

The Economist

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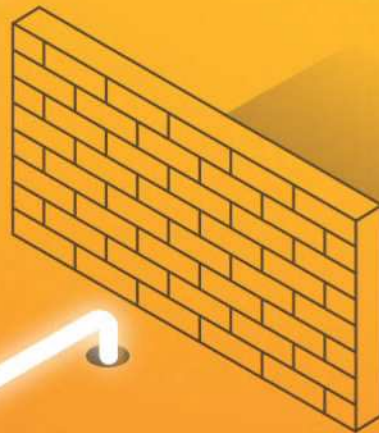


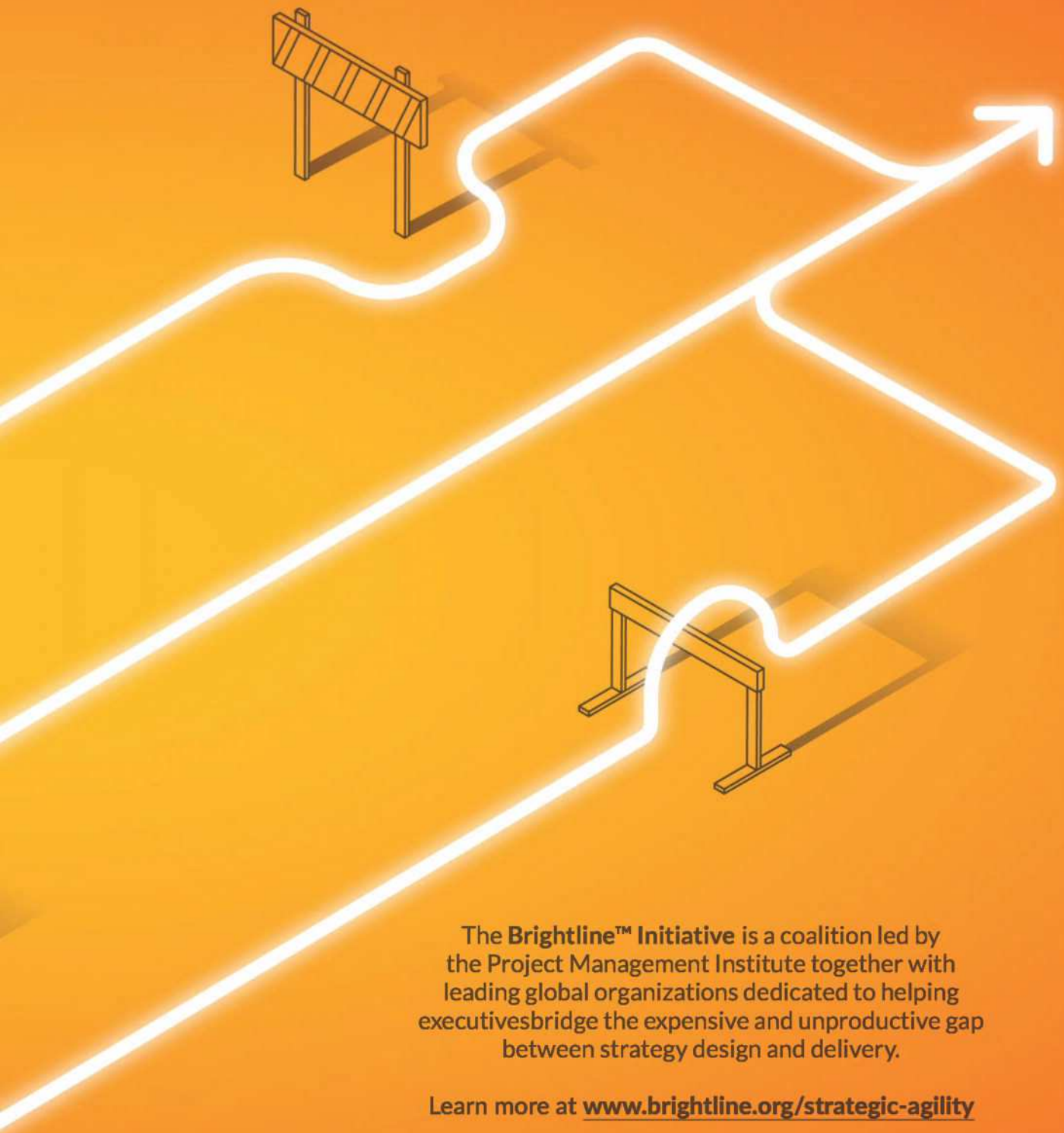
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On the cover

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Principal commercial offices:

The Adelphi Building, 1-11 John Adam Street, London WC2N 6HT

Tel: +44 (0) 20 7830 7000

Rue de l'Athénée 32
1206 Geneva, Switzerland

Tel: +41 22 566 2470

750 3rd Avenue, 5th Floor, New York, NY 10017
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“Our biggest dream for the future is that we stop wasting food entirely.”

Mette Lykke, CEO of Too Good To Go, Denmark

Shocked at seeing good food being thrown away, a group of friends decided to create an app called Too Good To Go where stores can sell their surplus food. Developing on Android's open-source operating system allowed them to launch their app quickly and make improvements to the service as it grows. Too Good To Go's mission is to reduce food waste worldwide. So far they have saved an incredible 3 million meals.

Watch the mini-documentary about the app that reduces food waste: g.co/androidstories

android



Politics



The World Health Organisation rushed to respond to an outbreak of **Ebola** in the Democratic Republic of Congo. So far, health workers have done a much better job of containing the virus than they did in west Africa in 2014. The fear, however, is that it may spread to big cities.

Voters in **Burundi** approved a constitutional change that will allow President Pierre “Supreme Eternal Guide” Nkurunziza, who has been in power since 2005, to run for a further two terms when his current one ends in 2020. The vote took place in a climate of fear.

Two weeks after **America** withdrew from a nuclear deal with **Iran**, Mike Pompeo, America’s secretary of state, called for a more sweeping agreement. Mr Pompeo demanded that Iran stop enriching uranium, allow nuclear inspectors “unqualified access” and end its involvement in Syria, Yemen and Lebanon, or else face “the strongest sanctions in history”. Hassan Rouhani, Iran’s president, said this was “unacceptable”.

Human-rights groups reported that **Saudi Arabia** had detained at least 11 feminists. The kingdom plans to lift a decades-old ban on women driving next month. But as it loosens up in some areas, it is also cracking down on dissent.

Israeli warplanes hit targets in the Gaza Strip after a group of **Palestinians**, allegedly from Hamas, the militant Islamist group that runs Gaza, crossed the border and set fire to an unmanned Israeli army post.

Syria’s army captured an enclave in Damascus from the jihadists of Islamic State. The victory brings the entire capital area under the control of Bashar al-Assad’s regime for the first time since 2012.

Your country needs you

Italy’s president appointed a non-politician, Giuseppe Conte, as prime minister. Mr Conte faces the ticklish task of trying to run a cabinet including the leaders of the two parties that will make up the new populist government: Luigi Di Maio of the radical Five Star Movement and Matteo Salvini of the right-wing Northern League. The two party bosses agree on little.

The **Swedish** government began sending leaflets to every household advising Swedes what to do if war breaks out. It included tips on how to cope if food and water are short, or if electricity, phones and computer systems fail. Such literature has not been distributed to the public since 1961, during the cold war.

Ken Livingstone, a former mayor of London, resigned from Britain’s **Labour Party**. He was suspended in 2016 after a row over allegedly anti-Semitic comments he made. Jeremy Corbyn, Labour’s leader, who has been accused of turning a blind eye to anti-Semitism, said resigning was the “right thing to do”.

Sergei Skripal was discharged from hospital in Britain. The former **Russian spy** and his daughter were exposed to Novichok, a nerve agent, in an attack in March that was linked to Russia, resulting in tit-for-tat diplomatic expulsions and criticism of Russia from NATO and the UN. Britain will also not send any dignitaries to the football World Cup, which starts in Russia next month.

Flight disaster

In **Cuba** a plane crashed shortly after taking off from Havana airport, killing 111 people on board. The 39-year-old Boeing 737 had been leased from a Mexican company.



Nicolás Maduro, **Venezuela’s** president, won re-election in a vote that was widely condemned as fraudulent. He took 68% of the vote. The main opposition leaders were banned from running. The government set up tents near polling stations to scan voters’ “fatherland cards”, which entitle them to food rations. Some voters feared being denied food if they did not back Mr Maduro.

Panama’s president, Juan Carlos Varela, said an Israeli intelligence agency had given him evidence that a plane that crashed in the country in 1994 was brought down by a terrorist act. The crash occurred on July 19th, the day after an attack on a Jewish centre in Buenos Aires.

After a brief period in office

The Bharatiya Janata Party, which runs India’s central government, emerged as the biggest party after elections in the state of **Karnataka**. Its local leader was sworn in as chief minister, only to resign two days later because he could not cobble together a majority in the assembly, paving the way for an opposition coalition.

India’s army declared a truce in its fight against separatists in the **Kashmir Valley**. The ceasefire, to mark the Muslim fasting month of Ramadan, is the first since 2000.

Authorities in **Thailand** suppressed protests marking the fourth anniversary of the military coup. The junta running the country has repeatedly delayed new elections. Meanwhile, a series of bombs exploded across southern Thailand, damaging banks. The bombs are thought to be

the work of insurgents campaigning for greater rights for the region’s Muslim majority.

China said it had landed long-range bombers at an airport in the **South China Sea** for the first time. The Centre for Strategic and International Studies, a think-tank, identified the location as Woody Island, in the Paracel archipelago, which is also claimed by Vietnam and Taiwan. China also said it had “expelled” ten foreign fishing-vessels from around the islands.

China launched a satellite that will act as the relay station for a planned landing of a spacecraft on the far side of the Moon later this year.

Her time has come



Democrats in **Georgia** elected Stacey Abrams as their candidate for governor, making her the first black female nominee from either party to run for governor in America. She will have to fight hard to win in November; the last time Georgia elected a Democratic governor was 1998.

Officials in **Texas** confirmed that the suspect in a school shooting used his father’s guns to kill ten people. Police arrested the 17-year-old, a student at the school near Houston.

Gina Haspel was sworn in as the new director of the **CIA** after the Senate voted to confirm her in the job by 54 to 45.

A 30-year-old man was taken to court in **New York state** by his parents to force him to leave home. The son, who never did housework, had refused to go, but the judge sided with his parents and told him to pack his bags. ►►

Business

The American Congress passed a bill that exempts medium-sized **banks** from the most stringent rules introduced after the financial crisis. Only those banks with at least \$250bn in assets will now be subject to strict federal oversight, up from \$50bn previously. It was the most substantial change yet to the maze of rules brought in under the Dodd-Frank act, which smaller banks have long bemoaned as being too cumbersome.

Fifth Third Bancorp, a medium-sized bank based in Cincinnati, offered to buy **MB Financial**, a smaller lender in Chicago, in a transaction that they valued at \$4.7bn. The deal sparked speculation that there are more banking mergers in the pipeline. Net profits in America's banking industry rose by a healthy 28% in the first quarter compared with the same three months last year, to \$56bn.

A court dismissed charges against **Barclays** in relation to a loan it obtained from Qatar's investment company during the financial crisis in order to avoid a government bail-out. Britain's Serious Fraud Office may yet try to reinstate the charges against the bank.

Blowing hot and cold

Steven Mnuchin, America's treasury secretary, said that plans to levy tariffs on Chinese goods had been put on hold amid progress in talks over **trade**. China promised to import more from America, but also defended its controversial industrial policies. Donald Trump initially hailed the outcome, only to declare himself dissatisfied after political allies accused him of capitulating to China. One sticking-point remains the penalties imposed on **ZTE**, a Chinese maker of telecoms equipment.

As America and China bargained, new fronts in the trade conflict opened up. Japan, Russia and Turkey notified the World Trade Organisation that

they would follow the lead taken by the EU and India in applying tariffs on American **steel and aluminium** in retaliation for the duties America recently imposed on such imports, unless those duties are reversed. Mr Trump, meanwhile, signalled a new battle with Europe and Japan by ordering the Commerce Department to look at imposing tariffs on **imports of cars** on the ground of national security, the same argument that lies behind the levies on steel and aluminium.

Rusal, Russia's biggest producer of aluminium, warned that unless the sanctions that America has imposed on it are lifted, international banks will probably stop doing business with it, affecting its production of metal. The company also said that its chief executive and seven directors would resign as part of its effort to seek relief from the sanctions.

At an emergency meeting, Turkey's central bank raised one of its key interest rates from 13.5% to 16.5% as it tried to halt another run on the **Turkish lira**, which had plunged by 5% against the dollar in a day. Its other rates stayed the same. The currency rallied after the move, but only

briefly. Concerns remain about the political pressure on the bank to lower interest rates.

The first female president

Stacey Cunningham was appointed as the 67th president of the **New York Stock Exchange**, the first woman to hold the role in its 226-year history.

The rally continued in **oil markets**. Brent crude traded at around \$80 a barrel, the highest level in four years and up by almost 50% from a year ago. The latest spur to price rises stems from the assumption that American sanctions on Iran may curtail oil exports from that country.



There was more pain on Britain's high streets, as **Marks & Spencer**, a staunchly mid-market clothing and food retailer, announced more store closures. The costs from its

retrenchment programme have hurt profits; annual pre-tax income fell by 62% to £67m (\$89m) for the year ending March 31st. By contrast, **Ocado**, an online retailer, saw its share price soar after **Kroger**, one of America's supermarket giants, increased its stake in the company and said it would use Ocado's technology to roll out "seamless" shopping, as it takes on Amazon in the battle for online grocery sales.

General Electric struck a deal to merge its transport business with **Wabtec**, which makes braking systems, locomotives and other apparatus for the rail industry. Valued at \$11.1bn, it is GE's biggest disposal of assets yet under John Flannery, who took over as chief executive in August and is restructuring the group around its three core businesses of aviation, health care and energy.

Gold digger

Sony upped its stake in **EMI Music Publishing** to 90%, giving it a catalogue of more than 2m songs, including hits from the classic Motown label, Queen and Carole King, as well as from Donald Trump's biggest fan, Kanye West.

For other economic data and news see **Indicators** section





She's a fan.



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The affair

American executives are betting that the president is good for business. Not in the long run



MOST American elites believe that the Trump presidency is hurting their country. Foreign-policy mandarins are terrified that security alliances are being wrecked. Fiscal experts warn that borrowing is spiralling out of control. Scientists deplore the rejection of climate change. And some legal experts warn of a looming constitutional crisis.

Amid the tumult there is a striking exception. The people who run companies have made their calculations about the Age of Trump. On balance, they like it. Bosses reckon that the value of tax cuts, deregulation and potential trade concessions from China outweighs the hazy costs of weaker institutions and trade wars. And they are willing to play along with President Donald Trump's home-brewed economic vision, in which firms are freed from the state and unfair foreign competition, and profits, investment and, eventually, wages soar.

The financial fireworks on display in the first quarter of this year suggest that this vision is coming true. The earnings of listed firms rose by 22% compared with a year earlier; investment was up by 19%. But as our briefing explains, the investment surge is unlike any before—it is skewed towards tech giants, not firms with factories. When it comes to gauging the full costs of Mr Trump, America Inc is being short-sighted and sloppy.

The view from the C-suite

Since winning Congress and the White House, the Republicans have sought to unleash the power of business. After the election Mr Trump held summits with tycoons, televised live from the boardroom at Trump Tower, and later from his new HQ in the Oval Office. Though bosses have tired of this kind of pantomime, particularly after Mr Trump's equivocations over white-supremacist protests in Virginia last summer, they remain bullish. A reason is the Republican corporate-tax reform passed in December, the first on such a scale since 1986. It does several sensible things, including cutting headline rates to average European levels. The annual saving of \$100bn is worth 6% of pre-tax profits (it accounts for a tenth of the fiscal deficit).

Deregulation is in full swing. This week saw a relaxation of banking rules (see Finance section). The leaders of many agencies have been replaced with Trump appointees. The change at the top, firms say, means officials are being more helpful. A surprising number of boardrooms support a muscular stance on trade with China. If, for argument's sake, China capitulated to American demands and imported \$200bn more goods a year, it could boost the earnings of America Inc by a further 2%. The benefits for business of Mr Trump are clear, then: less tax and red tape, potential trade gains and a 6-8% uplift in earnings.

The trouble is that companies are often poor at assessing nebulous risks, and CEOs' overall view of the environment is fallible. During the Obama years corporate America was convinced it was under siege when in fact, judged by the numbers, it was in a golden era, with average profits 31% above long-term levels. Now bosses think they have entered a nirvana, when

the reality is that the country's system of commerce is lurching away from rules, openness and multilateral treaties towards arbitrariness, insularity and transient deals.

As the contours of this new world become clearer, so will its costs to business in terms of complexity and predictability. Take complexity first. One of the ironies of the Trump team's agenda is that, although they want to get out of businesses' hair at home, when it comes to trade they want to regulate. When they tinker with tariffs, large numbers of firms have to scurry to respond because they have global supply chains. The steel duties proposed in March cover a mere 0.5% of American imports, but so far this month 200-odd listed American firms have discussed the financial impact of tariffs on their calls with investors. Over time, a mesh of distortions will build up.

Because trade is becoming more regulated, a new surveillance bureaucracy is sprouting. On May 23rd the Department of Commerce launched a probe of car imports. A bill in Congress envisages vetting all foreign investment into America to ensure that it does not jeopardise the country's "technological and industrial leadership in areas related to national security". American firms have \$8trn of capital sunk abroad; foreign firms have \$7trn in America; and there have been 15,000 inbound deals since 2008. The cost involved in monitoring all this activity could ultimately be vast. As America eschews global co-operation, its firms will also face more duplicative regulation abroad. Europe has already introduced new regimes this year for financial instruments and data.

The expense of re-regulating trade could even exceed the benefits of deregulation at home. That might be tolerable, were it not for the other big cost of the Trump era: unpredictability. At home the corporate-tax cuts will partly expire after 2022. America's negotiators are gunning for a five-year sunset clause in a new NAFTA deal, although Canada and Mexico would prefer something permanent. Bosses hope that the belligerence on trade is a ploy borrowed from "The Apprentice", and that stable agreements will emerge. But imagine that America stitches up a deal with China and the bilateral trade deficit then fails to shrink, or Chinese firms cease buying American high-tech components as they become self-sufficient (see China section), or Mr Trump is mocked for getting a bad deal. If so, the White House might rip the agreement up.

The new laws of the jungle

Another reason for the growing unpredictability is Mr Trump's urge to show off his power with acts of pure political discretion. He has just asked the postal service to raise delivery prices for Amazon, his *bête noire* and the world's second-most valuable listed firm. He could easily strike out in anger at other Silicon Valley firms—after all, they increasingly control the flow of political information. He wants the fate of ZTE, a Chinese telecoms firm banned in America for sanctions violations, to turn on his personal whim. Inevitably, other countries are playing rougher, too. China's antitrust police are blocking Qualcomm's \$52bn takeover of NXP, a rival semiconductor firm, as a bargaining chip. When policy becomes a rolling negotiation, lobbying explodes. The less predictable business en- ►►

► vironment that results will raise the cost of capital.

As America's expansion gets longer in the tooth, these arbitrary interventions could intensify. Mr Trump expects wages to rise, but 85% of firms in the S&P 500 are forecast to expand margins by 2019, reflecting a control of costs. Either shareholders, or workers and Mr Trump, are going to be disappointed. Given that interest rates are rising, a recession is likely in the next few years. In a downturn, American business may find that its fabled flexibility has been compromised because the politics of firing workers and slashing costs has become toxic.

Republicans are right that tax cuts and wise deregulation can boost firms' competitiveness. But little progress is being made on other priorities, including repairing infrastructure, ensuring small firms are not squashed by monopolies and reforming the education system. Most firms pride themselves on being level-headed, but at some point that bleeds into complacency. American business may one day conclude that this was the moment when it booked all the benefits of the Trump era, while failing to account properly for the costs. A strategy that assumes revenues but not expenses rarely makes sense. ■

Audit reform

Shape up, not break up

The audit industry needs fixing. But dismantling the Big Four is not the way to do it



WHEN a company goes bankrupt, recriminations tend to follow. Even so, the fury caused by the recent collapse of Carillion, a British contracting firm, is unusual. A report on the debacle by British MPs, which was released this month, sav-

aged everyone from the firm's executives to its regulators. But the MPs reserved special bile for the Big Four accounting firms—not just KPMG, which audited Carillion's accounts for 19 years, but also its peers, Deloitte, EY and PwC, each of which extracted fees from the company, before and after its fall. The MPs have called for a review into the audit market and asked it to say whether the Big Four's British arms should be broken up. The row is local, but concerns about the industry are global.

Critics of the auditors are right in two respects: that the industry matters, and that it needs reform (see Finance section). It is in everyone's interest that auditing works. If investors cannot trust financial statements, then companies' cost of capital will rise, crimping growth and employment. It is also true that the industry has flaws. It is highly concentrated. The Big Four audit 98% of the companies listed on the S&P 500 and the FTSE 350 indexes. And auditors are paid not by investors, whom they serve, but by the company whose accounts they scrutinise. That raises questions about objectivity, especially since the Big Four earn nearly twice as much from consulting and other services as they do from auditing. Past reforms banned them from providing both an audit and certain consulting services to the same client, but conflicts of interest remain. In America non-audit fees charged to the same client amount to a quarter of audit fees; in Britain the figure is around a half.

A break-up, whether to separate the audit arms from the consulting businesses or to turn the Big Four into a Middling Eight, seems to offer a simple solution to these problems. It would at first affect only the British parts of the firms' global networks, but the idea could spread.

Although a break-up might be justified as a last resort, it is premature. Investors have exaggerated expectations of auditors' ability to detect fraud. Because audits rely on sampling, some skulduggery will inevitably slip through. There are also signs that the industry is improving. Many countries tightened the rules after a scandal in 2001 sank Enron, an energy-trading firm, and its auditor, Arthur Andersen. In America the number

of accounts that are restated because of a material error has fallen sharply over the past decade. Break-up would bring unintended consequences. As the world economy shifts from making goods to selling services, auditing is becoming more complicated: scale and the multidisciplinary expertise of large firms count for more. Smaller firms risk being too reliant on a few large clients, which may cloud their judgment.

If you want radical fixes, there are better ways to correct the incentive problems at the core of the industry. You could sever the link between auditors and their clients by requiring securities regulators to pick firms' auditors. Or you could introduce mandatory insurance of accounts, whereby companies must buy coverage for losses from accounting errors and the insurers would therefore appoint auditors to assess their risk.

One bean at a time

Such ideas have been floating around for years, but even these are too hasty. Instead regulators should sharpen tools that are already available in Europe. They could lower the cap on non-audit fees charged to an audit client from today's generous level of 70% of the audit fee. Under rules introduced in 2016, British companies with the same auditor for ten years must re-tender; they are forced to rotate after 20. Such rules look draconian to American eyes, where the average auditor tenure for the first 21 companies in the Dow Jones Industrial Average to have made disclosures this year is a cosy 66 years. New research finds that auditors are most likely to find misstatements early in their tenure; by the tenth year, the benefits of a fresh pair of eyes are lost. Academics also find that the Big Four's fees rise with tenure. Even Britain's 20-year limit is too long.

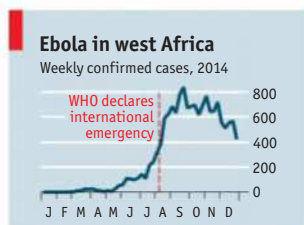
Auditors in many countries are already required to add flesh to the bare bones of the audit opinion. That is to be encouraged. Transparency over the main points of contention with management, and the size of revisions made to the accounts as a result of scrutiny, would cast light on auditors' successes, not just their failures. And that in turn would help investors to assess auditors' performance.

For years shareholders have waved through a company's choice of auditor at annual general meetings. A bit more boldness could be salutary. Last month, for instance, over a third of investors in General Electric voted against the reappointment of KPMG, its auditor for 109 years. The case for breaking up the Big Four is unproven. But every so often, shareholders need to remind the quartet who their main customers are. ■

Ebola

Back to blood

A new outbreak of Ebola in Congo will test what the world has learned from the calamitous epidemic of 2014



IN MARCH 2014 the brave doctors of Médecins Sans Frontières (MSF) sounded an alarm. They were struggling to contain an outbreak of Ebola in Guinea, a poor and violent west African state. The Ebola virus causes a terrifying disease: a fever sometimes followed by massive internal and external bleeding. It is contagious, via body fluids, and frequently fatal. Yet no one paid much attention to MSF's warning, and by June the epidemic had spread to 60 places in three countries. It was not until August that year that the World Health Organisation (WHO) declared an international health emergency. The delay allowed Ebola to rage out of control, killing 11,000 people in six countries and leaving 17,000 children without one or both of their parents. Only after the epidemic had peaked did the world pay heed. Some governments panicked, imposing flight bans on all travellers from affected countries. This prompted many to go by road, where they were harder to track.

Global public-health authorities vowed to learn from this catastrophic foul-up. A fresh outbreak of Ebola, this time in the Democratic Republic of Congo, will reveal whether they have done so (see Middle East and Africa section). So far, the signs are good. The big mistake last time was to dither—containing an epidemic early is easier and cheaper and saves lives. This time medical staff have been rushed to the scene, the im-strong city of Mbandaka on the Congo river. Protective gear and medicines have been promptly deployed. Health workers have swiftly started to trace those who have been in contact with Ebola sufferers. Congo's neighbours are on alert. Isolation zones and treatment centres have been set up. The WHO has released cash from a contingency fund. Canada, Germany, the EU, America and Britain have pledged more. For the next

three months the WHO says it needs \$26m. That is a bargain: last time it cost \$3.6bn to contain the epidemic and it knocked \$2.2bn off the GDP of the worst-affected countries.

Technology has improved since 2014. Not only is there a quicker diagnostic test, but there are also ample supplies of an effective vaccine. Thousands of doses are being deployed in a "ring" strategy, to inoculate those who have been in contact with known cases of Ebola, as well as their contacts in turn. Jabs are also being offered to front-line health workers—an essential precaution, given the large number of such workers who died last time. It is not yet clear how well ring vaccination will contain the early stages of an outbreak, when chains of transmission are less certain. The vaccine is also hard to administer, since it must be kept as low as -80°C. However, if this one proves unsuitable, another is available that might work.

Vigilant against the virus

Even with all these advantages, containment will be hard. Congo is atrociously governed; getting anything done there is tricky. The virus could spread along the Congo river, the country's main artery. Further infections, and deaths, are all but certain. Still, the world is much better placed to fight Ebola than it was four years ago. Public and charitable money ensured that there were vaccine stockpiles. America's Department of Defence helped to fund vaccine research—which for-profit drug firms are unlikely to do, since such vaccines must be given away, not sold. A new group called the Coalition for Epidemic Preparedness Innovations (CEPI) was set up to raise money and channel it to the most promising projects.

If this epidemic is contained, the world should learn the lesson. Ebola is just one of many horrendous pathogens, including Lassa fever, Marburg fever, SARS and Nipah virus, that could become epidemics. CEPI wants to reduce that risk by developing vaccines now. It is an urgent task. ■

Colombia's election

Faulty front-runners

The two leading candidates for the presidency are flawed



THE last time Colombia elected a president, in 2014, the country was at war. Its army was fighting the FARC, a Marxist guerrilla group dedicated to overthrowing the state and to making money from drug-trafficking and other crimes. In 50 years 220,000 people died and 7m were displaced. This year's presidential election, the first round of which is scheduled for May 27th, is the first since the war's end. President Juan Manuel Santos negotiated a peace deal with the FARC in 2016 and won the Nobel peace prize for it but cannot run again.

Candidates in this year's vote are rejecting his legacy. The front-runner is Iván Duque (pictured left), an ally of a conservative former president, Álvaro Uribe, who was the peace accord's most ferocious critic (see Americas section). His closest competitor is Gustavo Petro (on the right), a former mayor of Bogotá who was himself a member of the M19 guerrilla group in the 1980s. He is pro-peace, but he rages from the left against the establishment to which Mr Santos belongs.

Either of the front-runners would be a bad choice. Mr Duque is a moderniser but his mentor, Mr Uribe, is not. As president, Mr Uribe led the offensive against the FARC that paved the way for peace. But he also has an authoritarian streak, and is allied with large landowners who will resist re- ➤

► forms mandated by the peace deal, such as updating land records and property tax. Colombians are right to wonder whether Mr Uribe would have too much influence over a Duque presidency.

Mr Duque shares Mr Uribe's disdain for the peace deal and will weaken it if he becomes president. That would not rekindle all-out war. But it might prevent a peace agreement with the ELN, a guerrilla group that is still in the field.

Mr Petro would be a worse president. His plans include the self-defeating notion of pulling Colombia out of the oil business, its chief source of exports. His term as mayor of Bogotá was marked by clashes with the city council and disputes with contractors, one of which left rubbish uncollected. His opponents compare him to Hugo Chávez, who launched next-door Venezuela on its course towards economic and political disaster. That is an exaggeration. But neither Mr Petro's temperament nor his ideas equip him for the presidency.

Colombians' hunger for change is understandable. Income inequality, though falling, is the second-highest in Latin America. Schools and health care are not good enough. Corruption is

a running sore. People are angry that the peace accord has not ended the violence in the countryside and allows FARC leaders who have committed crimes to sit in congress.

Other candidates have better answers to most of these complaints than Mr Duque or Mr Petro. Humberto de la Calle, the government's chief peace negotiator, is a worthy aspirant. Sergio Fajardo, a mathematician who has put clean politics and education at the centre of his campaign, looks as if he has a better chance. A former mayor of Medellín and governor of the department of Antioquia, he has shown that, unlike Mr Petro, he can run a government successfully. Unlike Mr Duque, he would seek to improve the implementation of the peace agreement, not undermine it. He gets our vote.

It's not Venezuela

Even if the wrong man wins, do not despair for Colombia. Unlike Venezuela, whose president, Nicolás Maduro, has just won a fraudulent election, Colombia is a solid democracy with relatively strong institutions. At least the next president, whoever he may be, is unlikely to change that. ■

Truth and technology

Cinema, not vérité

A faked video of Donald Trump shows how AI will make propaganda cheap and easy



“DEAR people of Belgium. This is a huge deal. As you know, I had the balls to withdraw from the Paris climate agreement, and so should you.” It sounds like Donald Trump—a bit, anyway. It is definitely a picture of Donald Trump. But the

person in the video, produced by sp.a, a left-wing Belgian political party, is not quite the American president. It is a computer-tweaked facsimile, into whose mouth has been put a not-entirely serious homily about Belgium's carbon emissions.

Faked images are not new. Stalin airbrushed his enemies out of history by having them removed from official photographs. Visual-effects studios in Hollywood transpose actors' faces onto the bodies of fitter, more disposable stunt doubles. But tinkering with video is hard. Doing it well requires specialists who are scarce and expensive.

Technology is making things cheaper and easier. The video by sp.a is a “deep fake”—which draws on “deep learning”, an artificial-intelligence technique used in everything from recognising faces to playing Go, a complex board game. To produce a deep fake, all you need is a piece of free software, some pictures of the person whose face you wish to transpose, an existing piece of film to paste it into and a script for your digital creation to read. The computer takes care of the rest. And unlike special-effects artists, computers are cheap and widespread.

For now, the results are often amateurish. The video of Mr Trump is suspiciously blurry. His speech is stilted. His mouth moves in odd, not-quite-human ways. But as algorithms are refined and computing power gets cheaper, that will change. A previous demonstration, involving an ersatz Barack Obama and considerably more care, produced slicker results. Pictures and video will become like text: easier to fake outright or to

shade in subtle ways that exaggerate or downplay what is really happening. The video, sp.a says, was not intended to deceive. The game is given away near the end, when Mr Trump says: “We all know climate change is fake—just like this video!” But not everyone will be so scrupulous.

This prospect would be worrying at any time. It is particularly unwelcome now. The internet has already given partisans and provocateurs a cheap and effective way to spread written rumours and untruths. Faked videos will be similarly easy to disseminate, but will be more powerful precisely because people have not yet learned to mistrust film and soundtracks. Just imagine the mayhem sown by a faked video showing Mr Trump confessing that he had taken money from Russia's president, Vladimir Putin.

The camera often lies

What to do? Ideally, people will adapt, becoming more sceptical, and the world will be quick to apply the lessons from “fake news”. But that will be hard. Technologies such as encryption and digital signing can help trace a film or picture back to a trusted source, although malicious actors will have no incentive to use them. Fact-checking will devote more time to videos and pictures as digital fakery becomes widespread; but such services can only ever be reactive, sending the truth panting after a lie that is already halfway across the world. Journalists and bloggers with a reputation for accuracy might see demand for their services rise—though only if people want truth rather than titillation or confirmation of their biases.

Before the era of mass media, mass literacy and cheap communication, knowledge of the world was foggy. It was a struggle to sort fact from rumour. Cheap, high-quality propaganda risks making the truth harder to find, further debasing democratic politics. Technology could make the global village feel more like a fearful, distrusting swamp. ■

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China's Golden Waterway

New efforts underway to make the Yangtze River Economic Belt vibrant and green

By Yuan Yuan

The Yangtze River, winding through 11 provinces, autonomous regions and municipalities from west to east, is China's mother river. Protecting and improving the environment along the major waterway while developing the economy has become one of China's top priorities.

The Yangtze River Economic Belt boasts a population of roughly 600 million that generate 40 percent of China's GDP. Many enterprises thrive along the belt and will now have to be on the frontlines of protecting and building the ecological sanctity of the river. As the country strives to continue to elevate the living standards of its citizens, all polluting enterprises are being required to either close down production or transform themselves into environmentally-friendly companies.

Going green

Under a local government campaign against pollution in Yichang City, in central China's Hubei Province, the Hubei Xingfa Chemicals Group closed, relocated or upgraded to clean industries a total of 134 chemical plants along the Yangtze River. Four sewage discharge outlets, which used to release untreated waste water directly into the river, were shut down and the waste water now goes to a sewage disposal plant for further processing. Green vegetation was then planted on the sites to restore the environment. Xingfa, located on the bank of the Yangtze River Economic Belt, is China's largest fine phosphoric chemical maker.

In Wuhan North Lake, the construction of a sewage treatment plant is in full swing. The short-term plan is to treat 800,000 tons of sewage daily while the long-term goal is 1.5 million tons.

With the restoration of the river's ecological environment high on the agenda in developing the Yangtze River Economic Belt, unplanned development along the river will be stopped and the total pollution discharge will be capped.

"The area along the Yangtze River has the most abundant ecological resources in China," said Luo Laijun, an economist

from Renmin University. "The protection of the environment here will benefit the construction of ecological civilization in the entire country."

Jingzhou City in Hubei Province has actively restored the ecological environment of its lakes and wetlands. By the end of 2017, there were a total of 24 newly emerged lakes in the city.

"In the past, many residents relied on fish farming to make a living," said Huang Zehua from the lake protection office of Jingzhou. "Fish farming was mostly disorganized then, with everyone fending for themselves. Now things are much better since many local governments along the Yangtze River rotate the fish farming and distribute the profits to individual households to promote ecological fishing."

Jiang Shenghui, a villager from the Liangzi Lake area in Ezhou City in Hubei Province, agreed, "We used to fish on the basis of individual households but could hardly make any profits because the fish feed was so expensive. Now we don't have to worry anymore." He continued, "The government organizes the individual fishing areas and runs them at full scale. We then get paid by either collecting rent or working for the collective. This ecological fishing is also good for restoring the environment."

Chang Jinwen, an official with the Development Research Center of the State Council, said, "Rivers are the birth places of many civilizations. The Yangtze River Basin is the key ecological defense line of our country and its ecological protection is key to the development of the Chinese nation."

Chang added, "This requires that all companies along the Yangtze River—no matter what industry they develop—make ecological protection a priority."

Innovation and coordination

Along the Yangtze River, the Donghu New Technology Development Zone, dubbed China's Optics Valley, is the world's largest research and development (R&D) and manufacturing

ADVERTISEMENT

base for optical communication equipment. It covers more than 500 square km and is now home to more than 20,000 technical professionals from both China and abroad.

The FiberHome Technologies Group, located in the zone, leads the world in R&D and production of optical communication equipment of “ultra-large capacity, ultra-long haul and ultra-high rate,” with technology that can enable 6.75 billion telephone calls at the same time using a single optical fiber.

Following the U.S.’s harsh sanctions on Chinese hi-tech company ZTE, many in China realized the importance of actually owning the core-technology in every industry.

Chinese President Xi Jinping recently toured the zone, including a national memory chip production base and assembly lines for integrated circuits at Wuhan Xinxin Semiconductor Manufacturing Corp., getting reports on the manufacturing of chips.

Comparing chips to the human heart, Xi said, “No matter how big a person is, he or she can never be strong without a sound and strong heart.” He urged businesses to make major breakthroughs in chip technology and challenge the heights of the global semiconductor industry. “To get core and key technology, begging for alms won’t work,” he said.

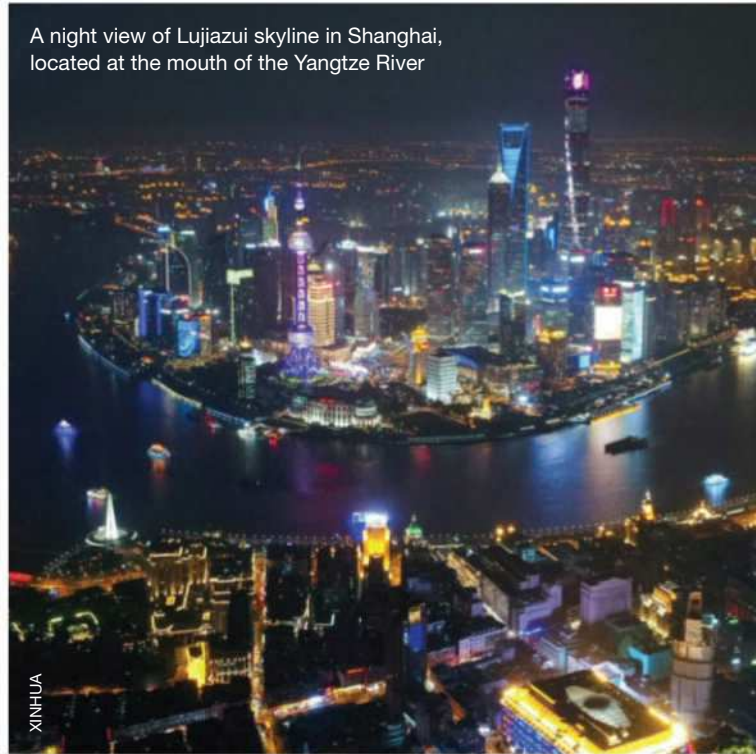
Differentiated functions

An Shuwei, professor of economics at Capital University of Economics and Business, divided the Yangtze River Economic Belt into several parts.

“The city clusters along the Yangtze River Delta area, the middle reaches of the river and the Chengdu-Chongqing area, are the three major growth poles along the Yangtze River Economic Belt and each one has its advantages and disadvantages.”

An explained that the Yangtze River Delta city cluster is the most developed, competitive and urbanized in China. Yet the high population density in Shanghai’s central urban area, the low

A night view of Lujiazui skyline in Shanghai, located at the mouth of the Yangtze River



utilization rate of urban space and the declining environmental conditions are a challenge to this area.

The city cluster in the middle reaches of the Yangtze has an excellent transportation infrastructure, strong economic power and further urbanization potential. But it needs to improve the competitiveness of its cities and the coordinated development mechanism among the cities.

The Chengdu-Chongqing city cluster enjoys an advantageous location and a relatively high economic development level, which is important for the western region’s development and strategic support of the Yangtze River Economic Belt. The challenges this region faces include its low internal impetus, weak innovation capacity and infrastructure connectivity.

“In addition to curbing excessive exploration, limiting total pollution emission volume and cracking down on activities that undermine the environment, more efforts should be made to adjust economic structures and transform development modes along the belt,” said Wu Chuanqing, Director of the Center for Regional Economics Research at Wuhan University.

“We also need to improve the system and mechanism for the coordinated protection of the environment along the belt, and enhance law enforcement,” Wu said. “Laws on economic activity and environmental protection activity should be formulated.”



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For the good of all

Universal health care is achievable if it is carried out in stages (Special report, April 28th). The ultimate aim is to provide services to all. But in countries where resources are limited, don't provide all services; instead focus on solutions that are the most cost-effective, in particular the ones that benefit poor people the most. Known as progressive universalism, this is why we already have a well-defined first step towards universal health care in the form of childhood immunisation. Today 86% of the world's children receive basic vaccinations. With more than 30 vaccine doses administered every second, no other health intervention reaches so many people. With routine immunisation comes supply chains, cold storage, trained health-care staff, data monitoring, disease surveillance, health records and more. It creates a platform for other health interventions, such as malaria-prevention measures.

SETH BERKLEY
Chief executive
Gavi, the Vaccine Alliance
Geneva

Even if low-income countries increased their taxes to the maximum extent that the IMF suggests is realistic, and they increased the proportion of that revenue allocated to health, they could still only afford to spend \$10 a person. The World Bank estimates they need to spend \$76 a person to achieve universal health care.

MARCUS MANUEL
Senior research associate
Overseas Development Institute
London

If surgery is the "neglected stepchild" of global health, diagnosis is its orphan. In many low- and middle-income countries problems arise from a lack of capacity and standards for diagnosis. To illustrate the problem, 15 countries in sub-Saharan Africa have five or fewer pathologists (Britain has around 1,800). In China the shortfall of pathologists is estimated at up to 120,000. Even where avail-

able, standards vary; 60% of the pathology reports on breast-cancer cases in Lagos failed to record whether the tumour had spread to the lymph nodes or not.

Without accurate diagnosis, a substantial proportion of patients will receive inappropriate treatment and be ill for longer. Without incorporating forgotten components like effective surgery, pathology and laboratory medicine into broad-based systems, achieving the aim of universal health care will remain out of reach.

KENNETH FLEMING
Senior adviser for pathology
Centre for Global Health
National Cancer Institute
Washington, DC

There is an increasing burden of chronic diseases in developing countries, caused by the adoption of the lifestyle in developed countries with a higher reliance on convenience foods. This leads to inflammation, diabetes, obesity and cardiovascular disease. Many richer countries are trying to reverse this by going back to "ancestral" diets, hence the popularity of farmers markets and agricultural co-operatives.

F. RAMZI ASFOUR
California Centre for
Functional Medicine
San Rafael, California

Redefining the old

"Small isn't beautiful" (May 5th) mentioned the "dependency ratio" and defined the working-age population as 15- to 64-year-olds. It is time to challenge these outdated stereotypes. Over one-third of people in this age group in the EU is not actually working. And rather than being dependent, people over the age of 64 contribute in many ways, by working and paying taxes, particularly consumption taxes. They also often fund their own retirement.

An ageing population can present challenges, but sound policy responses can address them. Otherwise how do you explain that, since 2000, the growth of the old-age dependency ratio in Germany has far

outstripped that in America, but GDP per person has nevertheless grown even faster?

