly setting of a village as "a living cemetery, only visited by its own residents". There are the emotionally scarred protagonists, with Mariamar "devoured by the emptiness of not loving". And then there is Mr Couto's lyrical prose, seamless-

ly translated from the Portuguese by David Brookshaw. As with Mr Couto's previous novel, "The Tuner of Silences", silence is not absence, but an acoustic force, used to atmospheric effect (a serpent "moves around over the silence of ceilings"), for symbolic weight (Mariamar's dead sister was called Silêncio), or as a component of one of Mr Couto's customary proverbs ("A lion's growl leaves no silence in its wake").

There are moments when those proverbs imbue the drama with a clumsy sententiousness, or when the motif of silence is overwrought to the point of bewildering metaphor ("silence is an egg in reverse"). Otherwise Mr Couto spins a beautifully crafted tale about sound and fury, the living and the dead. ■

several princesses.

Among the tombs and royal mummies that archaeologists have identified from Tutankhamun's dynasty, Ancient Egypt's 18th, there remains one gaping absence. Nefertiti, the wife of Tutankhamun's father Akhenaten, was not only a famed beauty, as the world knows from her famous bust in Berlin. Her titles indicate that she served as co-regent and possibly also as a pharaoh in her own right after Akhenaten's death, meaning Nefertiti's tomb and its contents would be every bit as magnificent as her stepson's. Indeed, if Mr Reeves is right, what Tutankhamun got was her leftovers; even his face mask might originally have been intended for the queen.

Egyptologists are habitually reticent about each other's work, and will no doubt wait to embrace this especially bold claim, but Mr Reeves's paper has already aroused keen interest. "It's a fascinating argument and an impressive first step," says Kent Weeks, an American archaeologist who has minutely mapped the Valley of the Kings and in 1995 discovered the extent of its biggest known tomb. Mr Reeves's theory would be simple to test using non-invasive techniques, says Mr Weeks. A radar scan, for a start, would quickly reveal any hollows.

Impatient as he is to find out, Mr Reeves understands the difficulties. He credits Egypt's antiquities authorities for commissioning the detailed photography that bolsters his theory, and is confident they will take a careful, consultative approach to test it. If the doorways do exist, modern archaeology will require a team of experts to work out how to enter them, and more delicate tools than the picks and shovels used by Howard Carter when he discovered Tutankhamun's tomb.

"Each piece of evidence on its own is not conclusive, but put it all together and it's hard to avoid my conclusion." So says Mr Reeves before adding reflectively, "If I'm wrong I'm wrong, but if I'm right this is potentially the biggest archaeological discovery ever made." ■

## Archaeology in Egypt

# What lies beneath?

### A tantalising clue to the location of a long-sought pharaonic tomb

**N**OTHING has inspired generations of archaeologists like the discovery in 1922 of the treasure-packed tomb of Tutankhamun. What if another untouched Egyptian trove lies buried, not in a distant patch of desert, nor even nearby amid the overlapping tomb-shafts of Luxor's Valley of the Kings, but instead just a millimetre's distance from plain view?

This is the dramatic hypothesis of a just-published paper by Nicholas Reeves, a British Egyptologist who co-discovered an undisturbed Egyptian tomb in 2000, and who is at the University of Arizona. His key evidence is disarmingly simple, and in fact free to see on the internet in the form of photographs published by Factum Arte, a Madrid- and Bologna-based specialist in art replication that recently created a spectacular, life-sized facsimile of Tutankhamun's tomb, intended for tourists to visit without endangering the original.

What Mr Reeves found in these ultra-high-resolution images, which reveal the texture of walls beneath layers of paint in the original tomb, was a number of fissures and cracks that suggest the presence of two passages that were blocked and plastered to conceal their existence. (See image, with proposed new areas in yellow.) One of these would probably lead to a storeroom; its position and small size mirror that of an already-uncovered storeroom inside the multi-chambered tomb. The other, bigger possible doorway in the north wall of Tutankhamun's burial chamber suggests something much more exciting.

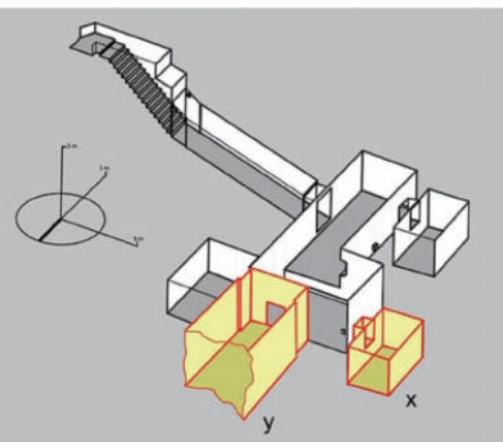
There are several oddities about Tutankhamun's tomb. It is small compared

with others in the valley. The objects found in it, while magnificent, seemed hurriedly placed and were found to be largely second-hand; even the boy-king's famous gilded funerary mask sports the strangely unmanly feature of pierced ears. The tomb's main axis is angled to the right of the entrance shaft, an arrangement typical of Egyptian queens rather than kings.

