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**On the cover**

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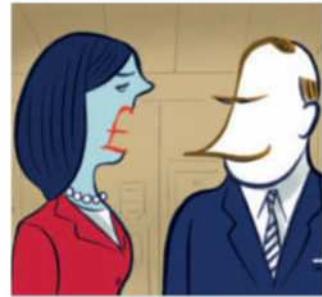
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TIME, A HERMÈS OBJECT.



Carré H
Time, square like a Hermès scarf.

Politics



France's four main railway unions went on strike in protest against reforms planned by President Emmanuel Macron. He proposes to end railway workers' special employment status, which includes employment for life. Energy workers, rubbish collectors and Air France employees are also on strike. The stoppages are the most serious threat yet to Mr Macron's agenda of reforms.

Italy's president, Sergio Mattarella, launched formal coalition talks between the parties, a month after a legislative election produced a fragmented parliament. The populist Five Star Movement emerged as the largest party. But to reach a majority, a pact would be needed with other groups. Five Star has already ruled out a coalition with Forza Italia, the centre-right party of Silvio Berlusconi, a former prime minister and billionaire.

Russian police arrested Ziyavudin Magomedov, a Dagestani billionaire, on charges of racketeering. Mr Magomedov, who owns grain and construction businesses, is associated with Dmitry Medvedev, **Russia's** prime minister, and the arrest is seen as part of a power struggle within the elite. Mr Magomedov has come under fire over alleged irregularities in the construction of a football stadium in Kaliningrad for the World Cup this year.

Banged up

Brazil's supreme court ruled by six votes to five that Luiz Inácio Lula da Silva, a former president, can be jailed while he appeals against a 12-year

sentence for accepting a bribe from a construction firm. He is currently leading in polls for October's presidential election but the conviction could make it impossible for him to run.

Carlos Alvarado won **Costa Rica's** presidential election. A former labour minister for the governing centre-left Citizens' Action Party, he beat Fabricio Alvarado (no relation), a conservative evangelical pastor, with 60.8% of the vote.

The former **Guatemalan** dictator, Efraín Ríos Montt, died while awaiting a second trial on charges that he committed crimes against humanity during the country's civil war. In 2013 he became the first former head of state found guilty of genocide by his own country's courts. The conviction was later overturned on a legal technicality.

A fire in a **Venezuelan** jail killed 68 people but elicited silence from the socialist president, Nicolás Maduro. Police sprayed tear-gas at family members who flocked to the prison for news.

On second thoughts

Israel cancelled a deal with the UN to relocate African migrants who entered the country illegally, many seeking asylum. The deal would have resettled some in the West, with others granted temporary residence in Israel. Binyamin Netanyahu, the prime minister, said he still wants "to remove the infiltrators".

Speaking to an American magazine, Muhammad bin Salman, the crown prince of **Saudi Arabia**, said "the Israelis have the right to have their own land". It was a rare recognition of Israel's right to exist by an Arab leader.

Abiy Ahmed, **Ethiopia's** new prime minister, was sworn in. He immediately offered a hand of friendship to **Eritrea**. The recently-warring countries have been locked in a bitter border dispute. In stark contrast to his predecessor, Hailemariam Desalegn, who

accused Eritrea of supporting anti-government protests, Mr Abiy called for an end to "years of misunderstandings".

It was announced that **Egypt's** president, Abdel-Fattah al-Sisi, was re-elected with 97% of the vote. Some voters said they were paid to cast a ballot, yet turnout, at 41%, was six percentage points lower than in 2014, when the last election was held.



Winnie Madikizela-Mandela, the veteran anti-apartheid activist and ex-wife of Nelson Mandela, a former president, died at the age of 81. Many **South Africans** hailed her as a "mother of the nation", but others saw her as an angry and flawed individual.

Ian Khama, a retired army general, stepped down as president of **Botswana**. He handed the thinly populated but diamond-rich country to his deputy, Mokgweetsi Masisi, after a decade at the helm. The new president inherits a country that has long been heralded as a beacon of African democracy and sound economic management.

Trumped

President Donald Trump ordered the National Guard to **America's** southern border upon hearing that a caravan of roughly 1,000 Central American migrants was travelling north through Mexico. Many of the migrants were fleeing poverty and violence in **Honduras**, a country wracked by protests after a contested presidential election.

The headquarters of YouTube, a video-sharing website, in **California** was stormed by Nasim Aghdam, a user of the

platform, who wounded three workers with a gun before killing herself. It is suspected that she held a grudge against the tech giant for filtering some of her videos.

I'm spinning around

China's first space station, Tiangong-1, crashed into the Pacific. It was launched in 2011 and received two visits by Chinese astronauts. Scientists on the ground lost control of it in 2016.

The *South China Morning Post* says that 500 test burners have been built in order to send silver iodide particles into the atmosphere over **Tibet**. When the water-laden air of the monsoon hits the particles, ice crystals should form and boost precipitation. If the full project involving tens of thousands of burners is completed, it would be the world's largest cloud-seeding operation.

The lower house of **Malaysia's** parliament passed a bill that would impose prison sentences and fines on those who spread "fake news".

India's government, however, retracted new rules that would have rescinded the credentials of journalists found to have published falsehoods.



Rodrigo Duterte, the president of the **Philippines**, acted on his threat to close the island of Boracay, a beach resort that is one of the country's most popular tourist attractions. From April 26th, he said, tourists will be turned away for six months while the authorities extend and repair the inadequate sewage system. Infrastructure problems have left the tropical paradise more of a "cesspool", as he tactfully described the island.

Business

A trade war seemed ever more likely. The Trump administration identified over 1,300 Chinese products, including car parts and television sets, that it would whack with tariffs of 25%. It plans to implement these after a period of consultation. In response China threatened to slap duties on 106 American goods. Donald Trump's demands to cut its trade surplus with America by \$100bn were, it said, "impossible".



Tough talk on tariffs spooked American investors. The **Dow Jones Industrial Average** fell by 2%, before recovering. Firms with the most to lose were the worst hit: the share price for Boeing, an aeroplane-maker and a big exporter to China, fell by nearly 5% on the news before regaining ground. The price of **soybeans**, which account for a large share of American agricultural exports to China, tumbled.

Going postal

Mr Trump took several shots at **Amazon**. He accused the e-commerce giant of enjoying unfair advantages over conventional retailers, alleging that it underpays the US Postal Service for delivery and that it does not pay all its sales taxes. The company's share price fell by around 5% when the president first aimed fire. Amazon made no comment.

Another privacy scandal hit the tech world. Researchers discovered that **Grindr**, a dating app aimed at gay people, had been sharing its users' HIV status with two third-party firms. Facing a backlash, the firm agreed to stop. Face-

book raised its estimate of the number of people affected by the Cambridge Analytica data breach, from 50m to 87m.

Shares in **Tesla** fell after news emerged that one of its cars had crashed in semi-autonomous mode. Regulators rebuked it for publishing details of the incident while an investigation was going on. The firm also reported its production figures for the Model 3, its mass-market electric car, which remain well below target. In an effort to calm concerns about its finances, Tesla insisted it would not need to raise funds this year.

Spotify, a music-streaming service with over 70m paying users, listed its shares in New York. The Swedish firm opted for an unconventional direct listing, allowing existing investors to trade shares freely instead of issuing new stock. The share price ended the first day of trading at \$149, above levels at which it had traded in the private market. That valued the company at \$26.5bn, making it the largest listing since Snap, the parent of Snapchat, floated last year.

Alibaba, a Chinese e-commerce firm, gobbled up Ele.me, China's biggest food-delivery

company, in a deal valuing it at \$9.5bn. The purchase reflects a battle between Alibaba and **Tencent** for the "online-to-offline" market.

Disney stepped into a stand-off between **Rupert Murdoch** and British regulators. The authorities had held up Mr Murdoch's acquisition of Sky, a television network, on the ground that it would give him too much power over the media. Disney, which is also in talks to buy parts of Mr Murdoch's firm, 21st Century Fox, offered to buy Sky's news channel whether its purchase of Fox goes ahead or not.

CBS, an American broadcaster, made a bid for a struggling sibling, **Viacom**. The offer was rejected as too low. Viacom had originally acquired CBS in 2000 before spinning it off in 2006, but the fates of the two networks have since diverged.

Carmakers rejoice

America's Environmental Protection Agency said that **emissions standards** for cars and light trucks planned by the Obama administration were unrealistically high and would be revised. Scott Pruitt, the EPA's chief, also backed a single national standard for emissions, which could spark

a confrontation with the state of California, where rules are stricter than in the rest of the country.

Marketing misery

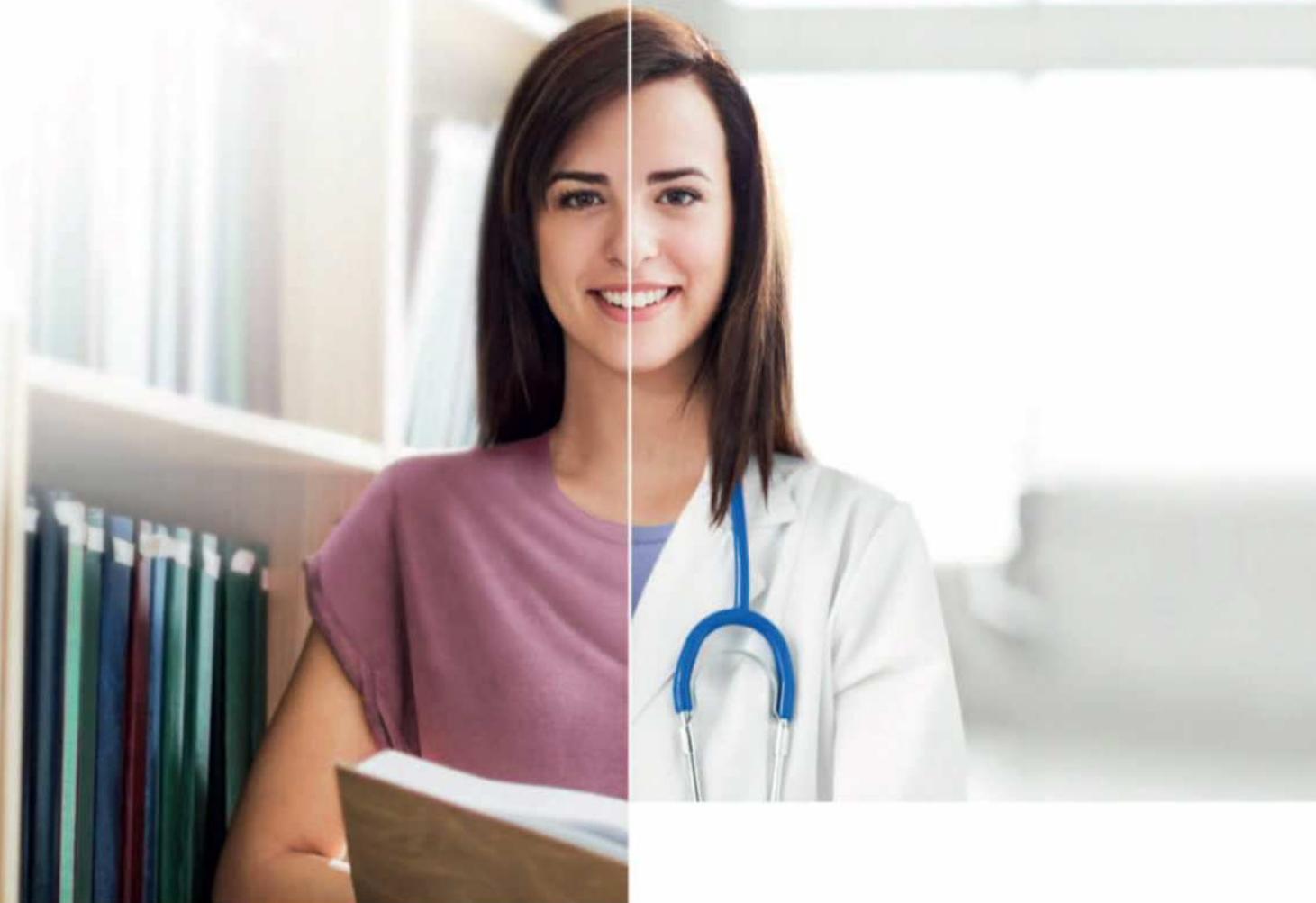
WPP, an advertising group, announced it was investigating whether its chief executive, Sir Martin Sorrell, misused company assets. (He rejected the allegations.) The probe adds to the company's woes: it is under pressure from clients to cut costs and is fighting off competition from digital rivals.

More than 10,000 British employers complied with a deadline to report their **gender pay gaps**. The declarations put the average median differential between male and female earnings at 12%. Gaps were widest in the construction and finance sectors, and narrowest in food and accommodation services.

John Williams was appointed the president of the **New York Federal Reserve**, a role that comes with a standing vote on America's monetary-policy body. Those hoping for a fresh face were disappointed: Mr Williams was previously the chief of the San Francisco Fed.

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





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Solving murder

Violent death is set to soar in some cities of the developing world. How to curb the killing



world's cities threaten to be engulfed by murder.

Of the 560,000 violent deaths around the world in 2016, 68% were murders; wars caused just 18%. Murder has been falling in rich countries (though London is suffering an outbreak—see Britain section), but it has long plagued Latin America and is starting to climb in parts of southern Africa, the Middle East and Asia. The world often goes to great lengths to stop wars. Just imagine if it put as much effort into stopping murders.

Latin America shows what is at stake. It has 8% of the world's people but 38% of its recorded murders (see Briefing). Counting the costs of police, hospitals, victims' lost incomes and so on, the bill for violent crime comes to 3.5% of GDP. The greater toll is human: mothers and fathers burying children, children brought up without a parent and societies deprived of tens of thousands of citizens in the prime of their lives.

There is no excuse for this suffering. Many of the emerging world's problems are intractable. Murder is not one of them.

Dusty death

High murder rates have lots of causes: fragile government; guns and fighters left over from wars; families broken up and forced into the city by rural violence and poverty; drugs and organised crime that police cannot or will not confront; and large numbers of unemployed young men.

The mix of causes in each country is unique but in every case rapid, chaotic urbanisation makes the problem worse. Urbanisation itself is welcome, because it boosts incomes and growth. It need not lead to violence—look at India and China, which have relatively low crime rates. But it can feed a vicious cycle, as the proliferation of murder destroys trust between the police and the people they are meant to protect. Residents keep off the streets. They no longer support the authorities. Impunity grows and the level of violence climbs further.

That is what faces some of the world's poor cities. Many already have the ingredients of a murder culture. Over the next decades these cities are set to grow rapidly. As much as 90% of urban growth will take place in the poor world. By 2030, according to HSBC, a bank, 42 of the 50 most-populous cities will be in emerging markets. Dhaka, Karachi and Lagos, each crammed with roughly 25m people, will join the ten largest.

To understand where this can lead, consider Latin America, where seven countries account for a quarter of the world's murders. Killings often started rising in its cities because of drugs and gangs. Since Latin America urbanised a generation before other developing countries, it has had time to find out which policies help stop the killing—and which fuel it.

El Salvador, though off the main drug-trafficking corridor, has struggled to establish peace since the end of civil war in

THE planet has rarely been so peaceful. Even with terrible fighting in such places as Congo, Syria and Yemen, wars between and within countries are becoming less common and less deadly. But a dark menace looms. Some of the developing

1992. A weak state failed to cater for hundreds of thousands of new city dwellers, driven into slums by fighting in the hills. The police were unable to cope with violent new residents who arrived in the slums: street gangs like MS-13 and Barrio 18. In 2015 El Salvador became the world's most deadly country bar Syria. The police still do not know who is killing whom or why. Ninety-five percent of murders go unsolved.

Yet the continent also has some of the biggest improvers. In many Colombian cities murder used to be the leading cause of death. The rate in Cali in 1994 was 124 per 100,000, four times worse than New York at its most lethal. The mayor was a surgeon who realised that murder was like a disease. Following an approach pioneered in New York and copied across the rich world, he set up “violence observatories” to study precisely how people, places and behaviour led to killings. They found that, even amid a raging drugs war, most murders resulted from drunken brawls. Restrictions on alcohol and guns helped cut murders by 35%. Other Colombian cities tweaked Cali's evidence-based policing to suit their own needs—Medellín, for example, targeted drug cartels. Police and judicial reform, and aid from the United States, were crucial, too. In 2017 Colombia's murder rate was 24 per 100,000, the lowest for 42 years.

The killing in Latin America has been shaped by local factors—political violence, crowded prisons, North America's appetite for drugs. In Colombia an offensive against guerrillas helped cut murders. Yet the continent holds broad lessons.

Because impunity encourages murder, you might think that the secret is tough policing. The Salvadorean government sent soldiers into the streets and threw petty criminals in prison. But both the criminals and the population were brutalised and the murder rate rocketed. Or you could buy peace with truces and special deals between rival gangs. El Salvador tried that, too, but the truce fell apart and the slaughter resumed. Although murders there have fallen slightly in the past two years, killing has become a way of life.

Instead, toughness needs to be targeted. Murder is extraordinarily concentrated—80% of violent killings in Latin American cities occur on just 2% of streets. Detailed crime statistics enable the police to get to grips with the local factors behind the killing. If they know exactly how and where to apply their efforts, they can make arrests and prevent violence.

Learning from murder

The good news is that you do not have to solve all the complex social causes of murder to begin to cut the murder rate. Colombia's innovative mayors helped create a virtuous cycle in which the police caught and punished murderers, and citizens concluded that the police were there to help them and that the streets were safer. Busier streets discouraged murder and other violent crime. Once the virtuous cycle starts to turn, the entire criminal-justice ecosystem can grow stronger.

If all countries cut murder rates to match the best in their region, 1.35m lives will be saved by 2030, says the Small Arms Survey. If they fall back to the worst, an extra 1.25m lives will be lost. Trusted police forces armed with good statistics could spare millions of lives, and an ocean of human suffering. ■

French strikes

How to stay on track

If Emmanuel Macron is defeated by railway unions, his reform programme will be derailed



MAYHEM at railway stations. Gridlock on the roads. The scenes of strife in France this week were as familiar as they were symbolic. On April 3rd train drivers and other rail staff began a rolling strike, planned for two out of every five days, that may last for months. It could be a re-run of the strikes that paralysed the country in 1995, forcing Alain Juppé, Jacques Chirac's prime minister, to back down in the face of chaos. How President Emmanuel Macron handles the confrontation with unions will determine whether he lives up to his electoral promise to "unblock" France, or joins the long list of French leaders defeated by the revolt of the street.

A grève problem

Strikes are part of France's culture of protest. They are seldom just a demand for better wages or working conditions. Rather, they are a political show of force. Having failed to mobilise workers against Mr Macron's labour reform last September, hardline unions now sense a chance to test his resolve. They know how the French romanticise their railways as a jewel of state planning, and disdain British-style privatisation.

The French high-speed train network is indeed a marvel. But SNCF, the state railway company, is laden with debts and ill prepared for upcoming competition under European Union rules. Staff of the French railway enjoy extraordinary privilege, dating from the days when shovelling coal into steam engines was punishing work. In a country with a life expectancy of 82 years, train drivers can retire at 50 (rising to just 52 by 2024) rather than at 62, the national retirement age. Unlike most public workers, they enjoy free train tickets, they receive free health care and, in some cases, subsidised housing.

Despite the unions' scare stories, Mr Macron does not plan to privatise SNCF. Nor is his reform plan particularly radical. Only new rail employees would be without their perks. Current staff—including those on strike—will keep theirs. Even so, 77% of train drivers joined the first day of industrial action. Equally worrying for Mr Macron, Air France staff are also on strike. And discontent has spread to university campuses.

It goes without saying that Mr Macron needs to keep his nerve. A government defeated once by the street will suffer irrevocable damage to its reformist credentials. Mr Macron's reform of SNCF is only part of a bigger effort to reshape the welfare state in a country where the public sector consumes 56% of GDP, the highest in the EU. Mr Macron rightly wants to trim the civil service. That will be difficult unless he can end the jobs-for-life culture.

Fortunately, there are reasons to think that France is not the country of 23 years ago. For a start, Mr Macron was elected on a promise to liberalise the economy and harmonise France's myriad pension regimes so that the same rules apply to all. In contrast, after Mr Chirac came in vowing to heal the "social fracture", his hard line was seen as a broken promise. In 1995 public opinion backed the grévistes, and support grew even as the strikes dragged on. Today commuter lines are creaking, and more of the French accept the need for change. At the age of 50, most French people have many years of toil ahead of them. Why should train drivers be different?

This is thus a contest that Mr Macron can win. But he needs to sound the right note—of determination but not arrogance. He should control his tendency to Jupiter-like haughtiness. His fight is not only to defeat unreasonable unions, but to win the allegiance of everyone else. The French often fear change as an assault on their way of life. Mr Macron needs to persuade the silent majority that, far from destroying public services, his growth-boosting reforms are the best way to save them. ■

Data privacy

Copy that

America needs a data protection law. Take Europe's and improve on it



AMERICA rarely looks to the bureaucrats of Brussels for guidance. Commercial freedom appeals more than dirigisme. But when it comes to data privacy, the case for copying the best bits of the European Union's approach is compelling.

The General Data Protection Regulation (GDPR) is due to come into force next month. It is rules-heavy and has its flaws, but its premise that consumers should be in charge of their personal data is the right one. The law lets users gain access to, and to correct, information that firms hold on them. It gives con-

sumers the right to transfer their data to another organisation. It requires companies to define how they keep data secure. And it lets regulators levy big fines if firms break the rules.

America has enacted privacy rules in areas such as health care. But it has never passed an overarching data-protection law. The latest attempt, the Consumer Privacy Bill of Rights, introduced in 2012 by the Obama administration, died a slow death in Congress. The GDPR should inspire another try.

The failings of America's self-regulatory approach are becoming clearer by the week. Large parts of the online economy are fuelled by data that consumers spray around without thought. Companies' arcane privacy policies obfuscate what they do with their users' information, which often amounts to ►

▶ pretty much anything they please. Facebook is embroiled in crisis after news that data on 87m users had been passed to a political-campaign firm. Identity-theft is widespread; the annual cost to American consumers exceeds \$16bn, according to some estimates. On March 29th Under Armour, a clothing brand, said that hackers had gained access to information about 150m users of its MyFitnessPal app.

These scandals are changing the calculus about the benefits of self-regulation. Opponents of privacy legislation have long argued that the imposition of rules would keep technology companies from innovating. Yet as trust leaches out of the system, innovation is likely to suffer. If consumers fret about what smartphone apps may do with their data, fewer new offerings will take off—especially in artificial intelligence. It emerged this week that Grindr, a dating app aimed at gay people, had been sharing details of users' HIV status with other firms. Tim Cook, the chief executive of Apple (which, admittedly, has sold itself on the idea that its customers' data should not be a source of profit), has called privacy a "human right". Even Mark Zuckerberg, Facebook's boss, has signalled an openness to regulation. It is striking that many of the firms preparing for the GDPR's arrival in Europe enthuse that the law has forced them to put their data house in order (see Business section).