JOHN BEARD
Director
Department of Ageing and
Life Course
World Health Organisation
Geneva

To boldly go

Congratulations to *The Economist* on slaughtering the old rule against split infinitives (Johnson, April 28th). Please relentlessly continue to radically cull prescriptive language rules. There are many more that need discarding. You might consult Robert Burchfield's "The English Language": "No construction is everlastingly stable, no cherished rule remains unbroken." Any style-guide editors inclined to mass executions should be reassured that history is on the reformers' side. Burchfield again: "There is little doubt that most of the new features that are intensely disliked by linguistic conservatives will triumph in the end. But the language will not bleed to death. Nor will it seem in any way distorted once the old observances have been forgotten."

Carry on culling!
JACK WINKLER
London

Et tu, Brute? I pen this missive, heavy of heart and slumped in despair. Now that your venerable publication, the last bastion of grammatical fortitude, has abandoned its principled stand against splitting the infinitive, are any of the sacred rules of grammar safe? What next? Will we all soon be pondering the question of to be or to not be?

H. COLEMAN SWITKAY
Bala Cynwyd, Pennsylvania

The Economist should not take any notice of that Fabian windbag, George Bernard Shaw. Perhaps your style has been changed to appeal to your large North American readership, unsplit infinitives being extinct in those parts.

J.M. HALLINAN
Sydney

Your change in grammar rules will surely lead to the sad demise of that finest subgenre of correspondence to *The Economist*: the letter designed grammatically to mock your avoidance of the split infinitive. I will continue mournfully to remember those halcyon days, while the waves of modernity begin to inexorably erode the shores of tradition.

OSCAR DESPARD
Dublin

A hostile environment

If Britain's new home secretary has the stamina to read the same piece of Ayn Rand's turgid prose twice a year he might have what it takes to reform the dysfunctional Home Office (Bagehot, May 5th). Then again, his taste in literature may belie an imagination too sterile for the task in hand. As one wit pithily put it: "There are two novels that can change a bookish 14-year-old's life: 'The Lord of the Rings' and 'Atlas Shrugged'. One is a childish fantasy that often engenders a lifelong obsession with its unbelievable heroes, leading to an emotionally stunted, socially crippled adulthood, unable to deal with the real world. The other, of course, involves orcs."

Given that the Home Office is more Mordor than the new Jerusalem, perhaps Sajid Javid would have been better off with Tolkien.

JONATHAN KENT
Wadhurst, Sussex ■

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A boom like no other

NEW YORK

Donald Trump is presiding over a tech-led surge, not an industrial renaissance

AMERICAN free enterprise has overcome many daunting challenges in its history. Now it faces a new one: proving to a grumpy public and a sceptical world that the answer to American capitalism's problems lies not in restraining business, but in liberating it. The unshackling comes courtesy of a Republican president and Congress. Its effects on investment for long-term growth and on increasing levels of competition, productivity and pay—the effects that would make America a better place for all—are still unfolding.

Leading executives know that the stakes are high. In his latest letter to the shareholders of JPMorgan Chase, Jamie Dimon, the bank's boss, worries that “Younger people in the United States, who are effectively going to inherit the wealthiest nation on the planet, seem to be pessimistic about our future and capitalism.” Larry Fink, the boss of BlackRock, the world's largest asset manager, worries about “popular frustration and apprehension about the future”.

That frustration is easily understood. The past decade was a great one for shareholders, but not for society. Comparing 2009-17 with an average of the past half-century, post-tax profits were 31% higher as a share of GDP. But they were spent on share buy-backs and cosy market-consoli-

dating mergers rather than investment, which was 4% lower as a share of GDP than its 50-year average. Pay was 10% lower (see chart 1 on next page). Competition flagged, dragging down productivity growth, the driver of long-term living standards. In early 2016 labour-productivity growth, which was low across the developed world, was almost zero in America.

Faced with all that, some countries would have set about constraining and controlling what companies could do. America did the opposite. In November 2016 it elected a Republican Congress and president keen to provide USA Inc with a sumptuous pick-me-up of tax cuts and deregulation, along with an order of protectionism on the side. Not all in the party agree on all of this. But almost all believe in doing things they think will help business, not just because they have a natural sympathy with the people who own and run companies, but because they think they will ultimately benefit everyone.

Eighteen months on, business confidence has soared. However alarming or distasteful some of them may find President Donald Trump, most of America's chief executives are quietly appreciative of the Republican agenda. Shareholders have continued in clover. Earnings for firms in the S&P 500 index rose by 22% in the first

quarter compared with the previous year, or by 9% if you exclude the benefit of the recent tax cut. Growth is broadly based: 89% of S&P 500 firms are enjoying rising sales, up from just 36% in 2009's nadir; the high in the previous cycle was 76% in 2008. Blackstone, a private-equity firm, says that the profits of its portfolio of companies are rising at double-digit rates; so does its rival, the Carlyle Group. Optimism among 29m small firms is near an all-time high.

Yet the test of capitalism is not just whether shareholders do well. It is whether everyone else benefits, too. To gauge if USA Inc is delivering, *The Economist* has taken its pulse in three ways: examining if investment is rising, whether employees are doing better and whether there is enough competition, which should cut prices and boost productivity.

There's something there

These are tricky questions. It is hard to untangle the effects of the recovery that had built up steam under Barack Obama, not to mention those of comparatively robust global growth, from those due to Republican policies. Nonetheless, our conclusion is that the government's new attitude to USA Inc is indeed delivering moderately better results for society than those seen for most of the previous dismal decade.

Yet this is hardly the sort of business boom that Mr Trump promised. The technology sector is dominating investment to an unprecedented degree. Patterns of competition are changing. Among industrial and small firms there is optimism, but little evidence of a big change in plans or prospects. And there is the prospect of a trade war to contend with—a threat Mr Trump ►►

escalated on May 23rd by setting the scene for tariffs on imports of cars and car parts.

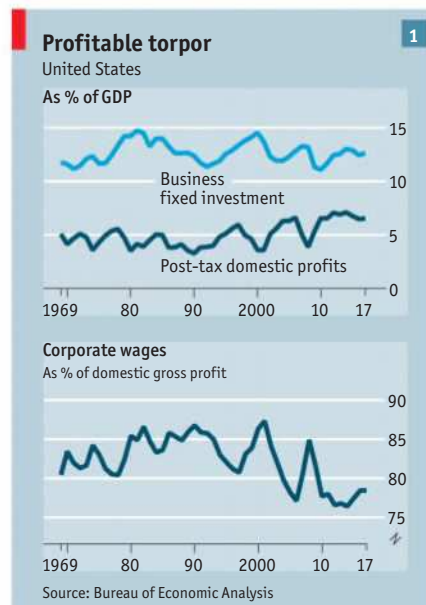
The pre-Trump decade was in some ways yet more dire than the financial crisis and its aftermath might have led you to expect. Many explanations for this were offered. Lawrence Summers, a leading economist, worried about “secular stagnation”, an excess of savings muffling growth. Robert Gordon, an economic historian, argued that today’s innovations could never provide boosts to productivity like those from electrification, the internal-combustion engine and other breakthroughs of bygone years. Free marketeers, including this newspaper, fretted about a new age of monopolies. Regulation was held to blame by some, while others, including incumbent chief executives, blamed short-term investors. Plenty of ordinary Americans simply concluded that the system was “rigged”.

However diverse the accounts of the problem, the Republican solution was simple: boost business confidence and get out of its way. Just 24 days after the election Mr Trump formed an advisory council stacked with corporate royalty. His inaugural address promised to “harness the energies, industries and technologies of tomorrow.” Mostly in concert, Congress and the White House prioritised tax cuts, deregulation, “fair trade”, infrastructure and giving bosses access to Mr Trump, who imagines himself as the nation’s chairman, banging heads together as appropriate.

The last two of these priorities have flopped. The federal government lacks the cash to rebuild crumbling roads, and while big investors pay lip service to creating new public-private partnerships, there is no sense of infrastructure being the real priority it should be. Mr Trump’s business council, meanwhile, was disbanded after many members left, most notably when the president blamed both sides for clashes between the far-right and its opponents in Charlottesville last summer.

Seeking Mr Trump’s personal patronage can be a precarious, humiliating affair. Hock Tan, the boss of Broadcom, a semiconductor firm then based in Singapore, appeared in the Oval Office on November 2nd, flattering the president. Mr Trump hugged him and called Broadcom “really great”, but in March Broadcom’s bid for Qualcomm, an all-American rival, was squelched on national-security grounds. What is more, given the president’s continuing business interests and the behaviour of some of those around him, seeking his approval can lead to the whiff of corruption. In 2017 AT&T, which is trying to buy Time Warner, paid Michael Cohen, Mr Trump’s personal lawyer, \$600,000 for advice. It now says it regrets this.

On tax, deregulation and trade, however, Congress and the administration have had an impact. The tax act passed in December lowered the headline corporate



rate to average European levels, gave firms a temporary break on investments, limited taxes on new foreign profits and allowed firms to repatriate cash held in foreign subsidiaries at a low rate. The net saving for firms will be \$100bn a year going forward, or 6% of 2017 pre-tax domestic profits. While deficit-hawks look on in disgust and tax experts grumble about fine print which is an utter mess, bosses are ecstatic.

On deregulation, the administration says that it enacted 60% less new economic regulation in its first year than the Obama administration did in 2009, and 38% less than George Bush’s administration did in 2001. Bosses in some industries report that regulators are less abrasive, indeed amenable. For example the Treasury and financial supervisors have made the stress tests that banks face less elaborate, and on May 22nd the House passed a bill exempting banks with less than \$250bn of assets from some rules (see Finance section).

The Federal Communications Commission has abandoned rules on cross-ownership of newspapers and broadcasters that it says were obsolete. Few firms talk much about the powerful Environmental Protection Agency: this may be because they are embarrassed to see any upside in the weakening of rules going on there, or because they are wary about exploiting them for fear they will be reimposed—or that the public will turn against them for doing so. With officials quitting regulatory agencies, funding drying up and lobbying rising, the quality of administration will in time almost certainly suffer. But it is pretty hard to find companies worried about that risk.

The last big policy change is trade. Many businessmen are not averse to a bit of protection if they can get it, especially when it comes to China. There are perhaps only a dozen American firms that make

more than a billion dollars in annual profits from China each year. The members of this tiny club put on a brave face; Dennis Muilenburg, the head of Boeing, America’s largest industrial exporter to China, has insisted that “we have a seat at the table”.

More generally, most CEOs probably calculate that the costs of tariffs would mainly fall on consumers. A general lack of panic over the matter suggests that bosses mostly think the North American Free Trade Agreement will be renegotiated. One barometer is Kansas City Southern, a railway company that brings cars and parts across the Mexican border. After a slump in late 2016 its share price has recovered; its executives say there is little sign of big firms rejigging supply chains.

The Bank for International Settlements, a club of central banks, recently simulated the impact on the supply chains of 17 American industrial sectors of a 20% tariff on Chinese and Mexican goods. The median rise in costs was about 1%, and even the highest was just 2%—hardly fatal. And bear in mind that, over the 2010s, big American businesses became decreasingly global—at least as far as profits were concerned. Earnings from subsidiaries or sales abroad have barely grown since 2008, while margins have risen at home: foreign profits are now only 20% of the total, down from 32%.

Beyond shareholder value

So what of investment, competition and better pay? Consider business investment first. Economy-wide figures show an increase of 7% in the first quarter of 2018 compared with that of 2017. By historical standards, that is decent but not exceptional: investment grew at an average rate of 10% in the big surge of the mid-2000s. The real excitement comes from what big listed companies report. There, according to data from Bloomberg, total investment (capital spending and R&D) rose by 19% in the first quarter of 2018 compared with the previous year (see chart 2). That is on a par with the giddy heights of 2007.

One quarter can be volatile. Another gauge is the budgets that big firms have set for 2018. For the largest 100 listed firms that



▶ have given public guidance, aggregate capital spending is set to rise by 10%. That would be on a par with the figures before the financial crisis.

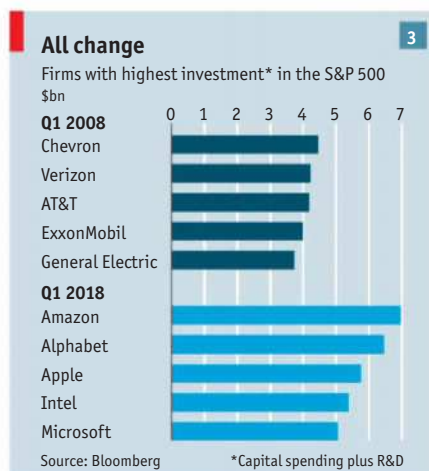
At first glance the good news appears broadly based, with almost two-thirds of the top 500 firms boosting their investment in the last quarter. Dig deeper, however, and you see that business investing has been transformed. Ten years ago the five largest spenders were old-economy stalwarts: AT&T, Chevron, ExxonMobil, General Electric and Verizon (see chart 3). Now the top five are Alphabet, Amazon, Apple, Intel and Microsoft. In the first quarter, tech firms accounted for 26% of the S&P 500's market capitalisation, 31% of its investment and a staggering 47% of the absolute rise in that investment (see chart 4). Budgets for 2018 suggest a similar mix.

Tech firms don't just write code and hoard the proceeds. The share of their total gross cashflow that they reinvest has risen from 40% in 2010 to over 50%, similar to the level for non-tech firms. Almost half of their investment is in property, plant and equipment. Alphabet is pouring cash into data centres and a redevelopment of Chelsea Market in New York. Amazon is building out e-commerce fulfilment centres. Semiconductor firms are expanding plants that make chips for machine learning and autonomous cars. What's more, tech firms are also investing on behalf of ordinary companies by building cloud-computing capacity that is increasingly replacing other firms' in-house IT investments.

The picture for the economy as a whole—rather than just for listed companies—looks similar. Plenty of tech activity is not captured by the figures for investment in the accounts of listed tech firms, most notably venture-capital activity, capital spending done off-balance sheet by Amazon and Microsoft using leases and Netflix's relentless spending on its content library, which counts as an expense. Include all this and tech accounts for 20% of absolute business investment across the whole economy and 83% of the rise in the first quarter. Furthermore, some investment by non-tech firms is linked to the tech boom. FedEx and UPS, two distribution firms, are boosting investment at a double-digit rate, buying planes and building depots to cope with e-commerce.

Tech is not the only exceptional sector. Energy, too, is a special case, since spending tends to be influenced by the oil-price cycle, which has moved from despair in 2015 to optimism again this year and last. Though the oil majors are no longer in the investment top five, shale-energy firms are spending like billy-o.

Exclude the figures for tech and energy and "traditional" investment in the first quarter rose by 12%, with firms' budgets suggesting a rise of 5% for the whole of 2018—considerably less impressive. A typi-

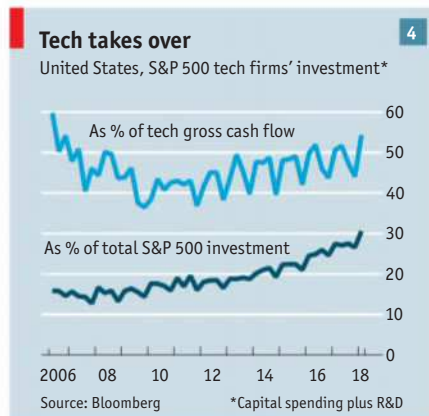


cal example of restraint is Emerson, a big, 125-year-old industrial conglomerate. David Farr, its boss, has been an outspoken advocate of tax cuts as a way to revive manufacturing. Despite tax reform his company's capital spending budget in 2018 will be lower than in 2015, though higher than it was last year.

It is a similar story for investment by foreign firms: modest overall growth coupled with a big increase in sectoral specificity. Toyota and other companies eager to ingratiate themselves have advertised plans to build factories. But the overall picture is lukewarm. The number of foreign-backed greenfield projects (creating physical assets such as plants) announced in the first quarter of 2018 fell by 29% compared with 2017, according to FDI Markets, a data firm.

Inbound takeovers and venture-capital and private-equity investments, which ran at \$6bn a week during Mr Obama's second term, picked up to \$7bn a week after the election in 2016, and have risen as high as \$10bn a week since the tax reform. However, the flow is heavily skewed towards intellectual-property-intensive industries such as tech and biotech. Five years ago these accounted for roughly a quarter of the total; now they are up to a half. Foreign firms are hot for America's ideas. They are tepid about its factory workers.

What is more, some foreign investors



may find themselves shut out, as Broadcom was, as the government takes a new hard line on takeovers and investments in anything deemed strategic if there is Chinese money or influence involved.

The second big test for American business is dynamism: whether the pace of creative destruction is rising. The past two decades of profitable torpor have been an incumbent's paradise, with big firms getting bigger in two-thirds of industries and finding it easy to crank out high profits even in low-margin industries. This has discouraged investment and innovation, raised prices and squashed small firms.

Based on last year's data there is no evidence that this trend has reversed. Of the firms in the S&P 500 with very high profits—which we define as a return on capital of over 20%, excluding goodwill—72% made similarly lavish returns ten years ago. But no one would expect such a trend to turn on a dime, and the picture going forward is a little more encouraging. This is probably thanks, in part, to the stiffening effect of Republican policy on animal spirits. But again it has more to do with a fundamental shift in the economy.

Not insane, just tech-centric

Various industries are being forced to change as digital competitors emerge, distribution and marketing shift online and price wars loom. Some companies will struggle. One way to judge how much there is to fight over is to look at firms which investors are worried about—those with market values at a low multiple of earnings, or that have seen their valuations drop a lot. Big food companies, asset managers, advertising agencies, broadcasters, drug distributors, telecoms firms and airlines fit this description. Together they account for about 10% of the total pool of abnormally high profits being made in America—a pool that increased competition would drain into more productive endeavours. Disruption could also spread into other cosy industries such as health care and credit cards.

Just as with investment, though, the nature of competition has changed, notes Hugo Scott-Gall, an investment strategist. Instead of a swarm of small firms attacking incumbents, the economy's main source of competition is less than a dozen tech firms. The most notable is Amazon; its boss, Jeff Bezos, says that "your margin is my opportunity". In that particular case, though, the government may be more hindrance than help; Mr Trump loathes Mr Bezos's *Washington Post*, and is apparently looking for ways to do him harm.

If rampant tech firms eat up all the abnormally high profits, they could drive margins down across the economy. But though the overall level of profits and investment might then look more normal than in the recent high-profit past, the ▶▶

► economy producing those results would be very different. It would be based much more on the giant tech firms, increasingly dominant in terms of profitability as well as investment.

You would normally expect small firms to take some of the fight to big firms, especially when they are as confident as they tell market researchers that they are. But though the number of firms that are less than one year old has recovered from the lows it hit after the financial crisis, the latest figures (for the last quarter of 2017) show it no higher under Mr Trump than it was under Mr Obama. The mid-sized banks to which small firms tend to turn for money, and which have benefited from deregulation, show no signs of limbering up for a big burst of borrowing. A sample of ten such banks shows them budgeting average loan growth of just 5% in 2018. Tellingly, perhaps, the most prominent signs of vigour among small firms come via the tech giants: Amazon has over 1m small firms using its third-party sales platforms.

Not just growing, changing

What about the third test for American business under Trump: labour markets? The one-off bonuses for their staff that hundreds of firms announced in the weeks after the tax act did not even rise to the level of a statistical blip. But there are more reliable signs that the lot of the worker has been improving as the number of jobs rises and pay grows, especially in cyclical industries. The two industries where hourly pay rose fastest in April were construction and retail. The absolute pay bill for all firms rose by 5% in the first quarter com-

pared with the previous year. The share of gross corporate profits that is paid to workers has risen to 78% from a low of 76% in 2014, which is something; but it is still below the 50-year average of 82%.

Although companies expect wages to continue to rise, there is no evidence that managers expect a big shift in the balance between capital and labour. Very few firms disclose their total wage bills, but the big ones that do seem relaxed about short-term pressure. Take Mr Dimon's firm, JPMorgan Chase. It employs a quarter of a million tellers, call-centre workers, administrators and bankers, and its pay bill had been flattish for the past six years. In the first quarter of 2018 it jumped by 7% compared with the previous year. Still, the bank recently told investors that overheads will fall relative to revenue in the medium term. Or consider UPS. Its pay bill rose by 9% in the first quarter, but sales rose faster. In April it introduced a voluntary retirement scheme to cap labour costs.

The tech-centricity of the investment uptick raises huge questions about how employees will fare. Tech investment could create, augment or substitute jobs. Some tech firms are labour-hungry; others are not. Amazon employs 11,000 staff per billion dollars of fixed capital, whereas for Facebook the figure is just 1,500.

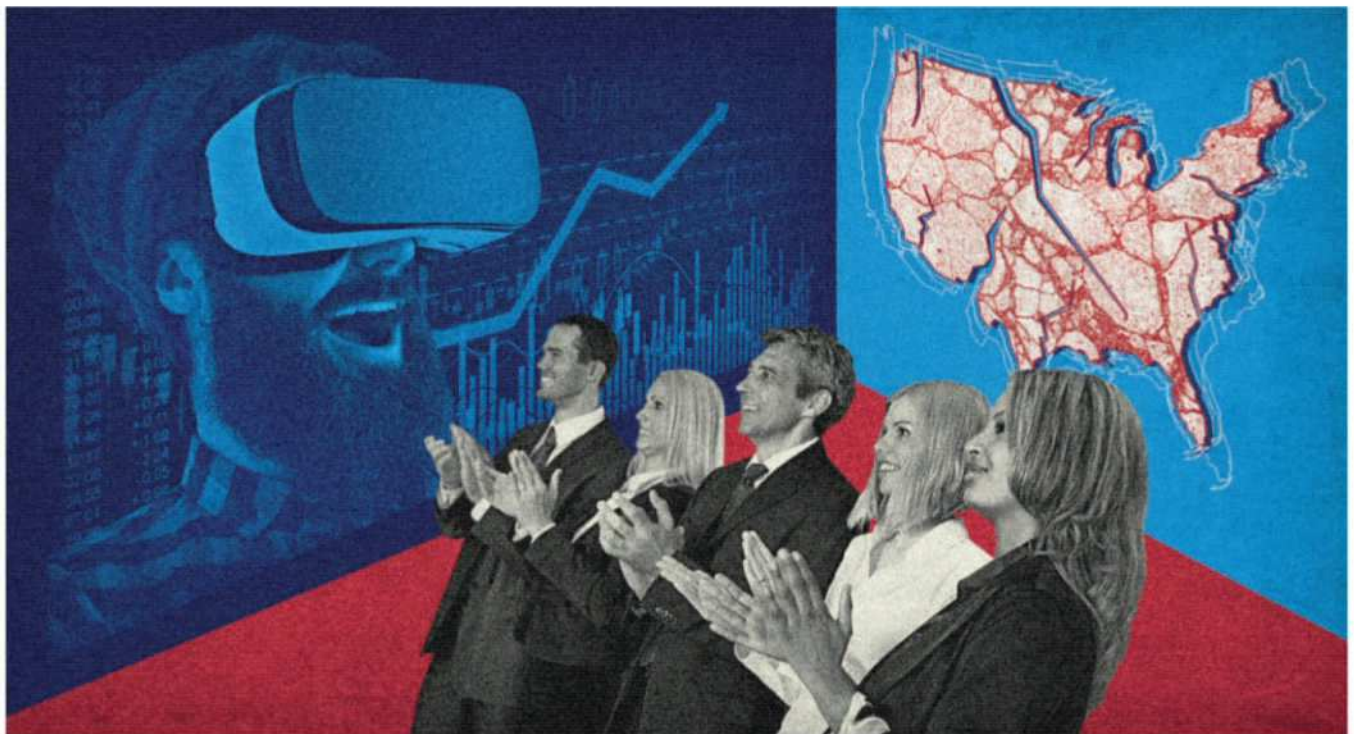
For one possible future assume that the current shift in the mix of investment continues, with tech growing and some other firms shrinking, and that each firm keeps the same ratio of workers to capital. Over five years firms in the S&P 500 would see total net fixed assets rise by 13% but payrolls shrink by 4%. A pessimistic scenario: not

necessarily an outlandish one.

The biggest near-term worry is surely that the nine-year-old economic expansion has already lasted longer than most recoveries. Even without the threat of a trade war its days would be numbered. Chief executives hope that the Trump surge will last for at least a couple of years longer. That could see business investment rise to a share of GDP in line with the long-term average. But it would take ten years for wage bills to get back to normal on that basis, and 19-year recoveries do not happen in America.

There is also a worry that investors may decide they have overvalued tech, as they did at the turn of the century—though unlike 1999-2000 today's big tech firms are for the most part hugely profitable. Rising interest rates might dampen investment, too, although USA Inc's balance-sheet is in passable shape, as are its banks. Losing one or both houses of Congress in November is unlikely to prompt a spasm of re-regulation or tax increases.

For the moment, then, the Republicans have got something that looks like the surge they wanted. But the way investment and the power to disrupt are now concentrated makes it unlike any business boom before. And what those firms, and the technologies powering their success, will mean for employment, inequality and the shape of the economy remains opaque. It is far from clear that their impact will repair capitalism's legitimacy in the eyes of the American public. And it is certain that they will create a need for more thoughtful government policies than just "Let business be business." ■





Italy

The servant of two masters

ROME

A bizarre new government takes shape

IN MANY another country, Giuseppe Conte would be politically a dead man walking. Instead, on May 23rd, he was asked to form Italy's next government.

Despite a controversy that cast doubt on Mr Conte's truthfulness, President Sergio Mattarella asked the little-known law professor to seek the backing of parliament for western Europe's first all-populist cabinet. He is likely to succeed. The 53-year-old Mr Conte, who vowed to be "the defence counsel of the Italian people", was a compromise candidate chosen by the anti-establishment Five Star Movement (M5S) and the hard-right Northern League after it became apparent that neither would let the other have the top job. Together, the M5S and the League have a solid majority of 37 in the 630-seat Chamber of Deputies, though a slimmer edge in the Senate.

Luigi Di Maio, leader of the M5S, and Matteo Salvini, head of the League, brushed aside evidence that Mr Conte had padded his professional CV with courses abroad that he had neither taken nor taught. His curriculum stated he had "perfected his legal studies" at numerous seats of learning including New York University, the Sorbonne and an "International Kultur Institut" in Vienna. But NYU had no record of Mr Conte. Nor had the Sorbonne. And the seemingly august Austrian institute turned out to be a language school.

The new prime minister's dodgy claims

were by no means the only reasons for doubting whether he was up to the task. He will be Italy's fifth unelected prime minister in a row. He has no experience of politics. Yet, if endorsed by parliament, he will soon be negotiating for his country at the European Council and with big hitters like Donald Trump and Vladimir Putin.

Just as pertinent is whether he can command the respect, let alone the compliance, of the politicians who chose him or whether, like Truffaldino in Carlo Goldoni's 18th-century comic masterpiece, he will end up as the harassed "Servant of Two Masters". First approached by the M5S to represent it on a self-regulatory body in 2013, Mr Conte declared: "I didn't vote for you and I am not a sympathiser." That did not stop Mr Di Maio from choosing him for a fantasy cabinet that the M5S leader presented before the general election on March 4th. The movement emerged from the vote as Italy's biggest party.

Rattling Europe

Virtually Mr Conte's only qualification is that he is acceptable to the League as well. But he once said his heart had always beaten on the left, and Mr Salvini is on chummy terms with the likes of Marine Le Pen. It will be interesting to see how the League leader's relationship with Mr Conte evolves, especially if Mr Salvini demands an increased say on policy. Polls since the

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election suggest that support for the League has grown, and that Mr Salvini is now Italy's most popular party leader.

The controversies over Mr Conte obscured worries over who will get the finance portfolio. The League's first choice was a fierce foe of the euro, Paolo Savona. The 81-year-old economist served as industry minister in the early 1990s. His antipathy to the euro, which he describes in his forthcoming autobiography as a "German cage", chimes with the views of the M5S (which is sceptical) and the League (which is firmly opposed to the single currency).

In a slightly ambiguous reassurance to Italy's EU partners, Mr Conte said he was "aware of confirming Italy's international and European positioning". Even though the coalition partners left out of their final programme a proposal contained in a draft to explore ways of leaving the euro, they have received warnings from inside and outside Italy. Vincenzo Boccia, head of the Italian bosses' union, Confindustria, said his compatriots should not assume their country's "position in the club of advanced economies will remain unchanged regardless of the choices we make". Calling for the new government to stick to a responsible budgetary policy, the vice-president of the European Commission, Valdis Dombrovskis, noted that Italy's borrowing was proportionally the highest of any euro-zone state except Greece.

Markets, too, have reacted with growing anxiety to the prospect of a populist coalition. After the president summoned Mr Conte, the Milan bourse closed 1.3% down. By May 23rd the gap between the yields on Italian and German government ten-year bonds, which reflects concern over Italy's ability to service its public debt, had grown to more than 190 basis points from 114 on April 24th. That is still nothing like what it ►►

attained in the euro crisis of 2011-12.

But the rise reflected unease over an innovation still hinted at in the coalition partners' programme: the issuance of so-called "mini-BOTS". Named after Italy's short-dated, zero-coupon Treasury bills, the Buoni Ordinari del Tesoro, or BOTS, these proposed securities would ostensibly deal with a problem that has long plagued Italian companies and driven some to bankruptcy—the state's failure to pay its suppliers. At the end of 2016, the state was reckoned to be almost €33bn in arrears. The "mini-BOTS" would be used to pay its debts and could also be given back to the authorities to settle tax liabilities. But the notes would be tradable in the meantime, probably at a discount. The effect would be to create a parallel currency beyond the control of the ECB, thereby weakening the euro. Watch this space. ■

Germany and France

Merkron, Merkroff

BERLIN

Differences of style and substance are straining the relationship

WHEN Emmanuel Macron won the French presidency last May, many hailed a new Franco-German dawn. Like Angela Merkel, he was a bookish centrist with few tribal allegiances. Like the chancellor, he saw Europe through the lens of the euro-zone crisis. "A little magic dwells in each beginning," proclaimed Mrs Merkel at their first meeting as leaders in May 2017, quoting Hermann Hesse. The concept of "Merkron" was born.

A year on, the sheen has worn off. Flashes of irritation now mark the relationship between the two leaders, particularly

over euro-zone reform. Allies of both Mr Macron and Mrs Merkel let it be known that their bosses are bristling at each other. The former considers the latter plodding and overcautious, the latter regards the former as rash and unreasonable.

At heart are two different understandings of the Merkron project. Mr Macron believes in the need for big-bang reform of the EU, with an overhaul of the currency union at its core, and has set out his agenda in speech after speech. The first came on September 26th, just two days after Germany's inconclusive federal election. In it, he called for a euro-zone finance minister, a large common budget, and later for full banking union and a European Monetary Fund (EMF). The French president assumed that competitiveness-boosting reforms in France would increase Paris's negotiating power.

By contrast Mrs Merkel gives priority to an array of less-contentious subjects, including better border controls, greater co-ordination of defence and more co-operation on education and research. For the chancellor, Mr Macron's calls for euro-zone reform command no particular urgency. Berlin is willing to contemplate change to the currency union only on the condition that risk reduction (getting dodgy debts off balance-sheets) comes before any additional solidarity (mutualisation of risk). Mrs Merkel is loth to test the patience of the Bundestag, where her "grand coalition" has only a modest majority.

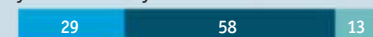
Frustrations are growing. "Wake up! France has changed; it's not the same!" implored Mr Macron in his speech on receiving the City of Aachen's Charlemagne prize on May 10th. He criticised Germany's budget-surplus "fetishism" and added: "Let's not be weak. Let's choose!" in German on his Twitter account. The chancellor used her own speech in Aachen to commit only to a vague vision of euro-zone reform, noting that this was just one of several sub-

Not happy

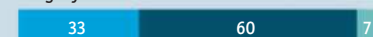
Poll of economics professors at German universities, May 2018, % replying

Yes Yes, with reservations No Undecided Don't know

Are you in favour of a dedicated finance minister for the Euro zone?



Are you in favour of a dedicated budget for the Euro zone?



Are you in favour of the planned joint deposit guarantee?



Source: Ifo Institute

jects where co-operation was needed. "Neither the euro zone nor France suffers from too few debts," sniffed Jens Spahn, the health minister and Mrs Merkel's possible successor.

The differences are spilling into civil society. The French media have revived the epithet "Madame Non" for Mrs Merkel. The German media have recoiled at Mr Macron's chiding: "It's no 'fetish', Mr Macron...the surpluses are the product of diligent workers and innovative entrepreneurs," tweeted the political editor of *Handelsblatt*, an influential daily. A letter signed by 154 German economists appeared in the *Frankfurter Allgemeine Zeitung*, another broadsheet, opposing Mr Macron's euro-zone proposals.

Other factors have also played a role. Last September the soft-Eurosceptic Free Democrats returned to the Bundestag; the hard-Eurosceptic Alternative for Germany got there for the first time. Martin Schulz and Sigmar Gabriel, the most keenly pro-French major figures among Mrs Merkel's Social Democrat partners, were toppled in the recent coalition talks, leaving Olaf Scholz—a typically German penny-pincher—to take the finance ministry. Meanwhile Mr Macron's chummy visit on April 24th to see Donald Trump, with whom Mrs Merkel has an awkward relationship, only served to highlight the differences of style between Europe's two leaders.

All is not lost. Mr Macron and Mrs Merkel may have less in common than was first hoped, but the story of post-war European co-operation is one of Franco-German synthesis, of compromises between national interests shrouded in nice talk of unity. In the 1950s the Germans got the common market in exchange for the common agricultural policy. In the 1990s the French got the euro in exchange for German reunification. Andreas Nick, a CDU member of the Bundestag's foreign-policy committee, spies a similar compromise in today's deadlock. "We will get there," he says, predicting compromises on a limited EMF and some common investments. ■



You want what?

Turkey's internet censors

Blocking booze and news

ISTANBUL

The government grants itself more power to censor the web

TURKEY's conspiracy theorists have had their hands full of late, uncovering the dark powers responsible for the collapse of the country's currency, which has lost almost a fifth of its value against the dollar this year, attempts by foreigners to murder President Recep Tayyip Erdogan using telekinesis, and a coup attempt set in motion by a biscuit commercial. Now they have exposed a new plot—produced by Netflix. In early April, days after the streaming company released a new trailer for “Casa de Papel”, a popular series, a pro-government journalist concluded the video contained “subliminal messages” intended to trigger “an economic coup d'état, political assassinations, a wave of terror attacks, or

a new treacherous scheme containing them all”. A former mayor of Ankara, the capital, immediately linked the show's theme song to demonstrations which rocked Turkey in 2013, and called on the authorities to investigate. Weeks later, another pundit suggested that the series was to blame for an unseemly brawl at a football match between two Istanbul teams, a sure sign that outside powers were stirring up chaos ahead of parliamentary and presidential elections set for June 24th.

To the dismay of some, Mr Erdogan's government has taken no action against Netflix. But it has granted itself the power to do so. Under a law passed by parliament in late March, streaming and digital tv services, both domestic and foreign, will have to register with Turkey's media watchdog, known as RTÜK, and abide by the same rules as television broadcasters. RTÜK can impose penalties, revoke licences, force providers to censor or withdraw content, and ask the courts to block access to those who do not comply. The risk is far from abstract. Tv shows in Turkey have been repeatedly fined for “immoral” content. On



screen, cigarettes and booze are replaced with blurred pixels, or with pictures of flowers. The authorities have occasionally blocked access to Twitter, Facebook and YouTube, citing national security. Wikipedia has been banned for more than a year for refusing to take down posts alleging Turkish support for jihadists in Syria.

“Casa de Papel” and similar shows are probably safe. The bigger danger is to Turkish online-news platforms, which have thrived by offering an alternative to the toothless coverage produced by mainstream outlets, and which will now be placed under RTÜK's supervision. Mr Erdogan's government already keeps the conventional media on a tight leash, says Kerem Altıparmak, a lawyer and cyber-rights activist. “Now it wants the internet too.” ■

Russian education

Meet the Ministry of Enlightenment

VORSINO AND MOSCOW

Reformists and traditionalists are fighting over schools

THE schoolhouse in Vorsino stands next to the village chapel. Inside, a painting depicts a teacher standing and reading to pupils who sit obediently in rows. Yet in one classroom a different scene unfolds. Ogabek Masharipov, a 23-year-old with Teach for Russia, a programme that sends young college graduates to teach in rural schools, banters with pupils and begins his lesson with an interactive exercise. He laments the ageing equipment and lack of space for pupils to gather outside class in the Soviet-era building, but revels in having taught them to assemble solar-powered toy cars out of parts of old PCs. Before he came, computer classes mostly involved paper exercise books.

Vorsino offers a snapshot of the coun- ►►

Abortion

The computer says yes

Ireland's abortion laws do not match its people

WHAT links Ireland with Venezuela, Somalia and Afghanistan? All four countries forbid abortions, except to save the mother's life. Ireland's eighth constitutional amendment, which 67% of people voted for in 1983, prohibits terminations even in rape cases. Yet that could change soon. On May 25th Ireland will hold a referendum on whether to repeal the amendment, thus allowing parliament to legalise abortion. Polls suggest that half the population favour doing so,

with 30% disagreeing and 20% unsure.

Statistical analysis of global abortion rules reveals that almost no rich country has a greater mismatch between its law and its demographic profile than Ireland. True, a large Catholic contingent and high levels of piety are both associated with stricter rules. But a hefty GDP per head and high rates of women working are linked to greater laxity (as is a history of communist government, notes Jessica Hyne of the UN). Overall, Ireland resembles Austria or Spain, which both allow abortion on demand.

The analysis identifies other rich countries that one might expect to have looser laws. New Zealand and South Korea both forbid abortion on demand; both are considering a change. Poland is another European example with stricter legislation than its demography would predict. The socially conservative Law and Justice (Pis) party is trying to impose even tougher laws, similar to Ireland's.

In some places people are less permissive than their laws. Italy, Portugal, Croatia, Turkey and America all allow abortions on demand, though many of their citizens regard it as murder. Donald Trump is trying to stop family-planning clinics from advising patients about abortion. But the Supreme Court makes it impossible to ban, at least for now.

Out of line

Criteria for legal abortion*, selected countries

● Actual law (2017) ● Predicted degree of liberalism, based on demography



Sources: Guttmacher Institute; The Economist
*Where 1=Never, 2=To save mother, 3=Physical health, 4=Mental health, 5=Economic need, 6=On demand

► try's schools. Russia has a strong crop of teachers, as well as a talented and well-educated population. Over 55% of working-age adults have degrees. Student performance in international tests has been rising steadily; Russia now scores around the average for OECD countries. Yet years of under-financing—the government spends just 3.6% of GDP on education—and an archaic curriculum have left the system struggling to prepare children for the modern world. And as Vladimir Putin enters his fourth term promising to turn his attention to domestic issues, education has become an ideological battleground.

The struggle over schools breaks down into two main camps, traditionalists who favour teacher-centric direct instruction and progressives who favour student-centred experiential instruction. This divide is both long-running and global, but has particular resonance in Russia. As Igor Remorenko, a former deputy minister of education, explains, Russia's traditionalists trace back to parochial church schools with their emphasis on sacred texts, while progressives carry on the spirit of early 20th-century Russian pioneers who preached learning by doing. The pedagogical divide mirrors a political one between conservative statist and liberal technocrats. Where the former see the main function of schools as *vospitanie*, a concept that means upbringing or character formation, the latter focus on *obuchenie* (teaching).

Education policy has taken a more conservative turn with the appointment in 2016 of Olga Vasilieva as minister of education and science. Ms Vasilieva, a historian specialising in the Russian Orthodox church, presents herself as an unabashed reactionary. "I'm for the return to the best traditions of the Soviet school," she said. "Everything new is something old that has been forgotten." Some of her early initiatives included a call to revive vocational training, and to study the classics. "Words such as mop, hammer and jack plane are falling out of use," she complained. She describes teaching as a divine calling, and has emphasised the creation of a "unified educational space", by which she means a common curriculum, as a matter of "national security".

The liberal camp in education, an influential network of experts at places like Moscow's Higher School of Economics (HSE), sees the current school curriculum as unsuited to modern life. These would-be reformers call for flexible personalised education, project-based learning and an emphasis on building skills and competencies, rather than rote learning. "I'm also sad that kids now don't know 'Eugene Onegin' by heart, but I understand those aren't the skills of the future," says Isak Froumin, director of HSE's Institute of Education.

Reformers frame their arguments in

The Sirius Centre

Shine, but remember

SOCHI

Vladimir Putin's pet project

AFTER talking to India's prime minister, Narendra Modi, in Sochi earlier this week, Vladimir Putin took him to one of his favourite places: the Sirius Centre for Gifted Education. "We discussed regional and international issues," Mr Modi said. "But when we were talking about Sirius, he had a special look on his face."

The centre offers intensive month-long courses to Russian students who demonstrate special talent in maths, science, sport or the arts. They live in a former four-star hotel and work in top-of-the-line laboratories in the former press



Selfies with the tsar

terms of human capital. Though Russia ranks fourth in the world in terms of formal educational attainment, according to the World Economic Forum's Global Human Capital report, it comes 42nd in terms of applied skills. "In some places, our girls still learn sewing," says Mr Froumin. "In China they're studying AI."

Neither group has won yet. Mr Putin's new national development strategy, issued shortly after his re-inauguration this month, calls both for making Russia's schools globally competitive and for promoting *vospitanie* on the basis of "spiritual and moral values", a nod to traditionalists. To this end, the Ministry of Education and Science will be split into two ministries, one for higher education and science and another for primary and secondary education. The former will be charged with fostering innovation, while the latter will be

run by Ms Vasilieva and renamed the Ministry of Enlightenment, a reprise of a Soviet and tsarist name indicating a focus on *vospitanie* of the state-approved sort.

The modernisers are not twiddling their thumbs. A glimpse of the future can be found at Khoroshkola, a new school in north-west Moscow. Large open spaces and mobile desks encourage collaboration; new microscopes and MacBooks emphasise technology. Although such schools will educate relatively few of Russia's children, liberals see them as testing-grounds for new educational methods. Elena Bulina-Sokolova, Khoroshkola's director, speaks of building a system with the pupil at the centre. For those who are motivated, such independence is a boon. Nikolai, a teenager, gushes about the chance to work on projects and make choices on his own: "You feel a bit of freedom." ■

centre built for the 2014 Winter Olympics. Elena Shmeleva, Sirius's director, speaks proudly of its project-based learning and focus on new technologies. A full-time school will open in the autumn. The goal, Ms Shmeleva says, is to set an example for the whole country.

The project has had Mr Putin's attention from the start; he is said to have come up with the idea, and even the name, and personally interviewed Ms Shmeleva for her job. He also heads the board of trustees, and this week's visit was at least his ninth since 2015. "Hardly a month passes when he doesn't check in on what's happening here," says Ms Shmeleva. Donors include Russia's leading companies. "Everyone put money into it," says one ex-official.

Yet Sirius is not the Potemkin Village it might seem. Instead, it serves as an example of effective authoritarian modernisation. On one Saturday this month, students crowded to hear a lecture on neural networks by a visiting specialist from Yandex, Russia's leading internet firm. In nearby labs, one group assembled micro-satellites, while another huddled around a spectrometer for a course in biomedicine.

Sirius marries the two sides of Mr Putin's vision for education. Students are pushed to be globally competitive; yet they are reminded of where they come from. "Always remember that you have a Home—your family, your friends, your city, your 'Sirius', your Russia," reads part of the school's code. "Succeed for their sake and always return to your Home."