Noting that the bigger of the two doorways he may have located aligns perfectly with both sides of the tomb's entrance chamber, Mr Reeves thinks it could conceal a corridor continuing along the same axis, in the scale and shape of other nearby royal tombs. All this, as well as evidence that the tomb's decoration and construction were executed at different stages, leads him to conclude that this corridor would lead to the burial chamber of a queen, or perhaps



Where could she be?





Recognizing the importance of international cooperation in the fight against money laundering, associated predicate offenses, and financing of terrorism, a group of Financial Intelligence Units (FIUs) met at the Egmont Arenberg Palace in Brussels, Belgium, and decided to establish an informal network of FIUs for the stimulation of international co-operation. Now known as the Egmont Group of Financial Intelligence Units.

### SENIOR POLICY OFFICER & SENIOR OFFICER

Egmont Group of Financial Intelligence Units Secretariat

Egmont Group Secretariat requires a Senior Policy Officer and a Senior Officer to join their team currently based in Toronto, Canada.

**MANDATE(S): Senior Policy Officer:** Will provide strategic, technical, administrative and other support to the structure and overall activities of the Egmont Group. The Senior Policy Officer will provide technical and strategic advice on AML/CFT matters to the Heads of Financial Intelligence Units, the Egmont Committee, Working Groups, the Chair of the Egmont Group of Financial Intelligence Units (FIUs) and Executive Secretary. **Senior Officer:** Provides strategic, administrative and other support to the structure and overall activities of the Egmont Group and administrative and strategic support to the Heads of FIU, Chair, Executive Secretary and Egmont Committee.

**MAIN QUALIFICATIONS:** **Senior Policy Officer:** Excellent working knowledge of the international AML/CFT environment, FATF Recommendations, mandate and functions of FIUs. Experience working with various AML/CFT stakeholders in the AML/CFT sector. Mutual evaluation assessor is an asset. Experience drafting strategic technical briefing papers on AML/CFT. Exceptional written and oral skills in English. **Senior Officer:** Exceptional written and oral communication skills in English. Experience in providing secretariat services – preparation of correspondence, agendas and minutes; preparation and editing of briefing papers and reports; project management. Understanding of Egmont FIU mandate, and AML/CFT environment. Experience working with a range of AML/CFT sector stakeholders an asset. For full job qualifications and additional information, please visit [www.egmontgroup.org](http://www.egmontgroup.org)

**HOW TO APPLY:** Interested qualified candidates must submit the following, in confidence, to Ms. Larissa Abreia Rowland at [Larissa@AltisProfessional.com](mailto:Larissa@AltisProfessional.com), SUBJECT: Senior Policy Officer OR Senior Officer, no later than **August 31, 2015**:

- Completed Qualifications Matrix ([www.egmontgroup.org](http://www.egmontgroup.org))
- Salary expectations
- Availability to start/notice required.
- Brief cover letter and resume in English

We thank all interested applicants, however, only those under consideration will be contacted. Selected applicants will require security clearance.

### Director (grade AD14)

European Institute of Innovation and Technology, Budapest  
COM/2015/20008

The European Institute of Innovation and Technology (EIT) aims to be a flagship for excellence in European innovation. Acting as a catalyst for economic growth and job creation throughout the EU, the EIT drives change by collaborating closely with European universities, research institutions, small businesses and large enterprises.

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- To prepare and draft strategic documents, work programmes, annual reports and budgets for submission to the Governing Board.

#### Your skills:

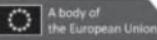
- Excellent analytical, managerial and organisational skills and an ability to develop long-term strategies, to lead and motivate large teams, set priorities and communicate objectives;
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- Proven experience in policy and practice relevant to higher education, research, business or innovation with experience of leadership in one of these areas.

Please consult the Official Journal C222A of 7/7/2015 for the detailed vacancy notice, in particular the eligibility and selection criteria.

#### Registration for applicants:

<https://ec.europa.eu/dgs/human-resources/seniormanagementvacancies/>

The closing date for registration is **4/9/2015, 12.00 noon Brussels time**.



European Institute of  
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### The Hague Institute for Global Justice

#### Head of Development – The Hague Institute for Global Justice

The Hague Institute for Global Justice is an independent, nonpartisan organization established to conduct interdisciplinary policy-relevant research, convene experts and policymakers to facilitate, contribute and further strengthen the global framework for preventing and resolving conflict and promoting international peace. The Institute's work is of use to the Dutch government, multilateral institutions and NGOs.

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- University degree in public international law, international relations, political sciences or economics.
- At least 5 years of experience in developing funding strategies.
- An entrepreneurial attitude and a relevant network in the field of the organizations area of expertise.