The need to minimise legal fragmentation only adds to the case for America to adopt bits of the GDPR. One reason behind the new rules in the EU was to harmonise data-protection laws so that firms can do business across Europe more easily. Amer-

ica is moving in the opposite direction. States that have detected a need for greater privacy are drafting their own laws. California, for instance, has pending legislation that would establish a data-protection authority to regulate how the state's big tech firms use Californians' personal data.

Internationally, too, America is increasingly an outlier. Any American firm that serves European customers will soon have no choice but to comply with the GDPR; some firms plan to employ the rules worldwide. Other countries are adopting GDPR-style laws. A similar regime on both sides of the Atlantic would help keep data flowing across borders. The alternative, of a regulatory patchwork, would make it harder for the West to amass a shared stock of AI training data to rival China's.

Putting the personal into data

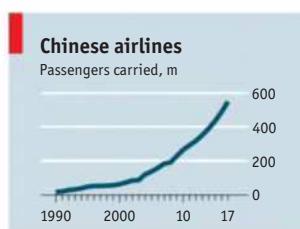
America need not adopt the GDPR wholesale. The legislation is far from perfect. At nearly 100 articles long, it is too complex and tries to achieve too many things. The compliance costs for smaller firms, in particular, look burdensome. In addition, parts of the GDPR are out of step with America's constitutional guarantee of free speech: a "right to be forgotten" of the kind that the new law enshrines will not fly.

But these are arguments for using the GDPR as a template, not for ignoring the issue of data protection. If America continues on today's path, it will fail to protect the privacy of its citizens and long-term health of its firms. America's data economy has thrived so far with hardly any rules. That era is over. ■

Airlines

Dragons fly

The take-off of Chinese aviation could be good for passengers everywhere



OVER the past few decades, established airlines in Europe and America have been hit by one thing after another. First came low-cost carriers, chipping away at their short-haul routes. Lately, a new crop of super-connecting airlines in the Gulf, Emirates, Etihad and Qatar Airways, has lured away their long-haul passengers with superior service and lower fares. Now looms the biggest threat of all—the rise of several promising Chinese airlines (see Business section). Unfortunately, the response of the incumbents risks depriving passengers of the benefits from this latest wave of competition.

China's airlines are rising up the world rankings at a breathtaking pace. In 2007 passengers in China made 184m journeys by air; last year around 550m did. The International Air Transport Association, a trade group, predicts that China will leapfrog America as the world's biggest market in the coming five years. During the next two decades Airbus and Boeing, the world's two big manufacturers of passenger aircraft, forecast that Chinese carriers will buy more jets than American ones.

Passengers who had a choice used to avoid Chinese airlines. Delays were common, accidents frequent and the food inedible. However, after a concerted effort to improve standards, they are winning flyers over. OAG, a data firm, reckons that in 2011-17 the proportion of passenger seats between China

and America on Chinese airlines rose from 37% to 61%.

Losing the battle to fly people in and out of China is one thing. But the menace to the world's established carriers goes deeper. Just as the Gulf airlines expanded by offering connecting flights to international passengers through their Middle Eastern hubs so, too, are Chinese airlines turning themselves into connectors. The cheapest way to get from London to Australia, for instance, is no longer via Dubai or Abu Dhabi but through Guangzhou, Shanghai or Wuhan. The Chinese authorities have loosened visa requirements to encourage this kind of transfer traffic.

China's arrival as an aviation superpower has prompted two responses from big Western carriers—both predictable, neither good. The Europeans are crying foul about government aid, just as they did when the Gulf airlines became a threat. The bosses of Air France-KLM and Lufthansa wail that they are the victims of "unfair trade". They are lobbying for rules that would let the European Union place unilateral sanctions on subsidised foreign rivals, Chinese carriers among them, even before any investigation has been concluded.

The fact that Chinese airlines benefit from support from the state is not in question. But the outrage of rivals is shamelessly conflated. Around the world, the aviation industry has been built on government support. CE Delft, a research firm, reckons that French airlines get €1bn (\$1.2bn) in energy subsidies alone each year. Unilateral sanctions might benefit incumbents, but would restrict choice and harm passengers. A tit-for-tat battle ►

over flying rights would hit Europe harder than China, which is fast becoming a sizeable net exporter of tourists.

The big three American carriers have taken a different tack. They are also happy to play the protectionist card when it suits them. American, Delta and United have all been lobbying hard against the Gulf carriers, for instance. But with China they sniff an opportunity as well as a threat. They want an open-skies treaty, which would allow airlines to fly between any airport in the two countries.

Fare trade

In theory, passengers have much to gain from a deal of this sort. In practice, open-skies deals open the door to joint ventures (jvs), which are granted immunity from antitrust rules and so can potentially lead to higher prices. In 2006-16 the share of long-haul passenger traffic controlled by such jvs

leapt from 5% to 25%. Three jvs account for almost 80% of the transatlantic market. The established American airlines would love to team up with Chinese rivals in order to dominate the Pacific, too.

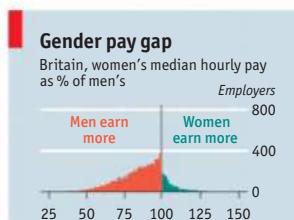
Neither shutout nor carve-up is good for passengers. In an ideal world, Europe and America would seek open-skies deals with China but design them to nurture competition rather than mute it. Airline jvs would be barred from gaining antitrust immunity. Airport slots would be allocated more fairly, so that the best landing and take-off times were not hoarded. State handouts would be transparent.

Alas, the chances of reaching such a sensible accommodation with China's airlines are low. Rising trade tensions between America and China are only part of the explanation (see Finance section). The real problem is that big Western carriers would not much like such policies either. ■

Britain's gender pay gap

How to narrow it

To make pay fairer, make it more transparent



PITY Britain's press officers. April 4th was the deadline for employers in Britain with 250 workers or more to publish details of the difference between the average pay of their male and female employees, under a new annual reporting requirement (The Economist Group recorded a median gap of 29.5%). The overall figures are eye-opening: eight out of ten employers pay men more than women. Theresa May, the prime minister, has promised to tackle this "burning injustice".

Some take the numbers to mean that women are paid less than men for the same job. In fact the exercise bluntly compares employees' pay without accounting for their differing roles—so Premier League football clubs have vast but meaningless pay gaps, as the men on the pitch are compared with the women on the turnstiles. This may even create perverse incentives, as firms could appear better by outsourcing low-paid jobs done by women. Yet the exercise could also lead to deeper questioning of what causes differences in pay (see Britain section). To that extent, the mad scramble among firms—not just for data, but also for justifications—is encouraging.

Even Stevens, and Stephanies

Two problems stand out. First, the data confirm that too few women hold senior positions. Firms have got better at attracting female entrants, but they leak talent, so women become rarer higher up the ranks. Remedies to fix that are well known: generous parental leave (for men and women alike), affordable child care and flexible working hours all help ensure that motherhood need not mark the end of a woman's career.

Second, women still face being paid less than men for doing jobs that are fundamentally similar. Many suspect that clear-cut sexism has given way to more subtle discrimination. Birmingham council was successfully sued for rewarding male-dominated work like street-sweeping more generously than female-dominated work like cleaning. However, quantifying

bias with rigorous statistics is tricky, and made more so by the growth of the knowledge economy—it is harder to compare the jobs of two consultants than two factory hands. Politicians, courts and bureaucrats are ill-placed to compare jobs from afar, let alone to set pay. Better for firms to be open about their pay and aware of biases, which may be unconscious.

At the heart of unequal pay is the asymmetry between employers, who know everyone's salary, and employees, who are entitled to know no one's but their own. As collective wage-bargaining has been replaced by salaries that are negotiated individually, firms have had more scope to pay unequally. Transparency would help overcome this and make the labour market more efficient, as workers and employers could find the jobs or employees that suited them best.

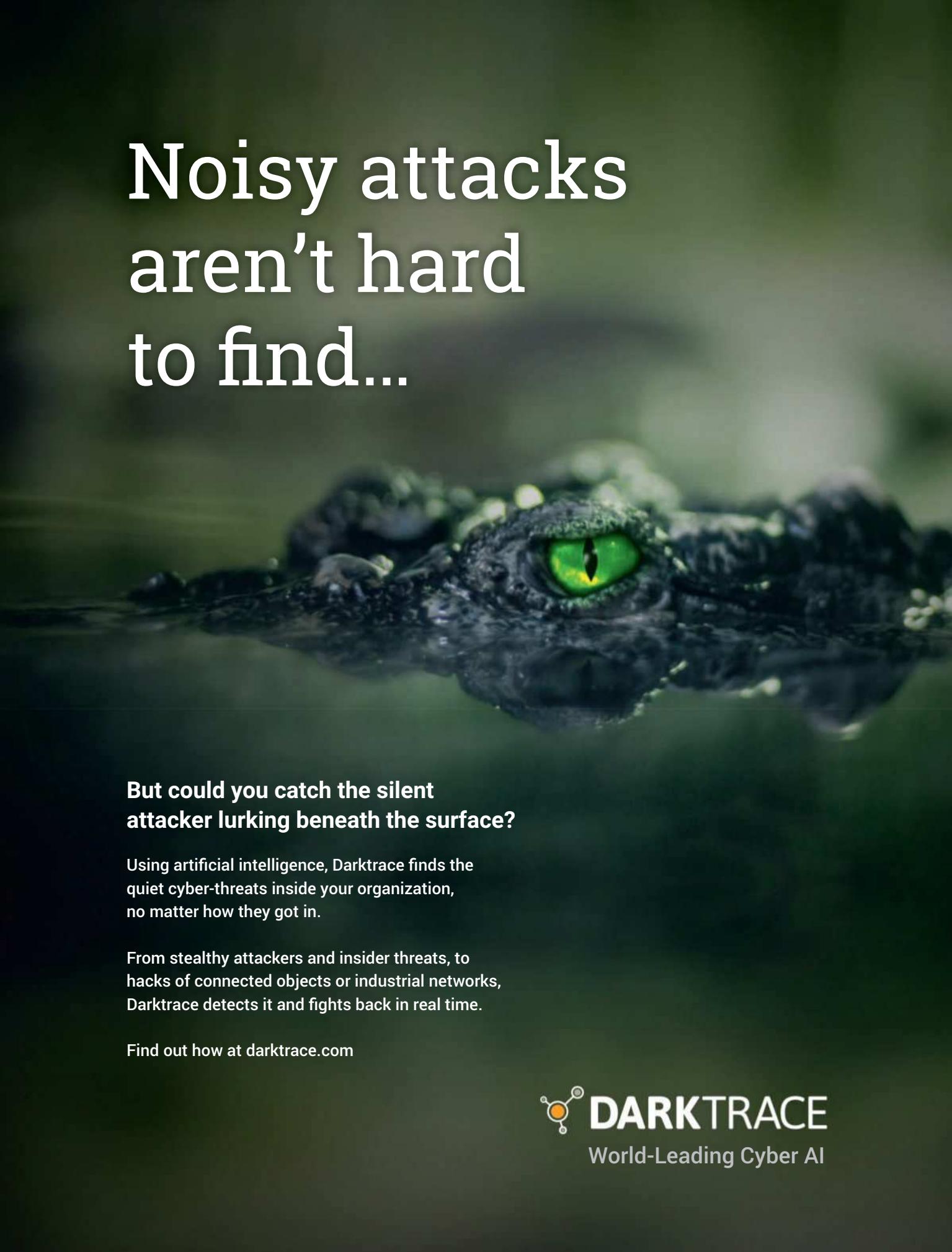
How far should this go? In Sweden firms with more than ten employees fall under a public ombudsman, who can inspect their mandatory pay survey, carry out in-depth audits and ask for changes. In America several big firms have begun voluntary pay surveys, often under shareholder pressure.

More radically, in Finland, Norway and Sweden anyone can look up what their colleagues and neighbours earn. For many, this economists' ideal is a step too far. But discretion could be preserved by borrowing from a new German policy that lets workers in firms with at least 200 employees ask about average pay within a peer group. This gives workers the tools to bargain with, without sacrificing anyone's privacy.

Such measures could help iron out other discrimination. The first pay survey of Salesforce, a cloud-computing firm, in 2016 led to \$3m in salary corrections that benefited men as well as women. Its next survey dealt with discrimination based on ethnicity, leading to a further \$3m in corrections.

Britain's exercise has stimulated reflection in firms that had given barriers to, and biases in, pay and promotion little thought. The goal should not be to eliminate gaps but to get firms to think about which differences in seniority and pay are justified and which are not. The fact that most have accompanied their data with analysis and explanations, and that some have set targets, is at least a start. ■

Noisy attacks aren't hard to find...



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The beautiful briny sea

"Race to the bottom" discussed the new technologies behind the push to mine the ocean floor (*Technology Quarterly*, March 10th). The article was aptly titled, as there is no such thing as an "environmentally sensitive way" to mine the deep seabed. The deep sea is the largest source of species and ecosystem diversity on Earth. Mining is likely to cause irrevocable loss of biodiversity, the world's natural inheritance. In the area where the dredging company you mentioned plans to work, a typical 30-year operation would cover about 10,000 square kilometres of ocean bottom. And sediment plumes will extend the damage over many thousands of square kilometres beyond the mining area.

At last month's session of the International Seabed Authority, an MIT researcher tasked with creating a financial model for seabed mining acknowledged that he had omitted any cost estimates of environmental damages and the loss of ecosystem services.

The ISA must fill that gap, and do so transparently: many of its most important findings are now hidden under a cloak of confidentiality. The world needs an open debate on the exploitation of the deep seabed.

MATTHEW GIANNI
On behalf of the Deep Sea Conservation Coalition
Amsterdam

Freedom for airlines

Correctly noting that airline joint ventures (JVs) are a way for carriers to overcome government restrictions on cross-border investment is only a small part of the story ("Come fly with me", March 17th). Airlines are hamstrung everywhere by anachronistic restrictions on their ability to do business. They are prohibited from operating domestic "feeder" services in any country but their own; not allowed to exercise corporate control over airlines in any country but their own; and even forbidden from operating international

flights that don't begin or end in their own country (or, in the case of European Union airlines, in EU territory). As long as this crabbed framework reigns, there will be no Marritts of the sky. Only through JVs and code-sharing are airlines able to replicate some of what might be possible in a more conventional regulatory setting.

JVs receive immunity only in liberalised open-skies markets in which governments have given up the power to regulate entry, routes, capacity and price. Because liberalisation is a prerequisite to immunity, it is no exaggeration to say that airlines' desire to serve their customers better through immunised JVs has cracked open the global aviation marketplace in ways unimaginable even 20 years ago. Not surprisingly, it is around 64% cheaper to fly today than in 1996.

IATA's members, not just legacy airlines but a growing number of new-model airlines, have long supported the quest for more open and competitive markets.

BRIAN PEARCE
Chief economist
International Air Transport Association
Geneva

Peruvian politics

Your article concerning my resignation contains a number of outrageous inaccuracies ("Odebrecht claims its biggest scalp", March 24th). From day one of our government, the super-majority of the opposition in Congress tried to bring down my administration, claiming the scalps of five of my cabinet ministers, including the transport minister, now Peru's new president. Despite the opposition's fierce efforts, our administration kept Peru growing without inflation or bloated public debt and worked successfully to improve the environment and public health while expanding major infrastructure and clean mining investment.

As for the alleged illegal link between me and Odebrecht, I refer you to the statements of my former colleagues

to the prosecutor, along with the evidence I and others have presented. Odebrecht officials have said that the fees paid to a former business partner's firm were entirely legal and not part of any bribery scheme. All make clear that the supposed link is a politically motivated construct with no credible evidence. Most chilling was the swift pace of proceedings which allowed no time for the role of due process so fundamental to the functioning of a transparent democracy.

I have welcomed a full investigation of my finances and, as a private citizen, will continue to work to assure that Peruvian citizens enjoy health and safety along with their human and civil rights.

PEDRO PABLO KUCZNSKI
Lima

The road to somewhere



Talk of a "freedom to go anywhere" that autonomous vehicles will somehow force us to give up is silly ("Who is behind the wheel?", March 3rd). I cannot "go anywhere" in my mid-size sedan. I can only go to destinations that can be reached by road. And that road needs to be passable. A checkpoint with armed guards, a barricade, a pothole or even a traffic jam will take away my freedom as much as any fiddling with software settings in an autonomous vehicle. A government bent on restricting the mobility of its people already has plenty of options for doing so by regulating access to roads.

Autonomous vehicles will change our cities and present trade-offs, but those who think that cars do not limit our mobility are kidding themselves. For disabled people, who

cannot drive the cars of today, autonomous vehicles hold the promise of freedom to go anywhere for the first time.

ALISA MOSKALEVA
San Francisco

Fisherman's friend

It is true that Britain's fishing industry is too small to jeopardise a future Brexit deal on trade ("A fishy transition", March 24th). Fishing contributes just 0.07% to British GDP, almost nothing. The industry employs only 12,000 people out of a total labour force of 33.6m, or a mere 0.04%.

However, this does not mean that the industry should be left to fend for itself or to meet its demise, especially since for certain communities it is a matter of life and death. Rather, it should be guaranteed support by the British government if Brexit becomes a reality—support that would not bear heavily on the Treasury.

ALI EL-AGRAA
London

On the bench

Charlemagne referred to Jaroslaw Kaczyński as a "back-bench MP" holding no constitutional position (March 3rd). I agree with the latter, but Mr Kaczyński, the leader of Poland's ruling Law and Justice party, defiantly sits on the centre of the front bench in parliament. Defiantly, because his officially allocated seat is to the side of the bench. According to the rules, all MPs must vote from their designated seats. But neither these rules, nor any others, seem to apply to Mr Kaczyński.

As you pointed out, everyone should know who is really in the driver's seat. But in Poland we let the driver sit where he wants.

KAROL KRAS
London ■

Executive Focus



DEPUTY DIRECTOR-GENERAL

Eurostat, Luxembourg
COM/2018/10378

Eurostat is a Directorate-General of the European Commission, providing the European Union with a high quality statistical information service. In addition to serving the European institutions, Member States, financial markets, business community, media and the general public, Eurostat is responsible for co-ordinating and strengthening the governance of the European Statistical System. At the same time, it proposes all EU statistical legislation and drives continuous improvement of statistical systems in candidate countries and across the world.

Your responsibilities:

- To give support in the strategic orientation of Eurostat;
- To manage four Directorates (comprising some 550 staff) in charge of "Methodology, corporate, statistical and IT", "Sectoral and regional statistics", "Social statistics", "Global business statistics" and the Task Force "Big Data";
- To represent Eurostat at high-level meetings and events.

Your skills:

- A proven track record of managing large teams and substantial financial resources at high level;
- Deep understanding of Eurostat's policies and activities;
- Highly developed analytical, decision-making and negotiating skills, as well as proven ability to communicate and interact with the relevant stakeholders.

The European Commission applies an active equal opportunities policy aimed at further increasing the share of women in management functions and it particularly encourages applications from women.

Please consult the Official Journal C 106 A of 21 March 2018 for the detailed vacancy notice as well as the eligibility and selection criteria.
 Registration for applicants:
<https://ec.europa.eu/dgs/human-resources/seniormanagementvacancies/>
 The closing date for registration is 24 April 2018, 12 noon Brussels time.



Executive Director for European Institute of Peace

European Institute of Peace (EIP) was launched in 2014 to complement and add value to EU and European peacemaking. It is an independent peacemaking and conflict resolution actor focusing on issues affecting peace and security of great importance to Europe. It holds a special connection to official diplomacy and foreign policy through its board members, made up of eight European states that share a common commitment to a European and EU global peace agenda.

The Institute complements existing peacemaking efforts through informal diplomacy and independent dialogue initiatives and provides mediation support to multilateral actors in charge of formal peace processes. Pragmatic at heart, EIP develops and spreads practitioner-driven knowledge on conflict resolution and prevention approaches to its partners in the field. It also works to promote a rights-based focus in conflict resolution efforts, embracing a broad concept of justice by vindicating rights with a view to securing short to medium term peace dividends. All the while the Institute maintains a European identity, by working closely with the EU and European partners in strengthening European peacemaking.

EIP sees the EU first and foremost as a peace project. Its vision is one where the EU and European peacemaking actors can draw on all its relevant assets to effectively face the challenges of 21st century conflict resolution. To this end, the Institute aims to be a trusted partner to European institutions and states, able to bridge the gap between excluded groups, tracks and issues to formal peace processes and official diplomacy channels.

EIP is looking for an **Executive Director** to lead the Institute, driving all aspects of EIP's peacemaking mandate forward. **More information at www.eip.org**


Independent Review Committee (IRC) Members

Gavi, the Vaccine Alliance is a public-private partnership committed to saving children's lives and protecting people's health by increasing equitable use of vaccines in lower-income countries. The Vaccine Alliance brings together developing country and donor governments, the World Health Organization, UNICEF, the World Bank, the vaccine industry, technical agencies, civil society, the Bill & Melinda Gates Foundation and other private sector partners. Since 2000, Gavi has contributed to the immunisation of nearly 640 million children and the prevention of more than 9 million future deaths.

Gavi relies upon its Independent Review Committee (IRC), an independent and impartial group of experts, to guarantee the integrity and consistency of an open and transparent funding process. The IRC considers requests for Gavi support holistically, and makes recommendations to Gavi on whether to fund country plans and programmes – for both new vaccine support and health systems strengthening support.

Gavi now seeks to appoint 30 additional public health experts as new IRC Members. Successful IRC Members will bring proven expertise and eminence in a field of public health relevant to Gavi. Collectively, the pool will include expertise in immunisation programmes, in particular on measles and rubella, HPV, and typhoid, and further expertise in health system strengthening, cold chain and logistics, financial and budget analysis, in the context of developing countries and, ideally, fragile and emergency settings.

Gavi seeks individuals who are not only well-rounded technical experts, but who are true team players, effective under pressure. The ability to communicate convincingly, both orally and in written work, is essential. The working language of the IRC is English. Fluency in French is highly advantageous, and is a requirement for at least half of the appointments; fluency, or a working ability, in Spanish or Portuguese is helpful.

Gavi has retained Russell Reynolds Associates to assist with these appointments.

For further information on the position and additional details on qualifications, requirements, terms and conditions of service and how to apply, please visit: www.rraresponses.com

The closing date for applications is 21 April 2018.





Secretary General

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Shining some light

BOGOTÁ AND SAN SALVADOR

Latin America's homicide problem is a harbinger for the developing world

ON JANUARY 11th 2017 no one was murdered in El Salvador—a fact that was reported as far away as New Zealand, Thailand and Russia. At the time, the Central American country had the highest murder rate in the world: 81 per 100,000, more than ten times the global average (see chart 1). On most days more than a dozen Salvadoreans lost their lives to gang warfare, police shootings and domestic disputes. On bad days, the number could be three times higher. Murder dominated newspaper headlines, campaign speeches and dinner-table discussions. A day without it was something to celebrate—and reflect on.