Charlemagne | The battle for Slovakia

The killing of a journalist exposed something rotten in the heart of Europe



A YOUNG journalist investigating links between his country's rulers and foreign gangsters is murdered at home by gunshot, alongside his fiancée. The prime minister, who features in the journalist's reporting, holds a press conference offering to reward anyone who helps bring the killers to justice with €1m (\$1.18m) in cash piled up on a table before him. Tens of thousands of demonstrators occupy the streets chanting for justice, but the prime minister, who has previously referred to journalists as "prostitutes" and "toilet spiders", dismisses them as stooges of opposition parties or foreign speculators. Meanwhile journalists at the public broadcaster are laid off after they protest against the appointment of government spokespeople as news managers.

This account of the past few months describes not some dictatorship tipping into chaos but Slovakia, a member of the European Union and NATO. But this is what happened next. The protests lead, after some political wrestling, to the resignation of the prime minister, Robert Fico, and his detested interior minister, Robert Kalinak. Andrej Kiska, the popular president, emerges as a stalwart defender of media freedom, the rule of law and Slovakia's geopolitical orientation. Academics and journalists rally to the cause of the public broadcaster; the protests continue, albeit in smaller numbers. Far from being cowed by the brutal murder of Jan Kuciak, a journalist at *Aktuality*, Slovakia's doughty investigative reporters step up their game.

Two stories; two Slovakiyas. In Hungary Viktor Orban's corrupt and autocratic regime seems beyond redemption; in Poland, the giant of the central European Visegrad group (the others are Hungary, the Czech Republic and Slovakia itself), civil society is robust but powerless to stop the government's assault on the state and judiciary. But in Slovakia the future seems up for grabs. The same is true in the neighbouring Czech Republic, where Andrej Babis, an erratic tycoon facing fraud charges, is struggling to put together a government. The EU is striving for unity in the face of tests from the east, south and across the Atlantic. Here, in the heart of Europe, is a struggle all its own.

After a rocky 1990s under the rule of Vladimir Meciar, a thugish strongman, Slovakia transformed itself into the workshop of central Europe and quickly got rich (average income is now roughly equal to that of Portugal). It joined the euro zone in 2009.

But political progress has been more halting than the economic sort. Mr Fico, a shrewd but cynical operator who ran the country largely uninterrupted after 2006, oversaw a rotten system that shattered trust and weakened institutions. A group of oligarchs became untouchable (their relationships with politicians formed the basis for much of the murdered Mr Kuciak's reporting). Mr Fico's nominally social-democratic SMER party has largely served the business interests that helped create it. He has spent the past few years burnishing his pro-European credentials, but some suspect he will now take a populist turn to engineer a return to power—or simply manipulate his replacement, Peter Pellegrini, from his perch as party chairman.

"Something bad has seeped into the very foundation of our nation," said Mr Kiska after Mr Kuciak's murder in February, which remains unsolved. Yet Mr Fico's toppling would have been unthinkable six months ago. The murder, and Mr Fico's tin-eared response, had an explosive impact, says Grigorij Meseznikov, a political scientist. Matus Kostolny, editor of *Denník N*, a daily, says the string of scandals his paper and others uncovered used to be ignored. Now, he says, "it's more and more obvious that the state is not functioning in a normal way." Ordinary people are suddenly getting in touch to relay stories of graft from years ago. Despite the changes at the top, the new government is a mere "puppet theatre", says Peter Bárdy, Mr Kuciak's editor at *Aktuality*. SMER's support has slumped to around 20%. The government's foes may have a vehicle for their grievances in Mr Kiska, who has hinted that he will remain in politics after he steps down as president next year.

Yet Slovakia, and other countries in the region, have known false dawns before. The energy generated in the protests could fizzle now that Mr Fico is out, and there are strong counter-currents at work. Paradoxically, the central European country that has tried hardest to plug itself into the EU's heart often seems most agnostic about its orientation. A recent survey by GLOBSEC, a Bratislava-based research outfit, found that just 21% of Slovaks believe they belong to the West; by a distance the lowest share in the Visegrad group. These are sobering figures in a country where Russia-inspired disinformation campaigns have found fertile ground, and unsavoury political parties are well placed to exploit them.

The dog days of SMER

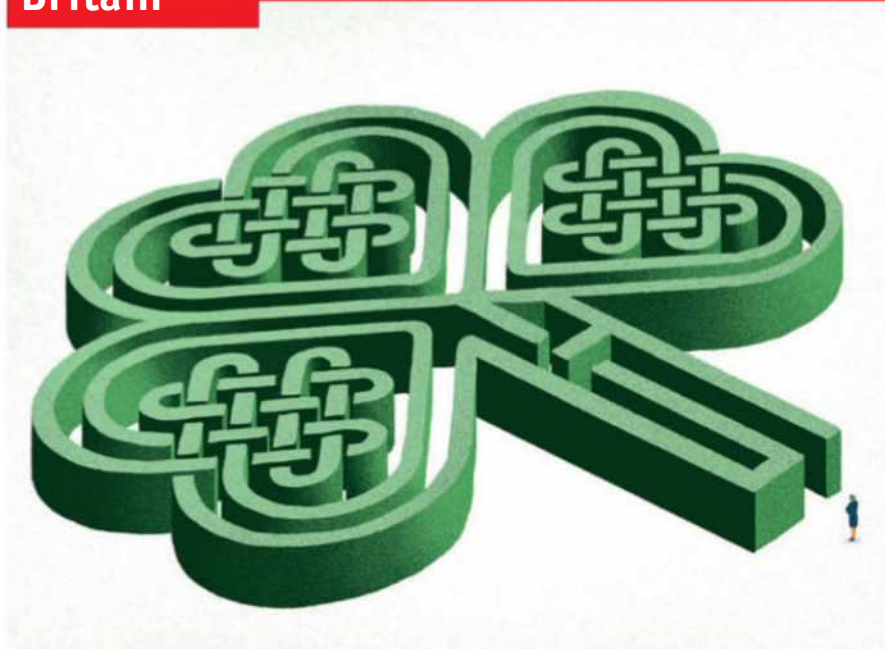
As in Hungary, the problems in Slovakia lie less in an ideologically coherent "illiberalism" than in the temptations of embezzlement and nobbled judiciaries. Those fighting for the rule of law look instinctively to Europe for help. Mr Fico's stance towards Europe may look cynical to some, notes Robert Vass, GLOBSEC's president, but creating a pro-EU "island" in central Europe bolstered Slovak officials and diplomats, and complicated claims of a fresh east-west divide. Emmanuel Macron in particular has sought to seduce the Slovaks and Czechs to isolate Hungary and Poland.

But there are trends working in the opposite direction. Europe's interminable refugee rows knit the Visegrad group together. Donald Trump's America offers succour to central European nationalists. Losing Slovakia would help Mr Orban to consolidate an anti-European regional bloc. This is the test for the generation that took to the streets and toppled Mr Fico. "People are starting to lose their fear," says Daniel Lipsic, the Kuciak family's lawyer and a former interior minister. It is a pity that it took the murder of two young people to wake them up. ■

Also in this section

34 Russian oligarchs feel the heat

Bagehot is away



Brexit and customs

Irish stew

BELFAST, BRUSSELS AND DUBLIN

The prime minister is hoping to avoid a row at next month's EU summit. But she has still not resolved the problem of the border

A CLEAR pattern has emerged in the Brexit negotiations. British cabinet ministers and their fellow Conservative MPs fight among themselves over their goals. Eventually the prime minister comes up with a deal. But it is promptly rejected by the European Union, which suggests a different plan. And the EU proposal often prevails.

So it may prove with Theresa May's latest idea for Northern Ireland. Her cabinet is split over two options for a future customs arrangement, to avoid imposing controls at the Irish border. Her preference is a "customs partnership", whereby the United Kingdom would apply EU customs duties, but rebate the difference for goods that stayed in the UK. Most Brexiteers prefer a plan known as "maximum facilitation", in which new technology, trusted-trader schemes and exemptions for small businesses would obviate the need for checks. Neither option is acceptable to the EU, neither is remotely ready and "max fac" might cost businesses as much as £20bn (\$27bn) a year, say British customs officials.

Given such scepticism and the shortage of time, attention is shifting to the "back-stop" option that would be adopted if neither of Britain's preferred systems is ready. In December Mrs May promised that, in the absence of other agreed solutions, she would keep Northern Ireland in the EU's customs union and aligned with any sin-

gle-market rules needed to avert border checks. Now she proposes a time-limited extension of customs-union membership for the UK as a whole, until one of the other customs options is feasible. Yet Brussels has already rejected this idea.

Ireland was always going to complicate Brexit, for Mrs May's objectives seem incompatible. She wants to leave the customs union and single market and be able to do free-trade deals with third countries. Yet these aims clash with the objective of avoiding a hard border in Ireland and any associated infrastructure, checks or controls. That is why the EU, urged on by Dublin, insisted that Britain had to agree to some way of avoiding a hard border before it would discuss future trade relations.

Full English Brexit

The border is more than a technical issue. Its disappearance made possible the Good Friday Agreement of 1998, which brought peace to Northern Ireland, and the development of an all-island economy. Cathy Gormley-Heenan of the University of Ulster says the true border is in the mind, not on the ground. Those who said the return of a hard border could bring back violence of the sort seen before 1998 may have exaggerated. But police in Belfast are clear that any infrastructure on the border would be seen by many as a legitimate target. So other EU borders, such as those with Norway

or Switzerland, where infrastructure is obvious, are poor models.

The political situation is also fraught. Northern Ireland's power-sharing executive collapsed 16 months ago for other reasons, but observers are in no doubt that Brexit is now the main obstacle to its reconstitution. Mrs May's government depends on the Democratic Unionist Party (DUP) for its parliamentary majority, leading some to question the government's neutrality in the province. Border constituencies are represented by nationalists from Sinn Féin, which refuses to take up Westminster seats. And politics intrudes south of the border too. Leo Varadkar, Ireland's taoiseach, is accused by many unionists of being incautiously nationalist. He is under pressure from other parties in Dublin not to be too soft on Britain—and he may face an election within 12 months.

This makes the border issue fiendishly difficult. Peter Sheridan of Co-operation Ireland, a peace-promoting group, says talk of controls between north and south instantly upsets nationalists; mention of checks between the north and the British mainland does the same for unionists. Nigel Dodds, the DUP leader in Westminster, calls this an absolute red line, as he says it is for most Tories. Moreover, neither of Mrs May's two customs options, even if they worked, would avoid all border checks. That would require alignment with some or even all single-market regulations, notably for the agri-foods that are heavily traded across the border.

Many Brexiteers accuse the EU (and Ireland) of weaponising the border to drive Mrs May towards a softer Brexit. Yet in truth the issue was there from the start. Others say a small country like Ireland cannot stand in the way of a deal. But the EU's negotiators say this is not a bilateral ►►

► squabble between Britain and Ireland, but one between Britain and the EU's 27 remaining members. A third line from Brexiteers is that, in the event of a no-deal Brexit, Ireland would suffer dreadfully. This is true, but the EU notes that Mrs May has made few preparations for such an outcome. A few have even suggested that Ireland should copy Brexit, and follow Britain out of the EU (call it Goodbyreland). This is fanciful: recent polls put Irish support for EU membership at 92%.

So why is the EU hostile to Mrs May's latest compromise, keeping the UK aligned with the EU on customs and single-market rules for a period after Brexit? It seems ready to offer a similar option to Northern Ireland alone, but is unhappy extending the idea to the UK as a whole. Sam Lowe of the Centre for European Reform, a think-tank, says that even a temporary sojourn in the customs union and parts of the single market without maintaining the free

movement of people is seen in Brussels as cherry-picking. Mujtaba Rahman of the Eurasia Group, a consultancy, adds that the EU believes that business should have to adjust only once to Brexit. Mrs May's plan implies at least two changes.

The EU is also aware of changing political currents in Britain. Mrs May, who has promised a white paper on trade next month, is still seen as bent on a hard Brexit. But Brussels believes there is now a parliamentary majority for staying in a customs union, and suspects one could yet emerge for the single market. That would clearly solve the problem of the Irish border.

It would also fit another Brexit pattern, which is that Mrs May's first goal is always to get through the next meeting. She may succeed at next month's summit, if only because its agenda is heavily charged with other matters. But the autumn deadline for a Brexit deal remains. A row at the October summit could be harder to survive. ■

Russia and Britain

'Vich hunt

A visa hold-up for the country's best-known oligarch signals a shift in policy

FIFTEEN years ago Britons searched the internet and learned to (mis)pronounce the name of an exotic Russian who had just bought an English institution, Chelsea football club. "He is Roman Abramovich, the major shareholder of Sibneft, one of the largest oil companies in Russia...one of his closest friends is Vladimir Putin, the president of Russia," the *Daily Mail* told its readers. Over the next few years the papers fell in love with "Red Rom", as the *Sun* dubbed him, who poured money into Chelsea. His marriages, divorces, yachts and parties made excellent copy. He became a celebrity—the most famous Russian oligarch in London.

This week Mr Abramovich made headlines again, for his absence from Chelsea's cup-final tie with Manchester United. Chelsea won that match. But Mr Abramovich may lose a different game. His British visa expired last month and has not been renewed, putting his London mansion and football club out of reach. It is unlikely to be a glitch. As one of Britain's richest domiciles, his case would probably have been considered by the home secretary. Rules introduced in 2015 require new checks. He has been asked for information about the source of his wealth and about his character. If the Home Office finds his answers unsatisfactory, his entry may be declined.

The source of Mr Abramovich's wealth has not changed since his arrival in Britain,

and nor has his character. He was one of the most influential Russians in the late 1990s, who assisted Mr Putin's rise and benefited from it. What has changed is the relationship between Russia and Britain. Russia's apparent use in March of a military-grade nerve agent against Sergei Skripal, a former double-agent living in Britain, tipped that relationship into open confrontation. As part of Britain's counter-offensive, Theresa May has put together an international coalition against Russia and pledged to crack down on Russian money



Flag of inconvenience

that is used to harm Britain and its allies.

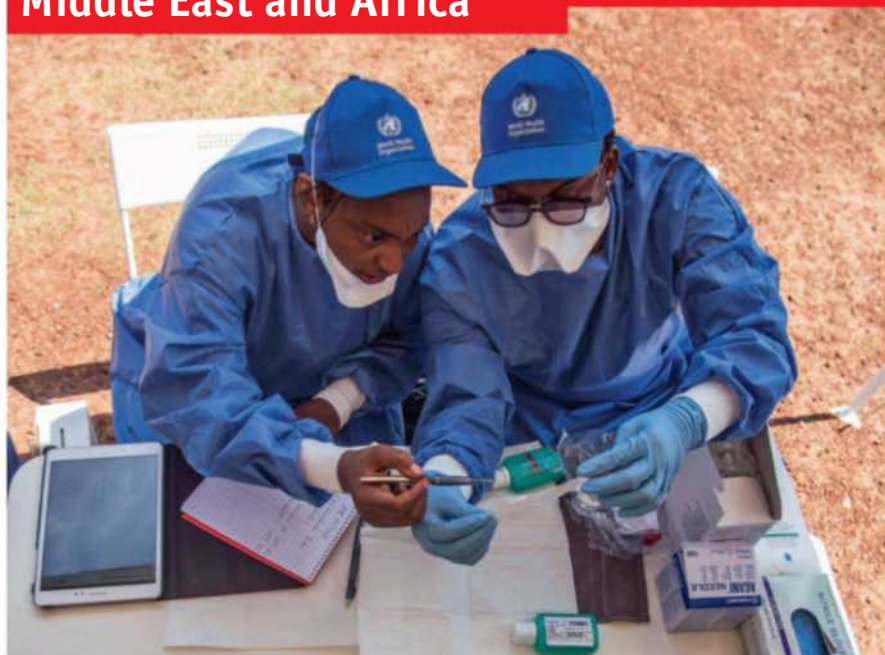
Mr Abramovich is not a threat to national security. But as Britain's most famous oligarch, he is a powerful symbol. Even if he receives his visa, the snap against him serves a political purpose. For Mrs May, and signifies a shift in her government's attitude to Russian money.

For years, Britain welcomed Russian cash without worrying about its origin. Its corporate and libel lawyers, private schools and estate agents were happy to serve Russians who used the country's financial and legal infrastructure to raise capital, hide it or hedge it against the risk of expropriation at home. A report by the House of Commons Foreign Affairs committee, whose publication on May 21st coincided with the revelation of Mr Abramovich's visa problems, draws a direct link between oligarchs' wealth and Mr Putin's ability to execute his aggressive foreign policy.

But it warns against "ad hoc" actions, instead urging the government to close loopholes that make London a favoured destination for Russian money, and to get in step with America, which has stricter rules. Last month America's Treasury sanctioned several Russian oligarchs, including Oleg Deripaska, who a few months earlier had raised \$1bn on the London Stock Exchange. The imminent passage of a Sanctions and Anti-Money-Laundering Bill by Parliament could narrow the gap, and eliminate the grey area occupied by oligarchs who depend on the Kremlin for their wealth but enjoy property rights in the West.

Mr Putin's regime has thrived on blurring the line between private and state interests, treating businessmen as holders rather than owners of assets. Increasingly Western governments do not separate Russian oligarchs from the state either. As Mikhail Khodorkovsky, a former owner of Russian largest oil firm, Yukos, says, "After 2014 no big business in Russia can be independent of the Kremlin; no businessman can refuse it a favour or it runs into trouble." Mr Khodorkovsky should know. He was one of the first oligarchs to behave as an unconditional owner of his firm. As a result he spent ten years in jail, watching his firm being dismembered by the Kremlin. The case helped Mr Putin to consolidate power.

It also foiled Yukos's merger with Sibneft, owned by Mr Abramovich at the time. Unlike Mr Khodorkovsky, Mr Abramovich played by the rules, and was thus allowed to enjoy London's high life. Now that Mr Khodorkovsky is in London and Mr Abramovich excluded, the Kremlin has shown an unexpected concern for fair play. Mr Putin's spokesman was quick to deem Mr Abramovich's visa troubles "a manifestation of unfriendly and unscrupulous competitions". His comments are unlikely to help Red Rom. ■



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Public health

Ebola is back

MBANDAKA

The outbreak in Congo is the most dangerous since 2015

IN A dank, unlit room in a government office in Mbandaka, a sleepy city of 1m people on the banks of the Congo river, Marie-Claire Thérèse Fwelo is booming out her most valuable knowledge to an assembled group of perhaps 80 health workers. "What do we look for?" she asks the class. They respond in unison: "a brutal fever". And what else? "Someone who has been in contact with an Ebola patient?", pipes up one.

This is the ninth outbreak of Ebola for Ms Fwelo, a 63-year-old Congolese employee of the World Health Organisation (WHO). As a young nurse she was at the hospital where the fever was first isolated in 1976. Since then she has become an expert on epidemic control. Yet this outbreak is the scariest Ms Fwelo has experienced in her own country. Most previous instances of Ebola in the Democratic Republic of Congo have been in remote towns where the disease burns out fast. This time the virus has spread onto the country's main artery, the Congo river. A little over 600km downstream is Kinshasa, the capital and Africa's third biggest city, home to some 13m people. Opposite it is Brazzaville, the capital of the Republic of Congo. "On one boat you can have 1,500 passengers," she says. Already 27 people have died.

This is the second outbreak in which the disease has reached large cities. The previous time it did so, during an outbreak

in west Africa in 2014-15, it spread rapidly, killing more than 11,000 people. Most of those who died were in Guinea, Sierra Leone and Liberia but cases extended to America and Europe, leading to flight bans. Tourism and local economies collapsed.

Ebola is not, in fact, a particularly contagious disease. It can be transmitted only by direct contact with the bodily fluids of somebody who is suffering symptoms: it does not spread by air, like the common flu. But it is deadly. The outbreak in west Africa killed more than 70% of those infected.

Foreign aid agencies, governments and the WHO hope that they will be able to curb the spread of the disease before it reaches Kinshasa. If they fail, this outbreak could be just as deadly as the one that oc-

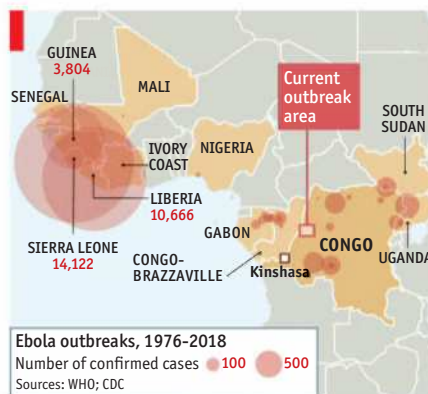
curred in west Africa.

There are many reasons for hope. Congo, which has suffered eight previous outbreaks (see map), quickly alerted the WHO when the first cases were confirmed on May 8th in Bikoro, a remote region south of Mbandaka (see box on next page). And the response has certainly come quickly. In Mbandaka, hotels are filled with workers from the WHO, Médecins Sans Frontières (MSF) and other medical organisations. Almost 8,000 doses of an experimental vaccine, first tested in Guinea in 2015, have been delivered to Kinshasa. On May 21st nurses started to vaccinate health-workers, ambulance-drivers, priests and people who have had contact with infected people. That ought to slow the advance of the disease but it does not end the need for the painstaking work of tracing those who may have been exposed to the virus. Such people must be isolated and treated before they infect others. But unless health workers gain some control over the disease, victims will keep infecting others and the number of cases could grow exponentially.

Yet even gathering data on the number of people infected, let alone isolating them, is exceptionally difficult in Congo, a huge and terrifyingly dysfunctional country, where few people trust the government. "Most of what we know right now is anecdote," says Christopher Haskew, an epidemiologist with the WHO in Mbandaka.

The WHO thinks that the epidemic originated in Bikoro, and then spread to Mbandaka through two people who attended a funeral of one of the first victims. It has listed more than 600 people who may have been exposed to the known victims. But new cases continue to emerge, which have to be investigated.

Keeping people isolated is also not proving easy. MSF said that between May



▶ 20th and 22nd three patients left the isolation ward in Mbandaka—apparently taken away by their relatives at midnight. Two later died.

Some traditional beliefs also make matters worse. In this part of Congo, washing the body is an important part of a funeral; the priestly laying on of hands is also common when people go to traditional healers. Both practices help spread the virus. In Itopo, another village affected, health workers on May 22nd failed to prevent the traditional burial of a confirmed Ebola victim, creating a whole new circle of potential victims to monitor.

“We fear but we do not panic,” says Roger Ikunka, a 65-year-old worker at one of Mbandaka’s many ports. He has heard about Ebola on the radio and knows what to do if a relative gets a fever. Pierre Formenty, the WHO’s top Ebola specialist, argues that “we know how to stop” Ebola. But he adds a worrying proviso. “We should not underestimate this virus. When I hear people say we have learned the lessons of the past already, I am even more concerned.” ■

Justice, Rwandan style

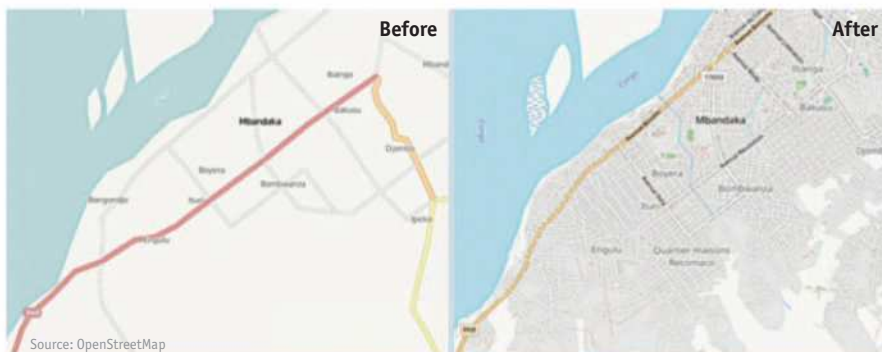
Stand, then stand trial

Diane Rwigara dared to run against Paul Kagame. Now she is in the dock

PAUL KAGAME, the president of Rwanda, thinks there is nothing odd about how he won re-election for a third presidential term last year with 98% of the vote. “It could have been 100%,” he told the Council on Foreign Relations, a think-tank in New York a few months later.

It is hard to tell how popular Mr Kagame really is. Serious candidates who tried to stand against him were barred from doing so—and then ruthlessly punished. One of them was Diane Rwigara, a young businesswoman who appeared in court this week with her mother, charged with “inciting insurrection or trouble among the population”. The government has also brought charges against her aunt and brother, who live abroad.

The prosecution says the charges against Ms Rwigara relate, in part, to comments she made at a press conference last year. “She intended to smear the country and its leadership with lies,” Faustin Nkusi, the prosecutor, told the court. “She said that people are dying of poverty in Rwanda; this is a false claim aimed at insurrection.” The government’s own statistics show that more than one in three Rwandan children is stunted by malnutrition (though that ratio has fallen from one in



Mapping pandemics

The terror of terra incognita

Volunteers are drawing maps to speed the distribution of vaccines

ON MAY 9th, the day after the first cases of Ebola were confirmed in Bikoro, an urgent request came into the headquarters of Médecins Sans Frontières (MSF), an international charity. Maps of this part of the Democratic Republic of Congo were needed to deliver vaccines and medical help. Yet accurate ones did not exist.

MSF turned to the crowd for help. Volunteers, trained using an online tutorial, started analysing satellite pictures and drawing maps. About 450 volunteers have already managed to plot some 67,000 structures and 1,000km of roads in the area of the outbreak, completing in days a task that could have taken months. Some of these new maps (see above) are already in the field.

This is not the first time humanitarian organisations have turned to crowdsourcing to help gather data. When Ebola spread through parts of west Africa in 2014, more than 3,000 people around the world helped add some 16m features to maps of the affected area.

Crowdsourced mapping is also proving useful in protecting human rights.

Amnesty International, a watchdog, has used volunteers to map 326,000 square kilometres of Darfur, a troubled part of Sudan, to help identify war crimes carried out by the government. First they used satellite imagery to locate and mark villages. Then some 6,000 activists looked for changes over time—buildings that had lost their roofs or fences that had been torn down—as indicators that villages had been attacked.

The next step is to try to automate this labour-intensive task. Amnesty is working with computer scientists at University College London to develop algorithms that can mimic the work of volunteers in mapping structures and spotting when they are destroyed. Preliminary results show a 97% accuracy rate. Applying such algorithms to mapping areas affected by pandemics could mean maps are produced even faster, increasing the chances of containing outbreaks before they spread too far.

two in 2005).

Many think Ms Rwigara’s real crime is uppityness. Mr Kagame has ruled Rwanda since 1994, when he first shot his way to power. (He led a Tutsi rebel army that stopped the genocide and overthrew the Hutu regime that orchestrated it.) Many people admire Mr Kagame for running a disciplined government that is relatively free of petty corruption. But he brooks no real opposition and shows worrying signs of wishing to remain in power indefinitely. His final term was meant to end in 2017, but a constitutional amendment passed in 2015 could let him stay in office until 2034.

Shortly after Ms Rwigara announced her candidacy, nude photographs of her were circulated on the internet. She blamed the ruling Rwandan Patriotic Front (RPF), saying the pictures had been faked.

Then the electoral commission disqualified her, saying she had not collected the 600 signatures she needed to stand. It also barred another independent candidate, Gilbert Mwenedata, who fled Rwanda after being questioned by the police.

Ms Rwigara, who has been detained since September, knew the risks she faced. Her father, a prominent businessman and longtime supporter of the RPF, had clashed with senior figures in the party when they allegedly asked him to hand over part of his business. He refused. In 2015 he died in a car crash. The family claim he was murdered. A few months before Ms Rwigara announced her candidacy, a friend, who had criticised the government, disappeared. Yet she refused to stay silent, saying: “A hyena runs after you for so long that eventually you stop getting frightened.” ■

The war against Islamic State

Losing the peace

DEIR EZ-ZOR AND RAQQA

America's strategy in eastern Syria is storing up trouble for later

AS THE territory held by Islamic State (IS) shrivelled in Syria, American generals spoke of “stabilisation” and “consolidation”. But seven months after an American-led coalition drove the jihadists from Raqqa, their putative capital, “stable” is not how residents describe the city. Mines, booby-traps and bombs continue to kill and maim. Bodies are still being pulled from the rubble. The lights are off and there is no running water. “The Americans have given us nothing,” said Omar Alloush, a member of the city council, weeks before he was shot and killed in his apartment by unidentified gunmen.

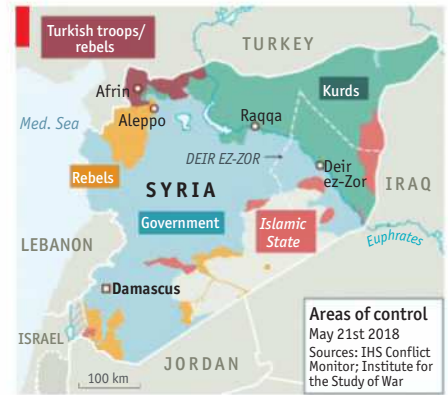
The goodwill that first greeted the coalition is fading as popular anger mounts, especially in the Arab heartlands south of Raqqa, along the Euphrates river. The Syrian Democratic Forces (SDF), a Kurdish-led militia that America relies on to fight IS, are increasingly viewed as occupiers. Tribal leaders in the eastern province of Deir ez-Zor mutter openly about taking up arms to drive the Kurds from Arab lands. Some fear the jihadists will try to exploit the situation. They are already creeping back into lost territory.

Ethnic tension in Syria's east dates back decades, a legacy of the divide-and-rule tactics used by President Bashar al-Assad and his father before him in the country's hinterlands. America's decision to rely on the military wing of the Kurdish Democratic Union Party (PYD) to lead the SDF has deepened those divisions. Arab rebel forces, which also received American backing, had to watch from the sidelines as the SDF marched into Arab towns. “We met in secret with the Americans in Turkey, but they told us we were too disorganised and couldn't raise enough men,” said Abu Omar, an Arab rebel commander. “They were worried we might fight the [Assad] regime after IS.”

The Kurds have done little to win over Arabs in the areas freed from IS. They favour their own for contracts and have alienated conservative Arabs with their relatively liberal ideology. Even Arab fighters in the SDF are viewed with suspicion by locals, who consider them Kurdish puppets or brigands. Many fear the Kurds will hand the territory to the regime as part of a deal that would allow the PYD to keep control over other parts of the country. “The hatred of this new Kurdish dictatorship grows bigger day by day,” says a human-rights activist from Deir ez-Zor.

IS, which claims to defend Sunni Muslims from non-believers, has a knack for exploiting such grievances. The jihadists were recently pushed out of the suburbs of Damascus, giving the regime full control of the capital for the first time since 2012. But hundreds of jihadists are hiding out in the east, where they slip into SDF-controlled areas to carry out attacks, assassinations and kidnappings. America paused the ground offensive against IS in March and April, as hundreds of Kurdish fighters moved to the frontlines against Turkey in Afrin. The jihadists took advantage, seizing towns and oilfields. IS still makes at least \$180,000 per day from selling oil, say industry sources.

The offensive restarted on May 1st. America's generals and diplomats are confident of reclaiming the area still held by IS. But they worry about losing the peace. President Donald Trump has frozen



\$200m in aid for activities such as de-mining, clearing rubble and repairing the water and electricity systems in Syria. He wants to withdraw American troops “very soon”. Eastern Syria is unlikely to be stable by then. ■

An Egyptian footballer

The pharaoh of forwards

CAIRO

In a moment of despair, Mohamed Salah has united Egypt

IN THE run-up to Ramadan artisans set to work on *fawanis*, the lanterns that hang in Egyptian homes and streets throughout the month-long holiday. Many are adorned with geometric patterns or the crescent-and-star symbol of Islam. This year some customers want a different model: a grinning face with a tangle of curls and a Liverpool jersey.

Much has been said about Mohamed Salah's influence on Britain. At a moment of rising xenophobia, a foreign-born Muslim footballer has become a national sensation. “If he scores another few, then I'll be Muslim too,” fans chant. To the extent that they care about his religion, it is only to fret that the Ramadan fast could hurt his performance in the Champions League final in Kiev on May 26th.

His influence runs even deeper in his

native Egypt. His face is everywhere, not just on lanterns but on T-shirts, bumper stickers, even the wall of a downtown café. Cairo's relentless traffic eases a bit when Liverpool takes to the pitch, as fans crowd around televisions in coffee shops and on street corners.

There is little else to cheer in Egypt. The promise of the 2011 revolution is gone, replaced by an army-backed dictatorship and economic pain. Cairo is dysfunctional; a city more endured than loved. Complaining about any of this can land you in jail. After a freak April storm turned streets into rivers, one minister mooted a law that would make it illegal for Egyptians to discuss the weather.

Instead they talk about the striker from the Nile Delta who captivates fans with his footwork. They admire his piety, humility and work ethic. His success is bittersweet, though. Like so many Egyptians, he had to leave the country to realise his potential. He spent just two seasons with his home-town club before decamping to Europe.

Perhaps that was a blessing: Egyptian football is not immune from politics. The chairman of Zamalek SC, one of its top clubs, is a staunch supporter of Abdel-Fattah al-Sisi, Egypt's strongman. Mr Salah avoids politics, though he did donate 5m Egyptian pounds (\$280,000) to a development fund set up by Mr Sisi.

Few will be thinking about that when Mr Salah takes to the pitch this summer at the World Cup, marking Egypt's first appearance in the tournament since 1990.



Salah strikes again

Yahya Sinwar

Gaza's ruthless pragmatist

GAZA CITY, JERUSALEM AND ABU DHABI

Hamas's leader in Gaza has embraced non-violent resistance. But has his group really changed?

YAHYA SINWAR, 56, has spent his entire adult life in prisons: the concrete Israeli sort and the open-air prison that is Gaza. Yet Mr Sinwar is now, arguably, the most influential man in the Palestinian territories. On May 16th, two days after Israeli soldiers killed about 60 Palestinian protesters at the border fence, Gazans huddled around televisions to learn if the violence would push their scarred enclave into another war. They were not listening to Mahmoud Abbas, the Palestinian president, or even Ismail Haniyeh, the nominal leader of Hamas, the jihadist group that runs Gaza. They were watching Mr Sinwar, Hamas's leader in Gaza, who may one day represent all Palestinians.

He was under pressure from militants to avenge the dead. But Mr Sinwar announced on Al Jazeera that Hamas would pursue "peaceful, popular resistance". (Less publicly, the group discouraged people from returning to the border fence.) It was an unexpected declaration by Hamas, which many countries consider a terrorist organisation. That it was delivered by Mr Sinwar made it all the more striking.

From executioner to executive

Born in the Khan Younis refugee camp in Gaza, Mr Sinwar became an early member of Hamas and helped to create its secret police. The force was charged with identifying and killing Palestinians who collaborated with Israel. Mr Sinwar carried out some of the killings himself. In 1988 an Israeli court sentenced him to four life terms in prison. There he would remain for more than two decades.

The turning-point came when Israel negotiated a prisoner swap to free Gilad Shalit, a soldier captured and held by Hamas. The Israelis used Mr Sinwar as an interlocutor. He was allowed to talk to Hamas's leaders, who wanted more than 1,000 of their own released in exchange for Mr Shalit. Israel vetoed a few of the names on their list. Mr Sinwar was not among them; in 2011 he walked free. Some Israelis came to regret that choice as they watched him become a commander in the Qassam Brigades, the armed wing of Hamas.

Founded in the 1980s, Hamas has always been fractious, split between the rough men of Qassam and the more pragmatic politburo. The schisms deepened after Hamas's third war with Israel, in 2014, which left around 2,300 Palestinians (and 70 Israelis) dead. Mr Sinwar's background,

his long years in Israeli jails and his reticent demeanour all gave him clout with the militant cadres. But Israeli analysts thought he would struggle to play politics.

They were wrong. When Mr Sinwar was selected to run Gaza by the politburo last year, both Israelis and Palestinians wondered—and feared—what kind of leader he would be. Gadi Eizenkot, the Israeli army chief, said his appointment erased the distinction between the political and military wings of Hamas. Gazans feared that a man who had spent so long in prison would be erratic and aggressive.

Those who know him best paint a more complex picture. One of his Israeli interrogators recalls him as "extremely hardline and at the same time ruthlessly pragmatic". The same assessment, almost word for word, comes from Muhammad Dahlan, a former Palestinian security chief exiled to the United Arab Emirates. They grew up together in Khan Younis, playing football in its dusty streets. Now they have a quiet partnership. Even though Mr Dahlan hails from Fatah, a nationalist party that is Hamas's bitter rival, he has steered Emirati money to Gaza and helps Hamas negotiate with Egypt, which controls the strip's southern border.

Mr Sinwar has marginalised the diaspora leaders who once ran Hamas from comfortable homes in Beirut, Istanbul and

the Gulf. He has also silenced hardline voices in Gaza—for now. Hamas spent years digging a network of underground tunnels as a way to sneak fighters across the border and bring mayhem to Israeli towns. But since 2016 it has watched the Israeli army identify and destroy them, with the help of new, classified technology. Muhammad Deif, the commander of the Qassam Brigades, wanted to use the tunnels before they were all closed. Mr Sinwar overruled him.

None of this reflects a fundamental change. Rather, Hamas's embrace of more peaceful action is tactical. Even Gaza's fieriest militants admit that their meagre arsenal poses no serious threat to Israel. "We don't have an army," says Khaled al-Batsh of Islamic Jihad, an extremist group. Hamas pragmatists accept that a fourth war would be ruinous for Gaza, which is already suffering from decrepit infrastructure and awful services. "The most dangerous thing is that youth have started to lose hope [of] a dignified life in Gaza," Mr Sinwar said in a meeting with foreign journalists this month, his first.

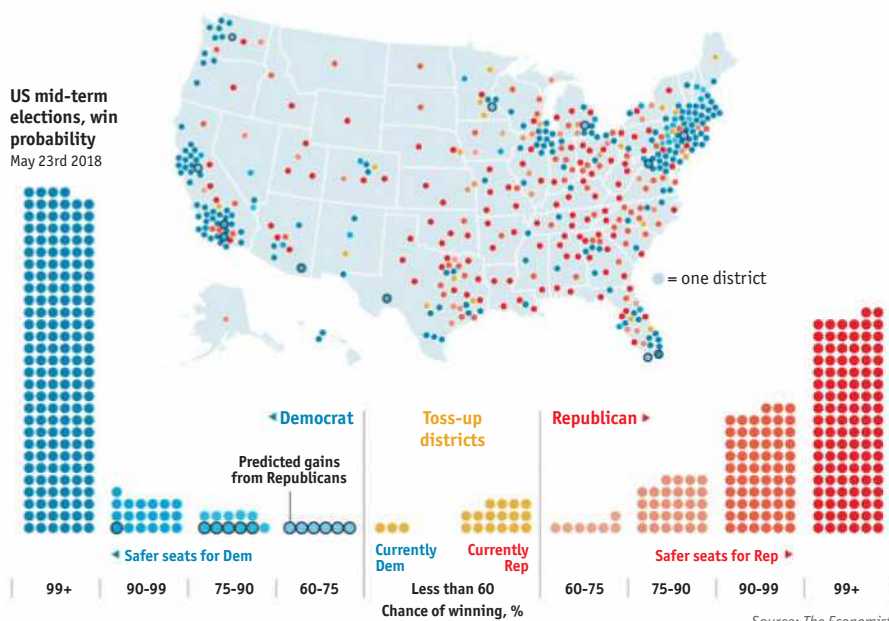
A farewell to arms?

"He is deeply ambitious," says his interrogator. Mr Sinwar certainly looks more like a leader than the ailing Mr Abbas, 82, who recently spent time in hospital with pneumonia. Aides released a photo of him pacing the corridors in a bathrobe, a visual reminder of his doddering irrelevance. But if Mr Sinwar aspires to lead the Palestinians, he cannot do so at the helm of an armed group. The world will not recognise Hamas until it renounces violence. He has amassed more power than any Hamas leader in recent memory. Now he will have to decide just how pragmatic to be. ■



Sinwar has seen war and it didn't work

US mid-term elections, win probability
May 23rd 2018



Source: The Economist

The mid-terms

Our best guess

The Economist's statistical model gives the Democrats a two-in-three chance to retake the House of Representatives

ALTHOUGH they lack the intense personal drama of a presidential race, America's mid-term elections in November will be hugely important. Every seat in the House of Representatives is up for grabs, along with 35 out of 100 Senate seats. A Democratic takeover of either chamber would unleash a flurry of investigations into President Donald Trump and wreck his hopes of passing more conservative laws on a partisan basis. If the Democrats take the House, Mr Trump might also be impeached.

This year's mid-term campaign is extraordinary in another way. It is expected to be closely fought. Thanks to Americans' tendency to separate into like-minded communities and to deliberate gerrymandering, most individual House races are one-sided. Historically, control of the lower chamber has been a foregone conclusion as well. In every contest from 1954 to 1992, the Democrats won at least 232 seats, well above the 218 needed for a majority. Since 2002 the winning party has always claimed at least 229 seats, with the results predictable (mostly in the Republicans' favour) months before election day.

By contrast, this year's contest appears to be poised on a knife-edge. Because district lines favour the Republicans, most estimates suggest the Democrats could wrest control of the House if they manage to win

53-54.5% of the total votes cast for the two major parties. For most of 2018, pollsters have reported that about 53.5% of people who express an opinion intend to vote Democratic. The Republicans appear likely to keep control of the Senate, but a Democratic wave could also put it into play.

Partisans from both sides see encouraging auguries. Republicans cite the economy, which is entering its ninth consecutive year of expansion. Democrats point to their recent victories in special elections. They won a Senate seat in deeply conservative Alabama, a House district in Pennsylvania that Mr Trump had carried by 19 percentage points, and came stunningly close to winning control of the lower chamber of Virginia's legislature. Democrats also note that Mr Trump is disliked by historical standards. Despite a recent improvement, his approval rating is much lower than his disapproval rating. Over the past half-century, this has previously occurred four times at this stage in a mid-term cycle (1982, 2006, 2010 and 2014). Each time, the unloved president's party proceeded to suffer devastating losses in the autumn.

Some pundits think the House race is too close to handicap. But *The Economist* has tried to do so. We have created a statistical model to forecast votes for the House, which has been trained on every election cycle since 1942 and 6,500 historical district

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At the moment, we give the Democrats a two-in-three chance of capturing it.

Our model is explained fully on our website. It begins by calculating the probability that each party will win a specific share of the overall popular vote, drawing on opinion polls, special and off-year elections, the unemployment rate and the partisan polarisation of the electorate. Then it delves into individual district races, weighing things such as voting history, incumbency, fundraising and candidates' ideological views. It runs thousands of simulations and reports the percentage in which one party holds at least 218 seats.

Spying a blue wave

The model makes the Democrats a clear but narrow favourite. It assumes that some historical patterns will persist. In the past, undecided voters have moved towards the opposition party as mid-term elections draw near. As a result, the model expects the Democrats' lead in polls that ask about people's broad preferences to grow from 6.4 percentage points now to 8.8 in November. It places a heavy weight on performance in special elections, particularly those for federal congressional seats held within a year of the vote, in which Democratic challengers have fared well.