Further information on the position can be found in the jobs-section at [www.thehagueinstitute.org](http://www.thehagueinstitute.org)



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for the position of

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<http://www.fao.org/employment/current-vacancies/senior-level/en/>  
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#### Applications to:

Executive Director, ICO, 22 Berners Street, London W1T 3DD or [ed@ico.org](mailto:ed@ico.org) by 11 September 2015. Applicants must be from Member countries of the International Coffee Organization.

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InfraCo Asia Development Pte Ltd (IAD) ([www.infracoasia.com](http://www.infracoasia.com)) is a commercially managed infrastructure development and investment company of the Private Infrastructure Development Group ([www.pidg.org](http://www.pidg.org)) headquartered in Singapore. It aims to stimulate greater private sector investment in infrastructure in South and South-East Asia. IAD funds high-risk infrastructure development activities by taking an equity stake in projects and focusing on socially responsible and commercially viable infrastructure projects that contribute to economic growth, social development and poverty reduction.

IAD is seeking two individuals with strong personal belief in the objectives of the PIDG and IAD, and a commitment to the major contribution that infrastructure can play in the eradication of poverty in developing countries to join its Board as Non-Executive Chairman and Non-Executive Director.

The Chair works closely with the other Board members and guides the management team and all aspects of the company's strategy, operations and financial performance together with the CEO. The Chair is the main point of contact between IAD and the members of PIDG. In addition to attending Board and other meetings of IAD, the Chair is expected to attend meetings of the PIDG and those with members of the PIDG that fund IAD. S/he is expected to work closely with the PIDG Centre (Supervisory Board and Central Management Office) and with the Chairs of the other PIDG companies.

The Non-Executive Director works closely with the other Board members, serves on one or more Board Sub-committees and guides the management team and all aspects of the company's strategy, operations and financial performance together with the CEO. Board meetings are normally held in Singapore.

#### Qualifications

Both candidates must have one or more of the following attributes:

- Senior level experience in commercial and/or public sector and/or third sector and/or functional role (financial services; non-financial services; audit; legal; governance; strategy) within South and Southeast Asia.
- A successful track record of business and/or public sector achievement in South and Southeast Asia.
- An understanding of the governance issues involved in managing a publicly funded privately operated company.
- A good understanding of the different cultures in the region, probably gained through residence and work experience in South and Southeast Asia.
- Excellent contacts and relationships in South and Southeast Asia including at senior levels in Government and key stakeholders.

#### Applications

Please direct respective enquiries and applications (with complete CV and cover letter) by email to:

[IADChair@russellreynolds.com](mailto:IADChair@russellreynolds.com) and [IADNED@russellreynolds.com](mailto:IADNED@russellreynolds.com) by 12 September 2015.

### President and Chief Executive Officer

Internet Corporation for  
Assigned Names and Numbers  
[www.icann.org](http://www.icann.org)



ICANN requires a public interest minded leader combining business, operational and diplomatic skills for a successful multi-stakeholder organization.

ICANN's global public interest mission is to promote the stability and security of the global Internet through its naming and addressing systems. It operates worldwide, with 325 staff primarily in hub offices in Los Angeles, Singapore and Istanbul. ICANN was founded in 1998 as a California public benefit not-for-profit corporation, and has a current budget of \$113 million. Its current generic Top Level Domain expansion will result in over 1,300 new gTLDs. ICANN works on a multi-stakeholder, bottom-up consensus model.

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- Work closely with the Board to fulfil ICANN's global mission and deliver operational excellence
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#### The Candidate

- Outstanding record in international public sector, corporate, and/or academic service
- Excellent management competence, persuasive empathetic style, multicultural skills
- Commitment to ICANN's values of integrity, technical excellence, diversity, and humility