Latin America, which boasts just 8% of the world's population, accounts for 38% of its criminal killing. The butcher's bill in the region came to around 140,000 people last year, more than have been lost in wars around the world in almost all of the years this century. And the crime is becoming ever more common.

Latin America is also the most urbanised part of the developing world, and that is not a coincidence. Its urban population grew in the second half of the 20th century much faster than those of other regions. By 2000 over three-quarters of the population lived in towns and cities—roughly twice the proportion in Asia and Africa. That move from the countryside concen-

trated risk factors for lethal violence—inequality, unemployed young men, dislocated families, poor government services, easily available firearms—even as it also brought together the factors needed for economic growth. As other developing economies catch up with Latin America's level of urbanisation, understanding the process's links to criminality, and which forms of policing best sever them, is of international concern.

In this regard, it is worth noting that the region's countries vary a lot. Some countries in the south of the region have urbanised as fast as those in its north, but murder rates in the south remain comparable to that of the United States. The drug trade in the northern part of the region undoubtedly makes a big difference. And some countries where murder rose have since seen it decline.

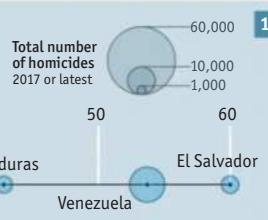
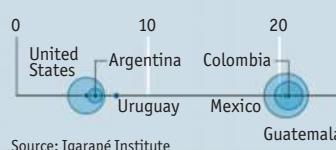
If lessons from those countries that have turned the tide were promulgated a lot of good could be done. The Small Arms Survey, a research group, has three scenarios for the world up to 2030: one in which murder trends continue; one in which the trends seen in the countries that are doing best with murder in their region are exported to their neighbours; and one in which trends start to match those in some of the worst-performing countries. The difference between the best case and the worst adds up to 2.6m lives.

Latin America's crisis has been mounting at a time when, in the developed world, murder has been becoming rarer. As Patrick Sharkey, a sociologist at New York University, shows in "Uneasy Peace", a recent book, the causes of the "great crime decline" America has seen since 1990 are complex and controversial: mass incarceration almost certainly reduced violence, though its impact diminished as a greater share of the population got locked up, leaving broken families on the outside.

Other factors mattered more in other countries. But most of the rich world saw a new stress on the use of data, especially geospatial data, in policing and crime-prevention efforts. That definitely played a ►

A sad distinction

Homicide rate per 100,000 population
2017 or latest



► role. Some approaches built on knowing precisely what was happening where to whom and why were criticised in terms of both cost efficiency and social justice: “Broken windows” policies stamped down on petty crimes it might have been safe to neglect; “stop-and-frisk” disproportionately targeted young men of colour. But there is now little doubt that, overall, data-driven approaches helped bring down crime rates. And when they succeeded they fostered a new confidence in the police, which encouraged community-driven efforts to reduce crime and co-operate with the authorities, all of which further reduced violence. As Adam Gopnik noted in a review of Mr Sharkey’s book for the *New Yorker*, a virtuous circle started to roll.

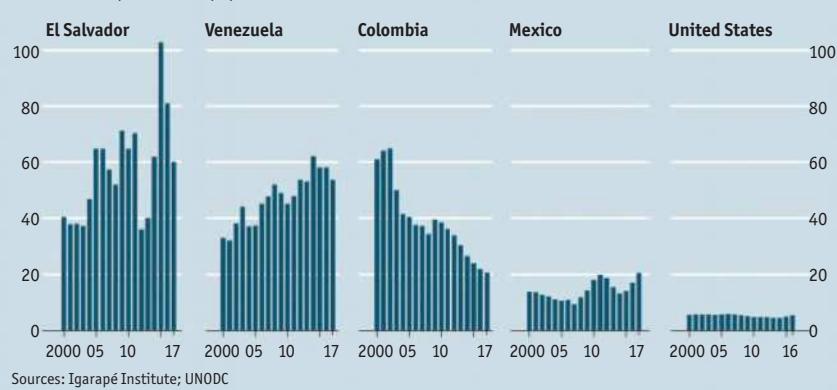
The Latin American trajectory has been the reverse of the rich world’s: the time of greatest concern in the United States was the time of greatest optimism in the south. In the late 1980s and the 1990s the civil wars and military dictatorships that characterised the 1970s and 1980s were giving way to democracies. Tens of millions—some displaced from their farms by guerrilla warfare—flocked to the cities, a willing workforce for the rapid industrialisation that governments hoped to bring about by opening their doors to global trade.

But the economic growth that followed did not match this influx, or the demographic “youth bulge” that exacerbated its effects. Nor did government services such as clinics and schools. People crowded into slums, shantytowns and favelas from where they were hard put to reach jobs. By the early 2010s, the bloodshed in some cities had reached a pitch comparable to that of the internal conflicts that had torn up the region decades earlier (see chart 2).

The causes of the bloodshed varied. Extortion gangs were responsible for a lot in some parts of Central America, drug-trafficking in others (though Costa Rica and Panama, both on the drug route, are relatively peaceful). Institutional weaknesses were widespread. Police and prosecutors in the region were badly trained, underpaid and often corrupt. In some places only one in 20 reports of murder led to a conviction. A penchant for ineffective but brutal government crackdowns often made things worse; grossly overpopulated prisons became crime factories rather than rehabilitation centres. To different degrees in different places, these factors all contributed to a vicious circle, rather than a virtuous one: the worse things got, the less effective efforts to stem the tide became.

But one factor seemed to be constant; where murder was high it was also heavily concentrated. According to Robert Muggah of the Igarapé Institute, a Brazil-based think-tank, approximately 80% of homicides in large and medium-sized Latin American cities occur on just 2% of the streets. Identifying those hotspots is cru-

Cityscapes of crime
Homicide rate per 100,000 population



cial. Randomised-controlled trials of homicide-reduction programmes in cities like New York and Los Angeles have shown that policies which use reliable data to give priority to high-risk places, people and behaviour have the best shot at success.

In most of Latin America those data are lacking. Many homicide reports say only whether the crime was a knifing or a shooting; locations may just be the name of a town. In a report the Inter-American Development Bank (IDB) published in 2012, Lawrence Sherman, a criminologist, concluded that this chronic lack of data “is not an obstacle to solving an important problem. It is the most important problem.”

Truths, not truces

Take El Salvador. In 1996 José Miguel Cruz, a political scientist, gathered data for the IDB’s first regional homicide report there: mayors sent him slips of paper with scrawled tallies marking murders. Today police, prosecutors and coroners meet monthly in San Salvador, the capital, to sort out national totals. But little attempt has been made to understand them, and they are not well used. “Plan Safe El Salvador”, launched in 2015 with support from various international organisations, called for resources to be funnelled to the 50 municipalities which statistics showed to be at highest risk. But because the “municipality prioritisation index” used total crime numbers, rather than rates per person, the plan’s targets for prevention projects were mostly just the biggest towns and cities.

El Salvador’s police claim to collect data good enough to make crime maps that delineate gang territories, but say they cannot release them because doing so could “compromise intelligence operations” and stigmatise residents of violent neighbourhoods. Such claims are common across the region. When they are true, the lack of transparency tends to be ill judged.

Consider the homicide report Mr Cruz worked on. He says that shortly before it was published El Salvador’s president begged the IDB to suppress his country’s

figures, worried that they would hurt the economy. But the real toll on GDP comes not from reports on violence, but from violence itself. Latin American governments spend an average of 5% of their budgets on internal security—twice as much as developed countries. A recent IDB study estimates the direct costs of violent crime in the region—measured by such things as spending on police, hospitals, insurance and private security, and the lost wages of prisoners—at \$236bn a year, calculated on a purchasing-power basis. At \$300 per person, that is much higher than in developed countries. In El Salvador the cost of murder works out at 1% of GDP a year. Countries fear that opening data up to independent analysis will reveal the costly ineffectiveness of their policies. But until data analysis improves, their policies will continue to be ineffective, and often erratic.

That has certainly been the case in El Salvador. In 2004 President Francisco Flores put soldiers on the streets and threw thousands of gang members into prison to clamp down on crime. Murders went up. In March 2012 the government of Mauricio Funes brokered a truce between El Salvador’s three main gangs, giving imprisoned leaders luxuries like flat-screen televisions and fried chicken if they would tell their subordinates to stop killing each other. Murders halved almost overnight, and some criminologists applauded, seeing the policy as a step towards “focused deterrence”—a combination of incentives and threats that is deemed to have worked well in Los Angeles, among other places.

Others were wary, with reason. The truce soon began to unravel, and the gangs began to see violence as a bargaining tool. In early 2015 President Salvador Sánchez-Cerén sent the army back on to the streets and returned gang leaders to top-security prisons. Murders rocketed to 104 per 100,000 people. The number dropped back by 40% over the next two years, something the government put down to “extraordinary measures” in the prisons; for two years tens of thousands of gang mem- ►

bers have seen no relatives, no doctors and no daylight. At the same time the number of members of the public shot by police has gone up 15-fold, sparking an international outcry. "The treatment that the state provides shouldn't be as bad as the sickness itself," says the UN special rapporteur on extrajudicial executions, Agnes Callamard. And for the past six months the murder rate has been on the rise again.

Some Salvadoreans worry their country is heading the way of Venezuela, which stopped releasing murder statistics altogether in 2005. Luisa Ortega Díaz, then Venezuela's attorney-general, started releasing some numbers again after attending a regional conference on homicide data in 2015; last year she was sacked and subsequently fled the country. According to the Venezuelan Violence Observatory, which uses press reports, victimisation surveys and leaks from sympathetic government officials to track murders, Venezuela now has the world's highest homicide rate.

Colombian data exchange

A generation ago that baleful title belonged to its neighbour, Colombia, where the drugs trade and peasants driven into slums by the civil war came together to dreadful effect. In 1994 the murder rate in Cali was 124 per 100,000 people.

Rodrigo Guerrero, the city's mayor and a surgeon by training, launched a plan inspired by the epidemiological approach some North American cities were taking at the time. He set up "violence observatories" where police, public-health officials, academics and concerned citizens could study crime data. This revealed that most of the city's murderers took place in drunken brawls, not in conflict between gangs, and that they were late at night a day or so after payday. Restricting alcohol sales and gun permits helped cut the homicide rate by 35% in a matter of months.

Long-term results were mixed—some

crime was probably displaced rather than prevented, and subsequent mayors discontinued the bans—but Mr Guerrero's data-driven approach to violence spread. In Bogotá, the capital, data-based policing became the norm.

Some experts believe that the only way for developing countries to curb high homicide rates on a permanent basis is systemic reform. But data-driven policing can buy the time—and create the conditions of trust-needed for such reforms to take place, and can work to boost the gains from all sorts of other approaches. In Medellín, where gains against crime have been even more marked than in Cali, targeted action against the local drug cartel and guerrillas first made things safer, and improvements in infrastructure, including cable cars, helped integrate the slums into the city; but data-driven methods learned from Cali also played a role.

In 2017 Colombia announced a murder rate of 24 per 100,000 people, its lowest in 42 years. That is still high, though, and there are more problems to come. The demobilisation of the FARC (the Revolutionary Armed Forces of Colombia) after decades of guerrilla war has created local power vacuums that could be filled by organised crime, especially if the government does not create opportunities for ex-combatants, coca farmers and young people. "Colombia is not approaching heaven," says María Victoria Llorente of the Ideas for Peace Foundation. "We're barely leaving hell, and if we aren't careful, we'll stay in limbo."

A recent proliferation of violence observatories in Latin America—many modelled after Mr Guerrero's Cali flagship—suggests that governments are realising the need for an evidence-based approach to security policy. But even now only two-thirds of the 60-odd observatories track when and where murders take place, and just half try to determine motives, accord-

ing to the IDB. In 2016 Ignacio Cano, a Brazilian criminologist, looked at 93 homicide-reduction programmes in the region, including controls on alcohol in Brazil, an advertising campaign exhorting Venezuelans to "value life", private investigators paid to help public prosecutors in Honduras, a \$400m justice reform in Mexico and mediation with criminals in Jamaica and El Salvador. Some coincided with impressive drops in murder rates—but only 16% actually tried to evaluate their impact.

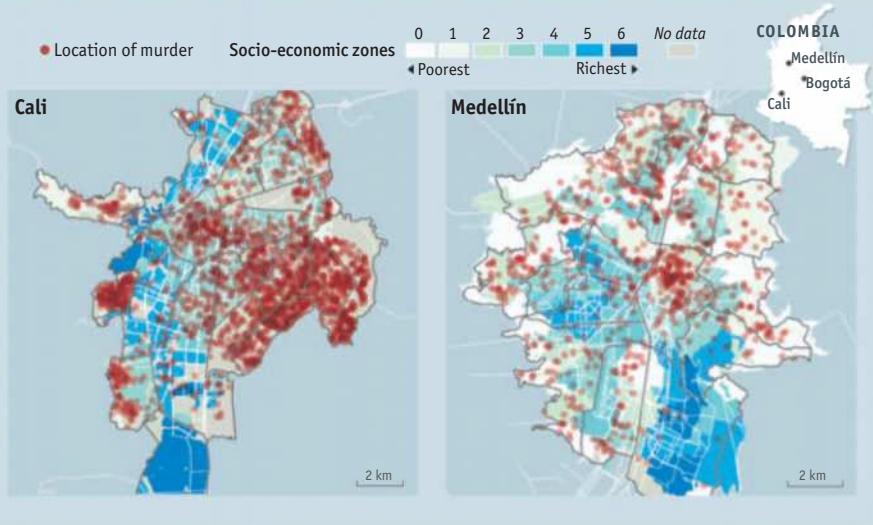
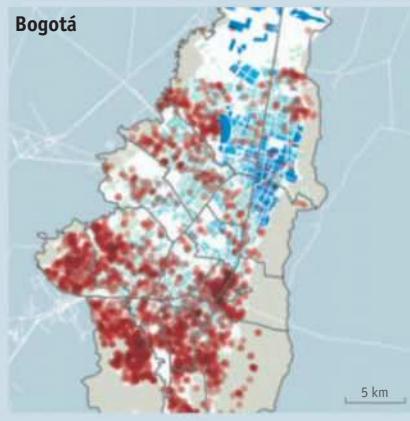
An international campaign called "Instinct for Life" has laid out six principles for reducing murders in Latin America by 50% over the next decade. It stresses both prevention and intervention—and in both cases it sees data as central, whether as a way of revealing what needs to be done or recording the extent to which an intervention has or has not worked. Even without state-of-the-art technology, the campaign says, police could make much better use of the information they already collect.

The rest of the world should take note. Murder already outpaces war as a cause of death. And the world is continuing to urbanise. India and China have accommodated huge increases in urban population while keeping violent crime levels relatively low, in part thanks to economic growth. But other countries exhibit many of the risk factors seen in Latin America a generation ago: widespread displacement as a result of conflict, millions of leftover guns, a demographic bulge, little by way of safety nets and corrupt, ineffective police forces.

The sooner cities and countries build good data analysis into their approach to curbing crime, the fewer of Latin America's problems they will recapitulate. And they will also spare themselves false hope. A few weeks after that day in El Salvador in January 2017, the police concluded that a body found in a shallow grave had, in fact, been dumped there on January 11th. The murder-free day has yet to dawn. ■

Join the dots

Colombia, murders and socio-economic status, 2016



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The gender pay gap

XY > XX

Despite its flaws, a new obligation to report the difference between men's and women's pay could spark a change in employment practices

BRITAIN has one of the widest gender pay gaps in Europe. For every pound that men earn, women make 80p, and the disparity has moved little in 15 years. Vowing to end this “scandal” within a generation, in 2015 the then prime minister, David Cameron, pushed through a policy long resisted by businesses. Organisations with 250 or more employees would have to publish the gap in hourly pay between men and women. April 4th 2018 was the deadline for the first wave of this annual exercise. The results aren’t pretty.

The 10,000 employers that filed results revealed an average median pay gap of 12%. The Economist Group, our parent company, reported a gap of 29.5%, more than double the average for the media industry*. Some, including Ryanair and Jef-feries investment bank, admitted that they paid women less than half what they paid men. Firms also published the share of men and women in each income quartile, with most proving top-heavy with men (see chart on next page).

The data do not adjust for employees’ different roles, so chief executives are compared directly with secretaries. Mean gaps can be skewed by a few high-earners, as shown by the fact that nine of the ten organisations with the greatest differences between their median and mean pay-gaps are football clubs.

All this leaves plenty of room for spin,

misinterpretation and counterproductive responses. Two narratives have emerged. The first is that the gaps prove how sexist and discriminatory the workplace still is. The second is that they are adequately explained by men’s greater share of senior jobs, and have nothing to do with discrimination. Neither is quite right.

Equal pay, unequal work

One misperception is that a gender pay gap reveals pay discrimination. It doesn’t. Pay discrimination refers to people who do the same job, or jobs of similar value, being paid differently. It has been illegal in Britain since 1975 and underpins several big complaints, such as an ongoing £4bn (\$5.6bn) claim against Tesco by female shop staff claiming that they should have been paid the same as mainly male warehouse workers (Tesco denies wrongdoing).

The new reporting exercise is not about such discrimination. Airlines have reported some of the widest pay gaps, yet are unlikely to have unequal pay, because collective bargaining tends to determine salaries in the industry. Of easyJet’s pilots, 94% are men (average salary: £92,400) whereas 69% of cabin crew are women (earning an average of £24,800). The airline industry does not have a pay-discrimination problem so much as a recruitment problem.

Other industries fail to promote enough women—and Britain is not alone

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in that. McKinsey, a consultancy, found that, whereas half of graduate entrants in American law firms were women, only one in five equity partners was. Such “leaking pipelines”, where the share of women drops at every level of promotion, are also clear in financial services, which has the second-widest pay gap of any industry in Britain. A study by SKEMA Business School found that, although women made up 52% of banking employees globally, only 38% of middle managers and 16% of executive committee members were women.

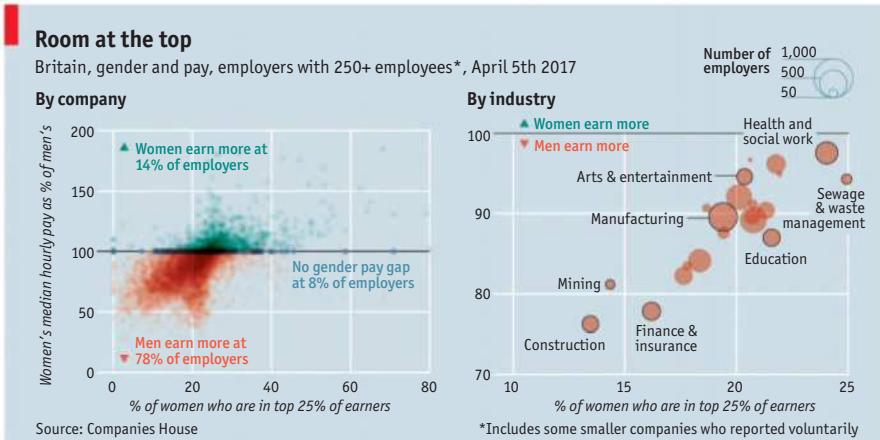
The pay-reporting exercise comes with limited enforcement. Some firms large enough to report have not done so, and several published what looked like implausible pay gaps (a cluster around 0% suggests that some are fibbing or failing to understand the exercise).

But others have accompanied their data with explanations and plans to fix things. RBS, a bank, vowed to achieve gender balance across all ranks by 2030. The Telegraph newspaper promised to close its 23.4% gap by 2025. Because this will be a yearly exercise, many firms’ priority will be to ensure the figures for 2019 show improvement.

They should beware quick fixes. Companies could outsource low-paid administrative work, which would improve their figures overnight. They could also stop hiring junior women, who exacerbate gaps in the short term. Voluntary pay-cuts by the best-paid men—as taken recently by some BBC stars—may be good PR, but they can create backlashes, as in Iceland a few years ago when some men’s salaries were cut after equal-pay claims by women.

Many of the more sensible solutions take time and start with diagnosing what ►

* A full breakdown of our figures can be found at www.economist.com/paygap



lies behind the numbers. "I'm concerned that this British reporting is ostensibly focused on pay, but in reality it's just about representation," says Brian Levine of Mercer, a consultancy. "What companies really need to find out is whether they are hiring equitably, paying equitably and are offering equitable opportunities to advance."

Men's and women's salaries start diverging from the childbearing years. This "motherhood penalty" is often followed by the "good-daughter penalty", when elderly parents require care and daughters prove more conscientious than sons. The median pay gap is only 2% among full-time workers in their 30s, yet jumps to 14% in their 40s and 16% in their 50s, according to the Office for National Statistics.

Tempting as it may be to blame women's lack of progression on their wombs, this is only part of the explanation. The other is structural discrimination. One in nine new mothers is dismissed, made redundant or treated so poorly that she leaves, according to Britain's equality watchdog. Subtler biases favour men in hiring, performance reviews, pay and promotions. A study in 2016 by Warwick University found that, among workers who asked for pay rises, men were 25% more likely than women to get the nod.

Unlike Britain, many European countries tackling pay gaps have focused on discrimination between people with similar jobs, rather than gaps across whole companies. Nevertheless, Britain's blunter exercise is having an impact. The data have got board members, shareholders, customers and employees talking about pay. Now that the numbers are out, executives are keen to "win", says one consultant. Iris Bohnet, an economist at Harvard University, has noted a similar effect caused by awarding hygiene ratings to restaurants and putting energy-efficiency labels on white goods.

If women's positions do improve, it will be hard to say whether it was caused by mandatory reporting or broader winds of change. In America, where President Donald Trump has rejected a similar poli-

cy, companies nevertheless increasingly publish data on pay equality, often under pressure from shareholders. In Britain several accounting and law firms disclosed partners' salaries, though they were excluded from mandatory reporting.

And within companies the case for diversity is increasingly made not in terms of PR but profit, as evidence linking diversity to performance mounts. McKinsey found that companies in the bottom quartile for gender and ethnic diversity in leadership were 29% less likely to achieve above-average profitability.

Even if every company became scrupulously fair, the pay gap would endure as long as more women than men worked part-time and in industries that pay poorly. This prompts a question that is often overlooked: what size should the gap be? Theresa May this week said she wanted her government to end the "burning injustice" of the gender pay gap. The injustice to aim at is not the lack of equality in outcomes, but rather in opportunities. ■

Transatlantic trade

The elusive art of the deal

WASHINGTON, DC

A promised trade agreement with America may never materialise

WHEN pitching an idea to President Donald Trump, a fine sales technique is to tell him that Barack Obama once thought the opposite. Small wonder British Conservatives thought selling Mr Trump a swift free-trade agreement would be a doddle. This was a fantasy. With preliminary talks under way, diplomats, trade experts and business lobbyists warn that a broad British-American trade deal will not be forged any time soon, if ever.