The model expects Democratic candidates to be competitive in many ostensibly red seats with retiring Republican incumbents. Of the 240 districts won by Republicans at the most recent elections, incumbents in fully 41 have already announced ►►

INTERACTIVE: As the race changes, so will our projections. The model will update every day to reflect new data from polls, special elections, economic indicators and primaries. You can follow its forecasts and learn more about our methodology at [Economist.com/midterms](https://www.economist.com/midterms)

▶ they will not run for re-election in November. That is more than twice as many departures as the Democrats have suffered. It is far easier to pick off an open seat than it is to oust a sitting member of Congress. Furthermore, in February the Pennsylvania Supreme Court redrew the state's congressional districts. The old map greatly favoured Republicans; the new one is expected not to.

Our model's best guess is that the Democrats will win 222 seats, 27 more than they won at the most recent elections. That would give them a nine-seat majority. They obtain control of the House in 65% of simulations. This probability is slightly more auspicious for the Democrats than prevailing opinion suggests. Punters on PredictIt, a political betting market, put the Democrats' odds at 59%. We will produce a forecast for the Senate races later this year.

When applied to past elections, the model's predictions in late May have missed the final totals by an average of just seven seats. There is, of course, no guarantee that it will perform as well in 2018. A two-in-three chance measured almost six months before the election is hardly secure enough for the Democrats to rest easy. Because this year's race is so close, it would take only a shift of 0.6 percentage points towards the Republicans in the model's expectations of the national popular vote for it to anoint Mr Trump's party as the favourite to retain control.

Such movement is possible. Mr Trump's approval rating has already defied the historical pattern of declining sharply in the first half of a mid-term year. His party could have bottomed out unusually early in polls of party voting-intention as well, which would make it unlikely to lose additional ground as the model expects. The Democrats could nominate ideologically extreme or poorly qualified candidates, or be shut out altogether in some California districts because of that state's odd primary rules. A dramatic event could occur. That is why we give the Republicans a one-in-three chance of hanging on. ■

Investigating the investigators

The least-worst option

WASHINGTON, DC

The president strong-arms the Justice Department

EVEN from a man as indifferent to political norms as President Donald Trump, the tweet on the afternoon of May 20th was alarming. At the end of a string of messages complaining about a “witch hunt” against him, Mr Trump demanded: “that the Department of Justice look into whether or not the FBI/DOJ infiltrated or surveilled” his campaign at the behest of the previous administration.

It was no mere taunt. Mr Trump was referring to an investigation that eventually turned into a wide-ranging inquiry by Robert Mueller into Russian meddling in the 2016 election and possible links between Russia and the Trump campaign. In effect, the president was using the power of his office to demand that those investigating him and his associates be investigated. He did not so much broach as blow up a long-standing norm that presidents do not direct or involve themselves in specific criminal investigations.

Although an American intelligence source met three of Mr Trump's advisers, there is no evidence that the FBI or the Department of Justice planted a permanent source inside his campaign team. Indeed, in July 2016, shortly after Mr Trump became the Republican nominee, senior FBI officials warned him that foreign adversaries including Russia would try to infiltrate, or at least spy on, his campaign. By that time Russians had already made contact with several members of the campaign.

Mr Trump's Twitter threat quickly produced a result. Rod Rosenstein, the deputy attorney-general—who is overseeing Mr Mueller's investigation because his boss recused himself—asked the Department of Justice's inspector-general to look into Mr Trump's accusation. He and Christopher Wray, the FBI director, met Mr Trump at the White House and agreed to convene two meetings on May 24th: one for two Republican congressmen friendly to the president, another for congressional leaders from both parties. They will review “highly classified” information about the FBI's source and methods.

Mr Rosenstein's decision to indulge the president is no less unfortunate for being understandable. He was in a difficult position. Refusing Mr Trump's demand, or resigning on principle, could well have let the president install a more pliant overseer of Mr Mueller's investigation. He has not agreed to surrender any documents—as Devin Nunes, chairman of the House Intel-



ligence Committee and Mr Trump's chief congressional henchman, has long demanded. Perhaps the appearance of capitulation will satisfy Mr Trump. The president has previously threatened crises, then stopped just short of provoking them.

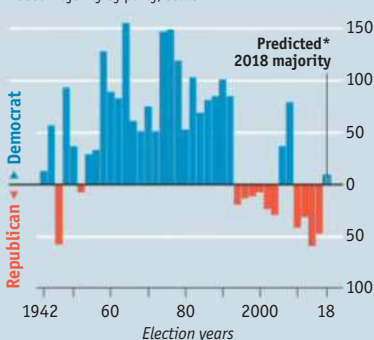
Ideally, Congress would constrain a president bent on exercising his powers to protect himself. That is what equal branches of government are supposed to do. But most congressional Republicans are frightened of Mr Trump's supporters and keen to hold the line against the Democrats, who are gunning for their jobs in the mid-term elections in November.

A recent poll showed that Americans are deeply divided on the question of whether Mr Mueller's investigation is a “witch hunt”. Republican voters think it is; Democrats think it isn't; independents are split. But almost all Americans believe that Mr Mueller should be allowed to finish the job. Firing him would be hugely risky. So Mr Trump, in Steve Bannon's pungent phrase, “floods the zone with shit” by throwing out so many theories, lies and half-truths that Americans hardly know what to believe. Some will be persuaded that Mr Mueller's investigation is not an attempt to find out how American democracy was assailed but part of a sprawling “deep state” conspiracy.

All this damages America's institutions and its intelligence capacity. Perhaps the most worrying development is that an informant's identity has been revealed—not directly by the White House or the House Intelligence Committee, but partly thanks to their fulminations and demands. In future, a person is likely to think twice before playing that dangerous but necessary role. As Mr Wray told a Senate committee, “The day that we can't protect human sources is the day the American people start becoming less safe.” ■

Back in familiar hands

United States, mid-term elections
House majority by party, seats



Sources: CQ Press; The Economist

*At May 23rd 2018

Gun control

Do massacres change minds?

Yes, but perhaps only locally

ONE of the awful things about America's latest mass killing, in Santa Fe High School near Houston on May 18th, is how quickly people slipped into familiar roles. Pupils and teachers cowered. Reporters and photographers tried to portray survivors' grief and explain the shooter's motives. Some politicians and officials lamented the toll of gun violence, while others blamed everything except guns (violent video games, abortion and too many doors in the high school were all bewailed). "A familiar tragedy sparks a familiar debate", sighed the *Texas Tribune*.

Two things are changing, however. First, mass killings have become more common and deadlier. A database maintained by *Mother Jones*, a magazine, suggests that deaths in shootings with multiple victims has risen since 2006, albeit erratically. Last year was the worst yet. After just five months, the toll from mass shootings in 2018 is higher than in any full

year between 1982 and 1998.

The second change is in attitudes. Two pollsters, Gallup and Quinnipiac University, find that Americans have become keener on gun control. On February 20th Quinnipiac reported that 66% supported stricter controls, up from 52% in November 2015. The February poll was conducted soon after another school shooting, in Florida, and could reflect a brief reaction. It is hard to know: gun outrages have become so frequent that there are few quiet spells in which to take an opinion poll. If underlying attitudes are changing, politics could be the reason. When Democrats hold sway in Washington, perhaps some gun owners feel that their rights are threatened and dig in against any change to the law. That is not the case at the moment.

Mass killings do appear to change opinions locally. A study in the *British Journal of Political Science* by Benjamin Newman and Todd Hartman finds that Americans who live near massacres are significantly more likely to support gun restrictions (controlling for other characteristics). People who live close to two or three mass killings seem especially swayed. Importantly, the effect seems not to be partisan. This suggests that gun-control campaigners should pick their moments, and concentrate on changing city and state gun laws rather than national ones.

They have already won a tiny victory in Texas. The governor, Greg Abbott, had offered a free shotgun in a prize draw for people signing up to his re-election campaign. He is now offering a \$250 gift certificate. ■

Telephone scams

Robocops needed

America is losing the battle against automated phone calls

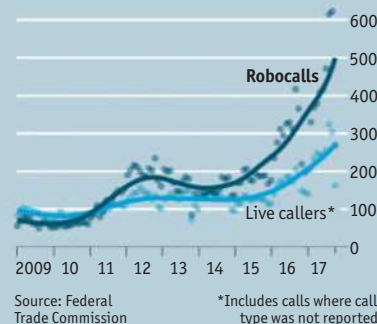
"I AM not the kingpin of robocalling that is alleged." So Adrian Abramovich, a telemarketer from Florida, assured American senators in April. Accused of making nearly 100m illegal "robocalls" in 2016 as part of a campaign to sell discounted holidays, Mr Abramovich has denied criminal wrongdoing. Nonetheless, on May 10th the Federal Communications Commission (FCC), America's telecoms regulator, fined him \$120m, the largest penalty in the agency's history.

The skirmish over Mr Abramovich is part of America's long, mostly unsuccessful war against robocalls, the pre-recorded phone messages peddling debt-reduction and timeshares that have irritated consumers for over a decade. According to YouMail, a call-blocking service, 3.4bn robocalls were blasted out in April, equivalent to nearly 1,300 every second. The Federal Trade Commission receives 500,000 complaints about such calls every month (see chart). Ajit Pai, the FCC chairman, says Americans are "mad as hell". Robocalls are consistently the agency's top consumer complaint. Can anything be done?

Most commercial robocalls have been illegal since 1991, when Congress passed the Telephone Consumer Protection Act. In 2012 the FCC banned telemarketers from making robocalls to consumers without previous written consent, and eliminated a loophole allowing companies to robocall consumers with whom they have an "established business relationship". That caused a temporary lull in complaints. Despite successful cases against legitimate firms like Bank of America and Sallie Mae, though, federal

Press 1 to find out more

United States, national "do not call" registry complaints, monthly, '000



regulators have struggled to stop shady outfits. Auto-diallers allow fraudsters to blast out millions of calls at little cost; "spoofing" software disguises their identities. After robocaller phone numbers are identified and blacklisted, new ones pop up in their place. Many robocalling operations are based overseas and beyond the authorities' reach.

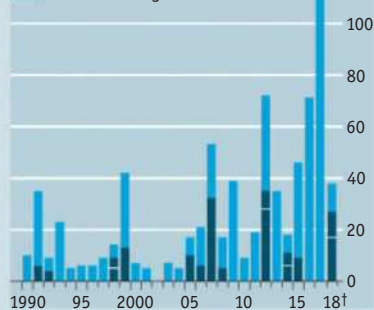
Some firms have joined the fight. In 2016 a group of over 30 carriers and technology companies including AT&T, Verizon, Apple and Alphabet formed a "strike force" to take on the robocall scourge. Dozens of mobile apps claim to block scammers. Whether the White House will join the assault remains to be seen. History suggests that Mr Trump may not be a steadfast soldier. "I did lots of robocalls" for political campaigns, Mr Trump bragged to the *Daily Mail*, a British newspaper, after elections in 2014. "Everybody I did a robocall for won."

Every one an outrage

United States

Mass shootings*, number of deaths

School shooting



Do you feel that the laws covering the sale of firearms should be made more/less strict or kept as they are now?, % replying



Sources: *Mother Jones*; Gallup; press reports *Shootings with three or more deaths excl. perpetrator(s). Before Jan 2013, with four or more deaths. Not comprehensive †At 6am EST, May 23rd ‡At Mar 15th



E-cigarettes

Starting young

A teenage vaping fad prods the drugs regulator to crack down

IT IS an entrepreneur's dream: make a gadget so appealing that fans turn its name into a verb. "Juuling", after a device known as a Juul that now accounts for 60% of e-cigarette sales in America, has become a youth fad. "I've been doing this work for 30 years and haven't seen anything like this," says Matthew Myers of the Campaign for Tobacco-Free Kids. Some schools have even removed toilet doors that were sheltering juuling gatherings.

Until recently teenage vaping appeared to be waning. Use of e-cigarettes by middle- and high-school pupils increased until 2015 but fell sharply the next year, according to the Centres for Disease Control. Teenagers have also become less likely to smoke or use most illicit drugs.

Consistent, up-to-date data on e-cigarette use are lacking. But it is possible that the Juul craze has rekindled enthusiasm. A survey conducted in 2017 by the University of Michigan found that 12% of 13- to 17-year-olds had vaped in the past 30 days. The most common substance they mentioned was "just flavouring", even though almost all vaping products contain nicotine. Juul uses nicotine salts, which are more potent than the freebase nicotine in standard e-cigarettes. It is advertised as packing cigarette-like levels of nicotine.

A Juul e-cigarette is small enough to hide in one hand. It looks like a flash drive and is charged by plugging it into a laptop. Its pods come in flavours like cool cucumber and crème brûlée. Teenagers pose with their Juuls on social media. Researchers from the University of Kentucky found

Old prisoners

Greybeards behind bars

WASHINGTON, DC

As crime rates fall, the number of incarcerated old people soars

ISMAEL IGARTUA got his first job, as a counsellor at a homeless shelter, when he was 55 years old. For the previous 29 years he was imprisoned on charges stemming from an incident during which he shot a police officer in the arm. In prison he earned a bachelor's degree and a master's in theology.

After his release, Mr Igartua says he had to learn how to order food in a restaurant, and relearn how to cross a busy New York street. At least he had a family to return to. Many older ex-convicts do not: more than 70% of prisoners above the age of 50 released in New York went directly to a homeless shelter.

Between 1993 and 2013 America's crime rate fell from around 52 crimes per 1,000 people to 23. At the same time, largely because of America's penchant for handing out long sentences, the number of people over 55 in state prisons rose from 26,300 to 131,500, and their share of the total more than tripled. According to the Osborne Association, a New York-based non-profit, by 2030 more than 400,000 prisoners are expected to be aged 55 and older—one-third of the total prison population, and a 4,400% increase since 1980.

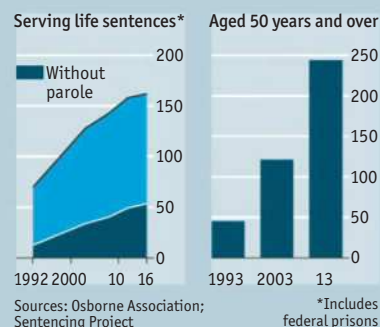
Incarcerating an older prisoner can cost up to five times as much as jailing a younger one. Prisoners are entitled to health care, but it is often expensively and inefficiently delivered. Mr Igartua says that getting a single steroid injection

required two eight-hour journeys accompanied by two prison guards. Older prisoners tend to be sicker than younger ones, and people often enter prison having had drug problems, mental-health woes and little access to good health care on the outside.

They also tend to be less likely to reoffend. Within three years, 43% of all released offenders have committed another crime. The rate for those between 50 and 64 is just 7%, and just 4% for those older than 65. People age out of crime—homicide and drug-arrest rates peak at 19—and criminal careers tend to be short. Sentences that keep people jailed into their dotage for crimes they committed in their youth drain the public purse with little public-safety benefit.

Bed blockers

United States, inmates in state prisons, '000



that mentions of the devices in tweets jumped around Christmas and Valentine's Day, suggesting it is a popular gift.

The Federal Drug Administration (FDA), which regulates tobacco products, must perform a tricky balancing act. It wants to promote vaping among the 40m Americans who already smoke. E-cigarettes, which contain a small fraction of the harmful chemicals in regular ones, can save their lives. But the FDA must also consider the danger that e-cigarettes will create lots of new nicotine addicts.

The agency is trying to set limits on the level of nicotine in cigarettes, which would make them less addictive to new smokers. At the same time it has pushed back the approval of vaping products from 2018 to 2022 because it needs time to develop standards. Looser regulation was expected to foster innovation in e-cigarettes and other nicotine products.

Now the FDA is under fire for getting the balance wrong. The American Academy

of Paediatrics and several other organisations are suing it for delaying regulation. They point to the proliferation of e-cigarette flavours like unicorn milk and cookie crunch. On top of that, says Mr Myers, smokers do not know which of the thousands of vaping products on the market are best to help them quit. "People don't look for cures for diseases by word of mouth," he points out.

The rising popularity of Juul e-cigarettes seems to be pushing the FDA into a tougher stance. In April it asked Juul Labs to turn over documents on its marketing and any research on why the device appeals to the young. On May 17th the agency sent similar requests to the manufacturers of four similar devices. Scott Gottlieb, the head of the FDA, says he is "extremely concerned" about the popularity of juuling among young people. The FDA will continue to track the fad, and the next one too. "Today it's Juul, tomorrow it will be something else," he says. ■

Assimilation

Tulip season

HOLLAND, MICHIGAN

Few cultures are farther apart than the Dutch and Dutch-American

PETE HOEKSTRA seemed a good choice for America's ambassador to the Netherlands when President Donald Trump appointed him last year. Mr Hoekstra, a former congressman, was born in the Netherlands and grew up in Holland, a largely Dutch-American town in Michigan. Unfortunately, Mr Hoekstra had baselessly claimed in 2015 that politicians in the Netherlands were "being burned" by Muslim radicals. A Dutch television reporter in Washington duly asked him what he had meant. Mr Hoekstra denied having said it, prattling about "fake news". The Dutch press corps was livid. Mr Hoekstra waited three weeks before formally apologising. The Dutch were also irritated by his opposition to same-sex marriage.

As it turns out, appointing a Dutch-American ambassador to The Hague was a diplomatic and cultural misstep. The Netherlands is among the most liberal countries in the world. Most Dutch-Americans, like Mr Hoekstra, are conservative. The regions where they cluster, in north-western Iowa and south-western Michigan, are devoutly Protestant and overwhelmingly Republican. Mr Hoekstra's hometown has not backed a Democrat in a presidential election since 1864.

Holland's other favourite daughters and sons include Betsy DeVos, the secretary of education, and her brother Erik Prince, who founded the private security firm Blackwater and was an early backer of Mr Trump. Dick DeVos, Mrs DeVos's billionaire husband, is Dutch-American too; his father co-founded Amway, a sales company based in nearby Grand Rapids. Mr DeVos's political activism includes a well-funded, ultimately successful campaign against trade unions.

What accounts for the cultural gulf? Some trace it back to the early settlers. "The people who left the Netherlands were some of the most conservative Dutch-speaking people on the planet," says Jay Peters, a progressive city council member in Holland. The town was founded in 1847 by Albertus van Raalte, the pastor-leader of a group of émigrés who believed the Dutch Reformed Church had become too worldly. Once in Michigan, the group split again. A conservative faction rebelled against Van Raalte's plan to fuse with Dutch Reformed congregations in New York. (They were also upset by non-biblical hymns, the use of English in the service and abstruse points of theology.) The

schism between Van Raalte's Reformed Church in America and the traditionalist Christian Reformed Church is only now being repaired.

In some ways, though, Dutch-Americans' values overlap with Dutch ones. "We've got that Dutch work ethic," says Dan Gillett, pastor at the First Reformed Church of Holland. Besides car-parts factories and high-tech startups, the region is the centre of the American office-furniture industry. Haworth has its headquarters in Holland; Herman Miller and Steelcase are close by. Ottawa County's unemployment rate is 3.2% and the area's population is the fastest-growing in Michigan, points out Jennifer Owens of Lakeshore Advantage, a regional planning consultancy.

Like the Netherlands, which ranks high on global indices for charitable giving and joining clubs, south-western Michigan has high rates of philanthropy and personal trust. The Boys and Girls Club of Greater Holland offers sports, tutoring, clubs and nursery school at a spiffy former church a few blocks from downtown. Membership costs just \$5 per child per year. Fully 97% of the budget is covered by donations, the lion's share from business and wealthy families. The club caters to 300-400 children per day, three-quarters of whom are below the poverty line.

Many of Holland's leaders nonetheless think it needs to change. Ms Owens says



May your windmills spin for ever

the biggest economic challenge is attracting talent—designers and engineers from Europe and India. There is a lack of affordable housing for mid-level workers; half of the city's residents are spending more than 30% of their disposable income on rent or mortgages. The town's population is one-quarter Hispanic and 4% Asian. Can Reformed churches and celebrations of Dutch lace and clog dancing make newcomers feel welcome?

Like many other parts of America, Holland struggles with the politics of identity. In 2011 the city council narrowly voted down an amendment to add LGBT status to its housing anti-discrimination statute. In mayoral elections last year Mr Peters, who supports the amendment, lost by a whisker to Nancy DeBoer, who opposes it. Bert Jara, an advocate for Latino concerns, says city elders are dodging hard issues like white flight from the public-school system, which is now over 70% ethnic-minority.

On May 4th police surrounded a car outside a mixed-race church and hauled the occupants out at gunpoint. One of them was the nephew of the church's pastor, who demanded a meeting about police misconduct. It seemed a grim sign. But Jim Brooks, a leading philanthropist in Holland, sees progress on both race and sexuality. "The strong religious orientation of much of the population is in conflict with the LGBT stuff, we're working through those conversations," he says. The amendment, he says, will "absolutely" pass next time: "How do you take a dynamic community that's plugged into the world the way this one is and not ultimately face up to those things?"

It may be too soon to schedule an Amsterdam-style Gay Pride parade in Holland. At present the city makes do with its traditional Volksparade, a tribute to its Dutch forebears' meticulousness. The mayor runs a white-gloved finger along the asphalt as a town crier proclaims: "Streets need scrubbing!" Locals kitted out in 19th-century Dutch provincial dress then march down Eighth Street, the town's main drag, cleaning the tarmac with wooden brooms and water. Standard-bearers carry the flags of the 11 provinces of the Netherlands. State legislators and Dutch diplomats cruise by in vintage Cadillacs, waving. Next come the marching bands: Holland High (the "Marching Dutchmen"), Zeeland High, Holland Christian and more.

Traditional folk dancers roll past on a bed of tulips. A microbrewery's waiters pedal an Amsterdam-style ten-person beer bike; an investment adviser's floats are styled as giant wooden shoes. Then come the non-profits: learning-disabled children from the Compassionate Heart Ministry, a family counselling group, staff from a mental-health foundation. Their t-shirts bear the ultimate midwestern exhortation: "Be Nice!" ■

Lexington | Broken bonds

A well-meaning effort to reduce partisan hatred shows how implacable it is



ARUDE but incoherent comment by President Donald Trump last week revealed the damage partisanship has done to America's body politic. The president described a group of Hispanic gangsters, or illegal immigrants at large, or maybe both, as "animals". It is impossible to know whom he was referring to. Yet most Americans thought they knew. Republicans heard Mr Trump's comment as tough talk on a bunch of killers, while Democrats heard it as a dehumanising slur against migrant parents and their children. Partisanship has altered Americans' hearing.

It has also changed their view of what is required to be human. No longer able to fathom how their partisan rivals can hear, and also see, think and say the things they do, Americans are increasingly liable to consider them lesser beings. Research by Alexander Theodoridis and James Martherus and colleagues finds that 77% of respondents considered their rivals to be less evolved humans than members of their own side. Americans are also prone, surveys suggest, to find their subhuman opponents extremely disagreeable. No wonder Republicans and Democrats cannot bring themselves to make the compromises upon which the healthy functioning of American democracy depends.

This malady has produced some interesting new research and efforts to treat it. To observe one, Lexington went to the Mutter Museum of medicine in Philadelphia. There, in a room lined with ancient medical manuals—"Treatise on Dislocation", "Treatise on Fractures"—five Republican and five Democratic voters had been gathered by a group called Better Angels for a day of mutual rehumanising. "I want to understand how the progressive mind works," said Greg, a grey-haired Tea Partier wearing denim jeans and braces, as he eyed a row of bearded college graduates seated opposite him. He had perhaps noted the pickled brain displayed outside the door.

Better Angels was launched in 2016 with the aim of awakening America's citizenry from its partisan nightmare. Its method, importantly and unlike several groups formed in response to the rancorous 2016 election, is not to forge consensus on issues. Rather it is to persuade voters to stop thinking of the other side as their enemy. Backed by a high-powered bipartisan board, the group has recruited over 3,000 members and held over 100 workshops across the country. Yet your columnist's day at the museum main-

ly showed how resistant to such laudable efforts Americans are.

Drawing on counselling techniques, the workshop began by separating the red (Republican) and blue (Democratic) teams and asking each to list the stereotypical views the other side held towards their party. They were then told to say why the stereotypes were unfounded and whether they contained a kernel of truth. The red team came up with: racist, homophobic, anti-immigrant, gun-loving, hateful. Only on guns, with which two of their members, 20-something brothers from hardscrabble South Philly, were obsessed, did the reds consider the type remotely justified.

The blue team's members were more educated and self-critical. They imagined the reds thought Democrats a bunch of smug, godless, politically correct traitors to the constitution. They confessed there was a bit of truth to much of that. Yet their humility did not make them less partisan. In an exercise that involved each side asking the other to justify their most divisive positions, the blues showed the flipside of their greater learning. They were better at mobilising arguments to justify partisan positions that, in truth, they probably held unthinkingly. The bearded graduates' full-throated defence of abortion, a difficult topic, illustrated that.

By the end, most of the participants said they had learned that the other side contained more diverse views than they had thought. That was useful. Yet by classifying the participants as red or blue, then asking them to defend highly partisan issues, the workshop also seemed to reaffirm their mutual antagonism.

The problem is structural: the root of tribalism is human nature, and the current state of American democracy is distinctly primeval. People have an urge to belong to exclusive groups and to affirm their membership by beating other groups. A new book by the political scientist Lilliana Mason, "Uncivil Agreement", describes the psychology experiments that proved this. In one, members of randomly selected groups were told to share a pile of cash between their group and another. Given the choice of halving the sum, or of keeping a lesser portion for themselves and handing an even smaller portion to the other group, they preferred the second option. The common good meant nothing. Winning was all. This is the logic of American politics today.

How passion got strained

The main reason for that, Ms Mason argues, is a growing correlation between partisan and other important identities, concerning race, religion and so on. When the electorate was more jumbled (for example, when the parties had similar numbers of racists and smug elitists) most Americans had interests in both camps. That allowed people to float between, or at least to respect them. The electorate is now so sorted—with Republicans the party of less well-educated and socially conservative whites and Democrats for everyone else—as to provide little impediment to a deliciously self-affirming intertribal dust-up.

A national crisis, such as a big terrorist attack, might ease the partisan warring. Yet because its causes are so fundamental, the relief would be temporary. A more lasting peace would take one of two things. One is electoral reform, with a view to ending the two-party system. More parties would lead to more cross-cutting identities, less zero-sum politics, so less discord. Alternatively—and more likely—Americans must wait for another of the political realignments that ended previous spells of intense partisanship, including the antebellum rivalry that stirred Abraham Lincoln's appeal to "the better angels of our nature". The civil war, which led to one such rearrangement, started the following month. ■



Colombia (1)

Judging the horseflesh

SAMANÁ

The two favourites in the first post-war presidential election would change the country's course

EVERY afternoon in Samaná, a small coffee-growing town in the Colombian Andes, prosperous townspeople mount Paso Fino horses to ride from bar to bar, where they down shots of *aguardiente*, Colombia's most popular tipple. Their tongues loosened by the anise-flavoured drink, they become garrulous on the subject of the country's presidential election, the first round of which is scheduled for May 27th. Álvaro Uribe, a right-wing former president, "is a horseman just like us", declares Brayan López, a horse-dealer. He, and almost everyone else in Samaná, it seems, will vote for Iván Duque, Mr Uribe's protégé, who is leading in the polls.

As president from 2002 to 2010, Mr Uribe sent the army to expel from the area around Samaná the 47th Front, a unit of the FARC, a guerrilla group that had fought the state since 1964. The front's leader, Elda Neyis Mosquera, known as "la negra Karina", was one of the FARC's few female commanders and is thought to have been one of its bloodiest. She turned herself in and is now, by Mr López's account, an *uribista*. In all, some 220,000 people died in the war and perhaps 7m were displaced.

The presidential election is the first to take place after the war's end. Juan Manuel Santos, who succeeded Mr Uribe as president, signed a peace accord with the FARC in 2016. The group disarmed last year. But the election is no celebration of peace,

which has both disappointed Colombians and raised their expectations. Smaller armed groups have occupied some of the territory vacated by the FARC and cultivation of coca, over which they fight, has surged (see next story). FARC members are now guaranteed seats in congress and face light punishment for their crimes. Mr Uribe was the peace accord's most prominent critic. His ally is the front-runner in part because many Colombians wanted Mr Santos to take a much tougher line with the FARC.

But peace has also opened the door to the candidacy of Mr Uribe's antithesis, Gustavo Petro, an ex-member of M19, another guerrilla group, and a former mayor of Bogotá. Polls suggest he is running second to Mr Duque, making him the first left-wing politician with a serious chance of becoming president. "By disarming the left, peace made the left capable of playing a role in politics," says Eduardo Pizano of the University of the Andes in Bogotá.

Many Colombians find that terrifying. Mr Petro has in the past said nice things about Hugo Chávez, the late leader of next-door Venezuela, whose socialist regime is destroying its economy and democracy and driving thousands of refugees into Colombia. Investors look upon Mr Petro with "utter fear", says an economist. That has bolstered Mr Duque, whose supporters accuse the left-wing candidate of plotting to

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Bello is away

bring Cuban-Venezuelan "castrochavismo" to Colombia.

Both candidates benefit from the popular rejection of Mr Santos, who is ending his presidency with an approval rating of just 14%. (He cannot run in this election.) Economic growth has been slow. Colombians resent Mr Santos, too, for raising their taxes. And they are fed up with an elitist style of politics that he seems to embody. His presidential campaign in 2010, and allegedly in 2014, accepted contributions from Odebrecht, a Brazilian construction firm that bribed parties and politicians across Latin America. (Mr Santos admits the contribution in 2010 but says he did not know about it.)

He is dragging down two other candidates: Germán Vargas Lleras, his former vice-president, and Humberto de la Calle, the chief negotiator of the peace accord. A third, Sergio Fajardo, a former mayor of Medellín and governor of the department of Antioquia, looks more like a candidate for change. But he is having trouble being heard above the sound and fury of the Duque-Petro clash.

Another orange president?

Colombia is doing better than most voters think. Its economy is recovering from a slowdown that began with a drop in the price of oil, its biggest export, in 2014. Mr Santos's decision to raise VAT kept its ballooning budget deficit from expanding still further. Nearly 5m people have escaped poverty since 2009. Despite lawlessness in parts of the country, last year was the least violent in four decades. The Santos government helped pave Samaná's only road link, points out the town's mayor, Gloria Inés Ortiz.

Yet the polls, which should be treated with some scepticism, favour candidates ►►

▶ who would yank Colombia off the course Mr Santos has set. Mr Duque and Mr Petro are leading in part because they took part in *consultas* (primaries), which coincided with a congressional election in March. They amassed millions of votes and drew media coverage away from other candidates. Mr Fajardo, the third candidate of change, “lost two months of message”, says Francisco Miranda, a political analyst. Both front-runners temper their radicalism by offering stirring visions of what post-war Colombia could become.

Mr Duque, the son of a prominent politician, has the difficult task of harnessing the enthusiasm for Mr Uribe in places like Samaná, while also appealing to voters who associate him with former right-wing paramilitary groups, a link he denies. Some voters fear that a President Duque would work to remove presidential term limits from the constitution, allowing Mr Uribe eventually to return to power. Chief of the Inter-American Development Bank’s culture division before he became a senator, Mr Duque has a thin CV for an aspiring president, which sharpens worries that he will be Mr Uribe’s puppet.

Mr Duque’s answer is to cast himself both as Uribe-light and as his own man. His demands for tougher treatment of FARC “kingpins” than the peace accord mandates and for forced eradication of coca are aimed at upholding the rule of law, not wrecking the agreement, he says. “Entrepreneurship” and “equity” would be the two other goals of his presidency. Promising to be the “first 21st-century president”, Mr Duque talks of an “orange economy”, based on talent and knowledge. To people who fear that his presidency will be a Trojan horse for Mr Uribe, he replies, “I’m just going to be Duque.”

Though the polls put him at least ten percentage points in front, he must worry about the passion roused by Mr Petro. Tens of thousands of fired-up supporters attended his closing campaign event on May 17th in the Plaza de Bolívar in Bogotá. Adherents of a martial-arts cult called the Sacred Tao Cistic Universal Church, clad in red-belted karate outfits, guarded the stage. The group has dubbed Mr Petro “Mahatmajustipol”, meaning “great soul who brings justice to the people”.

For young and poor Colombians who deem politics too grubby, the elites too smug and economic progress too slow, Mr Petro promises a “humane Colombia” with a much bigger role for the state in health, higher education, finance and business. More startlingly, he wants to pull Colombia out of oil and coal over the next ten years. It would be replaced by greener industries, such as agribusiness, he says.

Like Mr Duque, Mr Petro seeks to soothe voters who might take him for an extremist. “We’re progressives, not socialists,” says Hollman Morris, a Bogotá city coun-

cillor who is close to Mr Petro. He has no wish to emulate Venezuela’s “failed model”, says Mr Morris—which sounds less reassuring when he goes on to blame Venezuela’s dependence on oil, rather than its lunatic economic policies, for its woes.

Some of Mr Petro’s critics worry more about his high-handed managerial style than his ideology. As mayor of Bogotá from 2012 to 2015 he disregarded the city council, issued decrees and alienated allies. After a dispute over rubbish-collection contracts in 2012 left garbage piling up for three days, opposition parties launched a petition to recall him and the inspector-general ordered his removal from office. The Inter-American Human Rights Commission ordered his restoration.

Lower-risk candidates seem to be making little headway. Mr Vargas Lleras, a former housing minister with a record of getting things done, hopes his command of Colombia’s most effective political machine will deliver the votes that the polls say he lacks. Mr Fajardo, a mathematician who helped transform Medellín from a crime capital into a mecca of cool, promises polit-

ical renewal. He will not pay “a peso for a single vote” or exchange government jobs for support in congress, he vows. His vision is as professorial as it is presidential: he hopes to rally a country that “has been united by fear” behind a project to develop its talent and technology.

The candidates’ enthusiasm for schemes to improve education helps address one of the country’s main problems: low productivity. Less is said about other ills, such as Colombia’s underdeveloped international trade, its relatively high government debt and its low level of tax revenue, which is largely consumed by pensions, interest payments and transfers to regional governments. Mr Duque shies away from admitting the need to increase income tax; Mr Petro promises to cut VAT.

If the polls are right, Mr Duque’s tough-talking modernity will defeat Mr Petro’s radicalism in a run-off on June 17th. That would be “the last chance for the economic and political establishment [to show] it is something in which all Colombians can be successful”, says Mr Pizano. If it fails, a leftist like Mr Petro could be next. ■

Colombia (2)

Peace in peril?

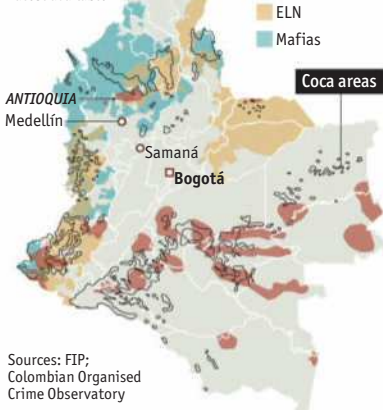
BOGOTÁ

The next president might be a foe of the peace accord with the FARC. That does not mean war will resume

JUAN MANUEL SANTOS, Colombia’s president, won a Nobel prize in 2016 for ending a 52-year war with the left-wing FARC guerrilla group, but criminals with guns still terrorise parts of the countryside. That alarms people in cities, where most people live. Some 12,000 FARC fighters have disarmed and moved into designated zones, as envisaged by the peace accord.

Coca and chaos

Colombia, group presence and coca areas
Latest available



But the space they left has been partly filled with other gangs, including dissident members of the FARC, the ELN, another guerrilla group, and Clan del Golfo, a mafia whose origins are in right-wing paramilitary groups that demobilised in the 2000s (see map).

Their fights with each other and with security forces are caused in part by competition over the cocaine trade, which was one of the FARC’s main sources of income. In 2016 coca, the raw material for cocaine, grew on 146,000 hectares, three times the area it covered in 2012. Most of the fighting took place in about a quarter of the country’s municipalities. Just 5% of that area is now under control of the state, reckons Kyle Johnson of Crisis Group, a think-tank.

That does not mean that the peace deal is a fraud. Violence has fallen sharply since the early 2000s, when the government stepped up its offensive against the FARC, and has dropped further since 2012, when negotiations began in Havana. The FARC have become a political party, assured by the peace agreement of ten seats in congress for the next eight years. But implementation of the deal satisfies no one. Iván Duque, the front-runner in the presidential election, objects to some of its main princi- ▶

ples. He could damage, but probably not destroy, the peace deal.

Just 70 demobilised members of the FARC are part of the main state-backed projects to give them livelihoods, according to the Peace and Reconciliation Foundation, an NGO. A programme to replace coca with legal crops is constrained by too little money and too much bureaucracy. There is little sign of new irrigation or roads, which would help farmers sell legal crops. Land reform, including distribution of 3m hectares to people from whom it was illegally seized, has so far been thwarted. "People expected more," says Ariel Ávila of the Peace and Reconciliation Foundation.

For Mr Duque, whose political mentor is the anti-accord former president Álvaro Uribe, the peace deal's failings go much deeper than that. He thinks it an outrage that some of the FARC's leaders will take their seats in congress without confessing to crimes against humanity, serving sentences for them and making reparations to their victims. Most Colombians agree with him. "Major FARC kingpins won't take the oath of office" when congress is seated on July 20th, he promises (though, if he wins, he would not become president until August 7th).

Foes of the accord argue that the special transitional-justice system (JEP) that members of the FARC will face is too lenient. Those who confess will be subjected to "restricted liberty" for up to eight years. Crop-substitution, which under the agreement should be done in co-operation with farmers, must be "mandatory", Mr Duque says.

The front-runner's plans worry the peace deal's advocates. Making FARC congressmen serve their sentences before taking their seats would be a "fatal blow", says Humberto de la Calle, a candidate for the presidency who led the government's side in negotiating the accord. That, he fears, will spark new violence. It might also hurt the government's credibility.

Just how much damage Mr Duque could do is unclear. The FARC's right to seats in congress and the JEP are secured by the constitution. The president cannot easily undo that. But the law regulating the JEP needs both the approval of the constitutional court and the signature of the president, who could be Mr Duque by the time it reaches his desk. Another law, which would establish procedures governing the tribunal's work, is still being debated in congress. The next president could withdraw it, which would paralyse the JEP.

Some aspects of the peace deal, such as building rural infrastructure, will no doubt appeal to the next president, whoever he is. But without vigorous backing from the executive, such programmes as land reform and voluntary crop substitution will grind to a halt.

The biggest threat may be that by reneging on the peace accord the next president

Archaeoastronomy in Chile

Sighting the sun god

SAN PEDRO DE ATACAMA

Archaeologists and astronomers find Inca calendars in the desert

ON THE winter solstice in 2017, a team of researchers waited in the pre-dawn chill of the Atacama desert. Before them stood two square piles of stones, each about 1.2 metres (four feet) high. A row of three other cairns stretched out 500 metres to the east. This line of *saywas*—roughly, "markers" in Quechua, an indigenous Andean language—intersected diagonally with an ancient path, part of a road network built five centuries ago by the Incas. The sun rose directly behind the closest columns, appearing to rest briefly atop them.

"It was an extremely moving experience," says Cecilia Sanhueza, a historian at Chile's Pre-Columbian Art Museum in Santiago. Her findings were made public last month. The alignment of the stones with the sun's rise supported her thesis that they were not just milestones. At least some of northern Chile's *saywas*

had the "astronomical function" of pre-figuring the sun's appearance. They are a southern-hemisphere Stonehenge.

The pillars are a visible link to Inti, the sun god, who was thought to "sit" on *saywas* at solstices. Their arrangement was a way of "sacralising the political presence of the Inca", whose empire ruled northern and central Chile from about 1470 to 1530, says Dr Sanhueza.

She formed her initial theories from her study of 16th-century Quechua-Spanish dictionaries, the drawings of Felipe Guaman Poma de Ayala, a Quechua nobleman who wrote and illustrated a 17th-century treatise on colonial Peru, and a chronicle by Martín de Murúa, a Basque friar.

To test her ideas, Dr Sanhueza approached the Atacama Large Millimetre Array, an observatory in the Andes mountains, around 150km (90 miles) from the *saywas*. Simulations by Sergio Martín and Juan Cortés, astronomers at the observatory, supported the thesis that some rows are aligned with sunrises on important dates. That spared Dr Sanhueza the trouble of testing in person the function of each set of *saywas*.

But she and her colleagues then spent days and nights battling altitude sickness and the cold to study the environment for additional clues to the purpose of the *saywas*. Jimena Cruz, an indigenous Atacameña archaeologist, interviewed retired llama herders to learn more about the cultural significance of the pathways. She suggested observing one set of *saywas* on August 1st, a day of veneration of the earth goddess Pachamama. Sure enough, the rising sun aligned with the pillars. Ms Cruz also recruited local volunteers to help preserve the *saywas*.

There are more to be studied, Dr Sanhueza thinks. The investigators hope the example they set will encourage more collaboration between archaeologists, astronomers and locals, and remind the rest of the country that it has a rich indigenous heritage.



Smarter than the average pile of rocks

could wreck any chance of reaching a deal with the ELN, which is negotiating with the government. Mr Duque says he would set very strict conditions for continuing negotiations, which is sensible; Germán Vargas Lleras, a former vice-president who is also in the race, would end the talks. The ELN has an estimated 2,000 fighters. With money from coca and help, perhaps, from neighbouring Venezuela, it could grow.

The FARC's leaders, though, are too old to return to the jungle. The group has virtually no support among the people it claimed to be fighting for (in congressional elections in March the party won less than 1% of the vote). The bargain that underlies the peace deal—political participation in return for disarmament—is likely to survive. The peace agreement may be more fragile than the peace itself. ■



North Korea under Kim Jong Un

Pastel-coloured penury

PYONGYANG

There is little sign of change for ordinary North Koreans

THEY have vanishingly few opportunities to speak to foreigners and, even when they are allowed to, risk landing in a labour camp if caught saying the wrong thing. Yet North Koreans are full of curiosity about the outside world. On a recent visit, your correspondent was asked about the place of civil servants in capitalist society, about how Western manufacturers keep costs down and, inevitably, about Brexit. Any information about foreigners is highly prized. “We want to know how you think,” said one inquisitive local, “so that when things change, we’re ready.”

“Things changing” has seemed like a tantalising possibility ever since Kim Jong Un, the North’s leader, embarked on a diplomatic charm offensive earlier this year. In Pyongyang, where most people can access accounts of the rapprochement with America and South Korea in the state media, some are allowing themselves to dream. One woman said she wanted to go to Britain and South-East Asia. Another asked your correspondent to help her practise her French because she hoped to travel to Paris if the diplomatic efforts paid off.

Yet hopes that Mr Kim will bring change, which were widespread when he took over from his father in 2011, have so far proved misplaced. Far from liberalising the country, Mr Kim has tightened the shackles, reinforcing the border with China to make it harder for people to escape and cracking down hard on offences such as possessing a flash drive loaded with South Korean soap operas, or owning a Chinese

SIM card in order to make international calls near the border. (Ordinary citizens are not allowed to call foreigners within the country, much less anyone abroad.)

Pyongyang welcomes visitors with a relentless onslaught of murals, monuments and portraits of Mr Kim and his father and grandfather, who ran the country before him. Primary-school children decked out in traditional costumes sing songs about their glory. “Let us accomplish the programmatic task our dearest supreme leader Kim Jong Un proposed in his New Year address” runs one catchy slogan. Drivers have to slow down when they pass enormous bronze statues of the dead deities. Out-of-towners are compelled to wash their cars before crossing the city limits, lest they mar the capital’s aesthetic.