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**Economic data**

% change on year ago

	Gross domestic product			Industrial production latest	Consumer prices latest 2015 <sup>†</sup>	Unemployment rate, %	Current-account balance			Budget balance % of GDP 2015 <sup>†</sup>	Interest rates, % 10-year gov't bonds, latest	Currency units, per \$ Aug 5th	Currency units, per \$ year ago
	latest	qtr*	2015 <sup>†</sup>				latest 12 months, \$bn	% of GDP 2015 <sup>†</sup>					
United States	+2.3 Q2	+2.3	+2.4	+1.3 Jun	+0.1 Jun	+0.4	5.3 Jun	-406.4 Q1	-2.6	-2.5	2.18	-	-
China	+7.0 Q2	+7.0	+6.9	+6.8 Jun	+1.4 Jun	+1.5	4.0 Q2 <sup>§</sup>	+288.2 Q1	+3.0	-2.7	3.21 <sup>§§</sup>	6.21	6.17
Japan	-0.9 Q1	+3.9	+0.9	+2.0 Jun	+0.4 Jun	+0.7	3.4 Jun	+89.0 May	+2.6	-6.8	0.39	125	103
Britain	+2.6 Q2	+2.8	+2.6	+2.1 May	nil Jun	+0.2	5.6 Apr <sup>††</sup>	-180.5 Q1	-4.8	-4.4	2.01	0.64	0.59
Canada	+2.1 Q1	-0.6	+1.5	-4.1 May	+1.0 Jun	+1.1	6.8 Jun	-42.2 Q1	-2.7	-1.8	1.47	1.32	1.10
Euro area	+1.0 Q1	+1.5	+1.4	+1.6 May	+0.2 Jul	+0.2	11.1 Jun	+305.9 May	+2.5	-2.1	0.75	0.92	0.75
Austria	+0.4 Q2	-2.9	+0.6	+0.7 May	+1.0 Jun	+1.0	6.0 Jun	+6.5 Q1	+1.2	-2.1	0.92	0.92	0.75
Belgium	+1.3 Q2	+1.8	+1.3	+0.5 May	+0.5 Jul	+0.4	8.6 Jun	+12.1 Mar	+1.3	-2.6	1.06	0.92	0.75
France	+0.8 Q1	+2.5	+1.2	+2.8 May	+0.3 Jun	+0.3	10.2 Jun	-10.5 May <sup>‡</sup>	-0.9	-4.1	0.96	0.92	0.75
Germany	+1.0 Q1	+1.1	+1.7	+2.2 May	+0.2 Jul	+0.5	6.4 Jul	+278.1 May	+7.4	+0.7	0.75	0.92	0.75
Greece	+0.2 Q1	-0.7	+0.5	-4.0 May	-2.2 Jun	-1.0	25.6 Apr	+2.7 May	+2.6	-3.8	11.82	0.92	0.75
Italy	+0.1 Q1	+1.2	+0.6	-0.3 Jun	+0.2 Jul	+0.2	12.7 Jun	+45.0 May	+2.1	-2.9	1.92	0.92	0.75
Netherlands	+2.5 Q1	+2.3	+2.0	+2.1 May	+1.0 Jun	+0.4	8.8 Jun	+91.4 Q1	+9.6	-1.8	0.82	0.92	0.75
Spain	+3.1 Q2	+4.1	+2.9	+1.8 May	nil Jul	-0.3	22.5 Jun	+15.8 May	+0.7	-4.4	1.94	0.92	0.75
Czech Republic	+4.0 Q1	+10.5	+3.1	+2.1 May	+0.8 Jun	+0.3	6.2 Jun <sup>§</sup>	+0.8 Q1	-0.3	-1.8	0.90	24.8	20.8
Denmark	+1.5 Q1	+2.0	+1.8	-3.2 May	+0.7 Jun	+0.6	4.7 Jun	+21.9 May	+6.7	-2.9	0.95	6.84	5.57
Norway	+1.5 Q1	+1.0	+0.7	+5.1 May	+2.6 Jun	+1.6	4.3 May <sup>‡‡</sup>	+39.3 Q1	+9.3	+6.0	1.54	8.26	6.28
Poland	+3.7 Q1	+4.1	+3.4	+7.6 Jun	-0.8 Jun	+0.2	10.3 Jun <sup>§</sup>	-1.2 May	-1.5	-1.5	3.00	3.83	3.13
Russia	-2.2 Q1	na	-3.6	-4.7 Jun	+15.6 Jul	+14.8	5.4 Jun <sup>§</sup>	+68.7 Q2	+5.0	-2.8	10.78	63.5	36.1