That may startle many Brexiteers. In 2016 Mr Obama warned British voters they would be at the "back of the queue" if they

left the European Union and then asked for a trade deal, because a rational America would focus on agreements with big groups of countries. In happy contrast, Mr Trump calls Brexit "so smart". To give America more leverage, he insists that future trade deals must be one-on-one, rather than "a whole big mash pot". Mr Trump's treasury secretary, Steven Mnuchin, has said that his boss wants Britain at "the front of the line" for a bilateral trade deal.

In theory, a quick-and-easy agreement should delight Republican members of Congress, too. Boosters see a chance to wave their party's free-trade battleflag, a little tattered just now, and to reward the land of Churchill and Thatcher for shedding the shackles of a bossy and socialist Europe. Representative George Holding of North Carolina, a Republican member of the Ways and Means committee which oversees trade policy, has told the president that a trade agreement with Britain should be a priority in his first term. Mr Trump nodded approvingly, says Mr Holding, whose office is a regular stop for Liam Fox, Britain's international trade secretary.

Alas, congressional hearings on Brexit show a pattern. Supporters of Britain's vote to leave the EU favour stirring but vague sloganeering, comparing Brexit to the Declaration of Independence and calling for the British lion to "roar again on the world stage, a formidable force for freedom alongside the American eagle."

Sceptics talk about details. At the best of times, Congress struggles to pass trade deals. With a tariff-loving populist in the White House, these are not the best of times. Realistically, says an insider, any window for trade deals will close months before the presidential election in 2020.

Some in the British government would settle for a limited pact to liberalise economic sectors where British and American views align, such as financial and professional services, or e-commerce, leaving to one side controversial talks about food safety or American investment in the British health system. Other British sources think time has run out even for that modest step. They point to a speech on February 27th by Dr Fox, in which the usually gung-ho Brexiteer insisted that Britain could use a range of flexible, agile tools to boost global trade, from agreements to remove non-tariff barriers, to the mutual recognition of standards and qualifications. To liberalise in a fast-paced world, "a full-blown, gold-plated free-trade agreement may not be the only solution," Dr Fox said.

Another question of timing concerns American business leaders. Though Britain and America are each other's largest foreign investors, the US Chamber of Commerce has warned that much investment in Britain was made "so companies could seamlessly access the much larger EU single market". Until Britain has concluded ►

► trade talks with the EU, it is “very hard to know” what future relations with America will look like, says Marjorie Chorlins, the Chamber’s head of European affairs.

American financial firms stand out for making contingency plans to move some staff and business units. Bankers now assume that British subsidiaries will lose their “passport” right to offer services to clients in EU markets. Some industries are shocked by America’s roughness in talks to replace European agreements that will expire on Brexit, notably a treaty regulating airlines. Other American businesses long for clarity on the movement of labour and the regulation of pharmaceuticals, chemicals and digital services, says the US Chamber. For now they are putting off investments or drawing up contingency plans.

From bridge to back door

In the halls of Congress, there is speculation that US negotiators will bully a “desperate” Britain into conceding things that America can then turn around and demand from the EU, citing the British precedent. No two countries are more closely aligned than Britain and America in views of capitalism and entrepreneurship, enthuses Mr Holding. That is why Brexit Britain “needs to be careful of signing up to any European regulations that would make it more difficult to do business in the US.” In November Wilbur Ross, America’s commerce secretary, said Britain’s exit deal should “[take] into account our commercial interests”. Mr Ross spelled out what he meant: breaking with Europe’s “highly protectionist” standards and regulations.

Dr Fox has accused critics of being “obsessed” with such questions as whether to import American chickens washed in chlorine, a technique banned by the EU. He has half a point. David Salmonsens of the American Farm Bureau Federation, an industry association, suggests that America has plenty of non-chlorinated chicken to sell, so may be flexible in that fight. British-American trade in agricultural goods is not vast. It totals about \$4.5bn a year, with American soybeans, apples and grapes crossing one way, and British cheese, biscuits and breakfast cereals crossing the other. But Mr Salmonsens also makes clear that American farmers, a potent lobby, will not tolerate talks with Britain that sidestep all controversial agricultural questions, such as whether to streamline permits for genetically modified crops. No trade pact stands alone, he explains; talks with Britain are a way to put pressure on Europe. “If there is going to be a future UK-US trade agreement, agriculture will definitely want to be a part of it,” he says.

Some pinstriped Tories boast that Brexit Britain will be a free-market, low-regulation Singapore of the north. Their voters, and supportive newspapers, meanwhile go berserk at news that British passports

Taxing soft drinks

Sweet talk

Makers of cheaper, low-sugar drinks stand to benefit from a new levy

THAT hissing noise is the sound of the British pop industry being shaken up. On April 6th a new tax on sugary soft drinks comes into effect. It is meant to curb obesity, which costs the health service an estimated £6.1bn (\$8.6bn) each year. Under the new law, drinks with over 5 grams of sugar per 100ml will be taxed 18p per litre and those with more than 8 grams 24p per litre. Drinks-makers have two choices: reduce sugar levels and avoid the tax; or keep faith with the recipe and risk sales going flat.

Most have opted to change ingredients, usually by replacing sugar with an artificial sweetener. AG Barr, maker of Irn-Bru, an electric-orange concoction favoured by Scots, has brought almost all its drinks below the sugar threshold. In fact, so many firms have done so that the government has revised down its fore-

casts of the revenue the new tax will bring in each year, from £520m when the plans were announced in 2016, to £240m today. The policy’s advocates would claim this as a success.

Changing recipes can have other advantages too, says Laurence Whyatt of Société Générale, a bank. Notably, sugar costs five times as much as some sweeteners, so switching brings big savings. But tampering with the formulas risks enraging loyal customers. Since January 52,000 people have signed a petition to keep Irn-Bru the same. Some have stockpiled high-sugar versions of the drink.

So, fearing a backlash, big drinks-makers will not tinker with flagship brands, such as classic Pepsi and Coca-Cola. The same goes for energy drinks like Red Bull, partly because sweeteners do not give a sugar-style boost.

Where the new tax is passed on to consumers, the price rise is likely to hit sales—especially in shops, where soft drinks are cheaper than in bars and the extra cost is more noticeable. A two-litre bottle of full-sugar cola could be 48p (or about 30%) dearer than a diet one. Other countries with similar taxes have seen sales of pricier pop fall.

What will consumers choose instead? Most likely the cheaper, low-sugar alternatives. Those who switch away from full-sugar cola because of the tax show themselves price-sensitive, rather than brand loyalists, argues Komal Dhillon of JPMorgan, a bank. Pepsi Max, a no-sugar offering, is already cheaper than Diet Coke and well placed to snap up such consumers. For Britvic, Pepsi’s British bottler, that will be sweet news indeed.



Still the real thing, for now

are to be printed by a French company. Mr Ross’s wish-list is full of tabloid provocations: more “science” in agricultural rules (eg, hormones in beef, ractopamine growth-promoter in pork), an end to geographic protections (eg, rules saying Stilton cheese must be made in England), or letting American carmakers self-certify the safety of exported models, with post-market verification by regulators.

Worse, the concessions Britain might give America are of a sort likely to sour trade talks with Europe—prepare for continental politicians calling Britain a Trojan horse for Trump. The moment Britain imports controversial Yankee crops, cries will go up for a hard border on the island of Ireland, or one separating Northern Ireland from the rest of the UK.

Finally Britain must navigate what one official calls Mr Trump’s *idées fixes*, such as his obsession with balanced trade (a problem given Britain’s sizeable current-account surplus with America) or his desire to equalise tariffs imposed on German cars entering America, and vice versa. Insiders predict that Britain will be pressed to scrap all import tariffs for American-made cars, even if Britain is still imposing them on cars from the EU. As it happens, the largest single shipper of American-made cars to Britain, accounting for 20,000 sales last year, is a BMW plant in Spartanburg, South Carolina. That would be an ironic undercutting of Brexiteer plans to use car imports for leverage: a back door for Germany, created by Mr Trump. What did Brexiteers think “America First” meant? ■



Foreign takeovers

An embarrassment of riches

Why foreign investment into Britain remains so strong

BRITAIN is not exactly bending over backwards to attract foreign investors. The country is marching towards a hard Brexit, which involves quitting the European Union's single market and customs union. Theresa May's Conservative Party has promised to take a tougher line on foreign money, which it links to "aggressive asset-stripping [and] tax avoidance". Jeremy Corbyn, Labour's far-left leader, wants to nationalise the utilities and railways, many of whose owners live abroad.

Yet foreigners have been splurging. Foreign investment in British firms hit an all-time high in 2016. Statistics from Dealogic, a data firm, suggest that so far in 2018 a tenth of announced global mergers and acquisitions have involved a British firm as a target, the highest share since 2008. Klépierre, a French property company, is after Hammerson, a British one, which until recently was listed on the FTSE 100. Comcast and 21st Century Fox, two American media firms, are battling over Sky, whose headquarters are in Britain. Despite the unwelcoming rhetoric, under Mrs May foreign investors have bought British firms at a faster rate than under any other recent prime minister (see chart).

Foreigners have long liked putting money into Britain. For decades the country has had a largely free market in corporate control. Good universities and the English language are other draws. Over the years Britain has attracted more inward investment than most other European countries.

For sure, Brexit has damaged Britain's reputation among foreign investors. A re-

cent survey from PwC, a consultancy, finds that 14% have reduced or paused investment in Britain in the past 18 months. Yet Brexit cuts both ways. The PwC report finds that 7% of foreigners have increased investment. Firms with supply chains across the single market may be consolidating some activities in Britain ahead of Brexit. Meanwhile, a weak pound, caused by traders selling British assets, has made takeover targets cheaper.

But Britain has more to offer than a bargain. Chandru Iyer works for Kingston Smith, an accountancy and business-advisory firm which has helped Indian companies set up shop in Britain since the 1980s. Among other things, they like Britain's low rate of corporation tax, which will fall to 17% by 2020. The "patent box", a scheme by which companies can pay 10% corporation tax on profits earned from patented inventions, is also attractive.

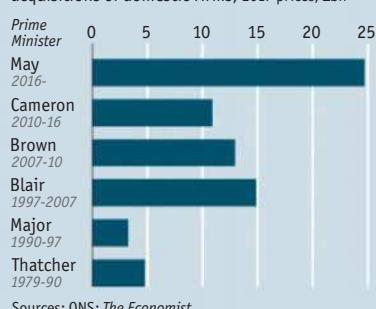
What does all this say about the government's promise to crack down on foreign investors? Mrs May is aiming her rhetoric at the many Britons who hold takeovers, especially foreign ones, in low regard. Many shudder at the story of Kraft, an American food giant, which swallowed Cadbury, a beloved chocolatier, in 2010, then reneged on a pledge not to close a factory. The *Daily Mail* has campaigned to "save" GKN, a venerable British engineering company, from Melrose, an investment firm (which, as it happens, is also British).

In places the government is taking a tougher line. It has won assurances from Melrose that GKN will not be Krafted—in the short term, at least. It will soon have the power to scrutinise deals involving small companies, not just big ones. Firms are also getting extra time to respond to a potential takeover bid before an offer is made.

If these policies sound modest, they are meant to be. Mrs May recognises the benefits that foreign takeovers can bring. New owners often introduce better management and technology, both useful when productivity growth is so weak. With Brexit looming, tough policies to block international capital would be reckless. Foreigners will fancy Britain for a while yet. ■

Citizens of nowhere

Britain, average quarterly value of foreign acquisitions of domestic firms, 2017 prices, £bn



Criminal justice

Easter eggsits

TWO legal chiefs quit. One should cause more concern than the other

EASTER is a time for new beginnings. As with Christianity and the countryside, so it was this year with the justice system. Before the weekend, Nick Hardwick, head of the parole board in England and Wales, resigned following criticism of the board's handling of a high-profile case. On Easter Monday Alison Saunders, boss of the Crown Prosecution Service, said she would leave when her tenure expires later this year. The tabloids led a hallelujah chorus; resurrection seems unlikely.

Ms Saunders has taken flak for bungles over evidence-disclosure and for charging paedophiles and dodgy journalists who turned out to be neither. Yet she claims the government did not try to dissuade her from applying for a second term.

Mr Hardwick's exit is the more significant. He was in effect sacked by David Gauke, the justice secretary, on March 27th. The next day, the High Court published the conclusions of a judicial review into the parole board's decision to release John Worboys, a taxi driver who was jailed in 2009 for sexually assaulting 12 women. He is thought to have attacked about 90 more. The judges criticised the board for not asking enough questions about Mr Worboys's offences, both alleged and proven. Mr Hardwick claims Mr Gauke told him the ruling made his position "untenable". He duly resigned.

Some worry that this compromises the board's independence. They argue that Mr Hardwick is a sacrificial lamb, since the justice minister was represented at the board's original hearing and it was his department's job to include all relevant evidence in the dossier submitted to the board. "The parole board is effectively being punished for taking a decision that is politically inconvenient," says Peter Dawson of the Prison Reform Trust, a charity. He would like the board, which is supervised by the Ministry of Justice, to become a tribunal, answerable only to judges.

Others are concerned about a review into the board that the government launched in January, following complaints about the release of Mr Worboys. The case was unusual because of the large discrepancy between the number of allegations and convictions, and because the parole board is generally "very risk-averse", says Don Grubin, a forensic psychiatrist who often gives evidence at its hearings: "The Worboys case is the exception." Less than 1% of prisoners whom the board releases

► or recommends moving to open prisons commit a further serious offence.

Yet the review could recommend big changes. Some would be welcome, such as scrapping a rule that forbids the panel to explain its decisions. A thornier issue is whether greater weight should be given to unproven allegations. Hearings can already consider them alongside convictions, but the government plans to emphasise this power. Mr Dawson says it could create a dilemma for prisoners: take the blame for unproven allegations, or deny them and risk being judged dishonest.

A new panel will now consider whether to release Mr Worboys. The judges made no ruling on the original panel's decision, so different people could reach the same conclusion. But Mr Grubin says that is unlikely, not least for political reasons. "I bet you any money that won't happen." ■

Violent crime

London's bleeding

Knife crime is surging in the capital

IT WAS another bloody week in London. On April 4th a young man was stabbed to death in the street. Earlier that day, a man died in a bookmaker's and, across town, another was fatally stabbed. On April 3rd a 16-year-old boy died from gunshot wounds. The day before, a 17-year-old died in her mother's arms after being shot from a passing car. On April 1st a 20-year-old was stabbed to death. So far this year, the capital has seen 51 murders.

The press is alarmed. Last weekend the *Sunday Times* claimed that London "is starting to look a bit like New York once did". That is overstating things. London's murder tally last year was far lower than that of New York, let alone that city's peak of 2,245 in 1990. There were 130 murders in London in 2017, compared with 292 across the pond. Though London's total was a little higher than New York's in February and March, it was far lower in January.

Yet there are good reasons for Londoners to be concerned. There were more murders in March than in any month for more than a decade. Violent crime involving a knife rose by a third in the 12 months to July 2017. The victims are often young and are disproportionately black.

Why is London getting so bloody? About 40% of youth homicides are gang-related. Some target teenagers who are being used to run cash and drugs to lucrative markets beyond the capital. Feuds escalate more quickly than in the past, because rival gangs goad each other on social media, police say. Others point to the dwindling number of coppers on

London's elections

Bins or Brexit?

Councillors perform political gymnastics over national issues

IN A youth centre in Hendon, north London, Barry Rawlings faces a conundrum. Barnet, where he leads the council's Labour opposition, has the highest concentration of Jews in Britain. The marginal council is a target for Labour in local elections due on May 3rd. Yet a row over anti-Semitism in the party has complicated this task. Some Jewish voters feel that Labour ignored and then downplayed anti-Semitism, says Mr Rawlings, speaking before an

event to combat Islamophobia and anti-Semitism. He has been sharply critical of the party's handling of the topic. But all is not lost. Other concerns among Barnet's Jewish population are more prosaic: schools, the environment and potholes—"the same as everybody else," he says.

Local and national issues collide in council elections. The vote in London is no exception. Topics range from bins to Brexit via anti-Semitism, housing and austerity, creating problems and opportunities for Labour and the Tories alike.

The capital used to vote in a similar way to the rest of Britain. Now it swings left. Polls suggest that Labour could win just over half the vote, nearly double the Conservatives' share. Once-solid Tory boroughs such as Barnet are expected to fall. Even strongholds like Wandsworth and Westminster look vulnerable. A four-point swing in either would be enough for Labour to outpoll the Tories, though safe Tory wards give Labour a steeper hill to climb before it can win control of the councils.

While Labour councillors deal with the anti-Semitism row, their Tory rivals face another problem: Brexit. Some 60% of Londoners backed Remain. In Wandsworth the share was 75%. EU nationals, who make up a sizeable chunk of some boroughs' populations (and can vote), add another dimension. But politics is still local, says Nickie Aiken, Westminster's leader. "It's bins, not Brexit," she adds, proudly pointing out that bin collections in the borough are still twice-weekly. Still, she is keen to put distance between the local party and the government. "Westminster Conservatives are slightly different to the party nationally," she says.

Tory councils in Westminster and Wandsworth have historically banked on a record of low taxes and decent public services. In 1997 Labour won all three of Wandsworth's MPs; the Conservatives still trounced them by a 17-point margin in local elections the year after. Now this gap has narrowed to eight points. "It's tougher than in the past," admits Ravi Govindia, the borough's Conservative leader. Council tax ranks below health, housing, crime and Brexit among Londoners, polls suggest. In both Westminster and Wandsworth, Labour has matched Tory pledges on tax. The logic is simple: in Wandsworth, council tax provides about 5% of the council's budget. Raising it would burn political capital for little actual capital.

Demographic shifts also make life harder for the Tories. Younger voters favour Labour, and in London 25- to 34-year-olds' share of the population is nearly twice that in the rest of England. Townhouses that once contained middle-class Tories have been converted into flats rented by Labour voters. Events may still intervene, as Mr Rawlings in Barnet can attest. But Labour's grip on the capital should tighten in May. ■



the beat: the number of officers in England and Wales has fallen by 19% since its peak in 2010. "Neighbourhood policing has all but vanished," says David Lammy, a Labour MP in north London. "The intelligence that police pick up on the ground isn't really there."

London's newish chief of police, Cressida Dick, agrees with the mayor that the force should reverse the decline in the use of stop-and-search powers, which have been criticised for targeting ethnic minorities. She also wants knife crime to be regarded as a public-health issue, making it a priority for the health service and councils as well as the police. Such measures will come too late for Tanesha Melbourne-Blake, the 17-year-old who died on April 2nd. "To my baby Nesh," her mother wrote on a note attached to flowers she left at the scene, "I'm gonna miss you so much."

Bagehot | The great survivor

Jeremy Hunt is at last reaping the rewards of his long tenure as health secretary



THREE is no worse cabinet job for a Conservative than secretary of state for health. Everything you do, however benign or banal, is viewed as a covert attempt to privatise the National Health Service. And there is no worse time to be health secretary than during a period of austerity. Since 2010 spending on the NHS has increased by barely 1% a year in real terms, compared with 6% in 2000-09. Yet Jeremy Hunt has been in the hot seat since September 2012, and is just two months away from becoming the longest-serving health secretary in history.

Mr Hunt has survived everything that the political furies could dream up. He weathered the first strikes by NHS doctors for 40 years. He endured the recent “winter of discontent”, which saw the NHS postpone all non-urgent operations (about 55,000 in all) for a month, as patients slept in hospital corridors. He even dodged the sack. In January Theresa May tried to move him to the business department, but he persuaded her not only to keep him in his job, but to give him responsibility for social care, too.

The health secretary has been more than the cabinet equivalent of a bed-blocker. He has presided over some of the most far-reaching reforms of the NHS since Kenneth Clarke held his job in 1988-90. Mr Clarke introduced the internal market, separating purchasers (people who make spending decisions) from providers (hospitals and GPs), who were paid for the number of operations they performed. Mr Hunt has focused instead on “integrating” services, by getting every element of the NHS to work together. He argues that the task facing Mr Clarke’s NHS was to raise productivity, whereas the problem today is dealing with the fact that the number of over-75s will rise by 1m in the next decade. Brief encounters are out, permanent relationships in.

Mr Hunt has also tried to tackle what might politely be called “variance”: the fact that the NHS contains valleys of poor performance as well as peaks of excellence. His approach was shaped by the fact that he arrived in the department just as a scandal broke around dreadful standards of care in Mid Staffordshire, which filled newspapers with stories of unnecessary deaths, distressed patients and sloppy management. It was also shaped by a chance encounter with one of Tony Blair’s advisers, who suggested that what the NHS needed was the equivalent of Ofsted, an inspectorate that goes around schools assessing their performance

and putting failing ones into “special measures”, which can include closer supervision and changes of management.

On his watch, the NHS has been characterised above all by an obsession with managerialism. Inspectors have travelled the country examining hospitals, publicising their results and putting poor performers into special measures (so far, 36 hospitals have met this fate). Mr Hunt is currently much taken with an example from the airline industry, which has slashed the number of fatalities by replacing a “culture of blame with a culture of learning”. Rather than trying to bury mistakes and near-misses, pilots are encouraged to discuss them so that they never happen again.

Mr Hunt is now capitalising on his five years’ experience to push for two big changes: securing a significant increase in NHS spending to make up for years of austerity, and guaranteeing funding for ten years rather than the five preferred by the Treasury. He worries that the NHS suffers from repeated periods of feast and famine. The past seven years of austerity were preceded by a decade of high spending by New Labour. He also worries that the rules make manpower-planning difficult. It takes seven years to train a doctor, for example.

The signs are propitious. Mrs May has hinted at giving the NHS a spending boost to celebrate its 70th birthday this year, and bringing forward a spending review which will look, among other things, at introducing an earmarked NHS levy and extending the funding horizon. Though the Treasury is far from happy, Mr Hunt has powerful allies. Most Tory MPs are acutely conscious that another NHS crisis could usher Jeremy Corbyn’s Labour Party into Downing Street. Tory Brexiteers are determined to make good on their pledge that leaving the EU will release money for the NHS. And Mrs May needs a domestic agenda so that she is not defined entirely by Brexit.

Fighting-fit

Mr Hunt’s prominence raises an inevitable question: is he the man to replace Mrs May when she has served her purpose by pushing through Brexit? His cabinet rivals are petrified that he is “on manoeuvres”. They also bitterly point out that he has retrospectively put himself on the winning side of the Brexit debate. He campaigned for Remain but now claims that, if there were another referendum, he would support Leave.