That aesthetic involves pastel-coloured apartment blocks, pretty flower-shaped streetlights and pleasant parks kept impeccably clean by residents. Work crews of middle-aged women dressed in bright orange can be seen at all hours planting flowers and ripping out weeds on the grassy verges around town. To those who can pay, the city affords a measure of material comfort, despite the recent tightening of sanctions. Restaurants offer pizza, pasta and sushi as well as semi-Western entertainment. At one restaurant the staff band performs stirring renditions of “Arirang”, a traditional Korean tune, and “Can you feel the love tonight?”, a schmaltzy duet from a Disney movie. Petrol and diesel prices have fallen by almost 20% after a spike in

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April, suggesting that China has relaxed its enforcement of the international sanctions that restrict North Korea’s oil imports.

Yet there are signs that even the showcase capital is struggling. Long-term foreign residents note that fancier restaurants and coffee shops look less busy than they did. (By contrast, grimy city-centre bars serving beer and cheap spirits are crammed even on weekday evenings.) Buses and trams, though gleaming, operate several times over capacity, with people hanging out of the windows and enormous queues at stops. In many buildings the lifts are mostly out of service and corridors remain dark, hinting at a less-than-perfect electricity supply (though some of the capital’s well-to-do get around the problem by installing solar panels on their balconies).

North Koreans are compelled to spend six days a week working for the state for meagre wages. Most get little choice in what they do, causing well-qualified people to complain of mind-numbing work with no prospects. “My job is just a dull waste of time,” says one woman in her 20s who works for a state-run firm. Asked about quitting, she demurs: “It’s not easy.”

Patriotic brick-laying

Young men have to spend years doing military service, which mostly amounts to hard labour on construction sites. Many young women work in factories far from home, where they live crammed into spartan dormitories. The only day off—Sunday—features group discussions about how output can be improved.

The workers in factories on the outskirts of Pyongyang are also permitted to visit the city on Sundays, in the hope of finding a local husband. (North Korean women are encouraged to marry young, often to a husband selected by their family, and are derided as “rotten fish” if they remain single in their late 20s.) But on the whole, personal life is restricted. Beyond ►►

▶ contact with one's family and colleagues, socialising is discouraged.

Only those deemed loyal to the regime are allowed to live in the capital. Life outside is far worse. The WHO says that 40% of the population is malnourished. Electricity and proper plumbing are rarities. Unlike in Pyongyang, people have fewer ways of getting around sanctions, which are starting to cause shortages of fuel and fertiliser, according to NGOs that work in the country. Agricultural technology remains primitive. Visiting experts say they still encounter farming equipment from the 1950s. Just beyond the city limits of Pyongyang, farmers are still ploughing fields with oxen; women carry big bundles of firewood on their backs. On the hills, anti-aircraft guns tower over the squat one-storey villages. News of the outside world comes mainly in the form of a weekly briefing from a party official.

And even in Pyongyang, Western and South Korean pressure groups attest, the deadening totalitarian system is as intrusive as ever. People are encouraged to keep an eye on the political reliability of friends, family and co-workers, and are rewarded for reporting misdeeds. Even minor infringements, such as perusing smuggled religious pamphlets, can result in severe punishment. Unguarded remarks about the leader or one of his predecessors may lead to banishment from Pyongyang or, in more egregious cases, being carted off to a prison camp—sometimes with one's family in tow. The UN estimated in 2014 that between 80,000 and 120,000 people were held in such camps, where torture, indiscriminate beatings and starvation are commonplace. The number seems to have stayed roughly constant since then. No wonder North Koreans are curious about different ways of doing things. ■

Indian politics

Two-day wonder

DELHI

A row in the state of Karnataka holds lessons for next year's national election

LITTLE did B.S. Yeddyurappa know when he was sworn in as chief minister of Karnataka on May 17th how brief his tenure would be. Two days later he was gone. The reversal was a humiliation for the Bharatiya Janata Party (BJP), whose local branch he heads and which also runs the central government. For opposition parties, it was a rare moment of triumph.

The drama began on May 15th when the results of the recent state election were declared. Three competing parties had each won a sizeable share of seats in the assembly, leaving a hung parliament. The BJP emerged as the biggest single party, with 104 seats, but fell short of the 113 needed for a majority. The party's only national rival, Congress, which came second, immediately locked arms with the third force, a regional outfit called the Janata Dal-Secular (JDS). Together they commanded 115 seats. The pairing of Congress and JDS thus claimed the right to form the state's next government, with the son of the founder of JDS to replace the incumbent from Congress as chief minister.

The BJP, however, declared that it should have the right to form a government as the biggest individual party. Its bosses secured an appointment with the state's governor, whose job it is to designate the chief minister, half an hour before the Congress-JDS crew were due to show up. Few saw this fortuitous timing as a coincidence. The governor, Vajubhai Vala, al-

though nominally above party politics, is a former member of the BJP, and served as speaker of the state assembly of Gujarat while Narendra Modi, the party's current leader, was the state's chief minister.

Mr Vala decided that the BJP should indeed have the first go at proving it had a majority in the state assembly, despite the apparently insuperable arithmetic. What is more, he gave the BJP 15 days to come up with the goods—an invitation, Congress and JDS argued, for the BJP to attempt to suborn their newly elected legislators.

Congress and JDS rushed to the Supreme Court in Delhi, where their lawyers argued at a special hearing lasting till 5am on May 17th that Mr Yeddyurappa's swearing-in, scheduled for 9am, must be called

off. Meanwhile, the caucuses of Congress and JDS were being shuttled from one locked-down luxury resort to another. Eventually they were ferried by bus to the neighbouring state of Telangana, the better to shield them from bribery and threats that might persuade them to defect to the BJP. Two Congress members, missing in action, were reputed to have been kidnapped by the BJP and held in yet another posh hotel.

In theory, "horse-trading", as the Indian press politely terms efforts to build a legislative majority by hook or crook, is illegal. Congress released several audio recordings that purported to capture allies of Mr Yeddyurappa offering places in his cabinet or even cash to his adversaries in exchange for legislators' support in a floor vote. (The BJP says these were faked.) What is more, Mr Vala's decision to give the BJP a shot at forming a government looked biased given that, at recent elections in other states, Congress had been in the BJP's position but had not got a look-in.

In the end the Supreme Court allowed the swearing-in to go ahead, but gave Mr Yeddyurappa just two days to prove his majority. When he could not, he was left with no choice but to announce his own resignation. The son of the JDS leader, H.D. Kumaraswamy, was sworn in on May 23rd; his deputy is from Congress.

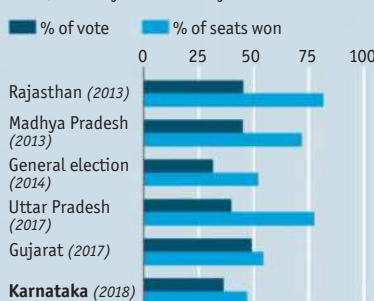
There are at least two lessons from this saga for next year's national election. The first is that Congress and the regional parties are ready for alliances—and that alliances can win. In Karnataka, as in India as a whole, the BJP tends to command a reliable 30-35% of the popular vote. India's first-past-the-post electoral system can easily turn such a plurality into a big majority, if the opposition is divided (see chart). Sizeable regional parties, having digested this lesson, are queuing up to strike pacts with Congress. The leaders of most of them attended the second swearing-in this week.

Another focus of attention is India's supposedly neutral institutions, which have come under tremendous pressure as Mr Modi's dominion over politics has grown. Just weeks ago Congress moved to impeach the chief justice of the Supreme Court, convinced that he was skewing the judiciary in favour of the BJP. There have also been complaints about governors of other states, the federal police and other supposedly neutral agencies.

Arun Shourie, a disaffected former minister from the BJP, accuses Mr Modi of pursuing the "Indirafication" of politics, a reference to Indira Gandhi, a former prime minister who awarded herself sweeping emergency powers. The fact that the Supreme Court overruled Mr Vala has provided a degree of reassurance. But his decision suggests there is reason to worry. The to-do in Karnataka, in short, is probably just a taste of the excitement to come. ■

Minority rule

India, Bharatiya Janata Party in elections



Sources: Election Commission of India; press reports



Fertility treatment in Japan

A corked tube

TOKYO

No country resorts more to IVF—or has less success

THE sterile façade of Kato Ladies Clinic gives little hint of the fecundity inside. Nestling among a plantation of high-rises in a business district of Tokyo, the clinic implants fertilised eggs in an average of 75 women a day. That makes it one of the busiest fertility hospitals in the world, says Keiichi Kato, the medical director.

Japan has come a long way since journalists were warned off the taboo story of Princess Masako's visits to fertility clinics 20 years ago. The wife of the crown prince, then in her late thirties, was being nudged to produce an heir to the throne (in the end, she disappointed traditionalists by having a girl). Today Japan has less than half America's population, but more than a third more hospitals and clinics that offer fertility treatment. Over 50,000 babies were born last year with the help of *in vitro* fertilisation (IVF)—5% of all births.

Nearly a fifth of Japanese couples struggle to have children, says the health ministry. Women are postponing marriage; social pressures mean there are far fewer babies born out of wedlock than in other rich countries. The upshot is that around 40% of Japanese women who undergo IVF do so in their forties, twice as many as in Britain or France.

Partly as a result, annual births have dipped below 1m for the first time since

Insurgency in southern Thailand

Blasts from the past

SINGAPORE

New bombings in an old conflict

ON THE evening of May 20th, just as it was growing dark, a series of explosions blasted banks, cash machines and electricity poles at more than a dozen locations across southern Thailand. Just three people were hurt by the bombings, which took place when most locals in the Muslim-majority region would have been breaking their Ramadan fast, and were thus safely indoors. Rather than killing bystanders, the attacks were meant “to serve as a reminder of militant capabilities”, reckons Matthew Wheeler of Crisis Group, a watchdog. Despite a recent period of relative calm, the violence that has by turns simmered and flared in the region since 2004 shows no signs of abating.

The provinces of Pattani, Narathiwat and Yala, as well as nearby parts of Songkhla, once formed an independent sultanate until Siam—as Thailand used to be known—overran it in the late 18th century. About 3m people live in the area, and most are ethnically Malay and Muslim. They bridle at policies imposed from Bangkok, which include sending civil servants from elsewhere in Thailand to run the local administration and a refusal to accord the local variant of the Malay language any official status, although it is the most common means of communication. Rebels have targeted anyone associated with the Thai state, sometimes killing teachers and Buddhist monks. Almost 7,000 people have died since 2004. Official brutality has fuelled unrest: extra-judicial killings and torture are commonplace.

A succession of Thai governments has agreed to negotiations with the insurgents, with little to show for it. One big problem is that the Barisan Revolusi Nasional (BRN), the most powerful armed group, has spurned talks. Nonetheless, the head of Thailand's military junta claimed last month that “major headway” had been made. There have been some small steps forward: interna-

tional NGOs and civil-society organisations have been permitted to work with BRN, educating its members on matters of law and governance. Discussions about creating a violence-free “safety zone”, however, remain mired in technicalities. The generals seem preoccupied with national elections they have promised to hold next year; the problems of the South get little attention.

For years Malaysia has helped mediate peace talks through Zamzamin Hashim, an associate of former prime minister Najib Razak. But Mr Najib lost power in an election earlier this month. Mr Zamzamin is likely to be replaced, too. Rebel leaders, many of whom live in northern Malaysia, may be wary of any mediator appointed by the new government. The new prime minister, Mahathir Mohamad, had two insurgent leaders arrested and extradited to Thailand during a previous stint as prime minister. If the past 14 years of fighting have proven anything, it is that tough tactics appear to prolong the violence, not prevent it.



This machine is temporarily out of service

1899, when the state began compiling statistics. The total fertility rate (the number of children a typical woman is expected to bear over her lifetime) is well below the number needed to keep the population stable. The pledge of Shinzo Abe, the prime minister, to stop the population from falling below 100m still assumes it will slump by a fifth from the present 127m.

In 2004, alarmed by the baby drought, the government began offering subsidies

for IVF, which is not available under the public health-care system. The government is mulling extending them to unmarried couples. Recipients get ¥150,000 (\$1,362) towards their first attempt and a limited number of follow-ups. But that does not cover the full cost. Women older than 43 and couples earning more than ¥7.3m a year are ineligible. Many would-be parents end up paying ¥300,000-500,000 per attempt, says Akiko Matsumoto of the ▶▶

► Fertility Information Network, an NGO.

Most of that is wasted. Fewer than 10% of local IVF treatments succeed, says Yoshi-masa Asada, a fertility specialist, and the proportion is falling. "We have the world's highest IVF numbers and the lowest success rate," he laments. "It's an embarrassment." Hospitals sell rosy expectations to older women, he says, and are happy to take their money for repeat visits. Doctors avoid prescribing the stronger drugs needed to help them conceive, partly because of popular fears about side-effects.

Experts say Japan needs a law to regulate the industry, including a ranking sys-

tem for hospitals. As it is, couples must rely on word of mouth, says Klaus Jacobsen, president of Origio Japan, a Danish company that sells IVF products. Surrogacy and the donation of eggs and sperm are regulated by the mostly male Japan Society of Obstetrics and Gynaecology, whose rules are unduly restrictive. Every year hundreds of Japanese end up going abroad to find donors and surrogates. Mr Jacobsen thinks that with better guidelines and more financial aid Japan could produce an extra 300,000 babies a year. That is roughly the number by which deaths currently outstrip births. ■

Taiwan's president

Hurry up

TAIPEI

Halfway through her term, Tsai Ing-wen has upset both business and workers

LIKE a nervous candidate in a job interview, shy yet formal, she fielded questions ranging from how to handle Chinese infiltration to why she always wears trouser suits. Tsai Ing-wen, Taiwan's usually plain-speaking president, marked her second anniversary in office with a rare live interview with a critical website.

Ms Tsai badly needs to restate her case to the people. In two years her approval ratings have slumped from almost 70% to as low as 26%, according to a broadcaster, TVBS; the Taiwanese Public Opinion Foundation says 48% of her compatriots disapprove of her performance, against 39% in favour. She has lost ground especially with the young, whom she has eagerly courted.

Elected in a landslide in 2016, Ms Tsai blazed a trail as the first female leader of a Chinese-speaking country in modern times. Her Democratic Progressive Party (DPP) also won a majority in Taiwan's parliament for the first time, finally ending the grip of the Kuomintang (KMT) that began when Chiang Kai-shek and his forces fled to Taiwan from mainland China in 1949.

But her promise to revive the island's economy, which used to be tigerish but has grown sluggish, remains unfulfilled. At the same time, tension with China has grown, despite Ms Tsai's efforts to restrain the more radical wing of the DPP, which wants to declare formal independence, rather than maintain the current fiction that the government of Taiwan notionally represents the whole of China. Such a step, China has said, would be grounds for war.

Ms Tsai has tried to appeal both to business, in the hope of stimulating the economy, and to workers and environmentalists, the bedrock of the centre-left DPP. She has ended up pleasing neither. The DPP has

promised to phase out nuclear power, but Ms Tsai allowed two shuttered reactors to restart after a big blackout last year, to the dismay of greens who object to nuclear energy despite its minimal greenhouse-gas emissions. In the name of workers' rights, she issued new rules on working hours, which companies denounced as unduly rigid. When she modified them somewhat, unions howled.

Pocketbook politics

Wages are barely higher than 15 years ago (see chart), largely because of increasing competition from manufacturers in China and elsewhere, which has left Taiwanese employers with little leeway to increase salaries. Many frustrated young university graduates have left the country in search of better opportunities. Ms Tsai has raised the monthly minimum wage by 10%, to NT\$22,000 (\$733). This year she also increased civil servants' pay by 3%. Yet on May 1st thousands of workers took to the streets, waving banners reading "Fight for a

higher salary".

Taiwan has one of the lowest levels of foreign investment in Asia, points out William Foreman of the American Chamber of Commerce in Taipei. Ms Tsai's government has given tax breaks to angel investors. She has also tried to pare regulation, giving firms more leeway to experiment with financial services, for example. And she has identified five industries in which she thinks Taiwanese firms can compete internationally: defence, biotechnology, clean energy, the internet of things and smart machinery—although only the last of these, notes Stephen Su of the Industrial Technology Research Institute, is currently a significant earner for local businesses.

Economic growth has picked up, from 1% year-on-year in the quarter in which Ms Tsai took office to 3% in the first quarter of this year. But workers are not feeling the benefit. Other reforms, however, have bitten. The government's (much needed) cuts to pensions for civil servants and teachers prompted big demonstrations. Last month hundreds of veterans scuffled with police and threw smoke-bombs to protest against plans to cut military pensions too.

On social issues Ms Tsai has wobbled. Before she was elected she put out a video supporting gay marriage. But once in power, the DPP backed away and dithered. In the end it was the constitutional court that ruled in favour of gay marriage a year ago, instructing parliament to enact the necessary laws. It has not yet done so. That has left young people disillusioned, says Jason Hsu, a KMT lawmaker, who believes gay marriage was one of the main reasons Ms Tsai captured the youth vote.

Ms Tsai also promised to provide a proper accounting of the human-rights abuses committed during the KMT's long, harsh dictatorship, and to remove all monuments glorifying this era. But she has appointed a former member of a watchdog agency under the previous KMT administration to head the committee in charge of this project. This has upset some in her own party. Meanwhile, a law that strips the KMT of wealth deemed ill-gotten has infuriated the opposition.

The KMT is still reeling from its defeat in 2016 and the legislative setbacks that followed. Its leadership is weak. But Ms Tsai faces opposition of a different sort. Two ex-presidents (one from the DPP and one from the KMT) and many prominent politicians, especially within the DPP, want her to permit a referendum on independence—something that would provoke a dire response from China. She is resisting, while counting on an economic upturn to bolster her fortunes. "We've spent most of my first two years in preparation, including legal preparation, so in my presidency's next two years we will speed up the pace of implementation," she said in her online interview. But time flies. ■

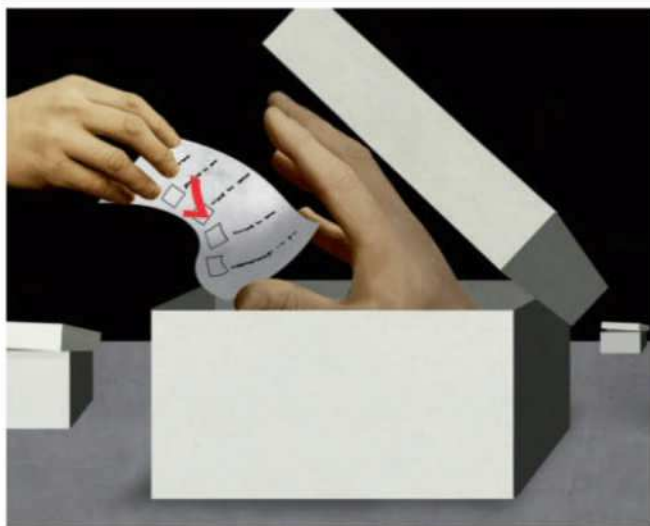
Like it's 1999

Taiwan, average monthly pay*
NT\$'000, 2011 prices



Banyan | Lots of elections, little democracy

South-East Asia shows that there is more to freedom than voting



DEMOCRACY'S worldwide retreat makes no exception for South-East Asia. In the Philippines President Rodrigo Duterte has thrown the law to the wind in his war on drugs. Many innocents are among thousands killed. He has imposed martial law in Mindanao in the south. And in early May he cheered on the sacking of the chief justice, a critic. In Cambodia, in anticipation of elections in July, the strongman, Hun Sen, has snuffed out the last of the free press and abolished the opposition. And in Myanmar the government of Aung San Suu Kyi turns a blind eye to an army-led campaign of rape and slaughter of the Rohingya minority, some 670,000 of whom have fled the country.

The question is how much of a retreat from democracy this really amounts to. For in the dozen or so countries that make up South-East Asia, liberal democracy has long struggled in the face of authoritarianism, bolstered by monarchism, nationalism and ethnic chauvinism. A political map of the region put out by Freedom House, a think-tank, makes stark viewing. It shows only tiny East Timor as wholly free in its political arrangements, and that only since last year, when Freedom House promoted it from the "partly free" category after open elections and a smooth transfer of power. All the rest of the region is classified as either partly free (eg, Indonesia, Malaysia, Myanmar, Singapore) or not free at all (Cambodia, Laos, Thailand and Vietnam). Just this week Thailand's military junta quelled protests marking the fourth anniversary of its seizure of power. No wonder liberals exulted so at Malaysia's general election on May 9th, in which the party in power since independence in 1957, UMNO, was peacefully ousted.

Even before that signal victory, things were not as bad as at the democratic nadir in the 1970s and early 1980s. Then UMNO's grip on power was unquestioned, and Ferdinand Marcos had assumed absolute power the better to plunder the Philippines. Daniel Slater of the University of Michigan points out that during that period not a single regime met even minimally democratic standards, excepting Thailand's brief flirtation with democracy in 1973-76, which soon gave way to military rule. The cold war, as Mr Slater puts it, did not bring about a domino collapse into communism. But it did see a collapse into authoritarianism.

Three subsequent democratic achievements greatly altered the balance-sheet. In 1986 the People Power revolution in the Phil-

ippines saw Marcos replaced by a new democratic government under Cory Aquino. Twenty years ago this week, Suharto, Indonesia's long-serving dictator, resigned, paving the way for the country's presidents to be chosen at the ballot box. And in 2015, after six decades of army rule, elections brought Aung San Suu Kyi to office on a popular wave, 25 years after her victory at the polls was overturned by the junta. This month's win by Malaysia's Pakatan Harapan coalition appears, for now at least, to be on a par with those moments.

But caution is needed. There has never been a shortage of elections in South-East Asia, yet they are not sure-fire signs of democratisation. Lee Morgenbesser of Griffith University in Australia and Tom Pepinsky of America's Cornell University point out that between 1945 and 2015 South-East Asia held no fewer than 110 executive or legislative elections. Singapore leads the regional pack. The ruling People's Action Party (PAP) has suffered no erosion of power in the 14 parliamentary elections since it came to power in 1959, even if it got a bit of a fright in 2011. Voting is clean. But the PAP wins not just by running the country competently, but also by instituting a favourable electoral system, harassing opposition politicians, cowing the media, threatening to cut spending on districts that vote against it and inculcating the absurd notion that its survival and that of Singapore itself are synonymous.

The Philippine election of 1986, which Marcos had expected to win, proved transformative. But most in South-East Asia are not. Suharto had already fallen before Indonesia's first proper elections. Ms Suu Kyi's party was allowed to take office only after the army had ensured that it kept a powerful stake in the state. Even Malaysia's recent may not turn out to be quite the game-changer it seems. When the new prime minister, Mahathir Mohamad, was last in power in 2003, as head of UMNO, he was emblematic of the strongman rule against which Malaysians have just voted. When the share prices of companies owned by people close to Dr Mahathir jumped after the election, it reflected an assumption that even if the ruling party had changed, the system had not.

A more hopeful trajectory

Two factors help to keep authoritarians in place. One is the strength of the state, which allows rulers to use economic and judicial means, as well as brute force, to crush opposition. The other is ancient habits of patronage to reward supporters. But both have limits. In Malaysia, UMNO's usual trick of bribing voters did not work this time, since Malaysians saw it as their own money. In Cambodia a political system that exists for no other reason than to distribute profit and privilege may not survive Mr Hun Sen. Even the (Western-educated) offspring of Cambodia's elites admit to embarrassment.

As for state strength, Malaysia has just shown the region how that can work to democracy's advantage. For the biggest lesson of the election, argues Michael Vatikiotis of the Centre for Humanitarian Dialogue, is how institutions can still function even after years of abuse. Whatever the misgivings about Dr Mahathir, thanks to the election the press is already freer, parliament will have more oversight, and the courts will be more independent. The election outcome, Mr Vatikiotis argues, surely troubles the junta in Thailand, which endlessly delays promised elections, and Mr Hun Sen in Cambodia, who fears a "colour" revolution. The fact that the authorities in both countries so fiercely squash any hint of dissent suggests that they, at least, do not think their victory over democratic forces is irreversible. ■



Trade with America

Assessing the pain

HANGZHOU

America says a threatened trade war with China is on hold. Chinese officials still have plenty to worry about

WANG XINGXING taps the back of his dog which, on command, stands tall, shakes its legs and struts forward. It is not a well-trained pooch so much as a well-built one. Laikago, its name, looks like a miniature version of the robo-dogs that propelled Boston Dynamics, an American robotics company, to fame. Mr Wang, a boyish 28-year-old, started work on his dog as a graduate student. It can walk on uneven surfaces, carry small loads and steady itself when kicked lightly.

Laikago is a far cry from the Boston Dynamics breed, which is sturdier, swifter and smarter. That has not stopped China's patriotic media from asking whether the firm Mr Wang founded, Unitree, could now rival the American one. But Boston Dynamics has been at it for more than two decades. Unitree is just getting going. It plans to open its first factory soon. For now it has a cluttered workshop in the city of Hangzhou, a tech hub west of Shanghai.

Unitree is not alone in China. The government has declared robotics a priority. On the other side of Hangzhou, a university research team has also started making robo-dogs. In northern China there are at least three companies doing the same. So, reportedly, is the army. China's robotic technology, by most measures, lags behind America's. But the country has abundant

talent, money and determination. Its robo-dogs are snapping at America's heels.

The pooches also show how a trade conflict with America could hurt China. Mr Wang admits that their most valuable parts—their semiconductors—are mostly made in America. Were the American government to block exports of these to China, Mr Wang's dogs would not work.

The phoney war

That is an extreme scenario. But it is the kind that China's government and companies feel they have to consider as their country's dispute with its largest trading partner grinds on. In the past few days, their fears have ebbed and flowed. On May 20th America's Treasury secretary, Steven Mnuchin, said his country would refrain for now from its threat to impose punitive tariffs. "We're putting the trade war on hold," he told Fox News after two days of talks in Washington with Liu He, a Chinese deputy prime minister. But Mr Trump is unpredictable. He may be mindful of the outrage that Mr Mnuchin's talk has stirred among China-sceptics in Washington. After first declaring success in the negotiations, Mr Trump later said he was dissatisfied. So Chinese officials are still preparing for the worst. And they know that even if this storm blows over, others lie ahead. Ri-

valry with America is getting more intense.

After the talks, the two sides issued a statement pledging to reduce America's \$375bn trade deficit with China "substantially". But the agreement was strikingly light on details. The Americans wanted China to cut its trade surplus by \$200bn. China refused, pledging only to buy more. Later it said it would cut import duties on cars to 15%, but that was well above the 2.5% level the Americans had demanded. Mr Trump boasted that China had agreed to buy "massive amounts" of American farm goods. But this will have a modest impact on the bilateral trade balance. It will not satisfy some American negotiators who have fumed about China's industrial policies, calling them mercantilism gone wild.

The next steps will depend to a worrying extent on Mr Trump's whims. He could claim China's offers, however limited, as a victory. Or he may conclude that Xi Jinping, China's leader, has played him for a fool and fire off a petulant tweet, nudging the two countries' relationship back into crisis and reigniting global fears of a full-blown trade conflict.

It may be that Mr Trump does want to ease tensions with China, but only as a temporary ruse to enlist Mr Xi's support for talks due to be held on June 12th between Mr Trump and Kim Jong Un, North Korea's dictator. Once that event is over (if it actually takes place), Mr Trump could again turn up the heat on China. Trade is one of the few issues on which he is close to consistent. Impervious to economic logic, Mr Trump thinks that America loses when it imports more than it exports. China accounts for about three-fifths of America's trade deficit (see chart 1, next page).

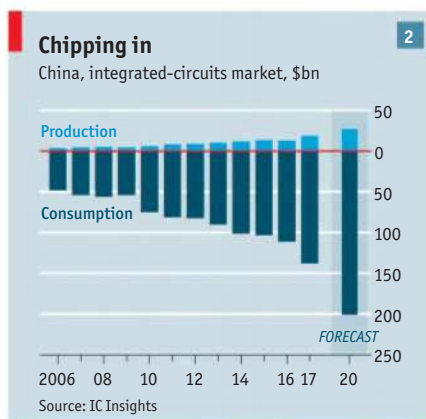
And China is not merely contending ►►

▶ with a truculent Mr Trump and his more hawkish economic advisers. A broad swathe of American opinion has turned against it. Businesses see a China that is determined to prop up its own companies, both at home and, increasingly, abroad. America's national-security officials see a China that is converting economic heft into geopolitical clout and military might. Kenneth Jarrett of the American Chamber of Commerce in Shanghai says that Mr Trump's anger about the deficit has at least helped China to wake up to the depth of foreign frustration. A quick deal in which China pledges to buy more American goods will not ease it.

Leading the charge against China on economic matters has been Robert Lighthizer, the United States Trade Representative. In March, after an investigation into China's trade practices, he alleged that China had, time and again, stolen American technology or forced firms to hand it over. He called on China to stop subsidising industries that it deems strategic, from renewable energy to electric vehicles.

From China's standpoint, this is a non-starter. Its plan known as "Made in China 2025" identifies ten high-tech industries and sets out global market-share goals. For policymakers in Beijing, it is their blueprint for reaching the next level of development—a reasonable desire for a middle-income country, as 19th-century Americans would have agreed. But foreign governments and businesses see it as a declaration of intent to seek global dominance.

The more the rest of the world complains, the more irascible China sounds. Mei Xinyu, a researcher in the commerce ministry, likened America's demands to what are known in China as the country's "unequal treaties" with foreign powers in pre-communist days. The most notorious of these accords was forced on China in 1842 by Britain after a war over British opium sales. It required China to open its doors to foreign trade and cede Hong Kong. State media have been even more colourful than Mr Mei. "Anyone who tries to hinder China's emergence is like a mantis trying to stop a car, or an ant trying to shake a



tree, and will pay a bitter price in the end," said the Communist Party's mouthpiece, the *People's Daily*.

Despite such talk, China worries. There are four main ways in which its economy could be harmed by a trade war with America. The first is by tariffs. Although America has delayed these, they may yet happen. After the talks with Mr Liu, Mr Lighthizer vowed that if China were to fail to change its ways sufficiently, America would use "all of its legal tools", including tariffs, to protect itself. Mr Trump has previously threatened tariffs on \$50bn of imports from China. They would throw sand in the gears of Chinese commerce.

But trade fuels less of China's growth than it used to. Exports to America were the equivalent of nearly 10% of Chinese GDP before the global financial crisis of 2008. Today they are just 4%. China has forged closer ties with many developing countries and cultivated its own domestic market. Moody's, a credit-rating agency, estimates that Mr Trump's initial set of tariffs, valued at \$50bn, would shave only 0.14 percentage points from China's growth rate—a rounding error for an economy that is expected to grow by about 6.5% this year.

A second vulnerability is to what might be called America's industrial policy in reverse. While China steers investment into favoured sectors, America adopts counter-measures. In recent years the Committee on Foreign Investment in the United States (CFIUS), which checks whether deals threaten national security, has blocked Chinese acquisition of firms in industries from semiconductors to payments. The reviews will only get tougher, says Scott Kennedy of the Centre for Strategic and International Studies, an American think-tank. Previously CFIUS focused on the purchase of controlling stakes. New legislation will expand its oversight to any investment, however small, that might help a "country of special concern" (read: China) catch up with America's technology.

Another bill would specifically restrict Chinese investments in the ten sectors targeted by the Made in China 2025 plan. If America does impose tariffs, they would

also mainly focus on these ten industries. Nearly all the proposed duties affect high-tech products such as avionics and medical devices. Low-tech goods that China sells by the shipload would be mostly untouched. He Weiwen, a former diplomat, says that America's goal is not to shrink its trade deficit but to impede China's progress. He has a good point.

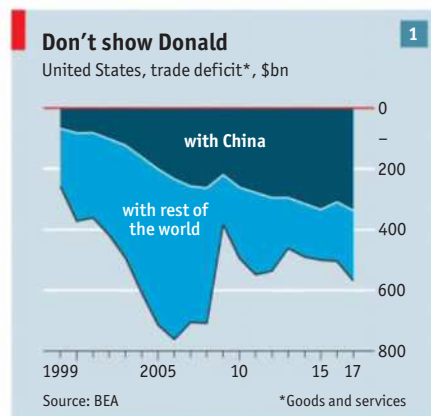
China's third vulnerability is to blocks on American exports. A taste of this was given on April 16th when America punished ZTE, a Chinese telecoms firm, for violating sanctions against Iran and North Korea. The penalty was a ban on American sales of parts to the company. ZTE is a large global business. But around 90% of its products use American parts, especially semiconductors. The ban would render ZTE comatose, said its chairman. In the past few days Mr Trump has appeared to have second thoughts on this. On May 13th he pledged to help ZTE "get back into business, fast". On May 22nd he said there was "no deal", but later suggested it may only have to pay a big fine and change its management. Whatever he is pondering, China has learned a lesson about how tech superiority gives America clout.

A lot to do in seven years

Chinese officials frankly admit that their technology is far from the global leading edge. The Made in China 2025 plan can be read as a confession of backwardness. China's dream of becoming a semiconductor powerhouse stirs fear abroad. But it is far from that today. Its domestic production satisfies only a little more than a tenth of its demand for chips (see chart 2). China produces nearly a third of the liquid crystal displays (LCDs) in televisions and car dashboards. But about 50% of the glass substrate used in its LCDs is made by Corning, an American company. Most of the rest comes from Japanese firms. China uses more robots than any other country. But imports account for 72% of the cost of the more complex ones that it makes.

Still more alarming for China is the way that America can weaponise its financial system. By denying banks access to its market, it can freeze them out of international transactions. American politicians muse about punishing big Chinese banks for doing business with North Korea. To reduce its reliance on the dollar, China wants to make the yuan a global currency. But that would require it to open its financial system to foreigners much more widely than it is now willing to do.

China's final area of vulnerability, and potentially its biggest, is to a united international front. Though a conflict with America would be bad, China could eventually work round it. Since the 1990s America has blocked the export of commercial satellites and their parts to China. But China was eventually able to get what it need- ▶



ed from Europe. Its satellite capabilities have almost caught up with America's. (Mr Wang of Unitree says he could redesign his robo-dogs for use with non-American microchips—Laikago would live.)

It would be far worse for China if other countries were also to turn against it. Governments from Australia to Germany have already started objecting to Chinese investments on security grounds, seemingly emboldened by Mr Trump. "We've become Chinese takeaway in Europe but we can't get a look at their companies in China," says Joerg Wuttke, a former head of the European Chamber of Commerce in China. Twenty-seven European ambassadors to Beijing complained in April that China's Belt and Road Initiative—its massive overseas investment plan—would harm global trade by subsidising Chinese firms. A multi-country alliance against China would "almost be a doomsday scenario", says Edward Tse of Gao Feng, an advisory firm. But he believes one is unlikely to emerge. Mr Trump has a tendency to alienate his country's usual friends.

How could China fight back? Were it just a tit-for-tat tariff battle, America would have the upper hand. America could, in theory, impose duties on its \$500bn-worth of imports from China. China only buys \$130bn of American goods, limiting its scope for retaliation. But it could make the brawl about more than tariffs. It could disrupt the business of American firms in China. The government has form in whipping up consumer boycotts, as South Korean retailers and Japanese carmakers can attest. China is the fastest-growing big market for American companies, from Apple to GM.

If America were to deploy sanctions such as those imposed on ZTE more widely, it would find that China can escalate matters, too. "From zero to 100, anything is possible," says a senior Chinese government adviser. American firms have invested \$250bn in China, according to Rhodium Group, a consultancy (see chart 3). The potential for asset seizures would keep executives up at night. Supply chains would be torn apart. Apple would no longer be able to use China as its main production base



Waiting for the chip to come in

for iPhones. Walmart's shelves would be bare. America's chipmakers would lose half their sales. China could further fan the flames by frustrating Mr Trump's efforts to bring North Korea to heel, or by flexing muscle against Taiwan or in the South China Sea (where it emerged last week that it had, for the first time, landed long-range bombers on a disputed island).

Grim, regardless

Given America's entanglement with China, an all-out trade war would be sheer folly. But even if one is avoided, prolonged strategic competition remains likely. Some analysts say this would involve a tech war or an economic cold war. These terms are misleading. China's integration with the global economy cannot be undone; there is no real way to cut it off as America once did to the Soviet Union. But China's ascent could get much bumpier. It is likely to face more restrictions on overseas investments, more pressure to open its market and more scrutiny of its economic policies. China's options for countering such amorphous efforts are not straightforward.

A complicating factor in China's handling of the trade dispute is nationalism. Advisers have highlighted the risk of going too far to placate foreigners. Zhang Ming of the Chinese Academy of Social Sciences recalls the Plaza Accord, a multinational agreement reached in 1985 under American pressure. It resulted in a soaring yen, arguably leading to Japan's economic stagnation in later years. Mr Zhang says that China must resist such pressure. Going by their unwillingness to yield to America's demands for deficit-reduction targets, Chinese leaders seem to agree.

Their response instead has two planks. The first involves reducing dependence on

foreign technology. The punishment of ZTE has only reinforced their commitment to this strategy. China must "cast aside illusions and rely on ourselves", President Xi said in a speech shortly after the American sanctions against the company were announced. One outcome has been more money for the semiconductor industry. China has nearly finished raising a 300bn yuan (\$47bn) fund to foster domestic chipmakers, its biggest ever.

Officials are aware that excessive government meddling in industry can be counterproductive. China has previously tried but failed to create chipmaking champions. So the state's fund managers are now operating more like venture capitalists. They are spreading cash around and monitoring returns. Much the same is happening in the other industries specified in the Made in China 2025 plan, from biotechnology to aerospace.

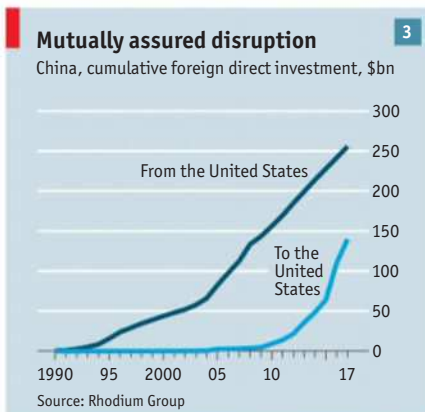
A go-it-alone approach to innovation rarely works. China has been most successful in industries such as high-speed rail, in which it has obtained foreign technology and combined it with domestic know-how. Hence the second plank of China's strategy: winning foreign friends, even if not the Americans. China still needs foreign technology, so is doing what it can to stop antagonism from coalescing.

Diplomatically, it is taking a softer tack. One recent example was its support for a three-way leaders' summit with Japan and South Korea. This was held on May 9th after years of tetchy relations. Chinese negotiators also want to give Mr Trump at least something he can claim as a victory. During the talks in Washington they promised that China would buy more farm goods and oil from America.

China has started throwing juicier morsels at foreign firms, too. It has unveiled a faster timeline for opening its banking industry to foreign investors. It has pledged to scrap limits on foreign ownership of carmakers. It has also been arguing that deals generated by its Made in China 2025 scheme will involve foreign businesses.

These steps alone will not disarm critics. Even with full control of their Chinese operations, foreign companies will encounter regulatory hurdles, written and unwritten. Foreign governments will continue to bristle as well-funded Chinese companies buy up technology. The rivalry that has brought China and America to the brink of a trade war will not abate.

But so long as China can keep enough foreign businesses and governments on side for enough of the time, it will be able to carve out space for its economic rise. Faced with obstructive foreigners, China might well find that the target date of Made in China 2025 is overly ambitious. Yet that will not induce it to give up. Made in China 2035? If that, in effect, were the outcome, China could live with it. ■





Economic statistics (1)

Don't even ask!

Also in this section

57 Data hierarchies

Response rates to household surveys are plummeting. Statisticians, economists and policymakers all have reason to worry

ON A nippy January evening, Clare walks the streets of north London, armed with a file of addresses and maps. She wants to interview people for Britain's Labour Force Survey (LFS), which is the basis for a host of important economic statistics including the unemployment rate. Her job, like that of many surveyors across the rich world, has been getting harder.

Corralling interviewees has always been tough, particularly in London. Clare sometimes feels like a private detective as she befriends porters to enter gated communities. "It was the rule to be welcomed in, whereas now you can't count on it," she says. Of the five doorbells she rings, the most positive answer is that now is "not a good time". Clare is hopeful about the phone call arranged for the following day.

Response rates to surveys are plummeting all across the rich world. Last year only around 43% of households contacted by the British government responded to the LFS, down from 70% in 2001 (see chart). In America the share of households responding to the Current Population Survey (CPS) has fallen from 94% to 85% over the same period. The rest of Europe and Canada have seen similar trends.

Poor response rates drain budgets, as it takes surveyors more effort to hunt down interviewees. And a growing reluctance to give interviewers information threatens the quality of the data. Politicians often complain about inaccurate election polls.

Increasingly misleading economic surveys would be even more disconcerting.

Household surveys derive their power from randomness. Since it is impractical to get every citizen to complete a long questionnaire regularly, statisticians interview what they hope is a representative sample instead. But some types are less likely to respond than others—people who live in flats not houses, for example. A study by Christopher Bollinger of the University of Kentucky and three others matched data from the CPS with social-security records and found that poorer and very rich households were more likely to ignore surveyors than middle-income ones. Survey results will be skewed if the types who do

not answer are different from those who do, or if certain types of people are more loath to answer some questions, or more likely to fib.

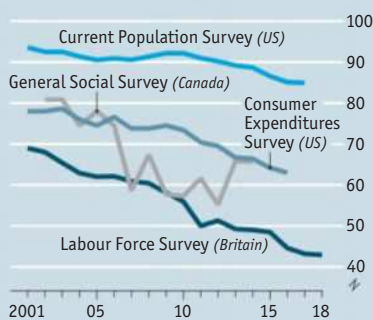
Statisticians try to correct for these problems. They can bump up the weights attached to answers from underrepresented groups, or fill in blanks with imputed answers based on those from similar people. To check, they can compare results from household surveys with official administrative data, such as tax records.

Worryingly, mounting evidence suggests that some of these corrections are failing. A study by Bruce Meyer of the University of Chicago, Wallace Mok of the Chinese University of Hong Kong and James Sullivan of the University of Notre Dame found a widening gulf between the income people declare in surveys and what administrative records suggest.

Research by Britain's Behavioural Insights Team, a research group, has found that the gap between the number of calories that Britons consume and what they report in household surveys widened between 1974 and 2008. Another study by Garry Barrett of the University of Sydney, Peter Levell of the Institute for Fiscal Stud-

Penny for your thoughts

Response rates to surveys, %



Correction: Our piece last week on university rankings asserted that books and non-English-language research papers were not counted. Times Higher Education points out this is incorrect: the database it uses for World University Rankings included 4.6% books and book chapters and 7% non-English research in 2015-18.

ies and Kevin Milligan of the University of British Columbia compared household data with national-accounts data between 1969 and 2010 in America, Britain, Canada and Australia. It found that for every percentage-point decline in the response rate, the share of spending captured by household surveys fell by 0.8 percentage points.

For decades, governments have relied on household surveys to set policy. Besides using them to gauge economic indicators, many rely on them for censuses. In America, the allocation of over \$600bn of federal spending is based on the Census Bureau's estimates of the population. Undercounting even a single person can cost a government programme—in health care, say—thousands of dollars.