Sweden	+2.9 Q2	+4.0	+2.5	+3.3 May	-0.4 Jun	+0.2	8.5 Jun <sup>§</sup>	+38.1 Q1	+6.1	-1.2	0.74	8.70	6.88
Switzerland	+1.1 Q1	-0.8	+0.7	-0.5 Q1	-1.3 Jul	-1.0	3.3 Jun	+53.7 Q1	+6.7	+0.2	-0.06	0.98	0.91
Turkey	+2.3 Q1	na	+2.9	+0.5 May	+6.8 Jul	+7.4	9.6 Apr <sup>§</sup>	-44.7 May	-4.6	-1.6	9.65	2.79	2.15
Australia	+2.3 Q1	+3.8	+2.4	+2.8 Q1	+1.5 Q2	+1.7	6.3 Jul	-41.9 Q1	-3.1	-2.4	2.81	1.36	1.07
Hong Kong	+2.1 Q1	+1.5	+2.3	-1.6 Q1	+3.2 Jun	+3.1	3.2 Jun <sup>‡‡</sup>	+6.1 Q1	+2.8	nil	1.78	7.75	7.75
India	+7.5 Q1	+11.0	+7.6	+2.7 May	+5.4 Jun	+5.4	4.9 2013	-27.5 Q1	-1.2	-4.1	7.84	63.7	61.1
Indonesia	+4.7 Q2	na	+4.9	+8.2 May	+7.3 Jul	+6.3	5.8 Q3 <sup>§</sup>	-25.2 Q1	-2.6	-2.0	8.63	13,525	11,685
Malaysia	+5.6 Q1	na	+5.5	+4.5 May	+2.5 Jun	+2.6	3.1 May <sup>§</sup>	+11.3 Q1	+3.4	-4.1	4.08	3.89	3.19
Pakistan	+5.5 2015**	na	+5.7	+6.2 May	+1.8 Jul	+4.1	6.0 2014	-2.3 Q2	-0.6	-5.1	9.45 <sup>†††</sup>	102	98.9
Philippines	+5.2 Q1	+1.2	+6.6	-3.1 May	+0.8 Jul	+2.6	6.4 Q2 <sup>§</sup>	+14.5 Mar	+4.1	-1.9	4.17	45.8	43.6
Singapore	+1.7 Q2	-4.6	+3.1	-4.4 Jun	-0.3 Jun	+0.4	2.0 Q2	+66.3 Q1	+21.3	-0.7	2.61	1.38	1.25
South Korea	+2.2 Q2	+1.2	+2.8	+1.2 Jun	+0.7 Jul	+1.0	3.9 Jun <sup>§</sup>	+102.2 Jun	+7.6	+0.4	2.43	1,174	1,029
Taiwan	+0.6 Q2	-7.7	+3.7	-1.4 Jun	-0.7 Jul	+0.3	3.8 Jun	+72.4 Q1	+12.7	-1.2	1.44	31.7	30.0
Thailand	+2.2 Q4	+7.1	+3.6	-8.0 Jun	-1.0 Jul	+1.1	0.8 Jun <sup>§</sup>	+16.1 Q1	+2.3	-2.0	2.53	35.2	32.2
Argentina	+1.1 Q1	+0.8	-0.2	+1.0 Jun	— ***	—	7.1 Q3 <sup>§</sup>	-6.0 Q1	-1.4	-3.3	na	9.21	8.26
Brazil	-1.6 Q1	-0.6	-1.7	-3.2 Jun	+8.9 Jun	+8.7	6.9 Jun <sup>§</sup>	-93.1 Jun	-4.1	-5.8	13.36	3.49	2.28
Chile	+2.4 Q1	+4.2	+2.9	+1.6 Jun	+4.4 Jun	+3.8	6.5 Jun <sup>‡‡</sup>	-1.3 Q1	-1.3	-2.0	4.53	682	578
Colombia	+2.8 Q1	+3.3	+3.4	-3.9 May	+4.5 Jul	+4.1	8.2 Jun <sup>§</sup>	-20.7 Q1	-6.5	-2.1	7.29	2,952	1,894
Mexico	+2.5 Q1	+1.6	+2.6	-0.9 May	+2.9 Jun	+3.0	4.4 Jun	-25.5 Q1	-2.4	-3.4	6.00	16.4	13.3
Venezuela	-2.3 Q3	+10.0	-4.2	na	+68.5 Dec	+76.4	6.6 May <sup>§</sup>	+10.3 Q3	-1.8	-16.5	11.43	6.31	6.35
Egypt	+4.3 Q4	na	+4.2	+0.2 May	+11.4 Jun	+9.9	12.8 Q1 <sup>§</sup>	-10.2 Q1	-1.4	-11.0	na	7.83	7.15
Israel	+2.2 Q1	+2.0	+3.4	-1.5 May	-0.4 Jun	-0.2	5.2 Jun	+11.7 Q1	+4.8	-2.9	2.45	3.82	3.43
Saudi Arabia	+3.5 2014	na	+2.7	na	+2.2 Jun	+2.7	5.7 2014	+81.2 Q4	-2.4	-12.1	na	3.75	3.75
South Africa	+2.1 Q1	+1.3	+2.0	-0.4 May	+4.7 Jun	+4.9	25.0 Q2 <sup>§</sup>	-18.7 Q1	-5.3	-3.8	8.26	12.8	10.8