He certainly has a case for being considered. Admittedly, he is not one for Churchillian rhetoric or brilliant performances at the dispatch box. He is also something of a throwback to the Blair era, with his enthusiasm for ideological cross-dressing and his addiction to ghastly phrases such as “joined-up delivery”. But he has shown that he can learn from his mistakes. Rather than getting stuck, like many Tories, in a war with “providers”, he has gone out of his way since the doctors’ strike to woo NHS employees, visiting a hospital a week. There are also signs that he is weaving his enthusiasm for good management into a broader philosophy. He talks admiringly of Singapore’s ability to transcend the division between planned economies and markets, by using long-term government thinking to train the population and shift resources to the industries of the future.

Good management might sound like tame stuff compared with promising to punish the fat cats, as Mr Corbyn does, or sailing off into the great blue yonder, as the Brexiteers would wish. Huntism is spinach and broccoli rather than meat and gravy. But after the extraordinary turmoil of the past few years, tame stuff may yet turn out to be just what Britain wants. ■



Election in Hungary

Orban's design

BUDAPEST

Hungary's prime minister is set to continue his illiberal reign

IN 1988 a dissident Hungarian university graduate wrote a letter to George Soros, a billionaire philanthropist, asking for help obtaining a scholarship to Oxford University. In the letter, which has recently resurfaced, the young Viktor Orbán said he wanted to study the “rebirth of civil society”. He got the scholarship. Thirty years on, Mr Orbán, now prime minister, looks likely to win his third election in a row on April 8th. But he is busy throttling the independent civil society he once championed.

Mr Orbán's right-wing populist party, Fidesz, is far ahead in the polls. The divided opposition is bickering over whose candidates should step down in local constituencies, in order to unite behind one anti-Fidesz candidate per district. (That tactic led to an opposition win in a former Fidesz stronghold in a mayoral by-election in February.) Nationally, no one is capable of taking on Mr Orbán. The nationalist Jobbik party, which has tacked towards the centre, will probably take second place. The best hope of one despairing opposition grandee is that Fidesz fails to win an overall majority, allowing liberals and left-wingers to form a minority government with the tacit support of Jobbik. Even that is a very long shot.

After eight years in power, and in his third stint as prime minister (he also gov-

erned from 1998 to 2002), Mr Orbán seems a long way from his youthful dissident past. Critics accuse him of presiding over a centralisation of political and economic power unparalleled since the collapse of communism. Civic groups and NGOs say they are under siege, harassed by the authorities, subjected to mysterious dirty tricks and attacked by government politicians and loyalist media. State television is little more than a propaganda arm of Fidesz. Party allies have been placed in charge of independent institutions.

The funds Hungary gets from the European Union, say opposition politicians, are often channelled to Mr Orbán's cronies, including his son-in-law and the mayor of his home village, nurturing a new class of oligarchs. (They deny it.) The health-care and education systems are in decline, especially outside the capital. Hungary has the fifth-lowest life expectancy in the EU, at 76.2 years—lower than Albania's 78.5. Education has been centralised with an old-fashioned syllabus that emphasises rote-learning over analytical skills. International test results show declines in science, mathematics and reading.

A stream of news stories, all furiously contested, allege high-level corruption in government circles. Mr Soros, now Mr Orbán's bitterest enemy, has accused his for-

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mer beneficiary of running a “mafia state”. Mr Orbán is “on an illiberal train and he cannot stop it”, says Viktor Szabadvari, of the progressive Together party. Another Fidesz victory, he says, will mean more attacks on civil liberties, the judiciary, the opposition and civic organisations.

Yet for many voters, none of this seems to matter. Mr Orbán and Fidesz have focused on a single message: the need to stop migration and defend Hungary from outsiders such as Mr Soros, the UN, NGOs and the European Commission. The government accuses Mr Soros and his allies of planning to flood Hungary with Muslim migrants. (In 2015 he called for the EU to accept 500,000 asylum seekers a year; he later lowered the figure to 300,000.) For Mr Orbán, this has been a political godsend. Speaking on March 15th, a holiday that commemorates the 1848 revolution, Mr Orbán told an adoring crowd that Christian Europe and Hungary were waging a “civilisational struggle” against a wave of mass migration, organised by a network of activists, troublemakers and “NGOs paid by international speculators”.

Even if such a network existed, it would be hard-pressed to flood Hungary with migrants. The fortified fence on Hungary's southern border has proved effective, and asylum claims have been reduced to a slow trickle. Yet Mr Orbán's bombast resonates with collective memory. The revolution of 1848 and the 1956 anti-communist uprising (crushed, respectively, by the Habsburgs and the Soviets) are central to Hungarians' view of their own history, leaving them suspicious of foreign interference. The focus on migration is really about national security and independence, and who decides the fate of Hunga- ►

ry, says Agoston Samuel Mraz, of the Nezopont Institute, a think-tank close to the government. "This motivates not only Fidesz voters but also between a third and a half of opposition voters."

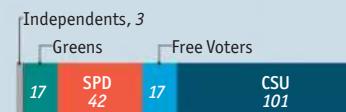
Mr Orbán's supporters say that he has simply delivered on his promises, including his pledge in 2014 to turn Hungary into an "illiberal", if democratic, state. "The opposition deny the validity and relevance of everything we do," says Zoltan Kovacs, a government spokesman. In his view, the state media and institutions remain free of political control; concerns about the new constitution and centralisation of power have long been settled with the European Commission and other bodies. Claims of cronyism, he says, are "political", and there are no rules barring politicians' friends or

relatives from public procurement, if they provide high-quality work. Besides, "nobody has elected NGOs," Mr Kovacs continues; "this is elitist activism."

More relevant to many voters, however, is the strong economy. Hungary still has plenty of poverty, especially among the Roma. But its middle class is doing well. Residential-property prices are rising in Budapest, driven up in part by an influx of foreign investors. GDP grew 4% in 2017, and unemployment is down from 11.6% in 2010 to 3.8%. The average monthly gross wage rose by 13% in the year to November, to 323,000 forints (€1,040). For many Hungarians, this is reason enough to vote for Fidesz. For the rest, Mr Orbán can fall back on his familiar bogeymen: Mr Soros and an assortment of nefarious foreigners. ■

Right at home

Germany, Bavarian parliament
Current seats by party, total seats: 180



Source: Bavarian Parliament

gressive politics of identity and belonging. On the CSU's insistence, Mr Seehofer will also occupy a new post of federal "Heimat minister", responsible for integration and cultural politics. Alexander Dobrindt, the party's leader in the Bundestag, wants a "conservative revolution" against liberal values. Mr Söder promises crucifixes on the walls of all public buildings to assert the primacy of "Christian-Western" culture. Most contentiously, on March 16th Mr Seehofer opined that "Islam is not part of Germany". The next week in the Bundestag he added the phrase "in any form", in defiance of Germany's more than 4m Muslims. "Multiculturalism has failed. Political correctness is no Heimat," Mr Dobrindt said on March 25th.

While the CSU expropriates the AfD's themes in Bavaria, a sort of experimental control is being conducted in the rest of Germany. Under Mrs Merkel and Annegret-Kramp Karrenbauer, the party's new general secretary, the CDU is steering clear of culture wars in favour of bread-and-butter issues like safe streets and living standards. Both women rejected Mr Seehofer's claim. "Islam has become part of Germany," countered the chancellor in the Bundestag. Which branch of Germany's centre-right more efficiently marginalises the AfD will offer lessons for mainstream parties fighting populists across Europe. The echoes of this experiment will be heard far beyond Bavaria's Alps. ■

Germany's Heimat politics

Homeland insecurity

ERLSTÄTT AND MUNICH

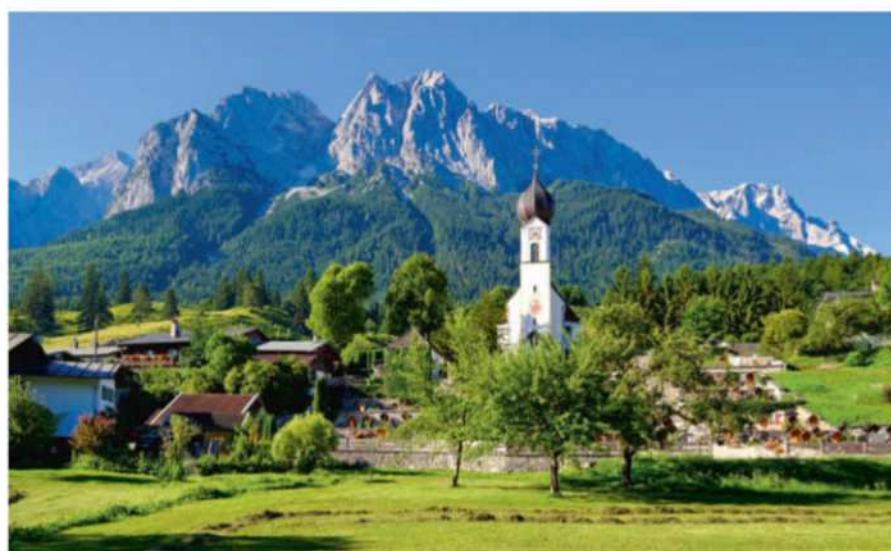
Bavaria's conservatives embrace identity politics to fend off the far right

THE Rittbitten is as characteristic of Erlstätt, a village in southern Bavaria, as the onion dome of its church and the Alpine peaks on its horizon. Each year villagers gather at the Gasthaus Fliegl restaurant, where, accompanied by a brass band in lederhosen, the religious Saint George Society invites locals to join an Easter Monday horseback ride. It is respect for the old ways, says Andreas Fliegl, that has made this place so successful: "We have the lowest unemployment in Germany." He is thinking of entering his restaurant in a competition, created by Marcus Söder, the new Bavarian premier, to find the state's best "Heimat inn". Heimat means home, but also tradition, belonging and place. In Bavaria, it is the front line of a big political experiment.

At the general election last September the far-right Alternative for Germany (AfD) did best in Germany's formerly communist east, which suffers from economic decline, antipathy to refugees and weak connections to established parties. In contrast, Bavaria is rich, has managed migrant inflows more smoothly than other states and has its own deep-rooted conservative party: Mr Söder's Christian Social Union (CSU). Yet in Bavaria, the CSU lost more than ten points of support at the election, while the AfD rose eight points to 12%. Horst Seehofer, the then party leader, blamed Angela Merkel and her liberal refugee policies, even though the CSU, which took a tougher line on migrants, suffered a worse fall than Mrs Merkel's party, the Christian Democrats (CDU).

After the election Mr Söder, the traditionalists' favourite, toppled Mr Seehofer. Bavaria faces a state election in October, and polls show the CSU could lose its majority for only the second time in 54 years. The AfD could even come second. So the CSU is concentrating on the law-and-order issues that motivate right-wing voters. In federal coalition talks it managed to get Mr Seehofer the post of interior minister in Berlin, a handy platform for flaunting his party's conservatism. In Munich, Mr Söder promises more armed police, surveillance and immigrant deportation centres.

This strategy has a second prong: an ag-



Bavarian villages oppose Heimat change

French overseas territories

The isle is full of noises

Europe's leakiest border is on the other side of the world

MANY Europeans feel their homelands have too many immigrants. In countries like Germany, as many as 15% of the population are foreigners. But on Mayotte, a small French island in the Indian Ocean with a population of 256,500, the share is more than half. Immigration has led to violent protests and a general strike, bringing the island to a standstill since February. Locals have begun rounding up suspected illegal immigrants, and the island is descending into chaos.

"Every night ten boats carrying at least 30 people arrive on our shores," says Mansour Kamardine, Mayotte's deputy in France's National Assembly. "It is absolutely intolerable." Many of those arriving are pregnant women. Every year, 70% of the 10,000 births in the island's sole maternity hospital are to illegal migrants. France's policy of *droit du sol* (birthright citizenship) means they are entitled to French nationality. French officials are considering making the hospital a non-French territory.

The Comoros islands, including Mayotte, were a single French colony until the 1970s, when the people of Mayotte, known as Mahorais, voted to split off and become a French overseas territory. Political turbulence and poverty in the other three islands, which became the independent Union of the Comoros, have since led thousands to flee to Mayotte. Comorians now make up 42% of Mayotte's population. Some have legal status; many do not.

The rate of immigration has risen since Mayotte became France's newest overseas department (DOM) in 2011. With the same political status as residents of mainland France, the Mahorais expected higher living standards and better infrastructure. Seven years on, joblessness, now at more than a quarter, has not fallen, but DOM status means more taxes. Prices are high: in 2015 living a mainland French lifestyle on Mayotte cost 17% more than in France. In 2014, the last year it was measured, the island's GDP per person, at \$10,600, was the lowest in the European Union; 84% of its people live below the poverty line.

As elsewhere in Europe, immigrants have become scapegoats. But it is true that Mayotte's growing population is straining services. Hospitals are struggling to cope. Schools are "saturated", says Claire Petit, a high-school teacher. The current unrest began as a gang clash at a high school, which spilled over into a protest movement.

To its neighbours, Mayotte still looks

Interrogating Facebook

What do they know?

The EU guarantees its citizens' data rights, in theory

IN THE wake of the scandal over the unauthorised use of Facebook data by Cambridge Analytica, a campaign consultant, some Americans are looking enviously at the European Union, whose privacy laws are the global gold standard. Rights over personal data are enshrined in the EU's Charter of Fundamental Rights. European citizens have the right to have their data processed fairly, to know what data an organisation holds about them and what it is doing with those data. The General Data Protection Regulation (GDPR), a law strengthening data protection across the EU, goes into force at the end of May (see Business section). Yet in practice, when European citizens try to exercise such rights, they tend to end up mired in bureaucracy.

Take the case of Paul-Olivier Dehaye. In December 2016 Mr Dehaye, a Belgian mathematician, e-mailed Facebook asking for a copy of the data it had gathered about him through an advertising tool called Pixel. Organisations based in the EU or which process data of EU residents are required to answer questions like this, known as subject-access requests. Yet it took 106 days for Facebook to do so. The firm acknowledged the existence of Mr Dehaye's Pixel data, but declined to provide them, stating that doing so would involve "disproportionate effort". The data were buried too deep inside Facebook's data-analytics warehouse, known as Hive. When Mr Dehaye appealed to the Irish Data Protection Commissioner (DPC), which regulates Facebook's data processing in Europe, he entered a similar maze of e-mails. The DPC is still assessing the case.

Antonio García Martínez, a former Facebook product manager, says that sending Mr Dehaye his Pixel data would be technically difficult. Facebook's global corporate structure makes it even harder. Employees of Facebook Ireland, he says, have "no power or leverage to tell an engineer at Menlo Park" to do anything, including retrieving Mr Dehaye's data.

wealthy. The island has 82 doctors per 100,000 people, compared with just 19 in the rest of the Comoros and 14 in neighbouring Madagascar. Yet the fed-up Mahorais are deserting their homeland in droves. Older ones head to the neighbouring French island of Réunion, but the young—including some 40% of 25-to-34-year-olds—are moving to Europe. "It is the only way for them to go to university, or to

Other Europeans run into similar quagmires with American tech companies. Millie Graham Wood, a solicitor with Privacy International, a charity, has tried for six months to find out what data Google has collected from her Nest smart thermostat. The firm has sent her only links to privacy policies, blog posts and irrelevant log data, each time after a long delay. "It's been a real nightmare," says Ms Wood. "If you're not a lawyer, you're going to give up." She has appealed to Britain's data-protection regulator.

The tech companies prefer to meet their obligations through web portals which let people download some, but not necessarily all, of their data. That may not be enough, especially if the portal includes data that users have uploaded themselves, but not the way the system categorises them. The GDPR makes few changes to subject-access rights, other than removing a small fee which data controllers had been able to charge. This is likely to lead to more requests. Refusal to provide the requested data has never been tested in court. As Europeans fret ever more about what data moguls know about them, that is likely to change.



have a job," says Ms Petit.

Comorians in Mayotte do not have that option. They cannot even return home. In March the Comoros announced a refusal to accept the repatriation of its citizens. France is in a bind. "More naval boats, more police—that's the answer," says Mr Kamardine. But as in Europe, it is hard to stop impoverished people from seeking a better life that looms tantalisingly close. ■

Reproductive rights in Poland

Forcing the issue

WARSAW

Conservatives are pushing one of Europe's toughest abortion laws

At 13 weeks of pregnancy, Marta, a young woman in Warsaw, learned that her baby had Down's syndrome and life-threatening defects. After a procedural obstacle course (including a visit to a psychiatrist), she was allowed to undergo a legal abortion, one of just 1,000 or so in Poland every year. Poland has some of Europe's tightest restrictions on abortion, allowing it only when the mother's life is at risk, or in cases of rape or severe prenatal defects. Many women turn to illegal abortions or go abroad, often to Germany.

Now the restrictions could get even tighter. Legislation proposed by a pro-life organisation, backed by the Catholic church, would ban abortion even for severe prenatal defects. The Polish parliament's committee for human rights gave the bill the go-ahead last month, although the Council of Europe and UN experts have urged lawmakers to reject it.

The proposed restrictions suit the social conservatism of the governing Law and Justice (PiS) party. According to Jaroslaw Kaczynski, the party's leader, women should give birth even to children with such severe deformities that they are "condemned to death", so that they can be "baptised, buried, have a name". (Mr Kaczynski is unmarried and childless.) A recently adopted government scheme offers women a one-off payment of 4,000 zloty (\$1,170) for giving birth to a disabled child, dead or alive. At the programme's recent launch in Ostroleka, a town in north-eastern Poland, children performed on stage dressed as embryos. Since coming to power in 2015, PiS has also ended state-funded IVF treatment and restricted access to the morning-after pill.

The politics of abortion are awkward for PiS, whose support has fallen after a scandal over ministers' bonuses, though it still leads in the polls. In October 2016 it withdrew support for a bill banning abortion except when the mother's life is in danger, after mass protests by women across the country. The new bill is unpopular, too. Three-quarters of Poles oppose it, according to a recent poll. On March 23rd an estimated 55,000 people marched through Warsaw towards PiS's headquarters. "I think, I feel, I decide," chanted a group of women. One placard urged politicians and priests to account for their own sins. Yet a televised discussion on the protests on public television on March 30th did not feature a single woman.



Their bodies, their selves

Since being promoted to prime minister in December, Mateusz Morawiecki, a former banker, has sought to court centrist voters by giving the government a milder face. He sacked several hardline ministers in January. Yet PiS is under pressure from the Catholic church. Last month the Polish Bishops' Conference urged parliament to consider the abortion law without delay.

Access to prenatal diagnosis and care is already inadequate, especially outside the cities, says Urszula Ajdacka, a Polish gynaecologist who now works in London. Women often find out about severe defects after the deadline for terminating their pregnancy has passed. "The proposed bill would mean the end of prenatal diagnostics in Poland, as women would have no choice," says Ms Ajdacka. The lawmakers who back it "do not know what situations they are dealing with". ■

Kemerovo fire

Blaze of indignation

MOSCOW

A deadly tragedy causes outrage in Russia

WITHIN a day, fire crews doused the blaze that killed 64 people on March 25th at the Winter Cherry mall in Kemerovo, a Siberian mining hub. More than a week later, the political embers still smoulder. A national day of mourning was declared, social-media avatars went black and marches were held across the country. In Kemerovo, protesters demanded the resignation of the governor, Aman Tuleyev. On April 2nd, he said he would go.

Though lethal disasters are common in Russia, the fire in Kemerovo seems destined to enter a different category of national tragedy, alongside the sinking of the Kursk submarine in 2000 and the Beslan hostage crisis in 2004. More than 40 of the victims were children, many trapped inside a cinema watching the animated film "Sherlock Gnomes". Some wrote panicked messages on social media. Others called parents who could do nothing to breach the fire separating them. Video footage from the mall showed patrons leaping from windows to escape flames, and others banging on locked exit doors in vain.

In the aftermath of the tragedy, public outrage soared. Many blamed a system that encourages bribes to avoid inspections. In Kemerovo, doubts spread about the official death toll, a telling expression of distrust in a region that cast 85% of its votes for President Vladimir Putin last month. Protesters demanded answers from the authorities, who reverted to defensiveness. In the city's central square, the deputy governor, Sergei Tsivilyov, accused a protester of attempting to "promote himself through the tragedy". The man, Igor Vostrikov, replied that he had lost his entire family: his sister, wife and three children.

Mr Putin, who had flown to Kemerovo, met Mr Tuleyev, who assured him that those gathered on the square were just a handful of "troublemakers". The governor asked the president for his "personal forgiveness", something he had failed to ask of his citizens. Maxim Trudolyubov of the Kennan Institute in Washington, DC, wrote that in Russia "accountability only runs upward: a civil servant is accountable to his or her superior, not to the public, as these two types of accountability are mutually exclusive."

Investigators say the mall's fire-alarm system had been out of order for days and that staff failed to alert patrons or organise an evacuation. They have arrested seven people, including a mall security guard and the head of the company contracted to service the fire alarm. Although Mr Tuleyev resigned, he was hardly pushed out in disgrace. He took up a post in the local parliament, potentially paving the way to become speaker of the body or a member of Russia's senate. Replacing him is Mr Tsivilyov, a business partner of Gennady Timchenko, an old friend and close associate of Mr Putin.

Even the widowed Mr Vostrikov has changed his tune. After meeting officials, he called for an end to protests and praised Mr Putin as the "tsar". Unrest over the fire has begun to settle. "Mistrust of the authorities hasn't disappeared. What has appeared is the hope they won't trick us this time," writes Alexei Makarkin of the Centre for Political Technologies, a Russian think-tank. As an old Russian proverb goes, hope dies last. ■

"The subjects invariably combined academic rigour and practical applicability. The strategy course in particular really influenced my thinking post-MBA."

Richard Sharp
CTO at Shazam
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Charlemagne | Orban's unwitting ally

The EU is tolerating—and enabling—authoritarian kleptocracy in Hungary



IT IS a miserable day for a political stunt. Rain drips ceaselessly from the stands of the cathedral-like stadium in Felcsut, the home village of Viktor Orban, Hungary's football-mad prime minister. Bescarved fans huddle for warmth as they queue to watch their team, Puskas Academy, take on a local rival. Across the street Laszlo Szilagyi, an election candidate for Dialogue, an opposition party, and a few colleagues have gathered outside Mr Orban's modest cottage. Sausages bearing the names of national oligarchs are draped over the garden fence, in an apparent nod to an old Hungarian aphorism that mocks the wealthy.

For the likes of Mr Szilagyi, Felcsut is emblematic of everything that has gone wrong under Mr Orban. The stadium, completed in 2014, cost a fortune; a nearby tourist train, reopened in 2016 with European Union funding, runs half-empty most of the time. Kleptocratic elites bleed public services while Fidesz, the ruling party, chips away at Hungary's democracy.