Understanding why people shun surveys might help boost response rates. The most common reasons people give for refusing are that they do not care, that they worry about privacy or that they do not have the time. (Clare reports that some non-respondents spend 20 minutes explaining how busy they are.) Another factor could be a weakening sense of civic duty—voter participation has also been falling. Over-surveying may also be to blame: the share of Americans reporting that they had been surveyed in the past year more than quadrupled between 1978 and 2003. Messrs Meyer, Mok and Sullivan speculate that what once “was a rare chance to tell someone about your life, is now crowded out by an annoying press of telemarketers and commercial surveyors.”

Statisticians have been experimenting with methods of improving response rates: new ways to ask questions, or shorter questionnaires, for example. Payment raises response rates, and some surveys offer more money for the most reluctant interviewees. But such persistence can have drawbacks. One study found that more frequent attempts to contact interviewees raised the average response rate, but lowered the average quality of answers.

Statisticians have also been exploring supplementary data sources, including administrative data. Such statistics come with two big advantages. One is that administrative data sets can include many more people and observations than is practical in a household survey, giving researchers the statistical power to run more detailed studies. Another is that governments already collect them, so they can offer huge cost savings over household surveys. For instance, Finland's 2010 census, which was based on administrative records rather than surveys, cost its government just €850,000 (\$1.1m) to produce. In contrast, America's government spent \$12.3bn on its 2010 census, roughly 200 times as much on a per-person basis.

Recent advances in computing mean that vast data sets are no longer too unwieldy for use by researchers. However, in

Economic statistics (2)

Data hierarchies

Administrative records are not available to all

BESIDES brains, the only tools an economist used to need were a pen and notebook. But massive improvements in computing power have turned the dismal science into an increasingly empirical one. Research by Daniel Hamermesh at Royal Holloway, University of London, finds the share of economics papers in leading journals focused on pure theory fell from 58% in 1983 to 19% in 2011.

Three types of empirical papers have taken their place. The first sort feeds on publicly available data, such as household surveys. The second relies on data from experiments, such as randomised controlled trials. Most leading empirical papers, however, now rely on other data, often administrative and acquired through extensive negotiation with government officials. Analysis by *The Economist* of work from the National Bureau of Economic Research finds that at least 28 papers it released last year featured the use of administrative data.

Before 2000 hardly any did (see chart).

Collaboration between professors and governments can yield impressive (if often predictable) results. In March Raj Chetty, an economist at Stanford University, published a paper which linked tax records with survey data and found that white men in America earned significantly more than black men, even after controlling for their parents' incomes.

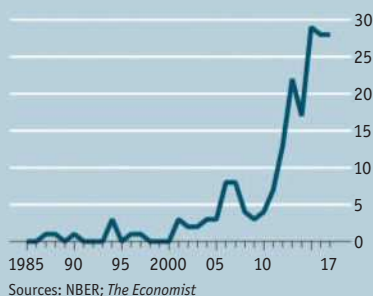
Sharing tax records with researchers can also yield useful policy advice. Arun Advani of Warwick University analysed self-assessment tax records provided by the British government, and showed that tax audits made money for the government by scaring tax cheats into improving tax compliance in future.

But not everyone is happy about relying on government sources. In America economists grumble that prominent researchers are more likely to have the connections needed to obtain such data. In other words, this line of research might widen inequality within the profession, because academic superstars have more opportunities to do celebrated research. So academic economics, like the society its studies, would become a game of who, rather than what, you know.

Moreover, governments, wary of privacy concerns, themselves tend to be cautious about sharing citizens' data. Britain's is still haunted by the memory of the revelation in 2007 that 25m child-benefit records had been lost in the post. So when officials share data with academics, they do so selectively and with plenty of bureaucratic hurdles, often making any resulting research impossible for third parties to replicate.

Administrative work

Number of NBER working papers published with “administrative data” in their abstracts



many rich countries (those in Scandinavia are exceptions), socioeconomic statistics are collected by several agencies, meaning that researchers who want to combine, say, health records with tax data, face formidable bureaucratic and legal challenges.

Governments in English-speaking countries are especially keen to experiment. In January HMRC, the British tax authority, started publishing real-time tax data as an “experimental statistic” to be compared with labour-market data from household surveys. Two-fifths of Canada's main statistical agency's programmes are based at least in part on administrative records. Last year, Britain passed the Digital Economy Act, which will give its Office of National Statistics (ONS) the right to requisition data from other departments and

from private sources for statistics-and-research purposes. America is exploring using such data as part of its 2020 census.

Administrative data also have their limitations (see box). They are generally not designed to be used in statistical analyses. A data set on income taxes might be representative of the population receiving benefits or earning wages, but not the population as a whole. Most important, some things are not captured in administrative records, such as well-being, informal employment and religious affiliation.

When administrative data offer no alternative, household surveys, warts and all, will have to suffice. Statisticians can only fix a biased survey based on other data. And in some cases, the only other source available is another survey. ■



Corporate graft in Europe

Cleaner living

PARIS

Bribery investigations of European firms suggest an old scourge is being tackled

ONE of the more extreme recent cases of corporate bribery is that of Lafarge-Holcim, a giant Swiss-French cement-maker which was accused in 2016 of funnelling money to armed groups controlling roads and checkpoints around a factory in Syria. The firm still cannot be sure who pocketed its payoffs, via middlemen, that were intended to keep its facility running at all costs. The money may well have ended up funding Islamic State terrorists.

The investigation into LafargeHolcim is one sign of a wider change. The era when European firms could talk up lengthy “ethics codes” at home and behave badly abroad is over. Long gone are the days when German law counted bribes paid by the country’s industrial champions as tax-deductible. A spate of scandals in Europe suggest that prosecutors, as well as the politicians who influence how much freedom judicial investigators enjoy, are becoming ever less tolerant of corporate corruption.

Another big firm under pressure is Novartis, a Swiss drugmaker. Since 2016 it has been probed over whether it bribed politicians to help its position in Greece’s drugs market (the firm has conducted an internal investigation). This month it admitted to paying \$1.2m to a firm, Essential Consultants, owned by President Donald Trump’s personal lawyer, after Mr Trump’s election in 2016. The goal, said Novartis’s ex-boss, Joe Jimenez, was to “get out ahead” in understanding Mr Trump’s plans for health care. The firm says the fees were legitimate, though admits that it should have thought harder before proceeding. But investigators

might yet ask if Novartis, and other clients, were buying political access.

A similar question has been put to Vincent Bolloré, one of France’s most successful tycoons, whose sprawling interests range from African logistics to French media. Last month he suffered the humiliation of detention during two days of interrogation in Paris. A close colleague complains that judicial investigators treated him harshly (unusually, Mr Bolloré was reportedly kept in a cell overnight) as they asked if bribes were paid to politicians in Togo and Guinea a decade ago to win contracts to run two ports. Mr Bolloré and his firm deny any wrongdoing.

It is unclear how far that legal process will get—investigators stopped short of pressing formal charges. Yet the much-publicised interrogation of a tycoon who is in-

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Schumpeter is away

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time with France’s political establishment sent a strong message. Germany has taken a tougher line since the shock of Siemens, an engineering giant, having to agree on a \$1.6bn legal settlement in 2008 with American and European authorities for bribery, but France still has a reputation for turning a blind eye to the behaviour of its firms abroad. That is changing. “The French have undoubtedly upped their game,” says a defence lawyer who helps companies accused of white-collar crimes.

New laws are making it harder for European companies to misbehave. America passed its Foreign Corrupt Practices Act (FCPA) back in 1977. Over the years it has ensnared many European firms, whose activities it regulates if they have operations in America or have listed shares or raised debt there. Some of the biggest FCPA fines have been levied against European companies. Compared with America, European governments have pursued relatively few cases in recent years (see chart).

Foreign misadventures

Now local legislation is catching up. A French law, Sapin II, enacted last June, gives courts the jurisdiction to try firms for bribes in third countries, even if no other state has complained. Like Britain’s Bribery Act of 2010 it was shaped by an anti-corruption convention from the OECD, a club of rich countries, agreed on in 1997.

European-level laws on money-laundering, and new rules such as MiFID 2, an EU directive for financial firms that came into force this year, also shape new habits, for example by making firms publish who gets paid for what services. Organisers of fancy events such as this month’s Chelsea Flower Show, in London, already blame MiFID for companies sending fewer guests their way. European rules are soon likely to outlaw anonymously owned firms, used as shell companies for hard-to-trace transfers of funds. Britain, which already bans such anonymous firms, is set to extend the

Grease payments

Corporate foreign-bribery schemes punished 1999-2014



► law this month so that it applies to several overseas territories.

As important as new laws, anti-corruption activists say, is the readiness of investigators, prosecutors and others to enforce them. Politicians' actions count here. Since the financial crisis, voters are less likely to view graft as an acceptable cost of doing business abroad. Among the first acts of Emmanuel Macron after becoming president of France a year ago was to pass another anti-corruption law aimed at politicians and officials.

Non-governmental groups are becoming more assertive, too. LafargeHolcim's

case erupted, for example, after investigations by Sherpa, a legal activist group, and *Le Monde*, a French newspaper. In Italy Global Witness, a London-based activist group, and others did much to generate evidence now being used against Eni and Shell, two oil-and-gas titans. They are being prosecuted for alleged bribe-paying in Nigeria in 2011 (both firms deny wrongdoing). So many people, including figures from Nigeria's government, attended the initial hearing in a cramped court in Milan on May 14th that the judge quipped "next time we'll have to get a bigger room".

Among the 15 defendants are the cur-

rent boss of Eni and some former bigwigs from Shell. Putting pressure directly on individual bosses and executives is no accident. Senior management often know when decisions are made to pay bribes. A study of 427 corporate corruption cases published by the OECD in 2014 found that the CEO or other high-ranking staff knew about decisions to pay bribes in 53% of the cases. And being in the spotlight changes things. "What matters are the incentives for you personally," argues Robert Barrington, head of the British bit of an anti-corruption group, Transparency International. Personal shame, or the prospect of ►►

Bartleby | Labour of love

Our new column on management and work

WORK is like a capricious lover whose incessant demands are resented but who is missed terribly when they are not there. The relationship is long-term; an average person spends more than half their life at work. Work defines people's social status, sets income levels and generates a circle of friends.

Attitudes to management, as to work, are double-edged. The modern economy has become immensely complex. Coordinating the production of goods and services across international supply chains represents a huge achievement. Becoming a manager is usually seen as a promotion, yet the role of a "middle manager" is often despised as a useless layer of bureaucracy. Workers simultaneously blame managers for not providing enough leadership and for interfering too much with their daily tasks.

For their part, managers desperately want to improve their performance. Enter "management books" as a search term on Amazon and you get more than 100,000 results. Budding executives solemnly learn the buzzwords of the profession to give their pronouncements greater authority and conviction, like trainee priests memorising the liturgy.

Management at all levels is probably more difficult today than ever before. Activist investors harass firms that underperform profit and share-price targets. Pressure groups want them to conform to higher standards of corporate governance, environmental sustainability and employee well-being. News of a product fault or customer complaint can swiftly reach millions of people on social media.

So this seems an ideal moment to launch our new column on management and work. Some of the biggest issues in economics concern the nature and organisation of work. What explains the re-



cent slowdown in productivity growth in the developed world, and how long will it last? One possibility is that managers have focused too much on short-term profit targets, not enough on long-term investment.

Technological change is a massive threat to both managers and workers. Businesses fear the arrival of a low-cost competitor on their patch, causing the sort of disruption that they have already witnessed in retailing and the media. Workers, too, worry that their job will be the next to be automated, a threat that has shifted from the factory floor to middle-class jobs in accountancy, law and finance. The danger is that the future labour market will have a very few high-paying jobs and a lot of lower-tier roles satisfying the demands of the cognitive elite.

The rise of the "gig economy" means that, for many people, employment no longer entails a nine-to-five job in a factory or office with a single employer. Instead, they find themselves in a version of the old "putting out" system in which textile workers worked at home, conducting specific tasks for a piece rate. Those who do trek to an office or warehouse may find them-

selves monitored more than ever before, thanks to artificial intelligence and facial recognition. Future workers may be able to enjoy income security or personal freedom, but not necessarily both.

One thing seems certain. Big changes to how people work, and the way businesses are managed, are bound to occur. Electric power was first developed in the 1880s, but industry took 40-50 years to adapt fully to the new technology. The biggest impact of the internet and greater computing power is probably yet to come.

In the short story by Herman Melville from which our new column takes its name, Bartleby was a scrivener—a dying art, nowadays. When hired, Bartleby at first worked extremely hard at his job, copying and checking documents. But suddenly one day, asked to perform a task, he replied: "I would prefer not to." His manager pleaded, remonstrated and threatened him. But the scrivener simply repeated the same five words, with no explanation for his conduct. Later Bartleby started sleeping in the office, refusing either to leave or to undertake any work at all. His exasperated manager eventually moved office to escape Bartleby's melancholy presence.

This enigmatic tale can be interpreted as an essay on management failure; the unnamed narrator fails to find a strategy that can motivate his employee. Or it can be seen as an act of human rebellion. Bartleby fails to acquiesce in carrying out his humdrum, tedious tasks. So this column will concern itself with the plight of managers, as they attempt to understand what makes their workers tick. And it will also empathise with the plight of Bartlebys, as they deal with the mundanity of working life and carry out their bosses' often bewildering orders, even when they would "prefer not to".

prison, are powerful deterrents, he says.

On the face of it, anti-bribery pressure on European firms should increase further still. America's regulators will surely continue imposing big fines. A Nordic telecoms firm, Telia, was fined nearly \$1bn last September, for example, after an investigation by American and Dutch prosecutors into bribery in Uzbekistan.

Striking, too, are efforts in some emerging countries to hold Western firms to account. A spokesman from Thales, a French defence firm, says it will "continue co-operating with local authorities" in South Africa, for example, over a newly restarted investigation into bribes allegedly paid by a subsidiary (it denies doing so) over an arms deal involving Jacob Zuma, a former president. Malaysia's new government has just begun fresh probes into 1MDB, a state development agency from which \$4.5bn mysteriously went walkabout.

Authorities in some places have been increasing incentives for firms to "self-report", handing over some of the job of policing to firms themselves. In 2016 Airbus, Europe's aerospace giant, reported itself to Britain's Serious Fraud Office (SFO) and to French authorities for lying to export-credit agencies about bribes given by consultants; it may end up paying as much as \$3bn in fines—but could otherwise have faced a higher fine or even prosecution.

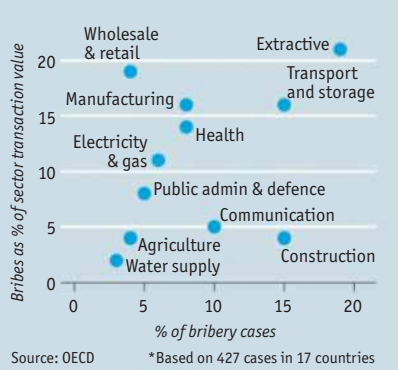
The SFO has also made enthusiastic use of "deferred-prosecution agreements" (DPAs) since 2014, following their widespread use in America. These let firms negotiate to suspend a prosecution if they pay a fine and co-operate with other investigations. Rolls-Royce, a British engine-maker, for example, reached a DPA in 2017 under which it paid about £500m (\$666m) to settle bribery allegations. Critics say such agreements let firms off too lightly, but they do have an effect on behaviour.

Not that anti-corruption activists are relaxing. A "really positive trend right across Europe" in the past few years could yet be reversible, worries one. Nationalist politicians are a risk. Mr Trump, for example, talks of helping national corporate champions abroad and has called the FCPA a "horrible law". In November he took America out of the Extractive Industries Transparency Initiative, a 15-year-old global standard against corruption in managing revenues from oil, gas and mineral extraction, which is common (see chart).

Britain is another worry. Some fear that, despite its crackdown on Russian oligarchs, the country may back-pedal on fighting corruption out of desperation to show the economy can thrive after Brexit. The recent overseas-territories amendment on shell firms was opposed by the government. Theresa May, the prime minister, and her ruling Conservative Party made a manifesto promise in 2017 to fold the SFO into the National Crime Agency,

Cash extracted

Foreign bribery* of public officials by industry
1999-2014



which activists and lawyers say would be a big step backward. A candidate to take over from the SFO's outgoing head, David Green, has in the past backed that course.

Western firms in the mining and oil-and-gas industry meanwhile grumble that rivals from China, Russia or elsewhere have "advantages" bidding for contracts in, say, parts of Africa, as they face few limits on bribe-paying. A French business body, MEDEF, says competitors are not subject to the same rules as Europeans. If such complaints grow loud, pressure not just to stand still on anti-bribery standards but actually to lower them could return. "I fear that we may be at a peak of anti-bribery efforts," says Mr Barrington, worried that weaker political leadership on the issue in the West will have a knock-on effect that will only be seen in time. Even if staff at European firms never again pay off armed factions in civil wars, there is always scope for standards to fall again. ■

Executive pay in America

Hitting pay dirt

New disclosures of the gulf between bosses' and workers' pay

HOW much should company bosses be paid relative to their employees? It depends who you ask. Plato argued that the richest members of society should earn no more than four times the pay of the poorest. John Pierpont Morgan, a banker from America's gilded age, reckoned that bosses should earn at most 20 times the pay of their underlings. Investors today hold chief executives in vastly higher esteem. According to new filings submitted to the Securities and Exchange Commission (SEC), America's largest publicly listed firms (those worth at least \$1bn) on average paid their chief executives 130 times more

than their typical workers in 2017. The figures are being disclosed by firms in their financial filings for the first time this year.

The SEC's new requirement to quantify the gap has its origins in the financial crisis. Facing populist outrage over the pay packages of Wall Street executives held responsible for triggering the crash, Congress added a provision to the Dodd-Frank act, a financial-reform law, that required listed firms to report the annual compensation of their chief executives, that of their median employees, and the ratio of the two.

In the five years of rulemaking that followed, corporate behemoths like General Electric, an industrial conglomerate, Johnson & Johnson, a pharma firm, and AT&T, a wireless and pay-TV giant, lobbied hard against the new disclosure rule, arguing that it would be costly for firms to implement and would provide little new information to their investors. Supporters of the reform countered that the disclosures would help shareholders to evaluate CEO compensation. Debate over the rule grew so fierce that the SEC, which was charged with implementing it, received over 287,000 comment letters.

An analysis by *The Economist* of filings submitted by over 700 large public companies shows that the pay ratios should not be taken at face value. Across the companies in our sample, which paid their chief executives a median salary of \$9m and their rank-and-file employees a median of \$69,000, ratios are heavily influenced by factors such as company size and industry. Whether a company relies on foreign, part-time or temporary labour can also skew the results. Marathon Petroleum, for example, reported an industry-topping pay ratio of 935:1. As the company pointed out, however, after excluding its retail outlets (which other oil refiners do not have), the figure drops to 156:1. If you control for such factors, much of the remaining variation in pay ratios is driven by levels of chief executive pay alone, a metric which has been disclosed to investors for years.

Interest in the pay ratios among investors has been fairly limited. "We haven't really seen institutional shareholders take note of this disclosure," says Steve Seelig of Willis Towers Watson, a consultancy. Yet shareholders can glean some insights from the disclosures, such as comparing ratios for similarly-sized firms in the same industry. The pay ratio of American International Group (AIG), for example, is more than three-and-a-half times as large as that of MetLife, a rival insurance provider. That of PepsiCo, a drinks giant, is nearly three times bigger than that of Coca-Cola (see chart on next page).

And research suggests the information can be valuable to investors. A paper by Ethan Rouen of Harvard Business School finds that large, unexplained disparities in pay tend to be associated with poorer com- ►►

Who gets what

Ratio of CEO pay* to median employee pay, selected Russell 1,000 companies, 2017



Sources: US Securities and Exchange Commission; The Economist

*Including stock options

pany performance. According to Mr Rouen, pay differences within firms may lead to feelings of resentment among lower-level employees, which may in turn cause some to shirk or to leave. Another paper, by researchers at Rice University, Texas Christian University and the University of Houston, finds that banks with massive ratios of boss-to-worker pay tend to receive fewer votes of support from shareholders on executive-pay packages.

Politicians will certainly find ways to make use of the data. In 2016, in anticipation of this year's disclosures, lawmakers in Portland, Oregon introduced a 10% busi-

ness-tax surcharge on firms with pay ratios greater than 100:1 and a 25% surcharge on those with ratios above 250:1. Lawmakers in at least six states, including California, Illinois and Massachusetts have considered policies of this sort, too.

Such laws would, however, be impossible to implement if the pay-ratio rule is scrapped. In October, in response to an executive order from President Donald Trump to review America's financial regulation, the Treasury called on Congress to do just that, writing that the information is "not material to the reasonable investor for making investment decisions". ■

Tesla

Plugging away

As Tesla's share price falls, it becomes a more inviting takeover target

A RECENT tweet from Elon Musk, the boss of Tesla, an electric-car firm, shows footage of a Model x undergoing rollover testing. The SUV is propelled rapidly sideways on a trolley before encountering a sand trap that stops it suddenly, tipping the car. The Tesla teeters between ending up on its roof or settling back on its wheels. It is an apt metaphor for a firm hovering between fulfilling its promise and succumbing to financial woes.

In April Adam Jonas of Morgan Stanley, a bank, said the next three months would be the "most critical time in Tesla's history" since launching its upmarket Model s six years ago. The move from a niche in expensive electric cars to bringing battery power to the masses has been troublesome, to say

the least. The firm had once hoped to be making 10,000 of its cheaper Model 3s a week by the end of 2018. But difficulties with a highly automated production line mean that just over 2,000 are rolling out of the factory each week. Even a revised goal of 5,000 looks distant.

As a result, cash is draining away. So are top executives. Around 20 have departed since the start of 2017. Crashes involving the firm's Autopilot self-driving system have put dents in its reputation. It all appears to be weighing on Mr Musk. On May 2nd, in a peculiar earnings call, he dismissed sensible questions from Wall Street analysts about production problems and cash burn as "dry", and labelled one analyst asking about Tesla's need to raise mon-

ey a "boring bonehead".

The stream of bad news has hit Tesla's shares, which have fallen by 28% from their peak in September 2017. Several stock analysts reckon the firm will soon run out of cash and will need to raise another \$2bn or more this year. Goldman Sachs, a bank, goes further, estimating that introducing new products such as the Model y, a smaller SUV, and an electric lorry, together with refinancing debt, will require raising \$10bn by 2020. The bank adds that its production problems could see Tesla's shares slide by around a third over the next six months.

Tesla is still more valuable than Ford, but if the slump continues it could become an inviting target. The question then is, for whom? An existing carmaker could put right Tesla's difficulties in churning out Model 3s to satisfy the more than 450,000 people who have put down a deposit. A few years ago, before Tesla's share price soared, rumours circulated of a bid from one of the German premium carmakers. But now all of them have competing cars in the works. A mass-market firm which has made less progress on electrification, such as Fiat Chrysler Automobiles (whose chairman, John Elkann, sits on the board of *The Economist's* parent company), might be interested if the price were sufficiently low.

A big technology firm might also be a suitor. Apple was once said to have an eye on Tesla, before hatching and then abandoning plans to make cars itself. It is under pressure to find a new hit product, is developing autonomous technology and has pockets deep enough to buy Tesla even if the share price takes less of a tumble than many expect. Waymo, the self-driving car unit of Google, might also want to own hardware to complement its own autonomous-driving software.

China's tech titans may regard it as a desirable asset, too. Both Tencent, which already has a 5% stake in Tesla, and Baidu are investors in NIO, one of the more plausible contenders among a slew of Chinese-backed competitors such as Faraday Future and WM. Along with Alibaba, Chinese firms are putting large sums into developing electric vehicles, autonomous driving and mobility services. Japan's SoftBank also has plenty of cash, likes investing in more mature tech businesses and encourages synergies among firms in its stable. As these include Uber and Didi, two ride-hailing firms, Tesla would be a useful addition.

Or perhaps Mr Musk could realise another plan. "I wish we could be private," he told *Rolling Stone* in November. If Tesla were cheap enough, perhaps SpaceX, his private rocket firm, could acquire it much as in 2016 Tesla bought SolarCity, a struggling energy business that also counted him as its biggest shareholder. Tesla might need to rein in its ambitions if it went down this path. But Mr Musk would get some respite from bores and boneheads. ■

Gazprom in Europe

Out of the frying pan

And into America's line of fire

FEW firms have more power to heat up the cauldron of global geopolitics than Gazprom, the state-backed Russian energy producer. It supplies more than a third of the natural gas that Europeans use for power generation, heating and cooking, creating what many—especially Americans—see as an unhealthy dependence (see chart). It has used its strength to bully countries which are out of favour with the Kremlin, such as Ukraine and Poland. And it is engaged in a growing rivalry with American exporters of liquefied natural gas (LNG) to Europe and China, a competition which potentially adds to the world's trade tensions.

The firm also revels in its bad-boy image. When its boss, Alexei Miller, was put on an American sanctions list in April because of his ties to President Vladimir Putin, he said: "Finally, I've been included. It means we are doing everything right." In February it described to investors in a presentation slide how its gas exports to Europe were like a big cup of tea. America's LNG exports to the continent, in contrast, were depicted as a couple of drops of water only visible under a magnifying glass.

Gazprom has reason to feel cocky. Back in 2014, as a result of the Ukraine crisis, it scrapped some pipeline deals to Europe amid tumbling export volumes. It also appeared to pivot east, announcing a \$55bn pipeline investment to provide gas to China; the taps are due to be turned on next year. But since 2016 its supplies to Europe have surged to record levels, thanks to falling coal use in Europe, less natural-gas production in the Netherlands and a robust revival in energy demand.

Regulators may give it a further boost. As *The Economist* went to press, Gazprom was expected to settle a long-standing dispute with European trustbusters, who have accused it of hindering the free flow of its gas in eight central and eastern European countries and of charging customers too much. The agreement is likely to come with strings attached, such as a commitment by Gazprom to provide more market-driven pricing and to allow purchasers to sell on its gas to others. But that could also make its gas even more attractive to customers, says James Henderson of the Oxford Institute for Energy Studies, a research body. With cheap gas plentiful in Russia and the rouble weak, the main constraint it faces in supplying yet more gas to European customers is the lack of spare pipe-

line capacity.

That is why the Russian firm has agreed with five other European energy companies—Engie, OMV, Royal Dutch Shell, Uniper and Wintershall—to double by next year the size of its undersea supply route to Germany through the proposed Nord Stream 2 pipeline, which will cost \$11bn. It also plans a new Black Sea route to Europe via Turkey called TurkStream. After a tribunal ruling in Stockholm in February that left Gazprom owing more than \$2.5bn to Ukraine's energy company, Naftogaz (money due because Gazprom defaulted on a 2009-19 contract to supply minimum amounts of gas to Naftogaz, depriving it of transit revenue), it has scrapped plans to restart exports to Ukraine. It has issued threats in the past to terminate its supply and transit contracts with the country.

But that is where the American government could disrupt Gazprom's streak of luck. Trump administration officials have threatened to impose sanctions on companies taking part with Gazprom in Nord Stream 2, worrying that this will strengthen Russia and leave Ukraine more exposed. They have also reportedly sought to force Germany to drop the project as part of ongoing negotiations on metals tariffs.

Russia suspects—probably rightly—that Mr Trump has specific energy goals as well as geopolitical ones. It says his government is trying to block the Nord Stream 2 pipeline in order to sell more American LNG to Europe. "Donald is not just the US president, he is also...promoting the interest of his business, to ensure the sales of LNG into the European market," Mr Putin said.

Perhaps in a sign of compromise, Mr Putin and Angela Merkel, Germany's chancellor, have agreed that Gazprom gas should continue to flow via Ukraine. The flow could be lower than previously, but Mr Henderson says continued transit via Ukraine could provide Europe with important alternatives, whatever happens to the other proposed pipelines. As for Nord Stream 2, he says the rising geopolitical temperature may delay it. "But not for ever." Gazprom has too much muscle to be thwarted altogether. ■



Privacy and advertising

GDParrgh...

Who will be the main loser from Europe's new data-privacy law?

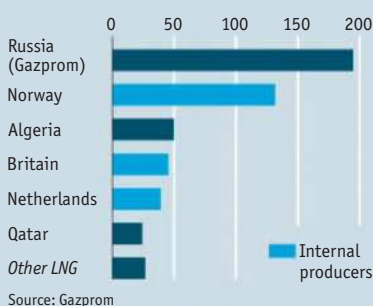
"PLEASE don't leave us." From the dozens of e-mails in people's inboxes, begging them to give their consent to be sent further messages, you could deduce that the senders of newsletters and the like are hardest hit by the European Union's tough new privacy law, the General Data Protection Regulation (GDPR), which goes into effect on May 25th. But the main loser may well be an industry that few have ever heard of but most have dealings with every day: advertising technology, or ad tech. In fact, the GDPR would probably not exist at all were it not for this collection of companies, which have an insatiable hunger for personal data.

Ad tech emerged because advertising is the internet's default business model. Since targeted ads tend to be more efficient and targeting requires personal data (sites previously visited, searches in online stores and the like), these data became the fuel of a new industry to automate online advertising. It is so complex that even experts often resort to what is known as "LUMAScape", a collection of maps of the business packed with logos put together by Luma Partners, a bank. It lists hundreds of firms in 18 different subcategories.

One cause for this fragmentation is the generosity of over-optimistic venture capitalists, who have backed even the most unlikely ad-tech ideas. Another is the nature of the beast: many cogs have to mesh to match people and ads in real-time. The fact that personal data are widely shared with lots of companies creates even more busi- ►►

Put that in your pipe

Europe, natural-gas suppliers, 2017
Cubic metres, bn



ness complexity—but also makes the system a favourite target of privacy advocates.

Yet the “ad-tech bubble” has been deflating for some time, says Brian Wieser of Pivotal, a research firm. The industry thought that consumers would welcome “relevant” ads, but as these got more intrusive and creepy, people reacted by installing ad-blockers. Both Facebook and Google, ad-tech ecosystems unto themselves, have grabbed ever more ad dollars, leaving slim pickings for rivals. As a result, the industry was already consolidating.

The GDPR will speed up the process by, in effect, assigning a value to personal data. Under a realistic reading of the GDPR, most ad-tech firms will need consent from individuals to process their data. This will be hard, since most have no direct relationship with consumers. And even if they do, people are unlikely to approve being tracked across the web; only 3% would opt in, according to Johnny Ryan of PageFair, an ad-tech firm critical of the industry.

Reactions to GDPR have varied. Some ad-tech companies have pulled out of Europe. Others think they can get away with claiming “legitimate interest”, which is another legal basis for processing personal data allowed by the GDPR—an optimistic interpretation, and one that is likely to become obsolete with the ePrivacy directive, another privacy law the EU is working on. For its part, the European arm of the Interactive Advertising Bureau, a lobbying group, has released technical standards to ensure that an individual’s consent or the lack thereof is communicated across the advertising supply chain.

Another tack is to try and use the GDPR to improve companies’ position in the market. Google has told all the websites and apps that use its ad-tech tools that they must get people’s consent. It also says that if they use its consent tool, they must limit their use of other ad-tech vendors. That has publishers up in arms. They worry it will make Google an even more dominant force in the online advertising market. Instead, they harbour hopes that the GDPR will end up helping them. The rise of ad tech meant that advertisers no longer targeted websites and apps, but people. If the law makes individual targeting more difficult, publishers will regain some control of customer relationships, says Jason Kint of Digital Content Next, a publisher group.

Early signs suggest that the ad-tech industry may indeed be turning away from individually targeting people, and not only in Europe. Google, for instance, has said it will offer ads that are less targeted at particular individuals. A group of media companies has launched Trustx, a non-profit ad exchange which does not allow people’s data to be shared by lots of other firms. If the GDPR strengthens this trend, consumers will breathe easier online—and not just because their inboxes will be emptier. ■

Tailors of Pyongyang

Outsmarting the fashion police

PYONGYANG

Tailoring shops are a thriving pocket of enterprise in North Korea’s capital

WALK down the streets of Pyongyang, North Korea’s capital, and at first sight the passers-by look rather uniform. The women are in tidy skirt suits and medium-high heels. The men sport variations on the theme of the jacket and wide trousers preferred by Kim Jong Un, the country’s leader. Government-mandated lapel pins with portraits of one or both of Mr Kim’s predecessors continue to be ubiquitous. But look closer and a wealth of individual variations can be seen, particularly among the women: some bright-coloured lace stitched onto a jacket here, a daringly cut skirt in a sparkling satin material there.

Although fashion from China and even from—Kim forbid—South Korea is increasingly making its way to the markets of Pyongyang, many of these flourishes are the work of the city’s own tailors. They may be only a small subset of North Korea’s textile industry—which accounted for around 30% of exports before being hit by sanctions last autumn—but they are one of many emerging shoots of private enterprise in a country which officially bans such activities. Unlike the bigger textile factories along the border with China, which send their output to global markets under “Made in China” labels, Pyongyang’s tailoring businesses cater to locals. Many are run by women and have only a handful of employees. Most are officially affiliated with state-run textile firms and must pay these a share of profits, but operate largely independently.

The tailors are responding to demand from a small but growing customer base. An increasing number of Pyongyang’s

residents are comparatively flush financially, either because they belong to the political elite, or are involved in semi-official private enterprise, or both. They are keen to distinguish themselves from their peers. “If you buy clothes in a shop you just have the same as everyone else,” says one woman whose sister sketches the designs she takes to the tailor. “That’s boring. I want to look different.”

A few years ago such a remark might have got a budding fashionista in trouble. Deviating from the officially approved look of either traditional Korean clothing or dark, loose-fitting suits and flat shoes for women was long interpreted and punished as political dissent. Blue jeans, associated with America, are still out. But although Mr Kim’s regime continues to crack down on more overtly political expressions of individuality, fashion is increasingly tolerated.

Stylishness does not come cheap. Customers report that prices at the city’s better-known tailors, who develop their own brands and sometimes even run advertisements on local television, range from \$8-50 for a shirt and start at around \$100 for a suit. That is significantly pricier than off-the-peg clothes in Pyongyang’s mid-range department stores or in informal markets. The fabric, which locals say tends to come in from China or elsewhere rather than from domestic factories, accounts for a large portion of the cost. But imports can bring excitement. “Once they got a batch of cloth in from England,” says one woman, her eyes glinting. Never mind that the label may well have been faked: the other side of the world seems suddenly closer.



No ordinary fashion statement



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Company audits

Great expectations gap

Accountants are under fire. One question transcends others: what is an audit for?

AUDITS get noticed only when things go wrong. Last week British MPs issued a scathing attack on KPMG, an auditor, for failing to avert the collapse of Carillion, a contracting company. South African authorities are looking into Deloitte's audit of Steinhoff, a retailer. PwC, another auditor, could face a court-damages verdict for hundreds of millions of dollars for not spotting fraud at Colonial Bank, a failed American lender. It is also fighting a \$3bn lawsuit in Ukraine and a two-year ban in India.

Investors are also waking up to audits. They almost never vote against management's choice of auditor. But last month over a third of shareholders at General Electric, an industrial conglomerate, voted against the reappointment of KPMG. Investors in Steinhoff are suing the company and Deloitte for \$5bn for their losses.

These actions challenge an industry dominated by four big firms: Deloitte, EY, KPMG and PwC. Between them they earned \$47bn from auditing most of the world's largest firms in 2017, and \$87bn more from selling consulting and tax advice. Regulators have tried to increase competition and limit conflicts of interest. But auditors argue that another problem is being ignored: that lawmakers, investors and courts all disagree about what an audit should be. They worry that they are being seen as providing insurance against corporate failure. Repeated large payouts

could erode quality, they say, and even threaten the viability of the big firms.

Developments in auditing have always been driven by corporate scandals. Until the mid-19th century investors used to look over the books themselves, checking that directors were not frittering away their capital. After a spate of accounting fraud during Britain's railway mania, investors turned to professional accountants to do the job. The stockmarket crash in 1929 led to laws requiring listed firms in America to be audited. Scandals in the 2000s took down Enron, WorldCom and their auditor, Arthur Andersen. That led to more regulation intended to protect auditors' objectivity, which comes under pressure because of limited competition and because they are paid by the firms they scrutinise, rather than the investors they serve. The tighter rules have had some success: measures of audit quality are improving.

But as Carillion shows, things can still go badly wrong. Incensed British MPs have called for a competition review to consider whether the Big Four in Britain should be broken up. The firms are braced for trouble. But they also argue that they cannot always get things right. People think of auditors as charged with seeking out fraud and failure, says Andrew Gambier from the Association of Chartered Certified Accountants, a trade body. But today's professional standards set out a more limited role. Audi-

tors give an opinion on whether the accounts are a "true and fair" representation of reality; they consider the risk of fraud, but do not hunt it down.

Robin Litjens from Tilburg University says there are several good reasons why failures may not always be detected. For one, a company's books are so vast that audits can only realistically assess a sample of transactions in selected markets. Auditors hope that better data-analysis techniques should allow for larger samples and better anomaly detection. But for now, for large firms, looking at less than 5% of transactions is not unusual.

Similarly, auditors look only for errors that are "material" compared with profits or assets. The threshold is often in the range of 0.5% to 10%. These limitations might help explain why, according to the Association of Certified Fraud Examiners, auditors picked up only 4% of occupational fraud in 2017. Although some firms offer more forensic audits, they cost so much in time and money that companies choose them only if they already suspect wrongdoing.

Below the line

Another reason audits cannot offer any guarantees is that, despite involving numbers and spreadsheets, they are subjective. Accounts contain plenty of assumptions, for example concerning provisions for uncertain future payments. Auditors must use their judgment to decide if those assumptions are reasonable. They could be wrong, sometimes because of information that emerges after the audit is complete.

Other parts of the expectations gap are, however, in their power to close. Auditors complain that they are judged solely on the few audits that go wrong. Of the 93,000 done in Britain alone each year, they say, ►►

most are uneventful. In a handful, they may even have spotted fraud or mismanagement. These are shared with regulators, but not widely publicised, says David Sproul of Deloitte, because auditors are reluctant to provoke stockmarket volatility. “They are not equity analysts.”

Yet investors are clamouring for just such information. Rules in many countries, which also come into force in America next year, require auditors to elaborate on the main risks to their audit opinion. That helps, says Liz Murrall from the Investment Association, a trade body for British asset managers. Many investors

would like also to hear how auditors challenged the management’s judgments. Others want auditors to go beyond financial statements to assess companies’ projections for sales and profits.

Natasha Landell-Mills from Sarasin & Partners, an investment firm, compares the audit to a homebuyers’ survey. It may not guarantee there will never be a leak, but it should give reasonable assurance that there are none. She wonders if some auditors are skipping the most basic checks. According to the International Forum of Independent Audit Regulators (IFIAR), a group of national authorities, two-fifths of audits

worldwide that are inspected are found to be flawed. Some auditors are not even sure about their responsibility to consider fraud. On top of that, they have been given free rein over their professional standards.

Reconciling all these views requires rethinking the purpose and scope of statutory audit. Brian Hunt, the head of IFIAR, agrees that audits need modernising so that they stay relevant to investors and help align expectations. But getting everyone involved, including regulators, standard-setting bodies, investors, companies and auditors themselves, to agree on what needs to be done is so complex that no one

Buttonwood | The rule of three

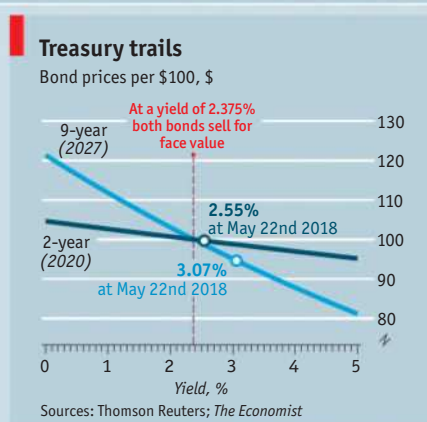
Why even bears about the government-bond market can find merit in Treasuries

JOHN KENNETH GALBRAITH, a quotable economist, observed that one of the deeper mysteries is why, in a falling market, there is still a buyer for every seller. It is a conundrum that bond investors must now contemplate. Since January the yield on a ten-year Treasury bond has risen (and thus bond prices have fallen) with scarcely a backward step. It is above 3% for the first time in years.

In part, the fall in bond prices reflects a growing acceptance that the Federal Reserve will raise short-term interest rates to 2.75-3% by the end of 2019, as its median rate-setter expects. In part it reflects worries that tax cuts and rising oil prices will fuel higher inflation. And there is anxiety that the supply of Treasuries is about to increase (in order to pay for tax cuts) just as buyers may become scarcer. The Fed itself is running down its holdings. The higher cost of hedging currency risk in dollars is putting off some foreign buyers.

If sellers outgun buyers, prices will continue to fall. Who then will buy? Actually, there is a large class of investors for whom long-dated Treasuries have an almost unique virtue. It may even include people who believe that 3% is far too low for a sensible long-term interest rate. It consists of holders of other, riskier assets, such as stocks, houses or high-yield corporate bonds, who wish to hedge against falling prices in the event of a recession.

There are other ways to insure against a crash than buying bonds. You might buy Japanese utilities—“the most boring stocks in the most defensive currency”, says Robert Buckland, a strategist at Citigroup. For investors willing or able to take a short position (ie, to sell borrowed assets in the hope of falling prices), Andrew Sheets of Morgan Stanley suggests an index of junk-rated property bonds, the price of which may not rise much further



in a growing economy but would fall fast in a shrinking one. Still, buying Treasuries is less fiddly for no-nonsense investors. And this insurance policy pays 3% a year.

Yields on government bonds now compare favourably with the paltry dividend yields on stocks or with rental yields on prime city property. But why buy a volatile ten-year (or nine-year) bond with a mere 3% yield? Why not instead buy a two-year Treasury, yielding 2.6%? That is a slightly lower return, but a surer bet. After all, securing good returns with the lowest risk is supposed to be the art of investing.

The answer is that long-dated bonds offer the prospect of a bigger capital gain should recession strike. The chart explains why. It shows the relationship between price and yield for a two-year bond and a nine-year bond. The slope of the line—how much price changes as interest rates rise or fall—is much steeper for the nine-year bond. That is because a change in interest rates must be discounted over a longer period than for the two-year bond. The gradients of the two lines are determined by each bond’s “duration”. This is a measure of the bond’s lifespan, which takes into ac-

count that some of what is due to bondholders (the annual interest) is paid before the principal is paid back on maturity. The duration for the 2027 bond is 8. So for every one percentage-point change in interest rates, its price changes by 8%.

The two-year bond offers a narrow sort of diversification. A true diversifier pays off when you really need it—when trouble strikes. In bad times the scope for fiscal stimulus in America would be limited by an already large budget deficit. The Fed would cut short-term rates, perhaps to zero. It might start buying bonds again. Investors would rush to the safety of Treasuries. Ten-year yields could plausibly fall to 1% or so. Those who had bought at yields of 3% would secure a 17% capital gain. Not only would that cushion a fall in the price of stocks, it would provide the means to buy them while they are cheap.

In a world without mystery, buyers of bond insurance would wait until prices stopped falling. A few investors may be able to sense the bottom of a market, but it would not be wise to assume you are one of them. If ten-year yields rise by half a percentage-point, it would mean a capital loss of around 4% but the 3% interest would almost offset it. A net loss of 1% is not a terrible price to pay for insurance.