Source: Haver Analytics. \*% change on previous quarter, annual rate. <sup>†</sup>The Economist poll or Economist Intelligence Unit estimate/forecast. <sup>§</sup>Not seasonally adjusted. <sup>‡</sup>New series. \*\*Year ending June. <sup>††</sup>Latest 3 months. <sup>‡‡</sup>3-month moving average. <sup>§§</sup>5-year yield. \*\*\*Official number not yet proven to be reliable; The State Street PriceStats Inflation Index, June 26.7%; year ago 39.46%. <sup>†††</sup>Dollar-denominated bonds.

The Economist

Events

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## Markets

	% change on			
	Index Aug 5th	one week	Dec 31st 2014 in local currency terms	in \$
United States (DJIA)	17,540.5	-1.2	-1.6	-1.6
China (SSEA)	3,870.7	-2.5	+14.2	+14.1
Japan (Nikkei 225)	20,614.1	+1.5	+18.1	+13.3
Britain (FTSE 100)	6,752.4	+1.8	+2.8	+2.9
Canada (S&P TSX)	14,503.0	+1.4	-0.9	-12.8
Euro area (FTSE Euro 100)	1,219.9	+2.9	+17.6	+5.6
Euro area (EURO STOXX 50)	3,676.8	+2.8	+16.9	+4.9
Austria (ATX)	2,501.8	+0.8	+15.8	+4.0
Belgium (Bel 20)	3,831.3	+3.0	+16.6	+4.7
France (CAC 40)	5,196.7	+3.6	+21.6	+9.2
Germany (DAX)*	11,636.3	+3.8	+18.7	+6.6
Greece (Athex Comp)	643.2	-19.3	-22.1	-30.1
Italy (FTSE/MIB)	23,911.8	+2.9	+25.8	+12.9
Netherlands (AEX)	503.5	+2.9	+18.6	+6.5
Spain (Madrid SE)	1,144.4	nil	+9.8	-1.4
Czech Republic (PX)	1,035.1	+0.8	+9.3	+0.7
Denmark (OMXCB)	923.6	+2.5	+36.8	+22.6
Hungary (BUX)	22,781.3	+2.1	+37.0	+25.4
Norway (OSEAX)	688.2	+0.7	+11.0	+0.8
Poland (WIG)	53,694.9	+2.7	+4.4	-3.3
Russia (RTS, \$ terms)	843.9	-2.5	+11.9	+6.7
Sweden (OMX30)	1,627.4	+1.8	+11.1	-0.4
Switzerland (SMI)	9,526.8	+1.5	+6.0	+7.3
Turkey (BIST)	78,134.3	+0.1	-8.9	-23.6
Australia (All Ord.)	5,659.5	+0.9	+5.0	-5.4
Hong Kong (Hang Seng)	24,514.2	-0.4	+3.9	+3.9
India (BSE)	28,223.1	+2.4	+2.6	+1.6
Indonesia (JSX)	4,850.5	+2.7	-7.2	-15.0
Malaysia (KLCSE)	1,725.6	+1.6	-2.0	-11.7
Pakistan (KSE)	36,156.8	+1.3	+12.5	+11.1
Singapore (STI)	3,191.4	-2.8	-5.2	-9.3
South Korea (KOSPI)	2,029.8	-0.4	+6.0	-0.8
Taiwan (TWI)	8,542.3	-0.2	-8.2	-8.3
Thailand (SET)	1,436.4	+1.3	-4.1	-10.3
Argentina (MERV)	10,911.7	-3.6	+27.2	+17.0
Brazil (BVSP)	50,287.3	+0.1	+0.6	-23.4
Chile (IGPA)	18,845.9	+2.6	-0.1	-11.3
Colombia (IGBC)	9,833.6	-2.6	-15.5	-32.0
Mexico (IPC)	44,937.6	+1.0	+4.2	-6.2
Venezuela (IBC)	15,458.5	-0.1	+301	na
Egypt (Case 30)	8,114.1	+0.1	-9.1	-17.0
Israel (TA-100)	1,489.0	+0.4	+15.5	+17.8
Saudi Arabia (Tadawul)	8,790.8	-3.4	+5.5	+5.6
South Africa (JSE AS)	52,774.2	+2.3	+6.0	-4.1

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

	Real GDP, % change		Consumer prices		Current account	
	Low/high range	average	2015	2016	2015	2016
Australia	1.8/2.7	1.8/3.3	2.4	2.8	1.7	2.6
Brazil	-2.5/-1.1	-0.3/1.3	-1.7 (-1.5)	0.6 (0.9)	8.7 (8.4)	6.0
Britain	2.2/2.8	1.9/3.0	2.6 (2.4)	2.4	0.2 (0.3)	1.6
Canada	1.0/2.0	1.5/2.7	1.5 (1.6)	2.1 (2.2)	1.1 (1.2)	2.1
China	6.5/7.2	6.3/7.4	6.9	6.7	1.5 (1.4)	2.0
France	0.9/1.3	0.8/1.9	1.2	1.5	0.3	1.2
Germany	1.4/2.1	1.5/2.8	1.7	2.0	0.5	1.7
India	6.8/8.1	6.5/8.4	7.6	7.8 (8.0)	5.4	5.5
Italy	0.3/0.8	0.4/1.7	0.6	1.2	0.2	1.1
Japan	0.5/1.4	0.9/2.5	0.9 (1.0)	1.6	0.7 (0.8)	1.1
Russia	-5.0/-2.5	-1.8/1.8	-3.6	0.4 (0.3)	14.8 (14.7)	6.7 (6.9)
Spain	2.4/3.3	2.2/3.0	2.9	2.6 (2.4)	-0.3	1.1
United States	2.1/2.6	2.5/3.0	2.4 (2.3)	2.7	0.4	2.1
Euro area	1.2/1.6	1.1/2.2	1.4 (1.5)	1.7 (1.8)	0.2	1.3