In some respects Hungary's descent into semi-authoritarianism follows a familiar storyline: the constitutional jiggery-pokery; the use of legal tools to neuter courts, intimidate media and tilt the electoral playing-field; the avoidance of outright oppression or violence. What makes the Hungarian case different, says Michael Ignatieff, rector of the Budapest-based Central European University (which has been threatened with closure by Mr Orban), is the "collusion and compliance" of the EU.

Brussels has worried about Hungary for years, but its officials are no match for Fidesz's clever lawyers. Other governments have not found the will to take on Mr Orban. An extra layer of protection is afforded by the European People's Party, the centre-right pan-EU political group of which Fidesz remains a member in good standing. Shamefully, the EPP's leaders have been gilding Mr Orban with praise as Hungary's election approaches.

A more tangible form of help comes in the form of the subsidies Hungary receives from the EU, which in good years can run to the equivalent of 6% of GDP. Europe's taxpayers are propping up a government that undermines the rule of law, and their transfers feed the systems of patronage that have come to define Mr Orban's rule. Much of this money finds its way to cronies of the prime minister, often via overpriced procurement contracts. Jozsef Martin at Transparency International, an anti-graft watchdog,

says that corruption in Hungary is centralised and semi-legal, making it difficult to challenge.

That has certainly been the EU's experience. The European Commission is, in effect, powerless to combat systemic corruption in a member state. OLAF, the EU's anti-fraud agency, has raised concerns about specific European-funded projects in Hungary, but it relies on national prosecutors to investigate. That is a problem in a country that has blurred the boundaries between party and state. Brussels insiders admit they are at a loss.

In the run-up to the election on April 8th, Mr Orban has drowned out allegations of government corruption with polemics against immigration. But the prime minister's earthy tactics should not be confused with anything resembling an ideology. Mr Orban's depiction of himself as the defender of Christian Europe against enemies from without (hordes of criminal migrants) and within (NGOs, effete EU bureaucrats and George Soros), wrapped up in his "illiberal democracy", may look like a challenge to European values, but it is largely window-dressing.

When Fidesz took office in 2010 it was driven by a roughly equal blend of ideology and thirst for power, says Mr Martin. The first element has now been largely excised. Over the decades Mr Orban has shed beliefs as chameleons shed skins. Compare Poland, where Jaroslaw Kaczynski, the de facto leader, still nurtures a long-held conviction (once shared by Mr Orban) that the state must be remade to undo the betrayal of post-communist elites.

Were Fidesz-friendly pollsters to discover that voters were no longer animated by migration, says Andras Kosa, author of a biography of Mr Orban, the party would simply manufacture a different foe. These days Fidesz's ideologues, such as they are, assemble theoretical scaffolding to justify the channelling of state resources to favoured businessmen under the rubric of "economic patriotism". The EU is harbouring not an illiberal democracy, but a semi-autocratic kleptocracy in which loyalty offers the quickest route to riches.

Eternal Viktory

There is a small chance that Fidesz will not win a majority on April 8th. If it does, it is unlikely to remain idle. NGOs, especially those funded from abroad, will be first in the cross-hairs. What remains of the independent media may also find itself targeted, warns Peter Kreko of Political Capital, a liberal think-tank. And the stakes extend beyond this country of 9.7m souls, for the Hungarian example inspires others. Foreign investors complain that the government's habit of hitting multinationals with arbitrary rules and taxes has spread to other central European countries. Mr Kaczynski may not be building a Hungarian-style crony state, but his tactics increasingly bear the Fidesz imprint (and Poland and Hungary have each other's backs in battles with Brussels). Mr Orban has shown that the international cost of trampling democratic norms and the rule of law appears to be close to zero. That lesson has not gone unheeded elsewhere.

That is why some EU governments want to use an imminent debate over the club's multi-year budget to threaten their miscreant peers with the loss of funds. Some fear this would merely feed Mr Orban's need to rally support against an external foe. But the alternative is that he continues to milk a system which, notes Mr Ignatieff, suits him very nicely: "Run against the EU from Monday to Friday; cash its cheques on Saturday and Sunday." This is the arrangement that Europe's politicians are tolerating, its institutions are enabling and its taxpayers are supporting. ■



Segregation

Coming apart

WASHINGTON, DC

Half a century after Martin Luther King's murder, class divides are replacing overt racism. That should be a call to action

FIFTY years ago, Shaw, a historically black neighbourhood ten blocks from the White House, was ablaze. The spark had been lit nearly 900 miles away. On April 4th 1968 Martin Luther King had been assassinated in Memphis, Tennessee. After the civil-rights leader's murder, riots gripped more than 100 cities. Shaw, a centre of black culture whose Howard Theatre had fostered the careers of Ella Fitzgerald and Duke Ellington, burned like a city at war. By the riots' end 1,200 buildings were damaged and 12 people were dead. And more than life and property were imperilled. The whole project of civil rights seemed to be on trial. The year before, calls to tear down race barriers had both stoked, and been hurt by, massive riots in black quarters of Detroit and Newark.

In February 1968 the Kerner Commission, created by President Lyndon Johnson to investigate race riots, had warned that "our nation is moving toward two societies, one black and one white—separate and unequal". The commission described a country blighted by ghettos, neighbourhoods in which too many citizens were trapped by poverty and race.

"White society is deeply implicated in the ghetto," the commission wrote. "White institutions created it, white institutions maintain it, and white society condones it." The report had identified a truth known to many Americans, even if it was

not always acknowledged. Even as legal barriers of segregation were dismantled, in cities and towns across the country, and not just in the Deep South, residents knew that a certain street, a railway track or other barrier, marked a colour line. Some barriers were enforced with lethal violence, as mobs attacked black professionals who had moved into white neighbourhoods. Others were maintained with genteel discretion, even after the Supreme Court in 1948 abolished covenants that bound white property owners to rent or sell within their race (sometimes they were also told to shun Jews). The Fair Housing Act of 1968 set out to abolish "red lines", racial boundaries which some mortgage lenders and estate agents worked hard to maintain.

Half a century after the flames were extinguished in Shaw, America remains an unequal place. To focus on one troubling fact, too many ghettos live on. Worse, the data show ghettos becoming increasingly concentrated sinks of poverty, disproportionately affecting non-whites. The bleakest charge, heard in political speeches, in academic discourse and from community campaigners, is that American schools and neighbourhoods are resegregating along racial lines, in mockery of King's legacy.

The reality, however, is more nuanced. Since 2000, there has been an explosion in the number of Americans living in neighbourhoods of concentrated poverty,

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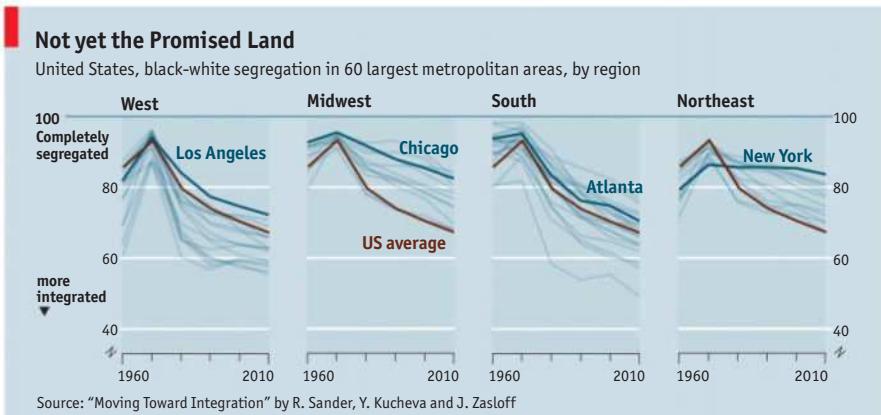
where more than 40% of the population live on an income below the federal poverty level, currently \$25,100 for a family of four. According to Paul Jargowsky, a professor at Rutgers University, nearly 14m Americans live in such neighbourhoods, compared with 7m in 2000.

Those unhappy numbers cannot be untangled from questions of race and ethnicity: 25% of the black poor live in ghetto neighbourhoods, as do 17% of poor Hispanics. Among poor whites, just 8% live in areas of concentrated poverty (though those numbers are complicated by the difficulty of comparing rural and urban deprivation). Children raised in ghettos must contend with higher crime rates and schools that do not ready them for the world of work, or even keep them safe. Such places are less healthy, with substantially higher rates of lead poisoning, depression, teenage pregnancy and premature death.

A dream unfulfilled

Talk of two Americas—one for whites and the other for non-whites—is re-emerging. Fred Harris is the lone surviving member of the Kerner Commission. He has declared America at risk of descending into fresh disorder and chaos, because "housing and schools have been rapidly resegregating, locking too many African-Americans and Latinos into slums and their children into inferior schools".

This is in part an argument about statistical methods. Some statistics on racial and ethnic integration in schools do indeed look alarming. One oft-cited measure involves the percentage of black pupils who attend majority-white schools. That number was, in effect, zero before the civil-rights era, then shot up dramatically during the era of court-mandated integration plans. Those were hard-fought gains, and ➤



► not just in the Deep South. In 1974 white Bostonians violently protested against a court-ordered integration scheme, hurling bottles, eggs and bricks at buses carrying black children. In recent years, however, the proportion of black pupils at mostly white schools has dropped steadily.

Yet context matters. In 1970, 80% of school-age children were white, according to census data. Today, mostly because of growth in the Hispanic population, just 52% are. That means fewer majority-white schools to attend. In New York City's public schools, just 15% of pupils are white.

To find routes out of the ghetto, America will need accurate maps. Tell a demographer the number of black children, rich whites or other group in a city, school district or area, and they can calculate a "dissimilarity index" which measures whether that group is clustered in certain neighbourhoods or schools, or spread evenly. An index of 100 signals the most extreme clustering possible, and an index of zero a perfectly even distribution.

Taken soon after Martin Luther King's death, the 1970 census showed an America almost completely segregated by race. Across the country's 60 largest cities, the dissimilarity index for black residents was 93. Put another way, 93% of blacks would have had to move districts in order to be evenly distributed, citywide. School districts were not much better. In 1970, 80% of elementary-age pupils would have had to move to ensure integration. In the four decades since, those numbers show more, not less, racial mixing. For schools the dissimilarity index has fallen to 47. Among cities, it has also dropped to 70: still high, but not increasing.

Ghettos without guards

Northern and midwestern cities are home to strikingly persistent ghettos. The cities that are the most racially segregated are not in the conservative Deep South. They are such Democratic-voting bastions as Philadelphia, Chicago, Detroit and New York (see chart). In 1970 black-white dissimilarity in New York City was 86—at the time of the last census, in 2010, it was 84. Ghettos

and colour lines have been so hardy in such cities that their names inspire songs, films and fashion: the South Side, 8 Mile and the South Bronx.

Today middle-class blacks, Hispanics and other minorities can and do move away from ghettos and deprived barrios. Roughly once a decade, the federal Department of Housing and Urban Development (HUD) looks for racial discrimination through paired testing. White and black actors are given matching fictional identities before seeking flats and then comparing notes. The most recent, in 2012, showed that outright racial discrimination has dropped close to zero, though subtler differences (such as the number of homes shown to prospective residents) persist.

Less happily, income segregation is on the rise, in both cities and schools. Historical racism and modern-day inequality cannot be neatly separated. Forcing generations of black Americans into bad housing, inferior schools and unpopular jobs to keep them in certain neighbourhoods was an act of both racial and economic violence. Within the ghetto, crowded apartments were divided, then subdivided further. Because of artificially constricted supply, blacks paid more for poor houses. The intergenerational effects live on, even among black Americans who successfully enter the middle classes. An analysis by the Pew Research Centre in 2016 found that, including property, the median net worth of black households headed by someone with at least a bachelor's degree was \$26,300 in 2013. For households headed by white holders of college degrees, the median net worth was \$301,300—11 times greater.

Segregation is not only a function of race. The poor, of whatever colour, cluster in class enclaves. The richest 10% are more likely to live among the similarly affluent. The college-educated also increasingly live among their peers, a surge driven by families with children. Wealthier families seem to be moving towards better-performing schools, while rising income inequality traps poorer families. Between 1991 and 2012, segregation of poor pupils in-

creased by 40%. Research by Sean Reardon of Stanford University shows that the gap in achievement between rich and poor pupils is now twice as large as that between black and white ones.

But some experiments to move families from poverty-blighted neighbourhoods have worked—and have shown the terrible cost of inaction. The Moving To Opportunity scheme, sponsored by HUD, randomly assigned families to receive housing vouchers that required them to move to better areas. The benefits were, in social-science terms, astonishing. Children who moved before the age of 13 went on to have incomes 31% higher than those who remained. HUD operates a voucher scheme for poor Americans, but it does not do a good job of moving recipients to better districts. The chance goes to a only quarter of those who qualify. Waiting lists are sometimes a decade long.

The scars of racial segregation persist. Blacks have significantly higher rates of downward mobility than their white peers. They are more likely to remain in poorer areas when they have money to move. Affluent blacks still live in poorer neighbourhoods than working-class whites. The criminal-justice system is experienced very differently by whites and non-whites. But the charge that the country is resegregating along racial lines is a counsel of despair. The existence of ghettos is no longer enforced by implacable bigots. They are too hard to escape. Fifty years after King's death, should call this generation to action. ■

Immigration

Be very afraid

CHICAGO AND WASHINGTON, DC

Egged on by Fox News, Donald Trump takes a hard turn on immigration

A FEW days into 2018, President Donald Trump pondered a record fall in the number of people apprehended on the border with Mexico and liked what he saw. Attempted border crossings are "way, way down" because migrants know they will fail, he told a bipartisan delegation from Congress. As if torn between claiming credit for intimidating toughness and promoting his signature promise to fortify the border with Mexico, he mused that migrants were being stopped by land, air and sea: "But we do need the wall, and we need more border security anyway."

That was then. Less than three months later Mr Trump sees a very different border. On the defensive after some bad headlines, a jump in border crossings and agitated by Fox News TV reports of a "caravan" ►

► of Central American asylum-seekers and activists making its way through Mexico towards America, the president fired off several dawn choruses of tweets, denouncing “our ‘Weak Laws’ Border”. In Twitter messages that in some cases cited ideas just voiced on Fox News, Mr Trump threatened to tear up the North American Free-Trade Agreement (NAFTA) if Mexico did not stop the migrant caravan, and to cut foreign aid to Honduras. He accused the migrants of seeking to “take advantage of DACA”, an Obama-era scheme to shield from deportation migrants who came to America illegally as minors. “Congress MUST ACT NOW!” he declared, and made a by-now-familiar demand for Republicans to eliminate the rule that most new laws can pass the Senate only with a 60-vote supermajority.

On April 3rd Mr Trump startled aides by calling for troops at the frontier. “We have horrible, horrible and very unsafe laws in the United States,” Mr Trump said. “We are preparing for the military to secure our border between Mexico and the United States.” The next day he signed a proclamation to deploy the National Guard.

As so often, there was much for fact-checkers to quibble over. Central Americans crossing Mexico cannot apply for DACA protections, which cover only migrants who arrived in America before 2012. The Republicans who control the Senate have no intention of scrapping the 60-vote threshold for legislation, fearing a loss of influence the next time Democrats hold the majority. Previous administrations have sent National Guard troops to the border as extra eyes and ears for border guards, but there are legal constraints on using soldiers for law-enforcement. In any case Central American asylum-seekers rarely hide from border agents, as their aim is to lodge a legal claim to stay.

But to fact-check Mr Trump’s tweets and crowd-pleasing impromptu utterances is of less use than monitoring his actions. Soon after taking office, he moved to “take the shackles off” America’s immigration police, particularly members of Immigration and Customs Enforcement (ICE). He signed an executive order deeming many undocumented immigrants “a significant threat to national security and public safety”, and vowing to enforce America’s immigration laws “against all removable aliens”. During his first nine months in office, arrests for immigration violations were 42% higher than they were during the same period in Barack Obama’s last year. Non-border deportations rose 25% in fiscal 2017. Deportations of illegal immigrants who have committed no other crime, and who were not a priority in the Obama era, nearly tripled. Refugee admissions have plummeted. This fiscal year 16% of them are Muslim, compared with 42% a year ago.

In recent years local police in many

places with large numbers of undocumented immigrants—including Chicago, New York, Boston, Philadelphia and California, between them home to around one-third of the undocumented population—have grown less willing to co-operate with federal immigration authorities. Mr Trump has pressed localities to co-operate with federal authorities, even threatening to withhold government money until a judge ruled that unconstitutional.

ICE agents have increased their presence at courthouses. ICE said they will use courthouse arrests only for “specific, targeted aliens” with criminal records, gang affiliations or removal orders, or who pose national security threats. Some see that promise as more honoured in the breach than the observance. Jan Schakowsky, a congresswoman from suburban Chicago, contends that one of her undocumented constituents who fitted none of those categories was seized after a minor traffic violation, and held in a detention centre in another state for three days. Activists also complain about a rising number of “collateral arrests”—in which ICE arrests people who were not the original targets of a warrant, but were merely swept up in a raid.

This week’s presidential fury obscured substantive policy moves. The Department of Justice is to set quotas for clearing cases for immigration judges to hit. White House officials are drafting a package which would, among other things, make it easier to deport children who arrive alone at the border. Watch what Team Trump does, not what it tweets. ■

State finances

The wisdom of Mr Micawber

Despite a growing economy, many states are struggling to raise revenue

POLITICIANS love to talk about spending. To simplify, Democrats win leftist votes by calling it investment and promising more of it. Republicans secure conservative votes by calling it waste and pledging to make cuts. Talking candidly about how to collect the revenues that fund government is more ticklish, especially when the pain is likely to be broadly shared.

This may help to explain why a surprising number of American states are facing a revenue crisis, even as the broader economy enters its ninth year of recovery. With unemployment at a 17-year low and stockmarkets near all-time highs, one might expect state coffers to be overflowing. Yet many states find themselves struggling to collect enough revenue to balance their budgets—as most are legally obliged to do.



The budget’s underwater too

According to the National Association of State Budget Officers, 27 states saw their revenues fall below expectations last year. While states have been grappling with rising health-care and pension-fund costs for decades, many recent woes can be blamed on sluggish revenue growth. If things do not pick up soon, states will be unprepared when a new recession strikes.

State fiscal policy is driven largely by the booms and busts of the business cycle. In economic downturns, tax revenues fall and states are forced to tighten their belts by slashing spending and raising taxes. In recoveries, revenues rise and states reopen the spigot. Historically, state officials struggled to moderate such fluctuations. Stockpiling tax dollars during good times was considered indecent. Lawmakers who refused to cut taxes when state coffers were flush risked taxpayer revolts. Fortunately, in the 1980s and 1990s most states set up budget stabilisation funds where reserves could be stashed during fat years. Today such “rainy day” funds hold some \$70bn.

States are now better equipped to weather economic storms, but other challenges have emerged. State tax systems were originally designed to collect sales taxes on goods like cars, furniture and clothing. As services have grown as a share of the economy, such levies have fallen on an ever-smaller share of purchases. Low inflation has also weighed on sales taxes in recent years, according to Dan White, an economist at Moody’s Analytics, a consultancy. Since 2013, prices of services have increased by 2.6% per year while prices of goods, which generate most sales tax receipts, have decreased at an annual rate of 0.4%. William Glasgall of the Volcker Alliance, an advocacy group, points out that tax breaks also cost states billions in revenue every year. In California alone, such tax expenditures—which include exemp-

Criminal justice

Don't throw away that key

NEW ORLEANS

In Louisiana, bipartisan support for criminal-justice reform is breaking down

THE hard thing about criminal-justice reform is that it involves criminals, who do not always behave as they should. Yet there are also costs to ignoring reform, measured in ruined lives, body bags and dollars and cents.

That was the conundrum faced by Louisiana when a group of Republican and Democratic legislators passed reforms intended to push the state off the top spot on some less-than-desirable charts. Start with incarceration rates. Louisiana has long tried to jail its way to public safety. The state imprisons its citizens at about twice the American average, which is an achievement. America's incarceration rate is an outlier in the rich world, being about five times higher than Britain's (which is more punitive than many European neighbours).

All that locking up and throwing away of keys has not made Louisiana safer. The state's murder rate is America's highest. Nor does the state, one of the poorest in the Union, target its resources on the worst offenders. According to the Pew Charitable Trusts, Louisiana is more than twice as likely to imprison citizens for non-violent crimes as southern states with similar crime rates, including South Carolina and Florida. Comparatively long prison terms also fill cells.

The normally feckless state legislature last year passed a package of laws to create alternatives to the warehousing of less dangerous criminals. These bipartisan reforms were supported by Governor John Bel Edwards, a centrist Democrat, and by conservative voices including the Louisiana Family Forum and Charles and David Koch, deep-pocketed industrialists. To reformers on the right, if government messes up most things it touches, expensively, why trust it to run vast prison systems? Defenders of the reforms say they will reduce Louisiana's prison rolls by a tenth over a decade. Savings will mostly go to programmes to prevent reoffending.

Unfortunately, reforms which free

inmates create trade-offs when some misbehave. Enter Louisiana's attorney-general, Jeff Landry, and one of its US senators, John Kennedy. Both men are probable Republican challengers to the governor when he seeks re-election in 2019. A political action committee backing Mr Landry pounced when an ex-con, Tyrone White, allegedly robbed a builder at gunpoint, days after his early release. "Lock your doors, and as Senator Kennedy has suggested, 'You ought to own a handgun just in case,'" the Landry backers said. Then came Rick Canaz Ball, whose fondness for robbing car mechanics earned him the sobriquet "Oil Slickster". Police booked him for alleged burglaries after his early release. In a joint op-ed, Mr Landry and Mr Kennedy mockingly renamed last year's reforms the "Louisiana Prisoner Release and Public Safety Be Damned Act."

Tanner Magee, a Republican state representative who backs the reforms, is sure they will pay off but concedes: "You cannot create a system where people will not reoffend." In Louisiana politics, alas, honesty is not always rewarded.

**The wrong southern hospitality**

► tions, deductions and credits—cost over \$60bn in annual revenue.

States nationwide have been raiding rainy-day funds and using other gimmicks to balance budgets. Such manoeuvres cannot conceal forever the larger crisis in revenue-raising. That is especially painful for Republican-run states that have spent years loudly slashing taxes, then more quietly cutting services to plug budget holes. A

backlash is brewing. Teachers' strikes have this year hit West Virginia, Oklahoma and Kentucky. Teachers in Arizona may follow suit. Even the most conservative states are having hard conversations about revenues. On March 29th, Oklahoma's Republican governor, Mary Fallin, signed a bill that will increase teachers' pay by raising \$400m in new taxes and fees. It is the state's first tax rise in 28 years. ■

Blue-collar television

This is us

ELGIN, ILLINOIS

Why the Midwest loves Roseanne

ONE of the odder things about President Donald Trump is that, though he cheers supporters up greatly, he has no discernible sense of humour. Rarely seen laughing spontaneously, Mr Trump's emotional range runs from bleak ("American carnage"), to scorn ("so stupid"), and a salesman's boosterism ("Folks are going to be very happy"). One of the sadder things about the Trump era is watching American families and communities being pulled apart by political differences. On the face of it, then, ABC television took a risk when it commissioned a new season of "Roseanne", a popular sitcom about a blue-collar clan's trials and tribulations, built around the premise that, 21 years after the show last aired, its fictional family is now divided by Trump-love and -loathing.