If yields go a lot higher, the losses would be greater, of course. A surge above 4% might well prompt a brutal repricing of stocks, property and other long-duration assets. Bond losses might be tolerable by comparison. Yet there is also good reason to think that a further rise in bond yields will be self-limiting. A debt-ridden world cannot sustain high interest rates for long. Perhaps long-term interest rates will move a lot higher over time. But they will probably fall again first.

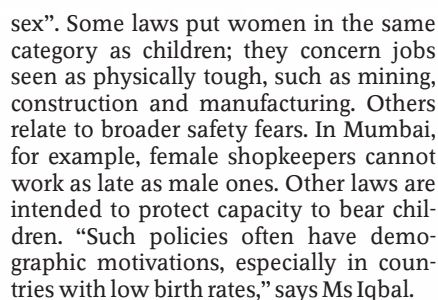
As long as misconceptions regarding audits exist, confrontations with angry investors and lawmakers seem likely. And the courts could side against auditors. Jim Peterson, who was an in-house lawyer for Arthur Andersen and has represented many of the large firms, points out that professional and legal standards differ. Auditors could have done what they see as their job, but still be found liable.

With litigation and reputational risks hanging over the sector, investing in the profession becomes less attractive. Competitors continue to find it extremely hard to dislodge the Big Four: on March 29th Grant Thornton, the fifth-largest audit firm in Britain, said it would cease bidding for audit work at FTSE 350 firms until there is a “shift in the competitive landscape”. Some British firms have already seen a rise in the number of senior partners fleeing for the safety of consulting and finance jobs, or even early retirement. If talent drains away, the bar set by public expectations will be even harder for auditors to reach. ■

Never done

EVEN as rich countries seek to rid workplaces of subtle gender bias, in many developing ones discrimination remains overt. According to the World Bank, women are barred from certain jobs in 104 countries (see map).

The aim is often to protect the “weaker



Some laws are of surprisingly recent origin: Vietnam's ban on women driving tractors of 50 horsepower or more came into force in 2013. But on balance, the trend is towards liberalisation. In recent years Bulgaria, Kiribati and Poland have removed all restrictions; Colombia and Congo have got rid of some. Other countries have changed laws in light of technological advances that have made many jobs safer and less reliant on brute force, or have seen courts overturn bans as discriminatory.

the end of a ban on women working nights in the Philippines in 2011 was cheered on by call-centres, which need staff during daytime in America and Europe.

Some sex-specific restrictions are called for, says the ILO, particularly in the case of pregnant and breast-feeding women, for example when working with chemicals. (Such temporary and specific precautions are not counted in the World Bank's study.) But, concludes the ILO, blanket protective prohibitions are "increasingly obsolete." ■

Kidnapping and ransom insurance

How insurance companies keep a lid on ransom inflation

IN THE early 1970s, leftist guerrillas in Argentina discovered a lucrative new way to make money: kidnap millionaires. Panicking firms would agree to huge ransoms, more concerned with freeing their executives than driving down the fee. That was not just bad for businesses. It also became a textbook case of how poor negotiating can send future ransoms rocketing and attract new entrants to the kidnapping trade. In Argentina, this culminated in the payment of an undisclosed ransom in 1975 for the release of Juan Born, followed by a \$60m ransom for his brother, Jorge. The latter figure, \$275m in today's money, is the highest ransom known in modern times.

One reason it marked a high point is the spread of kidnapping-and-ransom (K&R) insurance. This is involved in a minority of the \$0.5bn-1.5bn thought to be paid out in ransoms each year, but the share is growing. Around three-quarters of Fortune 500 companies pay to cover some employees. Insurers reimburse the ransom and, at ▶▶

▶ least as importantly, provide seasoned “crisis management” experts to help with negotiations. The best can get a ransom down to 10% of the initial demand. They can also calm criminals who may consider harming hostages to induce distraught relatives to pay up. In kidnappings motivated by money, a hostage’s risk of death during negotiations is 9% without K&R insurance, but just 2% with it, according to Anja Shortland, who is writing a book about kidnapping insurance. Kidnappers rarely know if a victim is insured.

Even without blood spilled, kidnappings ruin lives. Victims are often traumatised. A ransom can wreck a family’s finances. Kidnappings also keep companies and charities out of places in need of investment and help. K&R insurance has evolved to lessen these harms. Coverage includes legal liability for companies and counselling for survivors. Many rich families in countries such as Nigeria and the Philippines also take out coverage. However, employees with K&R insurance are forbidden from finding out they have it, for fear of encouraging more kidnapping if word gets out. Insurance is usually invalidated if its existence is confirmed.

Raw deals and ordeals

On a sunny day in Mexico City, Carlos Seoane of Seoane Consulting Group, a crisis-management firm, recalls how his hands shook the first time he listened in on a negotiation as a trainee. Some 116 kidnappings later, that no longer happens, he says: “Now I am made of ice.” Mexico’s kidnappers once targeted the ultra-rich. In recent years the trade has “democratised” to strike the middle class too, he says.

Kidnappers may search for victims on dating platforms, asking questions that reveal whether they have any money. Mr Seoane recalls a case where kidnappers turned up at a pig farm and asked to buy 20 pigs. A man identified himself as the owner of the swine, and was immediately grabbed. Random kidnappings on impulse have become more common. So have “express” kidnappings, where the victim is whisked to a cash machine to withdraw money, and “virtual” ones, where people are tricked into thinking a relative has been nabbed. As is usual for crisis-management firms, Mr Seoane’s works exclusively with a single insurance provider.

Insured negotiations are almost always carried out by family members, with calls recorded and trained negotiators giving advice. In countries where kidnaps are common, the police are seldom involved. Kidnappers expect to receive a lower ransom than they originally demand. If a family agrees on a price too soon, most kidnappers sense the chance to up their demand. Paying more money does not make the hostage safer, says Mr Seoane.

If negotiators are not careful, they risk

Oil

The crude curve

Does dear oil help or hurt emerging economies? It’s complicated

When they are not fretting about the American dollar or Chinese debt, policymakers in emerging economies keep a close eye on the oil market. The price of Brent crude has risen by nearly 50% in the past year to around \$80 a barrel. It ranks as the 11th-biggest spike in the past 70 years (adjusted for inflation), according to UBS, a bank. So should emerging markets now worry that oil prices will carry on rising above \$100, or that they will tumble below \$50? The answer is yes.

Many emerging economies import oil; others export it. As a rule, higher prices hurt the first group and lower ones hurt the second. But it can be more complicated than that. Indonesia, for example, is a net importer of oil, but a net exporter of “energy”, more broadly defined, including coal and palm oil. Since coal, palm and oil prices tend to rise roughly in tandem, Indonesia would benefit overall from \$100 oil, according to UBS. Mexico, like America, is also a net importer of crude. But in both countries a higher oil price will help investment and employment in the oil industry by more than it hurts household spending.

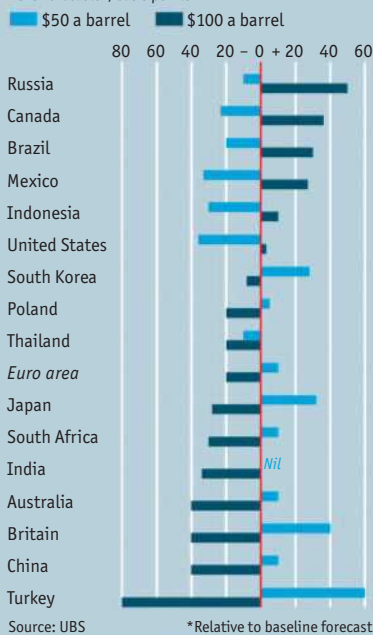
The impact of a price change also depends on the price level. A jump from cheap to dear oil works differently than a jump from dear to even dearer. In America, many rigs that are not profitable at \$40 become viable at \$60 or more. Conversely, most rigs that would be lucrative at \$120 are already viable at \$100. So an increase in price from \$40 to \$60 might inspire a lot of additional investment and employment, whereas an increase from \$100 to \$120 might induce less. Meanwhile, the damage to household wallets increases relentlessly.

As a consequence, the relationship between oil and growth is not straight but curvy. Prices below \$50 and above \$75 seem to hurt global prospects, according to calculations by Arend Kapteyn of UBS. In between, they appear to help.

Thus if the oil price remains within its recent range, the global economy should suffer few ill effects. But that is a big if. It is perilous to predict whether the oil price will lurch up or down, safer to predict that it will do one of the two.

Over a barrel

Impact of oil price on GDP growth
2019 forecasts*, basis points



sending ransoms spiralling, as in Argentina. In many countries the media refrain from publishing information about the size of ransoms for fear of attracting more criminals to the business. The average ransom paid to free ships captured by Somali pirates doubled between 2009 and 2011. Paying out generous ransoms hits everyone in the insurance industry, and those they cover. It may lead insurers to attach conditions to coverage, such as employers imposing a curfew or a requirement to hire private security.

To prevent bad negotiations wrecking their business, insurers have clubbed together. All of the 20 or so who underwrite and reinsure K&R have syndicates in Lloyd’s, a marketplace for insurance in

London, says Ms Shortland. Information-sharing between underwriters enables them to price K&R coverage in different parts of the world. If one crisis-management firm is negotiating irresponsibly, underwriters who employ them risk being kicked out of the Lloyd’s club, cutting off their access to pricing information.

The system has worked well. The cost of K&R insurance has fallen by half in the past decade, says one underwriter, bringing new customers into the market. But the popularity of K&R insurance itself could create a moral hazard. People in kidnapping hotspots may be targeted on the assumption that insurers will pay the ransom. Kidnappers would then have little reason to compromise. ■

Non-performing loans

Going south

Bad loans remain a problem in Italy and across southern Europe

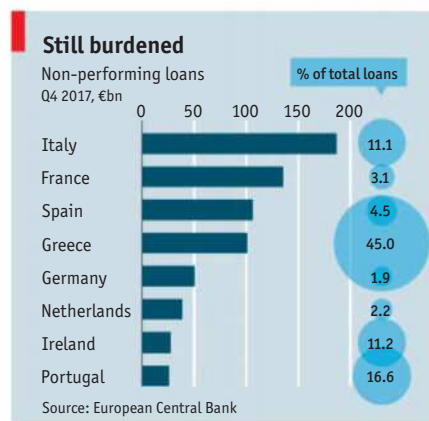
ITALY'S next government, a coalition between the populist Five Star Movement and the far-right Northern League, is giving investors plenty to worry about. Leaked plans, hastily abandoned, suggested it might want to leave the euro or ask the European Central Bank to forgive €250bn (\$292bn) of Italian debt. But less attention has been paid to what it might mean for Italian banks, and in particular for their biggest burden: non-performing loans (NPLs). Over €185bn of NPLs were outstanding at the end of 2017, the most for any country in the European Union (see chart).

By comparison with Greece, where NPLs are 45% of loans, Italy looks manageable, with just 11.1%. And it has made progress: in late 2015 NPLs were 16.8% of loans. But any wild policy lurches would put that progress in question. The clean-up of banks' books has relied on openness to foreign investors. Huge volumes of NPLs (€37bn in 2016 and over €47bn in 2017, according to Deloitte, a consultancy) have been sold by banks, often to specialist American hedge funds like Cerberus Capital Management or Fortress Investment.

These so-called vulture funds may find life harder under the new government. Given the importance of being able to repossess the collateral for secured loans, NPL investors have been taken aback by a proposal to prevent any action against a debtor without the involvement of a court. This would run counter to efforts to increase the use of out-of-court settlement for collateral across the EU.

The future of GACS, a scheme for providing an Italian government guarantee to the senior tranches of NPL securitisations (with the EU's blessing), is also in question. Despite a slow start in 2016, it has come to play a large role. An NPL sale last year by UniCredit, a large bank, worth €17.7bn, was subject to the scheme. Another €38bn-worth of Italian NPL deals in progress will be too, according to Debtwire, a news service. But investors now worry that GACS will not be renewed once it expires in September, contrary to previous plans.

European regulators have made a concerted effort to deal with NPLs. In March the European Commission proposed laws to make cross-border operations easier for debt servicers, which manage debt collection, and to force banks to hold more capital against new NPLs (and therefore push banks into selling off more such loans). It also produced a blueprint for countries



that want to set up a "bad bank" for dud assets (as both Spain and Ireland did in the financial crisis) in a way that dovetails with EU rules.

Markets have deepened in tandem. As well as the specialist funds doing large deals, more options for trading NPLs have emerged. One example is Debitos, a trading platform that started in Germany and that allows investors to trade in NPLs from 11 European countries, including Italy and Greece. Most of its sales are between €50m and €200m and interest often comes from local investors, says Timur Peters, its founder—for example, from individuals who buy property-backed NPLs as a way to acquire those properties.

A liquid pan-European market in NPLs ought to prevent banks' bad loans from accumulating and threatening their stability, as during the most recent crisis. But Italy would, because of its sheer size, be the largest source of such loans for the foreseeable future. And any market with real doubts about the largest supplier is almost certain to be a stunted one. ■

Banking regulation in America

Not quite a number

A rare bipartisan moment allows a timid regulatory rollback

REPUBLICANS in the House of Representatives had hoped to cut a swathe through the Dodd-Frank act, a titanic set of financial regulations passed in 2010 in the wake of the 2007-09 crisis. The "Financial Choice Act", drafted last year, would have lessened bureaucratic oversight and relied more on stiff capital requirements. Responsibilities and penalties would have been made clearer and regulators' discretionary powers would have been reined in. President Donald Trump, who had promised on the campaign trail to "do a number on Dodd-Frank", was effusive when the

House endorsed the Choice Act last year.

But the bill approved by the House on May 22nd, and expected soon to be signed into law by Mr Trump, is a distinctly tamer affair. It moves the line between big, systemically risky banks and the rest, set in Dodd-Frank at \$50bn in assets, to \$250bn. That cuts the number of institutions subjected to stress tests and stricter supervision from 38 to 12. It also eases some restrictions on proprietary trading. But only the very smallest banks will be allowed to substitute higher capital for strict regulation. Even as bold thinking was thrown out, one truly bad idea made it in, presumably under pressure from representatives from heavily indebted states. Municipal bonds will be granted special treatment in the composition of bank capital, incentivising lenders to load up on them.

Greater ambition was foiled by the need to gain support from at least some Democrats. They made it clear that sweeping measures would doom the entire bill. If Jeb Hensarling, head of the House Financial Services Committee and the primary author of the Choice Act, added "a bunch of crazy shit, [the bill] is going to die", said Jon Tester, a Democratic senator. Changing as little as a full stop would end the law's chances of passing, one congressman says he was told by a colleague in the Senate. Republicans took what they could get. Mr Hensarling was promised a vote on a package of other proposals, but there appears to be little appetite for a second round.

Deregulation continues by other, less obstacle-strewn routes, however. On May 21st Mr Trump signed the repeal of a directive imposed by the Consumer Financial Protection Bureau on car lending under the previous administration. Because it came into force near the end of Barack Obama's time in office, it was subject to congressional review under Mr Trump. Many in Washington, and inside the banks, say that the way federal agencies wield power under the new administration has changed: for its supporters, becoming more reasonable and judicious; for opponents, becoming more cursory and irresponsible.

One consequence is that the pressure to rip up Dodd-Frank has eased, not least because the big banks have built vast compliance operations which they believe give them an edge over smaller rivals. A renewed deregulatory push is generally thought unlikely unless the Republicans retain or increase their hold on both branches of Congress in the mid-terms, or prevail in the 2020 presidential election.

There is another possibility. Gains by Democrats in the mid-terms could lead to pricklier supervision and more zealous enforcement of Dodd-Frank provisions. That in turn could re-whet appetite for a big deregulatory push, says a former supervisor. A lasting rollback of the rules needs legislation, not just forbearance. ■

Investors and global warming

Carbonated?

Markets may be underpricing climate-related risk

AS A citizen, Dave Jones worries that climate change may imperil his two children, and theirs in turn. What exercises him, as California's insurance commissioner, is the way in which a transition to a low-carbon economy might affect the financial health of the state's 1,300-odd insurers. On May 8th he unveiled an examination of how well the portfolios of the 672 insurers with \$100m or more in annual premiums align with the Paris climate agreement of 2015, in which world leaders vowed to keep global warming below 2°C relative to pre-industrial times.

The answer is, not very. In the next five years carbon-intensive firms in those portfolios plan to produce more internal-combustion engines and coal-fired power than the maximum the International Energy Agency (IEA) reckons is compatible with meeting the 2°C goal (see chart). Meanwhile, investment plans in renewable energy and electric vehicles lag behind the IEA's projections of what is needed.

The results echo those of a study last year by Swiss authorities of the portfolios of pension funds and underwriters. According to the Two Degrees Investing Initiative, a think-tank that conducted climate stress tests for the Swiss and Californian regulators, global equity and corporate-bond markets also look dangerously exposed to energy-transition risk.

Such findings prompt talk of a "carbon bubble"—overvaluation of businesses that could suffer if the climate threat is tackled resolutely. A study this month in *Environmental Research Letters* by Alexander Pfeiffer of Oxford University and colleagues found that electricity producers would have to retire a fifth of capacity, and cancel all planned projects, if the Paris goals are to be met. Between 2009 and 2015 Moody's cut the average credit rating of European power utilities by three notches, partly because of environmental risk.

Last June the Financial Stability Board, a club of regulators, said companies should assess and own up to the climate-related risks they face. Since last year institutional investors in France have been required to do so by law. In a letter published in the *Financial Times* on May 18th, 60 fund managers with a combined \$10.4trn in assets urged the oil and gas industry to be "more transparent and take responsibility for all of its emissions". On May 21st Christopher Hohn, a hedge-fund manager, wrote an open letter to the Bank of England

warning that investors lacked the information they needed to assess the "serious climate-related risks" British banks are exposed to through their loan books.

But many investors seem unconcerned. At the annual meeting of Royal Dutch Shell shareholders on May 22nd, activist investors revived a resolution that would oblige the energy giant to align its business with the Paris agreement. As happened last year, the resolution was defeated. Shell contends that its assets are not at risk of being stranded. Other oil and gas companies are equally confident, judging by a report about climate planning by the eight biggest of them by Carbon Tracker, a watchdog. As the authors say, they cannot all be right.

Plenty of shareholders reckon that their companies will not suffer—or that they will be able to get out in time. Asset managers hold a stock or bond for just 1.5 years on average. Neither the signing of the Paris agreement nor its ratification a year later had an impact on global energy stocks, according to a working paper by Thomas Sterner and Samson Mukanjari of Gothenburg University, whether because these events were already priced in or markets never believed the commitments.

If climate action did come to naught, however, risk would return to strike investors in other ways. Assets may be ravaged by rising sea levels or other climate calamities. Or companies may be sued for their role in bringing these about. After *The Economist* went to press on May 24th a federal court in California was due to decide whether to dismiss a case brought by Oakland and San Francisco against oil majors, including Shell, for harm done to the cities by an encroaching ocean. Mr Jones will not be the only one watching closely. ■

Poverty and therapy

Mindful money

How psychotherapy improves depressed mothers' finances

IN 2005 and 2006, in northern Pakistan, some 900 pregnant women took part in an unusual experiment. All were in their third trimester and suffering from depression. Most families in the area rely on subsistence farming. Almost none of the women worked outside the home. This kind of life is hard. Perinatal depression (depression around the time of giving birth) is more common in poor countries than in rich ones.

As part of one of the largest psychotherapy trials ever run, the women were split randomly into two groups. Those in one received weekly visits from a health worker for the month before the birth, and less frequent visits during the ten months after. The rest received the same number of visits, but from health workers who had been trained to deliver cognitive behavioural therapy (CBT) during the visits, too.

CBT is a talking therapy that aims to break the cycle of self-reinforcing negative thoughts. It focuses on the present, rather than trying to uncover the causes of deep-seated neuroses. Subsistence communities are a good place to test it, since no other mental-health services are in place.

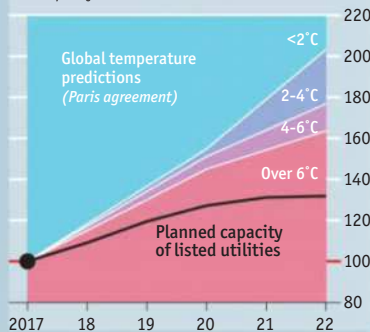
The study was a success on its own terms, with the rate of depression falling by 73% for the mothers who received CBT compared with 41% for the rest. But in 2013 a team of researchers returned to measure the long-term impact on the women's finances. It was surprisingly large. The results, currently under review at the journal of the Institute for Labour Economics, show that the women who received CBT in 2005-06 were 17% more likely than the rest to have control over their households' spending. They spent more time with their children and were more likely to send them to private schools.

According to Victoria Baranov of the University of Melbourne, who worked on the study, the reason is probably that those mothers have more bargaining power within their households. "Depression might make you less able to advocate for your own interests," she says. And the effects were stronger in mothers of girls than of boys, suggesting that mentally healthier mothers were able to lessen the harm suffered by daughters in a patriarchal society. She thinks CBT may be a more effective intervention than cash transfers, since it does not disrupt local social norms. It may not give a mother new options, but helps her choose better from those she does have. ■

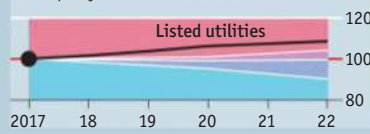
Power failure

Energy capacity by fuel source

Renewables
2017 capacity=100



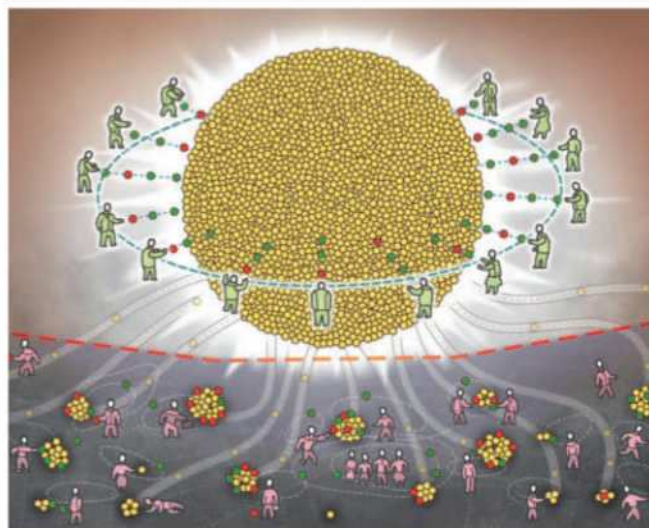
Coal
2017 capacity=100



Source: Two Degrees Investing Initiative

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Central banks should consider offering accounts to everyone



A RECESSION strikes. Central banks leap into action, cutting interest rates to perk up investment. But what if, as now, there is not much cutting to do, with rates already at or close to zero? In such cases the manual calls for purchases of government bonds with newly printed cash—quantitative easing, or QE—swelling the reserves each bank keeps at the central bank. Imagine instead that people also kept accounts at the central bank. New money could be added to their accounts, providing a direct, equitable boost to spending. That is one of several potential benefits of individual central-bank accounts, which are among the more intriguing of the radical policy ideas in circulation.

Central banks deal in two sorts of currency: cash, which anyone can hold, and digital money, accessible only to financial institutions through their accounts at the central bank. Individuals hoping to spend digital money must use a bank card or transfer (or a service, like Apple Pay, linked to a bank account), or a private crypto-currency such as bitcoin or Ethereum. Some central banks are considering whether and how to expand the use of their own digital money. Sweden's Riksbank, for example, is exploring ways to create a widely used e-krona. In June Swiss voters will participate in a referendum on a radical monetary reform, one effect of which would be to give individuals access to digital money at the Swiss National Bank (SNB). The main difficulty central banks face is how to facilitate the circulation of digital currency without routing everything through banks, as happens today.

Blockchain technology, which underpins crypto-currencies, could be one way to avoid the banks. In such systems balances and transactions are tracked on a distributed public ledger, secured with cryptography. But central banks worry about security risks and technical challenges. And as Aleksander Berentsen and Fabian Schar write in the latest quarterly *Review* of the Federal Reserve Bank of St Louis, central-bank backing for anonymised transactions would be awkward when private banks face demands to crack down on money-laundering and tax evasion. Easier and less risky would be to extend the privilege enjoyed by banks, to hold digital money at the central bank, to everyone.

Why, though, would central banks want to do so? One answer is that individual accounts could help them with their monetary-policy mission. At present, they manage interest rates across the

economy indirectly, by adjusting the rates banks earn on their reserves. But these are passed on only imperfectly to consumers. At the moment, banks in America can earn a short-run, risk-free interest rate of about 1.75% (those in Europe and Japan earn less). Current accounts at private banks, meanwhile, pay approximately nothing. In a world of individual central-bank accounts, in contrast, the rate paid on individual deposits would become a potent policy tool. Rate changes would have a direct, transparent effect on depositors. And were central-bank digital money to account for a big share of transactions, swings in such spending could become a useful real-time source of data for policymakers.

The accounts would come in especially handy when near-zero interest rates leave central banks with few good options in a crunch. The effects of QE diminish over time, particularly when crisis-induced breakdowns in credit markets begin to heal. Central bankers could be more confident in the stimulative effect of what Milton Friedman termed “helicopter money”: distributions to the public of newly minted dosh. These would bring complications. Money is commonly considered a liability of a central bank. Accountants would frown at distributing new money without obtaining assets in exchange (like the government bonds purchased when banks carry out QE), since they would create a huge negative position on central-bank balance-sheets. But an institution that can create its own money cannot go bankrupt. As long as a central bank is keeping to a policy target (like a 2% inflation rate) an ugly balance-sheet is not a problem.

Crucially, monetary policy oriented around individuals should be easier to understand than the customary prestidigitation. Political constraints on the use of QE—the perception that it is a giveaway to banks, or (in Europe) a way to prop up fiscally incontinent governments—might bind less tightly for injections of money into individual accounts.

A “public option” for banking ought to improve private banks’ behaviour, too. To keep their deposits, they would need to offer useful services and competitive rates, rather than hidden fees. Guaranteed access to a simple, interest-paying savings vehicle, and to electronic money, could be a boon for the world’s underbanked poor. And though it need not, such accounts could represent a first step away from deposit-financing of bank lending: a reform favoured by some economists and regulators.

QE too

No bold reform comes without difficulty. Administrative costs should be low, given the no-frills nature of the accounts. But the system would require investment in physical and digital infrastructure. Many people will be uncomfortable with accounts that give governments detailed information about transactions, particularly if they hasten the decline of good old anonymous cash. Poorly implemented systems could cause big trouble. The Swiss reform would move all demand deposits from private banks to the SNB and tie its hands in costly ways (although the proposal is unlikely to pass, polls suggest a surprising third of the population are in favour). Where central banks are less politically independent, courting votes by pumping accounts full of money, or punishing political opponents by draining them, could be irresistible.

But used well, individual accounts could improve consumer welfare as well as macroeconomic policy. It is a prospect that should raise interest. ■

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Childhood cancer

Germ theory

It may be possible to prevent childhood leukaemia by exposing children to more microbes

THE long struggle to cure acute lymphoblastic leukaemia (ALL), a childhood blood cancer, is a stand-out tale in the history of medicine. It was a massive endeavour, over decades, with many toxic drugs being tested in different combinations on dying children. It succeeded in the end. Half a century ago, survival rates were less than 0.1%. Today they are about 90%. Yet the cure brings unpleasant side effects, including problems with memory and concentration, and sometimes even other cancers. Globally, rates of ALL seem to be rising by about 1% a year. Yet it is almost non-existent in the poorest countries.

Its causes remain unclear and even controversial. A charity called Children with Cancer UK, for instance, still suggests the disease is connected to electromagnetic radiation from power lines. Into this debate comes Mel Greaves, of the Institute of Cancer Research in London. In a paper in *Nature Reviews Cancer*, Dr Greaves has marshalled decades of research into ALL alongside some new lab work, and created a comprehensive theory about its origins.

His theory involves three steps. First is a genetic mutation. Then there is an infectious illness. Lastly, the child's immune system reacts badly to that infection. And this chain of events is more likely in those who had little exposure to germs and bacteria in early childhood.

The first part of Dr Greaves's theory

dates back to 1988. Studies on twins showed that, where both suffered from ALL, the cause could often be traced back to a mutation in just one. Specifically, if they had shared a placenta, then genetic errors in the bone marrow, where blood cells are made, would result in one twin producing mutant cells. Those cells could then spread through the placenta into the other twin, even if his genes were free from the error. Such mutant cells are necessary, but not sufficient, for the later development of ALL.

Bugs are a feature

Lab work by Dr Greaves suggests that the genetic error that produces these pre-leukaemia cells is much more common than ALL itself. When he screened blood from umbilical cords in British hospitals, he found that six babies among 567 had pre-leukaemia cells. But the disease occurs in just 1 in 2,000 British children.

This is where the second and third steps of the theory come in. For those pre-leukaemia cells to develop into a full-blown blood cancer, a child has to be exposed to an infectious disease, and his immune system must then overreact to the threat. And there is substantial, albeit circumstantial, evidence to suggest that the risk of such an overreaction is raised by a lack of exposure to infections and microbes in the first year of a child's life.

In the 1990s the UK Children's Cancer

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Study Group found that babies who had been sent to child care in the first year of their lives were less likely to develop childhood leukaemia. That finding has since been replicated around the world. It is bolstered by a separate and fairly well-established inverse relationship between common diseases in early life and the risk of developing ALL.

More suggestive evidence comes from the fact that childhood leukaemia rates are higher in children born by Caesarean section, which avoids exposing them to microbes in the vagina. Dr Greaves's theory also offers an explanation for rare but puzzling geographical clusters of ALL. An infection might sweep through a community and pick out the children who are over-reactive carriers of pre-leukaemia cells.

In Milan in 2009, for instance, seven children developed ALL in rapid succession. All had been infected with swine flu three to six months before. None had been to nursery before the age of one. There is no reason to think that one infection is more likely than another to trigger ALL. But flu is common enough that researchers have been able to detect an uptick of ALL a few months after the virus sweeps through a country. Work in mice has proved that early stimulation of their immune systems protects against a murine version of ALL.

That is the evidence. So far, though, the precise mechanism remains mysterious. One candidate is a type of inflammatory molecule known as a cytokine—specifically, one called transforming growth factor- β , which seems to selectively boost the growth of pre-leukaemia cells. It is also known to promote other cancers.

Breastfeeding, which helps to calibrate a baby's immune system, can help. But if Dr Greaves is right, then another message for parents is to encourage early social con- ►►

tact with other infants, which encourages the swapping of germs.

Dr Greaves is not the first to have such ideas. The theory that modern humans are under-exposed to micro-organisms and parasites is known as the “hygiene hypothesis”. It has been invoked as an explanation for rising rates in the rich world of autoimmune disorders such as type-1 diabetes, multiple sclerosis and allergies. And ALL may not be the only cancer implicated. A malfunctioning immune system can cause chronic inflammation. That has been suggested as a risk factor in the development of oesophageal cancer, colon cancer and some cancers of the pancreas.

The hygiene hypothesis is a striking idea. But it is not yet proved. And even if it were, balancing the risks could be tricky, says Donna Lancaster, a paediatric oncologist at the Royal Marsden NHS Foundation Trust in London. Hygiene has benefits as well as drawbacks. Exposing children to germs means that many will become ill, and a few will become seriously so. One idea for squaring the circle—albeit a very speculative one—is a carefully designed vaccine that gives just the right nudge to an infant’s immune system without the risk of making them properly ill.

If Dr Greaves’s theory stands the test of time then the reputation of the hygiene hypothesis will rise. It even offers a possible explanation for the statistical link between power lines and leukaemia. Parents who fret about their children playing near power lines might keep them indoors—away from dirt, germs and each other. ■

All creatures great and small

Gotta count them all

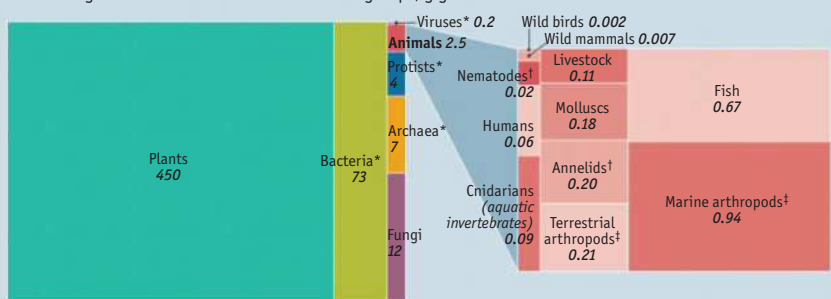
A census of Earthly life shows humans are few, but mighty

BILLIONS of years ago a star began to die. In the process, it created something new: 65,500 billion tonnes of carbon that would later be incorporated into the nascent planet Earth. That carbon is still there, and nowadays a fair chunk of it makes up the bodies of living beings. A new study, published this week by Yinon Bar-On and others from the Weizmann Institute of Science, in Israel, provides a comprehensive estimate of how the Earth’s carbon stock is distributed among its inhabitants.

By estimating the amount of carbon stored in organisms, otherwise known as biomass, the scientists were able to compare the relative abundance of different kinds of Earth’s life, weighing both the microbes beneath the soil and the giraffes walking above it on the same scale. The

Life as we know it

Estimated global biomass of selected taxonomic groups, gigatonnes



Source: “The biomass distribution on Earth” by Bar-On, Phillips & Milo, PNAS, 2018

*Micro-organisms †Worms
†Invertebrates with hard exoskeleton

mammals known as human beings like to imagine themselves the lords of the planet. But in terms of raw biomass, the results—published in *Proceedings of the National Academy of Sciences*—tell a different story.

No animal comes remotely close to the domination of plants, which account for 80% of the planet’s biomass (see chart). That makes sense: plants convert sunlight into food, and thus lie at the base of almost every food chain. Land plants account for the majority of that total, despite the fact that water covers almost three-quarters of the planet’s surface. Bacteria take second place, with approximately 13%. The remainder is distributed among fungi, archaea, protists, animals and viruses, in that order. Even within the animal count itself, there is little for humans to boast of. There is about as much biomass in one species of Antarctic krill, tiny shrimp-like crustaceans eaten by blue whales, as there is in all 7.6 billion human beings.

But size is not everything. Humans have had a profound impact on the prevalence of other species. Dr Bar-On’s research indicates that over the short span of human history on Earth (specifically after a large period of extinction that began 50,000 years ago) the biomass of wild mammals has decreased to a sixth of its previous value. Meanwhile, the carbon count of domesticated poultry grew to three times higher than that of every species of wild bird combined. Humans and their livestock have come to outweigh all other vertebrates on the planet with the exception of fish. That is not to say fish were spared. The biomass of fish is thought to have decreased by around 100m tonnes during humanity’s tenure. And the dominance of plants, although it is still overwhelming, was far greater before the start of human civilisation. Dr Bar-On suggests that the total biomass of plants has fallen to just half its previous level.

Of course, these numbers are estimates. Dr Bar-On and his team could not individually count each organism they reported. They relied on collating information from hundreds of other studies, public data when they were available, and their own

analysis of the likelihood of a certain thing being in a certain place. They were able to be a lot more confident about visible organisms in well-explored ecosystems than they were about microscopic ones in the Earth’s deep subsurface or the ocean’s deep water, such as bacteria.

Future research may therefore change these numbers, possibly dramatically. But Dr Bar-On’s portrait of the planet is an impressive achievement—and a welcome dose of perspective. ■

Genetics

Stress test

The effects of childhood trauma may be passed on through sperm

THE effects of child abuse can last a lifetime. Neglected or abused children have a higher risk of developing all sorts of ailments as adults, including mental illnesses such as depression but also physical ones like cancer and stroke. In fact, the effects may last even longer. Emerging evidence suggests that the consequences of mistreatment in childhood may persist down the generations, affecting a victim’s children or grand-children, even if they have experienced no abuse themselves.

Exactly how this happens is not well understood. Rigorous experiments on human subjects are difficult. Scientists have therefore turned to rats and mice. But now Larry Feig of Tufts University and his colleagues have shown that psychological stress seems to cause similar changes in the sperm of both mice and men. Their study is published this week in *Translational Psychiatry*.

Biologists know that traits are carried down the generations by genes. Genes encode proteins, and proteins make up organisms. That is still true. But it has recently become clear that it is not the whole story. Organisms regulate the activity of their

► genes throughout their lives, switching different genes on and off as circumstances require. It is possible that such “epigenetic” phenomena can be passed, along with the genes themselves, to an animal’s descendants. They offer a mechanism by which an animal’s life experiences can have effects on its offspring.

Hunting for signs of this, Dr Feig and his colleagues asked 28 male volunteers to complete a questionnaire assessing the severity of any trauma they had experienced as youngsters. They also asked their volunteers to provide sperm samples. They then looked for evidence for a common epigenetic mechanism involving small molecules called micro-RNAs. Their job is to bind to another molecule called messenger RNA, whose task in turn is to ferry information read from a gene to the cellular factories that create the required protein. Micro-RNA renders messenger RNA inactive, reducing the activity of the gene in question—and it can travel in sperm alongside DNA.

Sure enough, upon screening the men’s sperm, the researchers found that concentrations of two types of micro-RNAs, miR-34 and miR-449, were as much as 100 times lower in samples from abused men.

The team then turned to their mice. A standard way to stress mice is to move them to new cages, with new mice, from time to time until they reach adulthood. When the team did this they found that the stressed males had lower levels of miR-34 and miR-449 in their sperm. They mated these males with unstressed females. The resulting embryos also had low levels of the two micro-RNAs. And so in turn did sperm produced by the male offspring of these unions.

Dr Feig and others have shown that the female offspring of stressed male mice tend to be more anxious and less sociable. Furthermore, the sons of stressed fathers themselves produce stressed daughters. The effects of cage-shuffling, in other words, seem to last for at least three generations. The researchers have not demonstrated conclusively that miR-34 and miR-449 are responsible. But their results are suggestive.

To try to nail their case, the researchers plan to carry out a bigger study. This time, they will give questionnaires to their human subjects’ fathers, to tease out whether any epigenetic changes they observe arise from the childhood experiences of the subject or his father. Sisters and daughters may be included in the study, too. That is an ambitious goal. It is also a worthy one. Unless genetic engineering can one day be perfected, changes in genes are hard-wired. But epigenetic effects might be treatable, by boosting levels of particular micro-RNAs in sperm, for example. That could mean the legacy of abuse is no longer passed to future generations. ■

Recycling plastic

Worm food

Mealworms are the new champions in the plastic-eating stakes

PLASTIC production has tripled over the past 25 years, and the mess it causes has risen commensurately. Recycling is one option. Another is biology, and with that in mind researchers have been hunting for creatures that can digest plastics. Several species of fungi and bacteria can do the job, but only slowly. Now Anja Brandon, a student at Stanford University, and her research supervisor, Craig Criddle, have found that bacteria in the guts of mealworms can break down polymers much more quickly.

Other researchers had already found that mealworms can digest a particular plastic called polystyrene. Ms Brandon and Dr Criddle wondered whether polystyrene was uniquely palatable, or whether the bacteria in the worms’ guts might be able to eat other sorts of plastic, too. To check, they turned to polyethylene, which is both more common than polystyrene and very different in chemical terms. If the worms found it nutritious as well, that would suggest their tastes might be usefully wide-ranging.

As they describe in *Environmental Science & Technology*, the researchers divided their worms into groups. Some were given 1.8 grams of either polyethylene or polystyrene. Some were given both. Others had their plastic meals supplemented with wheat bran. (Wheat bran had been found to increase the rate at which mealworms could digest polystyrene). A control group of worms was fed only bran.

More than 90% of the worms survived the 32-day experiment. Those fed only polyethylene found it very agree-

able, polishing off 0.87 of their 1.8-gram helping. That was significantly more than the worms eating polystyrene, who managed just 0.57 grams of the stuff. Best of all were the worms that were given bran with their plastic. They chewed through 1.1 grams of polyethylene and 0.98 grams of polystyrene.

Nor were the insects merely chewing up the plastics and then passing them in their faeces. Instead, chemical reactions in their guts were converting them into carbon dioxide. The conversion rate was low at first, but by the end of the experiment the worms fed polyethylene were converting 50% of it into gas and those fed polystyrene were converting 45%.

Ms Brandon and Dr Criddle theorised that the bacterial ecosystems inside the insects’ guts were changing to fit their unusual diets. They dissected the worms at the end of the experiment and compared the gut fauna of those that had been eating plastics with the fauna found in the control group. They found big differences, with several types of bacteria being more common in the guts of mealworms that had been fed plastic.

The researchers argue that not only are mealworms probably capable of digesting a wide range of plastics, but that the protean nature of their gut bacteria should allow them to specialise in a particular sort relatively quickly. A small population of a thousand worms, they reckon, might manage to devour 0.32 grams of polyethylene or 0.28 grams of polystyrene in a day. That is still not lightning fast. But it is quicker than waiting for it to break down in a landfill.



Dinner is served

Shoemaking

A load of new cobblers

AMSTERDAM

Bringing bespoke footwear to the high street

AMONG the boutiques in the canal district of Amsterdam is a shoe shop, called w-21, that has a selection of stylish footwear in the window. A select group of customers were recently invited there to have their feet scanned by a laser, and then to spend 30 seconds walking on a modified treadmill in a special pair of shoes stuffed with accelerometers, pressure gauges, thermometers and hygrometers. All this generated a wealth of data, which was displayed on a large screen along with a model of how the walker's feet were moving.

From these data an algorithm determined the ideal soles for the customer's shoes. Upstairs, a couple of 3D printers began humming away to make those soles. In about two hours they were ready to be fitted to a new pair of shoes, uniquely tailored to each person's feet.

Some level of customisation is nothing new for buyers of apparel. But there is a big difference between clothes, which are relatively straightforward to tailor and alter, and shoes, which are solid and composed of lots of materials that require different skills and special equipment to produce. It is possible to acquire orthopaedic and specialist shoes, such as ski boots, in which the soles have been shaped to suit an individual's feet. Completely tailor-made shoes are also available if you have deep pockets and are patient. At the top end of the market, John Lobb, a London bootmaker established in 1866, will happily hand-stitch you a pair of Oxford brogues shaped around every dimple and bump in your feet, but they will cost £4,000 (\$5,500) and may take six months to deliver. What was going on in Amsterdam was an experiment by ECCO, a large Danish shoe brand that owns w-21, to bring bespoke shoemaking to the mass-market high street.

The shoe-shop event horizon

Lobb, and firms like it, make shoes using patterns called lasts. These are solid blocks of wood carved precisely into the shape of a customer's feet. The time and labour required to create these lasts explain the cost and tardiness of the finished product. Though ECCO still uses shoes made in standard sizes, at least for now, it customises the midsole. This is the part of a shoe that fits between the outsole (the bottom of the shoe that comes into contact with the ground) and the insole (on which the foot rests). The midsole is the functional heart of a shoe, says Patrizio Carlucci, the

head of ECCO's Innovation Lab, which is in charge of the project. On the basis of the laser scans, of data from the shoe sensors and treadmill tests, and of information about the customer (someone who stands around a lot may require a softer feel than does another who walks everywhere), individualised left and right midsoles are engineered to suit the person concerned.

Once the midsole designs are complete, the computer file describing them is transferred to the 3D printers. These are made by a firm called German RepRap and are adapted to print a type of silicone developed by the Dow Chemical Company for this purpose. The printers build layers of silicone into hundreds of closely packed cells. The shape and size of each cell varies throughout the midsole, to provide the required distribution of support. When complete, the midsoles are inserted into a pair of shoes chosen by the customer.