Sources: Bank of America, Barclays, BNP Paribas, Citigroup, Commerzbank, Credit Suisse, Decision Economics, Deutsche Bank, EU, Goldman Sachs, HSBC Services, ING, Itaú BBA, JPMorgan, Morgan Stanley, Nomura, RBS, Royal Bank of Canada, Schroders, Scotia Capital, Société Générale, Standard Chartered, UBS. For more countries, go to: [Economist.com/markets](http://Economist.com/markets)

## Other markets

	% change on			
	Index Aug 5th	one week	Dec 31st 2014 in local currency terms	in \$
United States (S&P 500)	2,099.8	-0.4	+2.0	+2.0
United States (NAScomp)	5,139.9	+0.6	+8.5	+8.5
China (SSEB, \$ terms)	345.5	-5.7	+18.9	+18.8
Japan (Topix)	1,665.9	+2.0	+18.4	+13.5
Europe (FTSEurofirst 300)	1,601.7	+2.6	+17.0	+5.1
World, dev'd (MSCI)	1,762.8	+0.1	+3.1	+3.1
Emerging markets (MSCI)	892.0	-0.9	-6.7	-6.7
World, all (MSCI)	425.7	nil	+2.1	+2.1
World bonds (Citigroup)	860.0	-0.8	-4.7	-4.7
EMBI+ (JPMorgan)	700.7	+0.2	+1.3	+1.3
Hedge funds (HFRX)	1,233.4 <sup>§</sup>	+0.4	+1.2	+1.2
Volatility, US (VIX)	12.5	+12.5	+19.2 (levels)	
CDSs, Eur (iTRAXX) <sup>†</sup>	62.8	+0.2	-0.4	-10.6
CDSs, N Am (CDX) <sup>†</sup>	72.1	+2.7	+6.2	+6.2
Carbon trading (EU ETS) €	7.8	-3.0	+7.3	-3.7

Sources: Markit; Thomson Reuters. \*Total return index.

<sup>†</sup>Credit-default-swap spreads, basis points. <sup>§</sup>Aug 4th.

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## The Economist commodity-price index

	2005=100		% change on	
	Jul 28th	Aug 4th*	one month	one year
Dollar Index				
All Items	137.8	136.1	-4.4	-18.0
Food	160.3	158.0	-5.0	-14.0
Industrials				
All	114.4	113.4	-3.5	-23.1
Nfa <sup>†</sup>	115.2	115.0	-4.8	-16.2
Metals	114.1	112.7	-3.0	-25.7
Sterling Index				
All items	160.9	162.9	-3.0	-8.9
Euro Index				
All items	155.3	154.4	-4.6	+0.1
Gold				
\$ per oz	1,095.2	1,092.6	-5.2	-14.9
West Texas Intermediate				
\$ per barrel	47.7	45.7	-13.5	-53.0

Sources: Bloomberg; CME Group; Cottlook; Darmenn & Curl; FT; ICCO; ICO; ISO; Live Rice Index; LME; NZ Wool Services; Thompson Lloyd & Ewart; Thomson Reuters; Urner Barry; WSJ. \*Provisional

<sup>†</sup>Non-food agriculturals.

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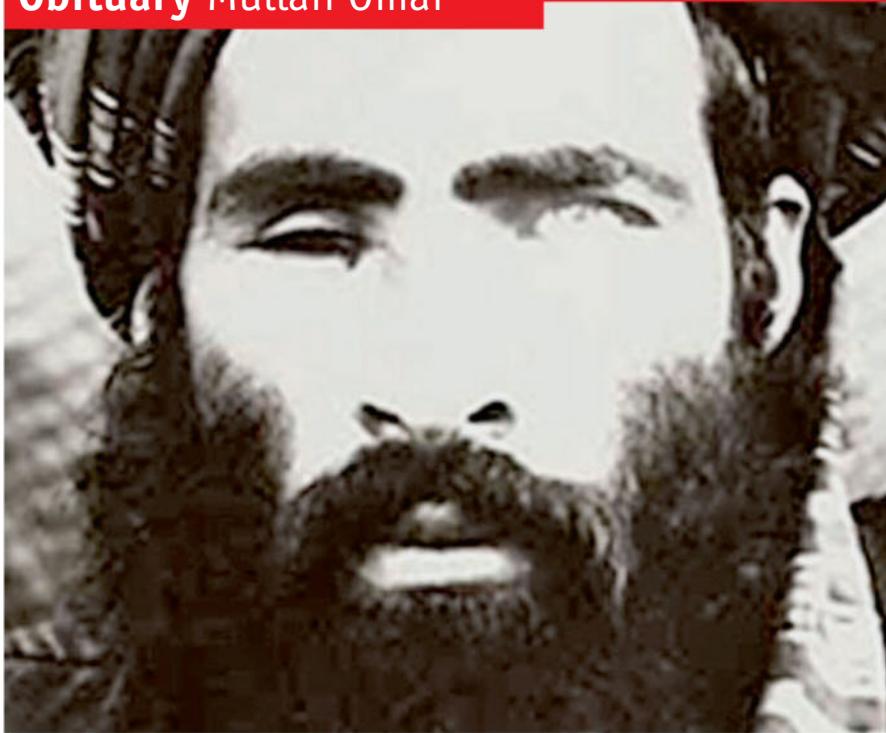


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## In the land of the blind

**Mullah Muhammad Omar, founder of the Taliban, is now known to have died on April 23rd 2013, aged about 60**

**T**HIS picture is the only one of Mullah Omar that is confirmed as genuine. It was taken in 1993, the year before he founded the Taliban, when he was merely a fighter against the Soviet occupation of his country. He needed it as evidence that he had lost his right eye to enemy shrapnel, so that he could claim compensation. He never knowingly faced the camera again, since it was contrary to Islamic law.