The gamble paid off. Fully 18.5m people watched the season premiere on March 27th and another 10.9m saw it streamed, recorded or repeated in the next five days. The president, a veteran of reality television, telephoned to congratulate Roseanne Barr, the comedian who co-created and plays the character of the same name in the show. "He really understands ratings," she reported. In real life Ms Barr is a woman of trenchant but hard-to-define political views. She once ran for the presidency on the Green Party ticket, has distinctly liberal views on gay rights and other social issues, but calls herself a fervent Trump supporter, praising the president for his populist economic agenda. More controversially Ms Barr has retweeted conspiracy theories from the far-right fringes of the internet, including tales of paedophile rings involving high-ranking officials that Mr Trump is supposedly battling. A day later Mr Trump took credit for the sitcom's success, telling a rally in Ohio that the sitcom's audience was so big because it was "about us".

Mr Trump was partly correct. To the political strategists who have learned to slice and dice Americans into mutually hostile tribes, divided by race, class, education, age and geography, the "Roseanne" audience does look fairly Trumpy. The reboot is a particular hit in the Midwest and among older people, who watch more TV than youngsters glued to smart devices. Nielsen Media Research found the three biggest audiences were in Tulsa, Oklahoma; Cincinnati, Ohio; and Kansas City, Missouri, followed by Pittsburgh and Chicago.

On a recent chilly April weekday, it was not hard to find devotees of the show in El- ►



How about, we get pizza and argue about Trump?

▶gin, a city in Illinois that “Roseanne” producers have called a model for Lanford, the fictional factory town where the sitcom is set. Elgin’s mayor, David Kaptain, says that “Roseanne” always struck a chord locally, thanks to its honesty about the economic, medical and personal struggles of its Conner family. When the show launched the town was still recovering from a grievous blow, the closure of the Elgin Watch Company plant, once the world’s largest watch-making complex. The fictional Roseanne has had jobs at a plastics factory, a beauty parlour, a diner and a telemarketing firm. In the new season she is driving for Uber, the ride-hailing firm.

One local fan is Lenny Sacchitello, who runs a heating and air-conditioning firm in Wheeling, near Elgin, and watches it with his 11-year-old son. He voted Democratic when the first nine seasons of the show aired in the 1980s and 1990s. In 2016 he backed Mr Trump but is socially liberal, like the character Roseanne, who defends her daughter Becky’s decision to become a surrogate mother because “it is her body”, and stands up for her gender-fluid grandson when he insists on going to school wearing a skirt and sequinned boots. Mr Sacchitello says the show reminds him of family political debates. His wife, who comes from a blue-collar, Democratic-voting clan, is not watching the relaunch.

Elgin offers clues as to why “Roseanne” arguably has a better handle on Trump’s America than Mr Trump. The show is funny. It embraces change, as Elgin has had to. Formerly overwhelmingly white, today’s 112,000-strong population is still working-class but almost 50% Latino, around 7% black and 6% Asian. Elgin’s east side is poorer, more diverse and tends to vote Democratic. The west is white, older and more Republican. Partisan divisions run deep, even within families, says the mayor.

In the new “Roseanne” its caustic, witty matriarch says grace before dinner and concludes with thanks for “making America great again”. Her sister in the show, Jackie, confesses to voting for Jill Stein, the Green Party presidential candidate in 2016. Sarah Gilbert, a producer and co-star, playing one of Roseanne’s daughters, says the sitcom is “about what happens to a family when there is a political divide”. But in contrast with the spleenetic, us-and-them president, the Conners handle differences with love. Some leftish critics call that a fantasy, normalising Trump support. They should lighten up. Roseanne is hardly saccharine propaganda. Good people can disagree, and even laugh as they do so. ■

The media

Out-Foxed

NEW YORK

Orders to local TV anchors reveal the clout of Sinclair Broadcast Group

ONE local television anchor compared the experience to being a prisoner-of-war recording a proof-of-life video. Others called it merely embarrassing. Either way, scores of TV newsreaders at local stations squirmed after colleagues at CNN, the cable-news network, caught wind of a media-bashing political commentary being run on outlets owned by Sinclair Broadcast Group, America’s largest operator of local television stations. The look of the spots is glossy, with nicely-coiffed television anchors leaving the safety of their desks to stand directly before the cameras, before delivering a heartfelt attack on the ethics of much of the news media. A leaked cor-

porate memo instructed: “Talent should dress in jewel tones”, while avoiding hues associated with elections, such as red, blue or purple.

Sinclair insists that the spot was a non-political appeal to viewers to trust local TV news. An early version of the script accused “national media outlets” of running untrue stories without checking facts. In the script used on air that charge is laid at the feet of “some media outlets”. But allegations of liberal bias in the media have long been a conservative staple, recently turbocharged by President Donald Trump and his tweets attacking TV networks and “failing” newspapers. Not irrelevantly Sinclair is controlled by David Smith, a conservative ally of Mr Trump’s.

Critics detected a Trumpian edge to the script sent by corporate bosses to many of Sinclair’s nearly 200 stations in 89 markets, assailing “false news”. “Unfortunately, some members of the media use their platforms to push their own personal bias and agenda to control exactly what people think,” presenters intoned. “This is extremely dangerous to a democracy.” Mr Trump certainly seemed pleased. On April 2nd and 3rd he praised Sinclair twice in tweets, while making his customary attack on “Fake News Networks”.

The episode sheds light on Sinclair’s unusual, and underappreciated, place in the marketplace of ideas. Last year the company hired Boris Epshteyn, a former campaign aide to Mr Trump, as chief political analyst. Local stations frequently air his pro-Trump commentaries at the behest of corporate bosses in Hunt Valley, Maryland. In between stories about traffic accidents and local sports teams, Sinclair stations are told to run such segments as the “Terrorism Alert Desk” about acts of terror elsewhere in the world.

About 39% of Americans are within range of a Sinclair-owned TV outlet, most of them unwittingly, because local TV stations typically use the logos of national networks with which they are affiliated, like NBC, CBS and Fox. Sinclair’s reach will soon extend to most of the country, with a planned acquisition of 42 stations owned by Tribune Media. Last year the Federal Communications Commission loosened media consolidation rules, making the merger feasible. (Sinclair has announced it will sell some stations as it seeks regulatory approval.)

There is a lot at stake. Last year 37% of Americans got their news from local television, according to the Pew Research Centre, compared with 28% who got news from cable networks, including the conservative powerhouse, Fox News. Older viewers are even more devoted to local TV news. For the time being, Mr Smith may be less famous than Rupert Murdoch, the boss of Fox News. But as astute media barons know, power trumps fame. ■

Lexington | Murphy's luck

The junior senator from Connecticut would be among the beneficiaries of new gun laws



GUN violence is no laughing matter, especially at James Hillhouse High School in New Haven, which lost a star footballer to the blight. Yet a roundtable Chris Murphy recently convened there on the issue included this moment of levity. The 44-year-old senator from Connecticut had been asked what he thought of a Republican proposal, endorsed by President Donald Trump, to arm teachers. "Who here thinks it's a bad idea?" the fresh-faced politician replied, and 200 teenagers were soon rolling in the aisles. It wasn't just that everyone raised a hand. It was the preposterousness of the notion that issuing stressed-out inner-city teachers with firearms, along with their parking permits and keys to the staff bathroom, could ever make sense. "It's an idea with no basis in reality," Mr Murphy said.

Since the shooting of 17 people at a school in Parkland, Florida, in February, many Americans have experienced a similar lifting of the veil on the gun lobby and its self-serving arguments. In response to an assured campaign by gun-control activists, fronted by some of Parkland's surviving students, the National Rifle Association and its mouthpieces have offered further absurdities. Rick Santorum, a former Republican senator, said the Parkland kids would do more to protect themselves by learning cardiopulmonary resuscitation (a technique to deal with heart failure, not gunshot wounds, incidentally). Ted Nugent, an NRA board member and singer, discerned "irrefutable" evidence that the kids had "no souls". Meanwhile public opinion has shifted towards stricter gun laws and millions now say gun violence is one of America's biggest problems. This suggests the political incentives on the issue could at last be changing. No politician has worked harder for that, or could stand to gain more from it, than Mr Murphy.

The Parkland students have succeeded, in a first for pro-control activists, by matching the zeal and organisational skills of their pro-gun opponents. The same can be said for Mr Murphy on the Hill. Though his views on gun control are unremarkable among Democrats—he defends the Second Amendment but wants more background checks and other curbs on gun sales—he has emerged as his party's conscience on the issue. Another massacre of children at a school in Sandy Hook, Connecticut, in 2012 explains that. Mr Murphy, newly elected to the Senate, rushed to join a desperate huddle of relatives close to the school. He left it,

after the 27th body had been counted, with a new mission: "It seemed like the only path forward was to try to change our gun laws to prevent another tragedy."

He has since held vigils on the floor of the Senate, at which he recites the names of children shot dead in his state. After a slaughter in a Florida nightclub in 2016, he launched a 15-hour filibuster to demand new controls. Given the popular demand for politicians to sweat passion, this has elevated the profile of a man who, having become a state congressman at 25, might have been viewed as a bloodless careerist. "It's a personal issue for me," he says. "I've gotten to know the Sandy Hook families and I feel I must satisfy them before I leave office." The fact that he has young children is another motivating factor; his six-year-old "just went through his first active shooter drill" in kindergarten.

Mr Murphy's path has been smoothed by the polarising of the issue on party lines. Earlier Democratic advocates of gun control, such as Senator Thomas Dodd of Connecticut, the architect of a landmark law in 1968, had to tiptoe around their pro-gun supporters. Mr Murphy spends much of his time preaching to those who agree with him on guns—and indeed everything, a day with the senator in and around New Haven suggested. At conclaves on gun violence, opioid abuse and brownfield-site redevelopment, he was articulate, informed, had a relaxed, slightly goofy, manner; it was hard to tell how he might fare under attack.

What nonetheless distinguishes Mr Murphy, as he showed at Hillhouse High, is his ability to speak powerfully, especially about gun violence, and yet come across as reasonable and pragmatic. The first quality appears well-attuned to the younger voters making the weather on his chosen issue. The second would ensure him a lead role in any future gun-control legislation. The combination has suggested to some that Mr Murphy, who reached the highest legislative office in his 30s and makes no secret of his ambition, could have a bigger future.

Radical with a smile

With that in mind, his knack of balancing conventional left-wing views with a suggestion of pragmatism looks additionally helpful, because it creates ambiguity about where he stands in his party. He has one of the most liberal voting records in the Senate, yet is often spoken of as a moderate. He has opposed most recent military interventions, yet John McCain, a Republican hawk, speaks admiringly of his foreign-policy skills. Identifying him as a moderate seems mainly to illustrate how the definition of political moderation is changing. As the number of true centrists dwindles in both parties, it is being extended to those who express ideological views in a way that sounds reasonable and cooperative, not strident and dogmatic. It is debatable how moderate that really is. But it is much closer to where most voters are, which is another lucky stroke for Mr Murphy.

Only in the realm of economic policy does he appear genuinely unconventional. On the one hand, he supports higher taxes on the rich and free college and is hostile to trade—standard fare of the Sanders-Warren left. On the other he offers a compelling analysis of why it is hard to sell such policies. "The economy is super unfair, but a lot of Americans hear talk of fairness as a promise to take from me and give to someone else," he says. "Most Americans are obsessed with more—more wages, more hours, more retirement savings. So I don't think Democrats should be afraid of framing our economic message in terms of growth, not fairness." Mr Murphy should run with that thought. ■



Costa Rica

The better Alvarado

SAN JOSÉ

Voters are angry. But they elected a reassuringly conventional president

ON EASTER Sunday the streets of San José erupted with revelry and relief. A long and bitter presidential election campaign had pitted a fiercely fundamentalist former gospel singer against a liberal candidate of the centre left. The liberal won decisively. A jubilant crowd waved banners of country, party and the LGBT movement, which had good reason to cheer his victory. Dancing continued into the night.

Costa Rica's election may have been the first national election anywhere to turn on the question of gay rights. That became the biggest issue in January, after the Inter-American Court of Human Rights (IACtHR), which is based in San José, issued a ruling obliging Costa Rica (and other Latin American countries) to legalise same-sex marriage. The judgment provoked an outcry in Costa Rica (most other countries barely noticed it), and propelled the two candidates with the strongest views on the issue into the run-off. Fabricio Alvarado, of the evangelical National Restoration party, vowed to disobey the order. Carlos Alvarado (pictured), of the Citizens' Action Party, promised to carry it out with gusto.

Carlos Alvarado's victory was an unexpected landslide. After trailing in almost every poll after the first round, held on February 4th, he defeated Fabricio (no relation) by 61% to 33%. The result does not show that ticos, as Costa Ricans call themselves, are enthusiasts for gay rights. Rath-

er, it shows that most want a president who defends the rule of law and appears capable of dealing with the country's many problems more than they want one who agrees with them on a divisive social issue.

Although gay people and their friends partied hardest, they are not the only ones who see Carlos Alvarado's victory as a chance for a fresh start. Costa Ricans are angry about unemployment and inequality, and about corruption under the current president, Luis Guillermo Solís. Gridlock in congress, where a single lawmaker can block a bill unless it is supported by a two-thirds majority, has helped undermine faith in democracy.

President-elect Alvarado says he is eager to shore up support for Costa Rica's institutions. "We lost our ability to make decisions about the future," he said in a post-election conversation in his boyhood home. At 38, he will be the youngest president since democracy began in 1948. He is the first one in 65 years who has never belonged to one of the two parties that alternated in power until 2014, when Mr Solís took office. One of his two vice-presidents, Epsy Campbell, will be the first Afro-Costa Rican to hold the job. Expectations of the new president are high.

His rival, Fabricio Alvarado, made voters' choice easier by adding an unnerving element of extremism to his fulminations against gay marriage. Having told voters

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the country needs "to put God in the government", he made some worry that he would be guided more by the Bible than the constitution. He did not make clear how he would block the IACtHR's ruling without shredding the constitution and withdrawing from the court's jurisdiction, something only Venezuela has recently done. Most ticos value Costa Rica's reputation as a champion of human rights. Fabricio Alvarado also feuded with the electoral tribunal, which scolded him for failing to submit financial declarations properly.

Courting consensus

Carlos Alvarado dealt more deftly with his own electoral handicaps. He criticised Mr Solís, who belongs to the same party, and called on him to sack ministers suspected of corruption. He formed a coalition with Rodolfo Piza, the candidate of the centre-right Social Christian Unity Party, who lost in the first round. This agreement moved his policy platform to the centre and broadened his support, says Jaime Ordoñez, a political scientist.

In office, Carlos Alvarado will have to be equally deft. His coalition with Mr Piza won just a third of the seats in congress. To compensate for that, he has invited all political parties to join Costa Rica's first "national unity government". The aim is "not just sharing power, it's sharing a common goal", he says.

He needs a veto-proof majority to confront the country's most urgent problem, a budget deficit of 6% of GDP. The main ideas for curbing it are to introduce a VAT and to rein in the fast-growing public-salary bill. To get these through, Carlos Alvarado will have to win over interest groups outside congress, such as trade unions, which blocked a plan by Mr Solís to reform public-sector salaries. Carlos Alvarado por- ►

trays his fiscal proposals as a way to make public services better, not just cheaper. He wants to spend much of his energy on issues like education and infrastructure, in part because they are “not polarising”. “From Marx to Adam Smith, [all people] hate being in traffic,” he observes.

He will also try to avoid more cultural skirmishes. One of the 93 points in the alliance agreement with Mr Piza is a promise not to tamper with Costa Rica’s restrictive abortion law.

Despite their joy, many election-night revellers realise that curing Costa Rica’s malaise will not be easy. Fabricio Alvarado was the first serious presidential candidate in the country’s democratic history to call into question its constitutional order. The next one may succeed. “We dodged a bullet,” says Kevin Casas Zamora, a former vice-president. It may not be the last. ■

Guatemala

From dictator to defendant

Efraín Ríos Montt and the democratic evolution of his country

NOWHERE in the Americas was the cold war fought more brutally than in Guatemala. After the CIA toppled a reformist democratic government in the name of anti-communism in 1954, a long line of military dictators followed, engendering left-wing guerrilla movements that they proceeded to crush. Efraín Ríos Montt, who died this month at 91, headed a military junta for 17 of the bloodiest months of this campaign, in 1982-83. His life tells the story of his country’s halting progress from horror to democracy and the rule of law.

In his way, General Ríos Montt was a re-

former. In 1974 he ran for president for the tame opposition. Fraud denied him victory. Perhaps that made him contemptuous of such electoral fictions. “I am a true political leader...because I am here without your votes,” he proclaimed after the officers’ coup that installed him as president in 1982. He stood out from his fellow dictators, above all, for his bluntness.

In place of the corruption, chaos and the freelance death squads of his predecessors, Ríos Montt brought a lethal modernisation to counter-insurgency. “We will execute by firing squad whoever goes against the law,” he said. “But no more murder.” The army went after the guerrillas and the Mayan Indians they lived among in Guatemala’s verdant highlands. Thousands were killed and scores of villages razed. Survivors were moved to “strategic hamlets” and enrolled in counter-insurgency “civil patrols” in a campaign dubbed *fusiles y frijoles* (guns and beans). Ríos Montt, like many Guatemalans, had converted to evangelical Protestantism. That and his anti-communism made Ronald Reagan’s administration his fervent supporter.

Partly under American pressure, and with the guerrillas reduced to an irritant, the army agreed to a return to democracy, at first under its tutelage. Ríos Montt reinvented himself as a cynical civilian politician. He was widely seen as personally honest. In a country traumatised by violence his brand of order was popular, at least with part of the population.

In an election in 1990 he tried but failed to overturn a constitutional bar on former dictators running for president. But he became a power-broker, serving for a while as the Speaker of congress. He lived in a quiet, middle-class suburb of Guatemala City, his house furnished with faux-Louis XV lacquered tables, Persian-style carpets and paintings of lachrymose children.

With the war ended by an agreement in 1996, Guatemalan democracy tried to hold

the army to account for its crimes. A truth commission backed by the UN reckoned that 200,000 people died in the conflict, most of them Mayan Indians killed by the security forces. Prosecutors were emboldened by a UN Commission Against Impunity in Guatemala, which had been set up in 2007 to help establish the rule of law (and continues to operate, albeit under threat of rescission by the government).

No longer enjoying parliamentary immunity, in 2013 Ríos Montt was convicted of genocide and crimes against humanity. At 86 he was sentenced to 80 years in jail, only for the conviction to be quashed on a technicality. A retrial in 2015 collapsed. Because of his longevity and political visibility he came to symbolise a past which still divides Guatemalans. That he was held to account, however imperfectly, shows how much his country has changed. ■

Peru

Making the most of moss

LIMA
Subsistence farmers team up with the country’s space agency

TO THE Quechua-speaking subsistence farmers who live in the higher reaches of the Peruvian Andes, the sphagnum moss that upholsters the land near their villages is a nuisance. They burn it away to clear land for planting traditional crops, like potatoes. Now some have realised that the spongy vegetation can be worth more than the tubers, which sometimes cost more to grow than they fetch in the market.

Moss is an internationally traded commodity. Canada, the biggest exporter, sold more than 1m tonnes of decomposed moss from peat bogs last year for around \$337m. The market for the sort of moss Peru produces, harvested live and then dried, is much smaller, around 5,300 tonnes a year. But it is growing fast. The absorbency of moss makes it useful for potting exotic plants like orchids. Because of its acidity, farmers add it to the soil in which they grow such foods as blueberries.

New uses are adding to demand. Moss is popular for “living walls” that are sprouting in European and North American cities. Mines can use sphagnum to filter out toxins from pits where by-products are collected. In the United States, owners of swimming pools install sphagnum filters to reduce the need for chlorination. The same technology can make water potable.

Peru came to moss-marketing late. Its southern neighbour, Chile, has 76% of the world market for live-harvested moss. New Zealand, with 15%, is the other main merchant. Peru harvests a scant 100 tonnes ▶



The deceased despot and some of his victims

► a year. Now it is trying to catch up.

Inka Moss, the only Peruvian exporter, has been teaching communities in the central Junín region since 2010 to harvest moss without uprooting it, allowing the plant to regenerate. So far, the rewards have been modest. Some 20 villages, each with about 60 families, made \$1.4m in total from 2010 to 2016. Marco Piñatelli, Inka Moss's boss, thinks the potential is much bigger. Each of the villages could harvest 30 tonnes a year, which would provide annual income of about \$85,000. And the number of moss-mining villages could be expanded.

To achieve that, Peru's moss miners

have enlisted help from the country's space agency. It is using data gathered from a French-built satellite, which also tracks coca production and deforestation, to map mossy places. "It would take years to map areas using traditional techniques," says Carlos Caballero, the general who heads the space agency.

But Peru's quest for mossy mastery faces obstacles. Ownership of land, and thus of the moss that grows on it, is fuzzy—a problem that plagues other ventures in Peru. The communities or individuals who own it rarely have title deeds. Local authorities are often reluctant to clarify own-

ership by issuing one. Moss mining also gets bogged down in bureaucracy. The government agency in charge of forestry and wildlife can take 18 months to issue a harvesting permit. Without such hindrances, Inka Moss could work with many more than 20 villages, says Mr Piñatelli.

Luis Alfaro, of the government's export agency for highland and jungle products, says forestry authorities have begun to accept land-purchase agreements in lieu of titles to issue harvesting permits. That will reduce one obstacle. The opportunity is great, says Mr Alfaro. "Now we have to get everyone lined up to make this take off." ■

Bello | Lula and government by judges

The flaws and benefits of an anti-corruption drive

BRASIL'S supreme court was damned whatever it did. On April 4th, after 11 hours of debate, it rejected by six votes to five a plea by lawyers for Luiz Inácio Lula da Silva, the country's former president, that their client should not be sent to prison following his conviction last year for corruption until he has exhausted all possible appeals.

That decision will be seen by his supporters as endorsing a political vendetta, potentially damaging the legitimacy of a presidential election in October. Lula leads in the opinion polls, by a wide margin. But upholding Lula's request would have had big negatives, too. It would have reversed the court's own doctrine, established by the same narrow margin just two years ago, that the guilty can be jailed after their sentence is confirmed on first appeal. And, according to many prosecutors and judges, it would have sucked the life out of the four-year anti-corruption probe known as Lava Jato (Car Wash).

Lava Jato has revealed massive graft in business and politics, not just in Brazil but across much of Latin America. Its revelations have taken a toll on the credibility of democratic politics. But it has held out hope that by punishing the powerful, ending impunity for stealing public money and forcing reform of campaign finance it will ultimately cleanse and strengthen the region's democracies and economies.