Further trials of the production system, which ECCO calls Quant-u, will be held in w-21 later this year and at other stores around the world as the company continues to develop the process and take account of feedback from customers who take part. At the moment, ECCO is charging a premium of around €100 (\$120) or so on top of the price of the shoes for the bespoke sole-designing service. If all goes well, Quant-u could be introduced in some stores for walk-in customers.

Other shoemakers are also trying new production techniques. Big names such as Nike and Adidas are printing some of the

components that go into their high-end trainers, although individual customisation has largely been limited to making running shoes for top athletes.

Smaller concerns, too, are showing an interest in bespoke automation. In Milan Andrea and Francesco Carpineti, and their colleague Michele Luconi, are trying to blend the new with the old. Their startup, Design Italian Shoes (DIS), provides shoe shops with a device they call the Totem Touch Screen. Customers place their feet in the bottom of this device to have them scanned. They then use a touchscreen to select a style of shoe and to customise it, from colours to materials, types of sole and even the eyelets and laces. Some 50m combinations are available. Personal monograms and inscriptions can be added.

Instead of sending the design to a 3D-printer, DIS passes it to a group of artisan shoemakers in the "shoes valley" of Le Marche, a region in eastern Italy that is famous for its cobblers. Which craftsman a pair of shoes is assigned to depends on the style to be made, for each has his specific areas of expertise. He will then make the shoes by hand, using a pair of existing lasts that are the closest match available to the data from the Totem. The Carpineti brothers claim that the firm can, in this way, rustle up a pair of handmade Oxfords in as little as ten days, for about €360—less than a tenth of Lobb's price. The company hopes to offer completely bespoke sizes eventually, using feet scans to create digital lasts, which would generate patterns for leather and other components of a shoe.

The company decided to adopt this marriage of high-tech and low-tech, says Andrea Carpineti, to help preserve shoemaking jobs in Le Marche. So far, 15 shoe shops in Europe have Totems installed, and he expects the devices to be in several hundred stores in China soon. One way or another, then, shoemakers are striding towards a bespoke future. ■



But now with lasers



Satire in Zimbabwe

The last laugh

HARARE

Zimbabwe's comedians testify to the changes since Robert Mugabe's fall. Now they want to keep their freedom

ON A stage in a park in Harare, Zimbabwe's capital, Carl Joshua Ncube, perhaps the country's most famous comedian, is coaching a novice. Imitating her act, in which she pretends to deliver a baby, he mimes a doctor slapping its bottom. "People love to hear about bottoms," he tells her. An hour or so later, he introduces her—and three other wannabe female comics, one of whom is his wife—to a big audience. "In Zimbabwe we only have one female comedian," he says, mock-solemnly. "We need some competition for Grace!" Feigning anxiety, he adds: "Although we know what happens when people try to introduce their wives to the profession!"

By Grace, Mr Ncube of course means Mugabe, the couture-loving wife of Robert Mugabe, Zimbabwe's leader until his removal last November. Before the coup de Grace, jokes at her expense were a bit risqué. These days they can be told anywhere, loud and clear. "Operation Restore Regasi", a play crudely satirising the Mugabes, sold out repeatedly earlier this year (the name parodies an army commander who mispronounced Operation Restore Legacy, the coup's code-name). At this month's Harare International Festival of Arts, where Mr Ncube was performing, Freshlyground, a band with members from across southern Africa, ended the jamboree with a song ridiculing Mr Mugabe, to raucous applause.

Satire may be the country's fastest-

growing industry. Comedians are now "rock stars in Zimbabwe", says Mr Ncube. The boom demonstrates the lightning speed at which prohibitions can crumble, and the cathartic benefits that can follow. But Zimbabwe's comics are not merely the beneficiaries of political change. They are actively working to cement it.

You've been a wonderful audience

With a goatee and square spectacles, Mr Ncube has a professional mien. His appearance belies his bravery. Over the past few years, he has developed an entire repertoire around his fear of Mr Mugabe. His trick was to make the joke without making it. A few years ago, he even told one in front of the president himself. "Your excellency, thank you so much for allowing me to be here," he began. "There's a lot of people who have been saying things behind your back, and they're afraid to say them to your face. I'm not afraid of you. I'm going to say what everyone else has been saying right now." And then, when the tension among the assembled politicians was at its peak, the punchline: "Everyone here wants to know if they can get a selfie with you?"

For much of the tail-end of Mr Mugabe's reign, Mr Ncube decided to stay away from Zimbabwe. "I called it going on tour, but I was pretty much in exile," he says. Satire was dangerous; Mr Ncube says the government would even blame him for other people's tweets. But it took off

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nonetheless, perhaps thanks to the abundance of material. One of the most prominent groups is an organisation called the Magamba Network. Since 2011 it has produced a satirical news show called the "Zambezi News", mocking the state broadcaster, ZBC, and the stooges who appear on it. Before the coup, the group's offices were repeatedly raided. An American employee was arrested and charged with attempting to overthrow the government.

From a purely comic perspective, Mr Ncube says, the repression had an upside: "The jokes were better because there was that fear." But finding a way to remain funny is not Zimbabwean comedians' only worry. They are also trying to ensure that their newfound licence is not revoked.

Today, the Magamba Network is frantically putting out jokes ahead of a general election in July or August. But it is also in effect doing reporting, says Samm Monro, a white Zimbabwean who appears as his alter ego "Comrade Fatso" (pictured right). The aim is to do for Zimbabwe what the "Daily Show" or John Oliver do for young Americans—which, in a country where most voters are under 40, could be decisive. The gags focus on problems faced by most Zimbabweans, especially the middle classes, such as not being able to get money from the banks. As well as the comedy, which (like Mr Ncube's stand-up) is mostly in English, the network's projects include live reporting of parliamentary hearings and social-media initiatives in Shona and Ndebele, the two main languages.

Emmerson Mnangagwa, the former vice-president who took over from Mr Mugabe and is known to Zimbabweans as "EDM" or "the crocodile", is widely expected to win the vote. Charles Mungana, the director of "Operation Restore Regasi", says he is optimistic about that outcome. He pours praise on Mr Mnangagwa, argu- ►►

ing that credit for his play “should also go to the current government”. It is certainly true that until recently Mr Munganasa would never have got away with a show in which an actor bounces around hunch-backed in imitation of Mr Mugabe.

But not all Zimbabweans are convinced Mr Mnangagwa will be much better than the man he replaced, or that Zanu-PF, the ruling party, has changed. “This is definitely not a new Zimbabwe, it’s the same old dudes,” says Mr Monro. One of his colleagues, Mukudzei Kandoro Majoni, or “King Kandoro”, fears there is “too much relaxation” among creative types, which

might enable backsliding by the authorities. After all, jokes about the old president don’t hurt his successor; if anything, they are a distraction from the fact that the present government seized power in a coup.

So far, tolerance for attacks on the new rulers has not been tested. Though declared unconstitutional in 2013, a law against mocking the president remains on the statute books and Mr Mnangagwa has supported keeping it. Laws restricting reporting are still in force; all plays must still be censored by geriatric party officials.

Mr Majoni compares being a comic to a “Sahwira”, a traditional Shona figure who

is a bit like a Shakespearean fool: “He’s somebody who comes out and says what’s really up.” The best hope for that indispensable role is that it will be difficult for Mr Mnangagwa to stop what has started. The jokes have already spread far and wide. Though many prices are going up, internet connections are getting cheaper. Even in the countryside everyone has to have a mobile phone, not least to make payments, because there is scarcely any cash left. When the authorities tried to demolish part of the Magamba Network’s offices, hundreds of protesters resisted. Once the mockery starts, can it end? ■

Johnson | Weasel words

Grammar is not to blame for mealy-mouthed journalism

ON MAY 14th, as Palestinians massed at the Gaza Strip’s border, Israeli soldiers fired on them, killing around 60 people. Shortly afterwards, the *New York Times* tweeted: “Dozens of Palestinians have died in protests as the US prepares to open its Jerusalem embassy.” Social media went ballistic. “From old age?” was one incredulous reply. #HaveDied quickly became a hashtag campaign.

The fault was soon laid not only at the door of the *Times*, but at a feature of English grammar. As Glenn Greenwald, a left-wing journalist, put it, “Most Western media outlets have become quite skilled—through years of practice—at writing headlines and describing Israeli massacres using the passive tense so as to hide the culprit.” His view was retweeted over 5,000 times and echoed by other critics.

The problem is that the *Times*’s tweet was not passive. “Have died” is the verb “to die” in the active voice and the perfect tense. Ironically, many people, in “correcting” the *Times*’s supposed passive, replaced the active “have died” with a passive alternative, such as “Dozens were shot by Israeli troops.”

English and most other European languages have both an active voice (*Steve kicked John*) and a passive (*John was kicked by Steve*). Style manuals, including *The Economist*’s, generally deprecate the passive voice. It is longer, for one thing. For another, it is often found in heavy academic and bureaucratic prose. Inexperienced writers tend to over-use it.

But critics of the passive often confuse two different things: syntax and semantics. Syntax has to do with the mechanics of putting a sentence together. In *Steve kicked John*, Steve is the subject and John is the direct object. But in *John was kicked by Steve*, John is now the subject, even though he is still the kickee, and Steve is



still the kicker.

To diagnose what readers did not like about the *Times*’s summary, you need semantics, not syntax; the description of meaning, not form. In both the active and passive sentences above, Steve is the “agent” and John is the “patient”, in the jargon of semantics. Flipping their syntactic form does nothing to their semantic role. There is one big wrinkle. Only in the passive can the agent be omitted entirely (*John was kicked*). That is another reason for the passive’s bad rap.

In the case of “have died”, though, neither patients nor passives come into it. To die is an intransitive verb. Intransitive verbs have no direct object (you can’t say *Steve died John*). There is no patient. For the same reason, there is no passive form at all. You can’t say *John was died by Steve*.

So what the critics really meant is that the *Times* erred in using an intransitive verb. This is, in fact, an unfortunate choice.

When gunshots land, someone shoots and someone is shot, two roles, a subject and an object, an agent and a patient, in any reasonable description. Journalists are often told to report “who-what-when-where-why” in headlines and first sentences. In cases like this they really need “who-whom-when-where-why.”

But merely reporting the full facts accurately does not save journalists from espousing a point of view. “Soldiers kill dozens of protesters” has a very different feel from “Dozens of protesters killed by soldiers”, even though they describe the same proposition. The first seems to point the finger more squarely at the soldiers; the second highlights the victims.

And this is to say nothing of word choice. Both active and passive forms can give the victims’ perspective, with active verbs like “Soldiers massacre protesters” or passive formulations such as “Protesters gunned down by army”. The same goes for the other side: “Soldiers shoot rioters”, say, or “Rampaging mob turned back from border”.

So the passive can be clear and the active can be a dodge. Words are more important than grammar. And no matter what their sympathies, reporters have a duty to give all the relevant facts. Headlines and the openings of stories are especially important. Nobody gets them right every time, but subeditors might consider letting enormous font-sizes shrink to accommodate more information.

As for the armchair grammarians: it is time to give attacks on the (mostly blameless) passive voice a rest. If critics want to decry shoddy headlines, the internet has offered alternative culprits: “evasive voice” goes well with “active” and “passive”. But since this is not really a feature of grammar at all, consider another popular suggestion—“weasel voice”.

Military history

Fallen heroes

Arnhem: The Battle for the Bridges, 1944.

By Antony Beevor. Viking; 480 pages; £25. To be published in America as *"The Battle of Arnhem: The Deadliest Airborne Operation of World War II" in September; \$35*

THERE is a particularly British tendency to romanticise valiant military failure. The retreat to Corunna, the charge of the Light Brigade and the death of General Gordon at Khartoum are remembered as much as famous victories. The "Battle of the Bridges" of 1944, fought predominantly in the Netherlands, fits into this category. Two films celebrate the heroics of what was the biggest airborne battle in history—"Theirs is the Glory" (made in 1946, immediately after the second world war) and "A Bridge Too Far" (1977).

Sir Antony Beevor avoids this trap. In the meticulous narrative style he first employed in "Stalingrad", he recreates the operation from the dropping of the first troops on September 17th to the evacuation of the remnants of the British 1st Airborne Division eight days later. Tragically, heroism and incompetence are inseparable.

The outline of the story of "Arnhem" may be familiar, but Sir Antony's unearthing of neglected sources from all the countries involved—British, American, Polish, Dutch and German—brings to life every aspect of the battle. The misjudgments of egotistical commanders are exposed by their own actions and words. The experiences of individual soldiers both appal and inspire. Five were awarded Victoria Crosses, Britain's highest military award, four of them posthumously. The plight of trapped Dutch civilians, who took great risks to help their liberators, is never overlooked. At times the wealth of detail threatens to confuse the reader. But confusion is the very essence—the "fog"—of war.

There is still debate about whether Operation Market Garden (the assault's code-name) was a bold strategy that might have shortened the war or was fatally flawed from the outset. Conceived by Field Marshal Bernard Montgomery, it was meant to provide a route into Germany's industrial heartland that avoided the well-defended Siegfried Line farther south. The idea was for airborne forces, dropped by parachute and gliders, to take a series of bridges over the Rhine, then to be quickly reinforced by ground units arriving by road.

How much Montgomery was motivated by personal rivalries is disputed, but there is no doubt he saw Market Garden as an alternative to Dwight Eisenhower's "broad front" strategy, which he despised.



He did for them all by his plan of attack

Eisenhower acceded to his relentless demands for resources, including American airborne divisions and vast numbers of transport aircraft. In the battle of the post-war memoirs, Montgomery still blamed him for his parsimony (while admitting to mistakes of his own).

In fact, the reasons for the disaster that befell the airborne assault were many and various. British tanks arrived too late to help; they had to come by a narrow road, dubbed "Hell's Highway", which ran across marshy polder land and was highly vulnerable to German attack. The decision to spread the drops over three days (because of shortening daylight) forfeited tactical surprise, as did the drop zones' distance from the objectives (the zones were chosen to avoid enemy flak). Montgomery discounted intelligence from the Dutch resistance that warned of a large German build-up around Arnhem. German fighting spirit had not collapsed after defeat in Normandy, as had been supposed.

Market Garden was not a total failure: part of the southern Netherlands was liberated and some bridges, though not the key one at Arnhem, were held. But the price was high. Allied casualties numbered around 17,000; thousands more were taken prisoner. German retribution against Dutch railway workers who went on strike to aid the assault led to a famine that killed over 20,000. A military maxim says that an operation's outcome rests 75% on planning and 25% on luck. Even if this plan had been impeccable, it needed improbable good fortune to succeed. As Sir Antony concludes, it "ignored the old rule that no plan survives contact with the enemy." ■

American fiction

Inside the cage

The Mars Room: A Novel. By Rachel Kushner. Scribner; 352 pages; \$27. Jonathan Cape; £16.99

AS RACHEL KUSHNER'S third novel opens, Romy Hall is on a bus to Stanville Women's Correctional Facility in California. At 29 she has lived most of her life in San Francisco, but not the city of tourist brochures: "It was not about rainbow flags or Beat poetry or steep crooked streets but fog and Irish bars and liquor stores all the way to the Great Highway, where a sea of broken glass glittered along the endless parking strip of Ocean Beach." Her mother fed her instant ramen, "then attended to whichever of the men she was dating".

Romy's crime is murder. The Mars Room is a strip club where she worked. A client became obsessed with her; finally she bludgeoned him to death.

This is a disturbing and atmospheric book, if a flawed one. Ms Kushner makes the prison, and the world beyond its walls, vivid. The novel is not Romy's alone; the strongest counterpoint to her voice is that of Gordon Hauser, a teacher for the California Department of Corrections who lives in a cabin in the Sierra foothills. A parallel is drawn between Gordon and Ted Kaczynski, the real-life "Unabomber", who also lived alone and waged a campaign of domestic terror until his arrest in 1996. Extracts from Mr Kaczynski's journals appear at intervals in the story, ill-judged interpolations that feel forced and overstated.

"The Mars Room" makes a kind of trilogy with Ms Kushner's previous novels, both finalists for the National Book Award. "Telex from Cuba" was set among American expats in Cuba during the 1950s. "The Flamethrowers" took on art and radicalism in the New York of the 1970s. Ms Kushner is marking out territories of American experience; in a country that accounts for 21% of the world's prisoners but less than 5% of its population, prison is fertile ground. The incarceration rate for African-American women is twice that of whites. Romy is white, but nearly all the other women she encounters in Stanville are black or Hispanic.

Ms Kushner's seriousness about her subject is always apparent, but the balance between documentary and fiction is occasionally uneasy. For example, Romy's love for her son is a driving engine of the novel, yet the child is more an archetype than an individual; some of the incidental characters seem like extras in "Orange Is the New Black". A sense of the inevitable weighs the story down. But then, that is true of many lives in the society it depicts. ■

Philip Roth

Theatre of one

A tribute to one of the greatest American novelists of the post-war era

IF THERE is one detail of Philip Roth's biography that is worth knowing, it is not that he was Jewish or that he had no children or that he was born in New Jersey—it is that he preferred to write standing up at a lectern. There are pages of his work where the irrepressible vitality of his writing seems to glow on the page as if charged with some kind of existential incandescence—the great and persistent question of his novels being no less and no more than: what the hell do human beings think they are doing here on Earth?

Mr Roth died on May 22nd. His work will forever be synonymous with verve, energy, wit, ontological wrath and—above all—a total commitment to both subject and style. His career began in 1959 when he was accused of being anti-Semitic following the publication of one of his early short stories, “Defender of the Faith”, in the *New Yorker*. The row nearly overwhelmed him. “What is being done to silence this man?” wrote a prominent rabbi. But real fame—and literary and commercial success—came with “Portnoy’s Complaint”, published in the revolutionary year of 1969.

Written in the form of a “confession” to a psychoanalyst, this was the book that brought him to the attention of America and the world. Even now, it is fiercely alive—a one man serio-comic farrago of sexual transgression, psychic pain, metaphysical horror and cultural lament. It contains all the seeds that were to germinate in the two dozen novels that followed, not least Mr Roth’s predilection for provocation and a kind of burnished, resplendent blasphemy. “Do me a favour, my people,” Mr Roth wrote in “Portnoy”, “and stick your suffering heritage up your suffering ass—I happen also to be a human being!”

That last phrase is the key to the man and to his work. Forget the Jewishness or anti-Jewishness. Certainly, like all great artists, Mr Roth mined his immediate milieu, but only as a way of directly unearthing the deeper questions of family, society, belief, culture and relationships; of getting at the underlying nature of humanity. Judaism is only his way in, a mighty metaphor for all religions and all peoples. (He used his religion in the manner of, say, Bob Dylan or Leonard Cohen.) But, profoundly, Mr Roth eschewed the literature of victimhood. He refused to be relegated. Instead—like all great artists—his subject was everything he could possibly imagine, summon or otherwise lay his hands on. His subject

was the human condition.

And, like all great artists, he inhabited and embodied contradictions. You cannot disagree with him more than he disagreed with himself. He wrote about patriotism and he hated patriots. He wrote about idealism and he despised idealists. He wrote about the family with great love, and yet he railed against the asphyxiation of family. He was a moralist who loathed moralists. He was an atheist locked in lifelong battle with a God who neither cared nor existed. His subject was often no more than ten



square miles of New Jersey and therefore the whole world.

He was fearlessly engaged with the profane and the repellent; and yet his work is apt on any page to break out into such passages of compassion and sorrow that the reader is ambushed all over again—this time by emotion. He wrote again and again about sex as a rebuke to death and death as the great reprimand to sex, as if by smashing the two great subjects against one another he might find at last the true particles of existence.

Of “Sabbath’s Theatre” (published in 1995), Mr Roth later wrote:

Such depths as Sabbath evinces lie in his polarities. What’s clinically denoted by the word ‘bi-polarity’ is something puny compared to what’s brandished by Sabbath. Imagine, rather, a multitudinous intensity of polarities, polarities piled shamelessly upon polarities to comprise not a company of players, but this single existence, this theatre of one.

For some critics, this was his best book. Mr Roth himself chose it, along with “American Pastoral” (1997), an intergenerational story of an immigrant family, as one of his favourites. “Operation Shylock” (1993) also belongs on that list.

There is bad Roth as well as good Roth, of course. But, even at his worst, readers know they are in the hands of a resoundingly intelligent writer. That is part of the pleasure of reading him: the feeling of being in the company of a mind that will not let you down in terms of the reach and grasp of what you are about to encounter. A shaping dramatist for whom the human drama is at once sexual, spiritual and intellectual. A novelist who credits his readers with the same understanding and intellectual resources as himself. Look, he seems to say, *I saw this and I found that. I know you live and feel as deeply as I do—so I know you’ll recognise the comedy, the horror, the tragedy and the farce.*

Then there is the actual writing. Sentence by sentence, he attended closely to words. The hyper-illuminated minds of his protagonists and the wars they fight, often with themselves, disguise the ingenious artistry of his work. He was a formidably precise writer; as a pilot of the English language, he was as exacting as Austen and as careful as Nabokov. He was richly alive to cadence and euphony. His paragraphs are written to careful rhythms, from incantatory to fulminatory with every stop on the way in between.

Nobody is dying

Something to do with the marriage of high seriousness and low comedy is at the core of his work; something to do with the wars against false piety, against the fantasy of purity and other forms of sanctimony; something to do with how the novel is playful and capacious enough to contain the life of the mind and the body and the spirit; something to do with human indignation and with human dignity; something to do with an epic disregard for the rigid tedium of conventions and the dishonesties of human life, relationships and consciousness.

Writing of the pianist Yefim Bronfman in “The Human Stain” (2000), a novel of campus and racial angst, Mr Roth said:

He doesn’t let that piano conceal a thing. Whatever’s in there is going to come out, and come out with its hands in the air. And when it does, everything there out in the open, the last of the last pulsation, he himself gets up and goes, leaving behind him our redemption. With a jaunty wave, he is suddenly gone, and though he takes all his fire off with him like no less a force than Prometheus, our own lives now seem inextinguishable. Nobody is dying, nobody—not if Bronfman has anything to say about it.

Not if Philip Roth had anything to say about it. ■

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The Economist May 26th 2018



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Economic data

% change on year ago

	Gross domestic product			Industrial production	Consumer prices		Unemployment	Current-account balance		Budget balance	Interest rates, %	Currency units, per \$	
	latest	qtr*	2018 [†]	latest	latest	2018 [†]	rate, %	latest 12 months, \$bn	% of GDP 2018 [†]	% of GDP 2018 [†]	10-year gov't bonds, latest	May 23rd	year ago
United States	+2.9 Q1	+2.3	+2.8	+3.5 Apr	+2.5 Apr	+2.4	3.9 Apr	-466.2 Q4	-2.8	-4.6	3.08	-	-
China	+6.8 Q1	+5.7	+6.6	+7.0 Apr	+1.8 Apr	+2.3	3.9 Q1 [§]	+121.0 Q1	+1.1	-3.5	3.26 ^{§§}	6.39	6.89
Japan	+0.9 Q1	-0.6	+1.4	+2.4 Mar	+0.6 Apr	+1.0	2.5 Mar	+197.0 Mar	+4.0	-4.9	0.04	110	111
Britain	+1.2 Q1	+0.4	+1.4	+2.9 Mar	+2.4 Apr	+2.5	4.2 Feb ^{††}	-106.7 Q4	-3.7	-1.8	1.57	0.75	0.77
Canada	+2.9 Q4	+1.7	+2.3	+4.5 Feb	+2.2 Apr	+2.2	5.8 Apr	-49.4 Q4	-2.7	-2.0	2.44	1.29	1.35
Euro area	+2.5 Q1	+1.6	+2.3	+3.0 Mar	+1.2 Apr	+1.5	8.5 Mar	+473.7 Mar	+3.3	-0.9	0.51	0.85	0.89
Austria	+2.9 Q4	+1.6	+2.8	+5.1 Feb	+1.8 Apr	+2.1	5.0 Mar	+7.7 Q4	+2.4	-0.6	0.59	0.85	0.89
Belgium	+1.6 Q1	+1.6	+1.9	+0.1 Feb	+1.5 Apr	+1.7	6.4 Mar	-0.8 Dec	nil	-0.9	0.85	0.85	0.89
France	+2.1 Q1	+1.0	+2.0	+1.8 Mar	+1.6 Apr	+1.7	8.8 Mar	-12.6 Mar	-0.8	-2.4	0.83	0.85	0.89
Germany	+2.3 Q1	+1.2	+2.3	+3.2 Mar	+1.6 Apr	+1.6	3.4 Mar [‡]	+312.3 Mar	+7.7	+1.0	0.51	0.85	0.89
Greece	+1.8 Q4	+0.4	+1.6	+1.1 Mar	nil Apr	+0.7	20.8 Feb	-1.8 Mar	-1.2	+0.2	4.36	0.85	0.89
Italy	+1.4 Q1	+1.2	+1.4	+3.6 Mar	+0.5 Apr	+1.1	11.0 Mar	+53.0 Mar	+2.7	-2.0	2.41	0.85	0.89
Netherlands	+2.8 Q1	+2.1	+2.8	+3.5 Mar	+0.9 Apr	+1.4	4.9 Apr	+84.9 Q4	+9.8	+0.8	0.71	0.85	0.89
Spain	+2.9 Q1	+2.8	+2.8	-3.6 Mar	+1.1 Apr	+1.4	16.1 Mar	+25.9 Feb	+1.7	-2.6	1.43	0.85	0.89
Czech Republic	+5.5 Q4	+2.0	+3.6	-1.0 Mar	+1.9 Apr	+1.8	2.2 Mar [‡]	+1.9 Q4	+0.7	+0.9	1.99	22.1	23.6
Denmark	+1.3 Q4	+1.2	+1.9	-9.8 Mar	+0.8 Apr	+1.2	4.1 Mar	+23.0 Mar	+7.8	-0.7	0.54	6.37	6.63
Norway	+0.3 Q1	+2.5	+1.9	-6.7 Mar	+2.4 Apr	+2.2	3.9 Feb ^{††}	+20.2 Q4	+6.1	+4.9	1.95	8.11	8.35
Poland	+4.4 Q4	+6.6	+4.2	+9.2 Apr	+1.6 Apr	+1.9	6.6 Mar [§]	-0.5 Mar	-0.7	-2.2	3.23	3.69	3.74
Russia	+1.3 Q1	na	+1.7	+1.0 Apr	+2.4 Apr	+3.1	4.9 Apr [§]	+41.7 Q1	+3.4	-0.9	8.13	61.6	56.3
Sweden	+3.3 Q4	+3.5	+2.5	+6.8 Mar	+1.7 Apr	+1.7	6.8 Apr [§]	+17.1 Q4	+4.0	+0.8	0.70	8.78	8.69
Switzerland	+1.9 Q4	+2.4	+2.2	+8.7 Q4	+0.8 Apr	+0.7	2.7 Apr	+66.6 Q4	+9.7	+0.8	0.09	0.99	0.97
Turkey	+7.3 Q4	na	+4.3	+6.8 Mar	+10.8 Apr	+10.7	10.6 Feb [§]	-55.4 Mar	-5.7	-2.8	15.01	4.87	3.56
Australia	+2.4 Q4	+1.5	+2.7	+1.6 Q4	+1.9 Q1	+2.1	5.6 Apr	-32.3 Q4	-2.2	-1.2	2.87	1.32	1.33
Hong Kong	+4.7 Q1	+9.2	+2.9	+0.7 Q4	+1.9 Apr	+2.5	2.8 Apr ^{††}	+14.7 Q4	+4.0	+0.8	2.30	7.85	7.79
India	+7.2 Q4	+6.6	+7.2	+4.4 Mar	+4.6 Apr	+4.8	5.9 Apr	-39.1 Q4	-2.0	-3.5	7.85	68.4	64.8
Indonesia	+5.1 Q1	na	+5.3	+1.1 Mar	+3.4 Apr	+3.5	5.0 Q1 [§]	-20.9 Q1	-2.1	-2.5	7.50	14,207	13,303
Malaysia	+5.4 Q1	na	+5.5	+3.1 Mar	+1.4 Apr	+2.5	3.3 Mar [§]	+12.2 Q1	+3.2	-2.8	4.22	3.98	4.29
Pakistan	+5.4 2018**	na	+5.4	+1.8 Mar	+3.7 Apr	+5.0	5.9 2015	-16.7 Q1	-5.8	-5.4	8.50 ^{†††}	116	105
Philippines	+6.8 Q1	+6.1	+6.4	+13.5 Mar	+4.5 Apr	+4.8	5.3 Q1 [§]	-2.5 Dec	-0.2	-1.9	6.30	52.5	49.8
Singapore	+4.4 Q1	+1.7	+3.2	+5.9 Mar	+0.1 Apr	+0.9	2.0 Q1	+61.7 Q1	+20.6	-0.7	2.63	1.35	1.39
South Korea	+2.9 Q1	+4.4	+2.9	-4.3 Mar	+1.6 Apr	+1.7	4.1 Apr [§]	+71.1 Mar	+4.7	+0.7	2.76	1,081	1,124
Taiwan	+3.0 Q1	+1.3	+2.7	+8.5 Apr	+2.0 Apr	+1.3	3.7 Apr	+84.8 Q1	+13.9	-0.9	1.02	29.9	30.1
Thailand	+4.8 Q1	+8.1	+4.0	+2.6 Mar	+1.1 Apr	+1.3	1.2 Mar [§]	+50.2 Q1	+10.2	-2.3	2.62	32.1	34.4
Argentina	+3.9 Q4	+3.9	+2.6	+3.2 Apr	+25.6 Apr	+22.5	7.2 Q4 [§]	-30.8 Q4	-5.3	-5.1	6.15	24.5	16.0
Brazil	+2.1 Q4	+0.2	+2.6	+1.3 Mar	+2.8 Apr	+3.4	13.1 Mar [§]	-8.3 Mar	-1.2	-7.0	8.44	3.65	3.26
Chile	+4.2 Q1	+4.9	+3.2	+8.7 Mar	+1.9 Apr	+2.3	6.9 Mar ^{§††}	-3.1 Q1	-0.6	-2.1	4.58	626	671
Colombia	+2.8 Q1	+2.8	+2.5	-1.4 Mar	+3.1 Apr	+3.3	9.4 Mar [§]	-10.4 Q4	-2.9	-2.0	6.64	2,864	2,900
Mexico	+1.3 Q1	+4.6	+2.1	-3.7 Mar	+4.6 Apr	+4.3	3.2 Mar	-18.8 Q4	-1.8	-2.3	7.73	19.8	18.6
Peru	+2.2 Q4	-1.3	+3.7	+2.4 Mar	+0.5 Apr	+1.8	7.0 Mar [§]	-2.7 Q4	-1.7	-3.5	na	3.28	3.28
Egypt	nil Q4	na	+5.4	+6.2 Mar	+13.1 Apr	+16.9	10.6 Q1 [§]	-9.3 Q4	-2.6	-9.3	na	17.9	18.1
Israel	+3.9 Q1	+4.2	+3.6	+6.5 Feb	+0.4 Apr	+1.1	3.6 Mar	+10.5 Q4	+3.5	-2.5	1.93	3.57	3.59
Saudi Arabia	-0.7 2017	na	+1.0	na	+2.8 Mar	+4.4	6.0 Q4	+15.2 Q4	+5.0	-6.1	na	3.75	3.75
South Africa	+1.5 Q4	+3.1	+1.9	+2.3 Mar	+4.5 Apr	+4.8	26.7 Q1 [§]	-8.6 Q4	-2.8	-3.5	8.52	12.6	13.1

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

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Markets

	Index May 23rd	% change on		
		one week	Dec 29th 2017 in local currency terms	in \$ currency terms
United States (DJIA)	24,886.8	+0.5	+0.7	+0.7
China (Shanghai Comp)	3,169.0	nil	-4.2	-2.3
Japan (Nikkei 225)	22,689.7	-0.1	-0.3	+2.1
Britain (FTSE 100)	7,788.4	+0.7	+1.3	-0.1
Canada (S&P/TSX)	16,133.8	+0.2	-0.5	-3.2
Euro area (FTSE Euro 100)	1,232.3	-0.6	+1.9	-0.7
Euro area (EURO STOXX 50)	3,541.8	-0.6	+1.1	-1.5
Austria (ATX)	3,481.8	-0.2	+1.8	-0.8
Belgium (Bel 20)	3,887.2	+0.8	-2.3	-4.8
France (CAC 40)	5,565.9	nil	+4.8	+2.1
Germany (DAX)*	12,976.8	-0.1	+0.5	-2.1
Greece (Athex Comp)	784.9	-0.4	-2.2	-4.7
Italy (FTSE/MIB)	22,911.7	-3.5	+4.8	+2.2
Netherlands (AEX)	565.1	nil	+3.8	+1.1
Spain (IBEX 35)	10,025.0	-0.9	-0.2	-2.7
Czech Republic (PX)	1,099.5	-0.6	+2.0	-1.8
Denmark (OMXC20)	915.4	-0.1	-1.3	-3.8
Hungary (BUX)	35,456.5	-5.6	-10.0	-14.8
Norway (OSEAX)	1,003.9	-0.5	+10.7	+11.6
Poland (WIG)	58,033.7	-2.9	-9.0	-14.2
Russia (RTS, \$ terms)	1,174.7	-1.3	+1.8	+1.8
Sweden (OMXS30)	1,602.1	nil	+1.6	-5.3
Switzerland (SMI)	8,794.9	-2.0	-6.3	-8.1
Turkey (BIST)	101,891.6	-0.3	-11.7	-31.3
Australia (All Ord.)	6,140.3	-1.1	-0.4	-3.5
Hong Kong (Hang Seng)	30,665.6	-1.4	+2.5	+2.1
India (BSE)	34,344.9	-2.9	+0.8	-5.9
Indonesia (JSX)	5,792.0	-0.8	-8.9	-13.0
Malaysia (KLSE)	1,804.3	-2.9	+0.4	+2.0
Pakistan (KSE)	42,772.3	+1.1	+5.7	+0.9
Singapore (STI)	3,496.3	-1.0	+2.7	+2.1
South Korea (KOSPI)	2,471.9	+0.5	+0.2	-0.7
Taiwan (TWI)	10,886.2	-0.1	+2.3	+1.6
Thailand (SET)	1,753.6	+0.2	nil	+1.4
Argentina (MERV)	30,234.0	-4.5	+0.6	-22.7
Brazil (BVSP)	80,867.3	-6.6	+5.8	-3.8
Chile (IGPA)	28,401.0	-1.9	+1.5	-0.2
Colombia (IGBC)	12,055.3	-2.5	+5.0	+9.4
Mexico (IPC)	45,776.7	-1.4	-7.2	-8.4
Peru (S&P/BVL)*	20,907.0	-4.1	+4.7	+3.6
Egypt (EGX 30)	16,662.6	-1.9	+10.9	+10.1
Israel (TA-125)	1,359.2	+0.5	-0.4	-3.2
Saudi Arabia (Tadawul)	8,044.7	+1.1	+11.3	+11.3
South Africa (JSE AS)	57,043.4	-2.7	-4.1	-5.6

Trade-weighted exchange rates

A country's trade-weighted exchange rate is an average of its bilateral exchange rates, weighted by the amount of trade with each of its partners. The dollar, on a downward trajectory since the end of 2016, has risen recently. The greenback has been boosted principally by rising bond yields, which reflect a more positive outlook for the American economy. The Japanese yen, conventionally a safe-haven currency, rose in the first quarter of this year partly because of reduced quantitative-easing purchases; the rally has since eased. The pound has made up ground from its lows after the Brexit referendum. But weak inflation data are putting it under renewed pressure.



Source: Bank of England

Other markets

	Index May 23rd	% change on		
		one week	Dec 29th 2017 in local currency terms	in \$ currency terms
United States (S&P 500)	2,733.3	+0.4	+2.2	+2.2
United States (NAScomp)	7,426.0	+0.4	+7.6	+7.6
China (Shenzhen Comp)	1,834.7	+0.1	-3.4	-1.5
Japan (Topix)	1,797.3	-0.2	-1.1	+1.3
Europe (FTSEurofirst 300)	1,538.9	-0.3	+0.6	-1.9
World, dev'd (MSCI)	2,122.9	nil	+0.9	+0.9
Emerging markets (MSCI)	1,133.1	-1.9	-2.2	-2.2
World, all (MSCI)	515.9	-0.2	+0.6	+0.6
World bonds (Citigroup)	937.5	-0.1	-1.3	-1.3
EMBI+ (JPMorgan)	794.0	+0.2	-5.0	-5.0
Hedge funds (HFRX)	1,276.0 ¹	+0.1	nil	nil
Volatility, US (VIX)	12.6	+13.4	+11.0 (levels)	
CDSs, Eur (iTraxx) ¹	61.5	+9.0	+36.3	+32.8
CDSs, N Am (CDX) ¹	61.9	+1.8	+26.1	+26.1
Carbon trading (EU ETS) €	16.0	+4.7	+97.0	+92.1

Sources: IHS Markit; Thomson Reuters. *Total return index.

¹Credit-default-swap spreads, basis points. ²May 22nd.Indicators for more countries and additional series, go to: Economist.com/indicatorsThe Economist commodity-price index
2005=100

	May 15th	May 22nd*	% change on	
			one month	one year
Dollar Index				
All Items	156.0	157.2	+1.5	+9.8
Food	159.3	161.2	+2.4	+4.5
Industrials				
All	152.5	153.1	+0.6	+16.3
Nfa ¹	144.2	147.6	+3.4	+8.6
Metals	156.0	155.5	-0.5	+19.7
Sterling Index				
All items	210.2	213.1	+5.6	+6.2
Euro Index				
All items	163.5	166.1	+5.3	+4.7
Gold				
\$ per oz	1,294.0	1,292.6	-2.7	+2.6
West Texas Intermediate				
\$ per barrel	71.3	72.2	+6.6	+40.3

Sources: Bloomberg; CME Group; Cotlook; Darmann & Curl; FT; ICDO; ICO; ISO; Live Rice Index; LME; NZ Wool Services; Thompson Lloyd & Ewart; Thomson Reuters; Urner Barry; WSJ. *Provisional

¹Non-food agricultural.

Speakers include:



ENRIQUE ORTEGA
Managing director
Hospital General de Valencia



JOSÉ IGNACIO TORROBA
Chief, pharmacy services
Hospital San Pedro



ENRIQUE ACÍN
Head, department for public
health, penitentiary institutions
Ministry of Interior



EVA BECH
President
National Federation
of Liver Patients and
Transplants



The man in the white suit

Tom Wolfe, chronicler of America, died on May 14th, aged 88

AT SOME convenient point in any morning, Tom Wolfe would put on his working clothes. Over a silk shirt, maybe ultramarine, maybe striped, he knotted a silk tie. A proper Windsor knot! No plastic cheaters, like Marshal McLuhan! Then a perfectly tailored white suit of linen or silk tweed...with double-breasted vest...dark blue trim of the matching square peeking from the breast pocket...cream socks....leather spectator spat boots...the summer *passeggiata* gear of Richmond, Virginia, his home town, transposed to New York. A glance in the mirror—the face fine, a china doll's, with hardly a suggestion of shaving. The underlip puppet-stiff, but the hair floppy in the English style, falling almost to the intertragic notch of his ear.

Work was not far to find, across a few dozen metres of parquet flooring, past orchids and butter-yellow sofas, to his study in his apartment on the Upper East Side. There stood his desk. His desk! A brass-galiered horseshoe in light oak sporting silver inkwells in the shape of top hats, paperweights of *millefiori* Murano glass, an apothecary's balance scale, family pictures in silver frames, a silver-footed chalice of blue Bohemian glass and a figurine of Bugs Bunny. At 90 degrees to the command centre of the desk was a typewriter with the blank paper set. *Ready to write! Ten pages a*

day! Triple-spaced! Forcing himself to do it! But every so often—he would pause—smoothly swivel—to consult his huge thumb-indexed and stand-mounted Webster's for “tabescent” or “prognathous”.

On this typewriter, or its predecessors, with shoulders braced and pinkie finger delicately raised, he banged out the excoriating articles and books that made his reputation. As leader of the New Journalism in the 1960s he piled up detail, drama and the flash of fiction to tell of trips, bus and otherwise, of the LSD crowd across America (“The Electric Kool-Aid Acid Test”), the business of customising cars in Los Angeles (“The Kandy-Koloured Tangerine-Flake Streamline Baby”), and status battles among pilots and astronauts in the first space programme (“The Right Stuff”). Status and power! The key to how the human beast worked! The motive for all activity in America, the new Rome, a nation so prodigiously wealthy and militarily mighty it would have made Caesar twitch.

Nostalgie de la boue

In college he had studied Max Weber—imbibed his theories whole and gratefully, letting them seep through him like hot coffee. Men were not individuals so much as social products...inevitably tied to their race and class...but *struggling! Fighting to im-*

press, to rise! And nowhere more than in New York, where he lived ever after coming to work on the *Herald Tribune* in 1962, wallowing too in the city of unbridled appetites and ambition, of overbuilt ugliness, shoving oneupmanship...his favourite that party in 1970 at the Park Avenue duplex of Lenny Bernstein, in the days when status required *nostalgie de la boue*, real revolutionaries at your soirée, hence Black Panthers in leather pieces and wild Afros gobbling tiny morsels of Roquefort rolled in crushed nuts on gadrooned silver platters...Frisson of *bomb-throwing danger!!! Delicious counterpoint! Radical Chic!*

On that typewriter too he had written the Great American Novel. For at just the moment when American society had become so wild, bizarre, Hog-stomping and Baroque that it cried out to be chronicled by a Zola or a Balzac, the novel had died. Those old bone-piles of American literature, Mailer, Updike and Irving, were writing psychological fantasies or books of otherworldly preciousness. *Never left their studies!* But he embarked on a novel as detailed as his journalism. A novel of the *real world*. From the trading floors of Wall Street to the police holding-pens of the Bronx he told the story of Sherman McCoy, bond-trader and Master of the Universe, and his fall from grace. “The Bonfire of the Vanities” was everyone's vanity. New York's. America's. Sherman in the stinking cells...his terrifying stumbles into the black netherworld...baying money fever...racism on every side...no redemption...

There were more novels, further investigations of the social mores of Atlanta (“A Man in Full”), of sex and society at university (“I am Charlotte Simmons”) and of immigrants in Miami (“Back to Blood”). The research took years. Each item of cheap clothing was traced to its store, each chair and lamp surveyed and each remark rendered in its exact patois. “If you ain't off'n'at roof, you best be growing some wangs, 'cause they's gonna be a load a 12-gauge bud-shot haidin' up yo' ayus!” His eye and ear were so meticulously malicious that he surely loathed the world, but he was courtly...spoke softly...had a wife and children...opened doors for ladies...and was every inch a WASP southern conservative, holding the ring for God, Country and—usually—the Republican Party.

And he retained the suit. *Always the suit*, even with the perpetually stoned Merry Pranksters in “Acid Test”. Even in barracks, sagebrush, slums. A necktie was his pride. So was the green spiral-top steno notebook in which, like some exquisitely coutured man from Mars, he jotted down everything around him in shorthand with a ballpoint pen. Ken Kesey, leader of the Pranksters, once told him to put his tools away and *Be Here!* But he already *Was!* *Ecce vates! Prophet and seer of the age!* ■



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