The flyers dropped by American planes over Kandahar later, offering \$10m for information about him, showed a photograph; it was not him. Portraits appeared of a man among yellow chrysanthemums, turning his right eye away. It was not him. Even when, as leader of the Taliban, he became emir of Afghanistan between 1996 and 2001, he so seldom left his house in Kandahar that most of his followers had no idea what he looked like. He saw almost no journalists, and hardly talked when he did. Discussion was difficult, and negotiation impossible. After 2001 he was in hiding, flitting between Afghanistan and Pakistan. "Nobody recognises him," said Hamid Karzai, who led Afghanistan in his turn. "This is a man nobody has seen."

There was a story about his eye. He was said to have extracted the remains himself, stitched it up, bandaged his face and sprung from his bed, singing a Persian

poem, when he heard the Soviet army was retreating. He was hailed as a ferocious jihadist and a brilliant marksman, taking out a slew of Soviet tanks and galvanising the other students (*talibani*) at his madrassa into a ruthless fighting force. In fact, he was a lowly and undisciplined fighter; and the Taliban began as a vigilante group of refugees and dropouts, as he was, taking revenge round his home village of Sangasar on warlords who were raping local boys and girls. Gradually they were called in to tackle more cases of crime and corruption in their collapsed country until, after reaching and taking Kabul in 1996, they became its moral guardians and rulers.

### The cloak of Muhammad

Omar was the spiritual leader of his movement, a role confirmed when he removed the cloak of Muhammad from the three chests that protected it in a mosque in Kandahar in 1996 and, standing tall and thin on a rooftop, draped it briefly on his own shoulders. This single act made him the leader of the faithful, the title in which he issued his military and social decrees. His impoverished childhood and the early death of his father encouraged parallels with the life of the Prophet. Allah, too, appeared to him in dreams: once to encourage him to form the Taliban, and in 2001 to

urge him to destroy the giant and ancient Buddhas of Bamiyan, as relics of idolatry.

His piety, strong and sincere, was not the learned or bookish sort. He could recite as much of the Koran as he had picked up from his father and uncle, itinerant preachers, in the mud-hut village in Uruzgan province where he had been brought up. Though he became a mullah in Sangasar, he preferred to call himself a *talib*, a man who was still seeking. In his hard-set rural ways, however, flavoured with fundamentalist Deobandi Islam, he already had the answers. For boys, fighting against unbelievers; for women, seclusion and subjugation; for thieves, amputation; for all Afghans, no more cinema, football, television, music or kite-flying. In the governor's palace in Kandahar he set an ascetic example: a cement floor, a wooden camp-bed, meals of soup and dry bread. He wore old-fashioned curled slippers, a sure sign of poverty, communicated mainly by letter and courier and, for a while, signed off permits on empty cigarette packets. An RPG7 was said to be his favourite weapon.

From 1996 he gave Osama bin Laden refuge in his country. Their relations seemed simple. Bin Laden, shrewder and more intelligent, charmed him, paid him homage as emir and gave him money and Land Cruisers. In exchange Omar refused to surrender him to the Americans after the September 11th attacks, admitting—in a rare flash of temper—that he wanted to kill the man who had asked him. Yet he was also unhappy when bin Laden launched his terror from Afghanistan. His defiance of the Americans was based both on principle—it was simply right, therefore God would protect him—and his estimate of a "less than ten per cent" chance that America would attack him. This conviction cost him his power and his country.

Real power, according to the Western intelligence agencies who struggled to read him, had seldom been his anyway. Although he came from the dominant Pashtuns, he was a member of the poorer Ghilzai tribe, without contacts or influence politically. He knew nothing of the outside world, and could barely do more than sign the statements issued in his name. Though he kept tight control of his field commanders as emir, strings were also pulled elsewhere: in Saudi Arabia, which provided many of the dollars he dispensed to his deputies from a large tin box beside his bed; and in Pakistan, where the Inter-Services Intelligence agency gave him training and, after 2001, intermittent shelter.

Together, these supporters kept his myth going. Whether he was dead or alive, the Taliban united round him and, throughout the late 2000s, regrouped to make war against the West. Unseen and unknown, he haunted the scene. Peace remains as elusive as he was. ■

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