The case of Lula, Brazil's president from 2003 to 2010, is emblematic. Prosecutors found that during the governments of his Workers' Party (PT) construction companies systematically overpaid for public contracts, with money going into the pockets of public officials and coalition allies, and into party coffers. They claim not only that Lula knew about all of this but that he interfered to arrange spe-



cific contracts. Their evidence comes from testimony extracted in plea bargains.

Lula faces nine separate charges of corruption or influence peddling, all of which he denies. He was convicted on the first charge—that he received a beachside flat in return for facilitating a contract after his presidency had ended—by Sérgio Moro, a crusading young judge. In January that conviction was upheld by a regional appeal court, and his sentence increased from nine years in jail to 12.

For its critics, Lava Jato has begotten a Robespierrean tyranny of prosecutors and judges. Many convictions result from generous plea-bargain deals offered to suspects. Marcelo Odebrecht, who admitted that his construction firm paid bribes of almost \$1bn in a dozen countries, received only a ten-year sentence, a quarter of which was served in jail. He is now incarcerated in the exacting gulag of his São Paulo mansion.

Defendants claim that judges have too much discretion. Lula's lawyers say that Mr Moro did not show that the flat, which Lula never occupied or owned, was a quid pro quo for any action. Mr Moro followed

the supreme court in a previous corruption case involving the PT, known as the *mensalão*, in applying the doctrine of command responsibility (used in the Nuremberg trials). It was enough that contracts were overpriced, that Lula was close to construction bosses and that he was the PT's unquestioned leader.

Right now, the long jail stretch, which could start any day, looks disproportionate. That matters in part because Lula continues to be revered by poorer Brazilians for the social programmes he implemented in a country where inequality and neglect of the poor was long the norm. He was unlikely to have been able to run in the election in any event: a separate law bars candidates who have been convicted of corruption by an appeal court. But his entering a prison cell will still be momentous for Brazilian democracy. It was not reassuring that the army chief appeared to try to influence the court against Lula by tweeting this week that his institution "repudiates impunity".

Still, many Brazilians are pleased by the ruling, and not only because they think the PT tried to place itself above the law. There are broader implications. Brazil is rare in allowing two levels of appeal (three in some cases). Without the prospect of jail, suspects would seek to spin out legal cases until they lapse rather than offer evidence.

Whatever its flaws and risks, the anti-corruption drive marks an advance. If judges are taking such momentous decisions, it is partly because the politicians have flunked them, from regulating appeals to political reform. Without plea-bargaining, and with the narrow and formalistic approach to corruption adopted before the *mensalão*, taxpayers were ripped off and voters duped. At least that should be harder from now on.



Ethiopian politics

Enter a new hope

ADDIS ABABA

A charismatic young leader tries to calm ethnic tension in Ethiopia

IN ITS three decades of existence, the ruling Ethiopian People's Revolutionary Democratic Front (EPRDF) has gone through only two leaders. Neither came to power through a competitive vote. So it was with a sense of novelty that Ethiopians awaited the outcome of a secret ballot held on March 27th to determine the new chairman of the coalition and, by extension, the country's prime minister.

The result was also historic. Abiy Ahmed (pictured) won the backing of 108 party bigwigs, while 59 went for Shiferaw Shigute, his closest rival. On April 2nd Mr Abiy was sworn in as prime minister, making the 42-year-old Africa's youngest leader. He will also be the first in modern Ethiopian history to identify as Oromo—from the largest, and lately the most rebellious, of the country's ethnic groups.

The region of Oromia has been the scene of deadly anti-government protests for more than three years. Anger over land seizures and government repression is compounded by a belief that other ethnic groups, such as the Amharas and Tigrayans, have for centuries conspired to keep Oromos out of power. The government reimposed a state of emergency in February after the resignation of the last prime minister, Hailemariam Desalegn. Mr Abiy's rise has eased tensions, for now.

He takes office on a wave of goodwill. Taxis across Oromia are emblazoned with his photo. Activists abroad tweeted their support. Even in Addis Ababa, the capital, where locals are wary of his ethnic nationalism, there is optimism. In his inaugural speech Mr Abiy apologised for the government's killing of protesters. He called for unity and talks with opposition groups. And he promised to make peace with Eritrea, Ethiopia's long-standing enemy. "He sounded like Obama," gushes Asrat Abera, a resident of the capital.

The appointment of Mr Abiy reflects a shift in the balance of power in the EPRDF. His Oromo People's Democratic Organisa-



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tion (OPDO) now takes the helm of the coalition, which had been dominated by the Tigrayan People's Liberation Front (TPLF). The TPLF represents Tigrayans, who form only about 6% of the population, whereas Oromos make up over 30%. Many in the Amhara National Democratic Movement, the coalition's Amhara wing, also bristled at the TPLF's power. Its candidate for chairman, Demeke Mekonnen, the deputy prime minister, withdrew at the last minute. Mr Hailemariam's Southern Ethiopian People's Democratic Movement also brought Mr Abiy crucial votes.

The new prime minister faces two daunting challenges. The first is to reunite the EPRDF, which has suffered from infighting ever since Meles Zenawi, its first leader, died in 2012. Before the vote, Mr Abiy and his OPDO colleagues were subjected to criticism from all wings of the coalition. Many resent his ambition and suspect him of using unrest in Oromia for political advantage. Some think he and Lemma Megersa, Oromia's popular president, turned a blind eye to attacks on non-Oromos. TPLF supporters accused the OPDO of fomenting a Western-sponsored revolution.

Mr Abiy's second task is to enact the reforms he and Mr Lemma have long promised. After taking over the OPDO's leadership in 2016, "Team Lemma", as the reformers are known, rebranded the party as a quasi-opposition. They adopted the protesters' demands for greater Oromo representation in government and the release of political prisoners. They criticised the army for killing Oromo protesters. In an act of defiance, 88 MPs, mostly from Oromia, voted against ratifying the state of emergency last month. Mr Abiy abstained. Sceptics note that Mr Abiy is a product

►

► of the old political system. He joined the OPDO in his teens. "Some of his chief mentors were TPLF-ites," says an analyst in the capital. In the late 2000s he helped set up a controversial online surveillance network. His background may have made him more palatable to hardliners in the EPRDF than Mr Lemma, who was once a more likely prime minister. The price of power may have been private assurances that aspects of the security establishment would be left untouched, says Harry Verhoeven of Georgetown University.

Shimelis Abdissa, one of Mr Abiy's closest colleagues in the OPDO, says his boss will "give a new life to the EPRDF". But revitalising the coalition will not necessarily lead to the democratic reforms demanded by activists. That may involve taking on the hardliners. Mr Abiy's supporters are watching him closely. "We now have a yardstick to measure him against," says Mengistu Assefa, a blogger. "His words." ■

Protectionism in Africa

Trump's other trade war

KAMPALA

Used clothes spark a row between America and Rwanda

THE second-hand clothes trade often starts with a gift: an old dress or unwanted shirt, passed on for another to use. Along the way it becomes a multi-billion-dollar industry spanning several continents. It ends at a market stall, usually in Africa. And now it is the cause of President Donald Trump's unlikeliest trade war.

Private companies in America and Europe buy up surplus donations from charities and export them to the developing world. In 2016 east African countries resolved to phase out the trade, complaining that cheap cast-offs hurt their own nascent garment industries. America responded by threatening to impose tariffs on east African goods. Kenya, Uganda and Tanzania backed down. But Rwanda has stood fast. So on March 29th Mr Trump said he would suspend duty-free access for Rwandan apparel in 60 days.

Technically, Rwanda has no grounds for complaint. Like 39 other African countries, it enjoys access to American markets under the African Growth and Opportunity Act (AGOA), enacted in 2000. One of the eligibility criteria is that countries progressively eliminate barriers to American goods. Rwanda has done the opposite, hiking duties on second-hand clothes 12-fold. "That is almost a de facto ban on these products," complains an American official.

East Africa accounts for over a fifth of the used-clothes market. Rwanda is only a

small part of that. Its stand-off with America is not very costly for either side. In 2016, according to official statistics, Rwanda's total used-clothes imports were only \$18m (against \$274m for east Africa as a whole). Its exports under AGOA were just \$2m.

But the case has wider resonance. African countries once nurtured their industries behind protective barriers. From the early 1980s they reluctantly opened their markets as a condition of foreign loans. Ghana lost four-fifths of its textile and clothing jobs. In Kenya, the number of big garment manufacturers fell by half. Garth Frazer of the University of Toronto estimates that second-hand imports account for 40% of the collapse in African apparel production from 1981 to 2000 (though the underlying data are fuzzy).

Slapping tariffs on used clothes is unlikely to help. Several countries have already tried import bans; smugglers just carry clothes across the border in a suitcase, passing them off as their own. Most local manufacturers, burdened with patchy power and costly credit, cannot produce clothes cheaply enough for domestic consumers. Rwanda's biggest textiles firm churns out uniforms, but not the trendy t-shirts worn by young men in Kigali.

The gap in the Rwandan market will probably be filled by imports from China, already worth \$12m in 2016. The immediate losers will be consumers, who will pay more. A survey by the American government finds that 95% of used-clothing imports in east Africa are bought by the poorest 40% of the population.

Still, Rwanda seems determined to push on. A special economic zone in Kigali hopes to attract garment-makers. Reducing imports is part of a broader industrial strategy. In economic policy, too, Rwanda is pursuing its own style. ■



Not another from Ivanka's line

Municipal finance in Africa

Taxes and taxis

KAMPALA

How African cities can pay for their own upkeep

WE PAY our money and you see how it looks," says Aggrey Batwala, leaning out of his minibus in Kampala's muddy taxi park. Shared taxis used to pay city authorities 120,000 shillings (\$32) a month for the right to ferry commuters into the Ugandan capital. But in September indignant drivers stopped coughing up. They later complained to the president, who ordered that the levy be halved. The city appealed against his decision and the drivers still aren't paying. The stand-off could cost it 21bn shillings this year.

Kampala shows why African cities struggle to raise revenues, squeezed as they are between poor citizens and overweening central governments. But it also proves that doing better is possible. In 2010-11 the city collected just 30bn shillings (see chart). Last year it raised 89bn shillings, about a third of its non-aid budget (the rest comes from central government). Its experience offers lessons for African cities, which will triple in size by 2050. They need roads, drains and lights. Yet many look to central governments for funds rather than seek ways to raise their own.

The change in Kampala began in 2011 with the creation of the Kampala Capital City Authority, a group of unelected technocrats which assumed most of the powers of the old city council. It took over a city with too many official bank accounts. Revenue collection was farmed out to middlemen who beat money out of taxi drivers, handing only a fraction to public coffers. The first step was sorting out administration and compliance. Collection was brought in-house. A new system allowed citizens to pay on their mobile phones.

Early gains came from taxi fees and business licences. They are predictably unpopular. Betty Ssuumbi, who sells clothes downtown, says the licence for which she pays 210,000 shillings annually is too high. "Just look at this business," she says, her shop barely bigger than a wardrobe.

Next came a drive to collect more property taxes. These should fall more heavily on the rich, rise as better services push up house prices and be harder to dodge. But the most recent valuation was in 2005, so new malls and office blocks were not on the register. That is not unusual in Africa. Nairobi has not updated its roll since 1982.

Valuers are now traipsing around Kampala, registering properties on tablet computers. In the business district they counted 16,000 buildings, doubling the size of ►



▶ the roll and tripling revenues from the area. Fred Andema, the city's chief taxman, hopes to raise 50bn shillings a year from property once the valuation exercise is complete. But he also estimates that he loses 20bn shillings because national law exempts owners who occupy their properties from paying the tax.

That suggests the third and, perhaps, most important step: better policies. Often national politicians get in the way. Consider borrowing, which might benefit some cities (though not all). Kampala secured its first credit rating in 2015, but has not issued a bond because of a central-government cap on city debts. That year Senegal's government forced Dakar to abandon a bond just two days before the planned issue. Civil servants cited regulations; cynics noted the mayor's rivalry with the president.

Politics is not always a hindrance. Opposition governors in Lagos see tax reform as a way to transform the city and build their base. In Kampala democracy has been sidestepped. Jennifer Musisi, the city's top technocrat, says that gives her "more freedom to do what is right".

Ms Musisi points to better services and smoother roads. But the scale of the city's problems still dwarfs the available resources. And her tough approach has more admirers on the affluent hillsides than in the slums between them. "It's not fair," says John Dungu, a shopkeeper. When it rains, he notes, the valleys still flood. ■

ganisers, admits it will succeed "only if we can mobilise Palestinians in other areas and raise the issue of Palestinian refugees in the international media." He knows the world is not that interested. But Gaza is Hamas's only asset, so it is using it to bid for the leadership of the Palestinian cause, as well as to challenge Israel.

Israeli intelligence analysts think Hamas has changed its tactics, if not its ideology. After a decade of building up its military muscle, in the shape of thousands of rockets and a network of cross-border tunnels from which to attack Israel, its leaders now know its weapons are ineffective. The rockets fired at Israel are intercepted by the Iron Dome missile-defence system. The tunnels are routinely destroyed by Israel. Rather than provoke another round of war and be blamed by Gazans for yet more suffering, Hamas has been looking for ways to break out of its isolation.

But two years of negotiations with Egypt and the PA, which is still dominated by its Fatah rivals, have failed to yield a breakthrough that would open Gaza's gates. Hamas is now returning to the "popular struggle" of the first intifada (uprising) which broke out in 1987. The hope is that the sight of young people throwing stones at armed Israeli soldiers will refocus the world's attention on the Palestinian cause. Hamas's new chief in Gaza, Yahya Sinwar, also thinks a popular struggle will boost his chances in the battle to become the Palestinians' next leader, once the ailing, unpopular Mahmoud Abbas leaves the stage.

Israel's prime minister, Binyamin Netanyahu, has turned down many proposals for a peaceful solution to Gaza's predicament, for fear of seeming weak in the eyes of his right-wing supporters. He is relying instead on Mr Trump, his Saudi and Egyptian allies, Israel's army and the fatigue and fractiousness of the Palestinians. But a bloody new confrontation may beckon. ■

Israel and Gaza

Will it boil over?

KFAR AZA

The Palestinians in the cramped strip are once more trying to push out

THE skies above the eastern suburbs of Gaza City buzzed with drones on March 30th. The Israeli army was using them to monitor the tens of thousands of Palestinians marching to the border, and to drop tear-gas grenades on those getting too close. When some of the marchers began running closer, the troops opened fire, killing 17 and wounding hundreds. Three and a half years after the last Gaza war, when 2,300 Palestinians and 74 Israelis were killed, the beleaguered coastal strip was erupting again. There were no casualties on the Israeli side, but the mass protests pose a new challenge.

The Palestinians are calling it the "Great Return March", a salute to the homes their grandparents lived in, across the border, before they fled or were pushed out by the newborn Israel. They promise to keep marching for another six weeks, at least. From Israel's perspective, these are "acts of terror", aimed at sabotaging the border fence and orchestrated by Hamas, the militant Islamist group that wrested control of Gaza from the Palestinian Authority (PA) in 2007 after winning an election the year before. Since then Gaza's neighbours, Israel and Egypt, have imposed a near-total blockade on the cramped strip's 1.8m peo-

ple. But the march's organisers insist that they do not represent any one movement, and are simply protesting against their perpetual refugee status and the siege.

After seven years of upheaval throughout the Arab world, the Palestinian issue has slipped down the international agenda. The administration of President Donald Trump is firmly behind Israel. International condemnation after the deaths on the border was relatively muted. Even Arab capitals issued no more than bland statements. Saudi Arabia's crown prince, who is touring America, preferred to talk about a potential partnership with Israel.

But the Palestinians are determined to draw the world's attention. The marches have been scheduled for symbolic dates. The first coincided with their Land Day, marking a deadly protest in 1976, and with Passover. More are scheduled to take place in coming weeks, as Israel celebrates its 70th anniversary; they will culminate on May 15th, when the Palestinians commemorate the *naqba* (catastrophe), the term they use for Israel's birth and their dispossession. Israel's defence minister, Avigdor Lieberman, warns that "anyone who goes close to the fence is risking their lives".

Isam Hammad, one of the march's or-



Made you look

Libyan politics

Rushing into a disaster

CAIRO

War-torn Libya is planning an election that will probably divide it further

SAIF AL-ISLAM QADDAFI is determined not to let a death sentence stop him from running for president. The son of Libya's deposed dictator was captured after the revolution in 2011 and later condemned by the government in Tripoli (his father was killed by a mob). But the militia that held Saif ignored the sentence and released him. He has been out of sight for years and is wanted for war crimes. Still, if Libya goes ahead with a planned election this year, the man who once vowed to spill "rivers of blood" to protect his father hopes to stand as a candidate.

The uprising shattered Libya into a collection of fiefs ruled by militias. Libyans and foreign diplomats have spent years trying to put the country back together. The new UN envoy, Ghassan Salamé, took office in August hoping to fix a deal from 2015 that tried—and failed—to unite everyone behind a single government. He hoped Libya would then hold a national conference and a referendum on a draft constitution. Only after all that should it call parliamentary and presidential elections.

His efforts, though, have not yielded much progress. Talks to fix the deal, called the Libyan Political Agreement (LPA), stalled in October. The national conference has not happened. In his last update to the UN Security Council, Mr Salamé said that it would not occur until after Ramadan, which ends in mid-June. The constitution remains a source of disagreement; no referendum is scheduled.

The "government of national accord" (GNA) in Tripoli, which was created by the LPA, has nevertheless jumped ahead to the last step. In December it launched a voter-registration drive, a precursor to elections later this year. It now has a voter roll with more than 2m names. But it is missing other ingredients for a successful vote, such as an electoral law, political freedoms and security. A separate government in the east, dominated by the country's strongest warlord, Khalifa Haftar, shuns the GNA.

The last election, in 2014, was a disaster. Low turnout and a dispute over the process led to the creation of rival parliaments in the east and the west. There is no reason to expect better this time. Militias hold sway across Libya, suppressing critics. General Haftar, who heads the self-styled Libyan National Army (LNA), rules the east with an iron fist (with backing from Egypt and the United Arab Emirates). "Libya today couldn't be further away from...accep-

The queen and the Prophet

Is the caliph a queen?

Muslims consider Elizabeth's ties to Muhammad

"**Q**UEEN ELIZABETH must claim her right to rule Muslims." So ran a recent headline on the Arab Atheist Network, a web forum. It was only partly in jest. According to reports from Casablanca to Karachi, the British monarch is descended from the Prophet Muhammad, making her a cousin of the kings of Morocco and Jordan, not to mention of Ayatollah Ali Khamenei, Iran's Supreme Leader.

The claim, first made many years ago, is gathering renewed interest in the Middle East. Why is not clear, but in March a Moroccan newspaper called Al-Ousboe traced the queen's lineage back 43 generations. Her bloodline runs through the Earl of Cambridge, in the 14th century, across medieval Muslim Spain, to Fatima, the Prophet's daughter. Her link to Muhammad has previously been verified by Ali Gomaa, the former grand mufti of Egypt, and Burke's Peerage, a British authority on royal pedigrees.

Much hinges on a Muslim princess called Zaida, who fled a Berber assault on her home town of Seville in the 11th century and wound up in the Christian court of Alfonso VI of Castille. She changed her name to Isabella, converted to Christianity and bore Alfonso a son, Sancho, one of whose descendants later married the Earl of Cambridge. But Zaida's own origins are debatable. Some make her the daughter of Muatamid bin Abbad, a wine-drinking caliph descended from the Prophet. Others say she married into his family.

Reaction to the queen's purported Muslim extraction has been varied in the Arab world. Some have warned of a perfidious plot to revive the British empire with help from Muslims, particularly Shias, who revere the Prophet's descendants. They note that the BBC's Arabic channel ran the bloodline story. But

table conditions for free elections," warns Human Rights Watch, a pressure group.

A presidential election would be particularly divisive. One potential candidate, Fayed al-Serraj, the head of the GNA, is struggling to exert control, even in Tripoli. Last summer he agreed to a truce with General Haftar and reportedly offered to share power with him. But General Haftar refused. His LNA continues to fight militias aligned with the GNA. He is open to elections, but warns that he will "take action" if he dislikes the outcome. The two sides cannot even agree on Saif's fate: the eastern

others welcome the news. "It builds a bridge between our two religions and kingdoms," says Abdelhamid Al-Aouni, who wrote the article in Al-Ousboe. Other reports have called the queen *sayyida* or *sherifa*, titles reserved for the Prophet's descendants.

Her son, Prince Charles (bin Philip), is intrigued by Islam. "Perhaps there were times when he wanted to marry more than one wife," says one of his Muslim confidants. Charles is a patron of the Oxford Centre for Islamic Studies, where he greets audiences with the Muslim salutation, *as-salamu alaykum* (peace be upon you). He is said to want a multi-faith coronation and to be ordained as "defender of faith", not "the [Christian] faith". He might try *amir al-mumineen* (commander of the faithful), an honorific favoured by Muslim rulers.



Elizabeth of the Al Windsor clan

parliament granted him amnesty in 2017; Mr Serraj refuses to recognise it.

The younger Qaddafi hopes to "restore the Libyan state", says his spokesman. Many Libyans would endorse that goal (if not Saif's candidacy). Income per capita is a third lower than it was in 2010. But where the fighting has abated, things are looking up. Oil revenues nearly tripled in 2017, from the year before, as improved security allowed the main fields and export terminals to reopen. The dinar has strengthened. For good reason, most Libyans just want the war to end everywhere else. ■



Japan's sex industry

More smutty than slutty

TOKYO

As the population ages, the sex trade is becoming less sexual

IN THE 17th century Yoshiwara, in north-eastern Tokyo (then known as Edo), was one of a number of red-light districts. Both female and male prostitutes walked the streets, offering a full range of services. Four hundred years later Yoshiwara remains a centre of the sex trade, but customers' desires are becoming less explicit. Scores of "soaplands" such as "Female Emperor" offer men a scrub by a lingerie-clad woman, for around ¥10,000 yen (\$94).

Yoshiwara's transformation reflects broader changes in Japan's sex industry. Reliable data are difficult to come by, but softer services seem to be gaining popularity at the expense of harder ones such as vaginal sex (which is illegal but widely available) or oral sex (which is legal). The sex trade in Japan has long been about not only intercourse, but also the yearning for intimacy and romance, says Masahiro Yamada, a sociologist, and these are the services that are growing.

There are, for example, more *kyabakura*, places where men go to be served drinks and fawned over by women, and "image clubs", where men act out fantasies (minus the climax, at least in theory) in mock doctor's surgeries or train carriages. *Onakura* shops allow men to masturbate, while female employees watch. The pornography industry is in rude health, too.

The shift to less carnal services started after the second world war, when the prudish American occupiers urged the Jap-

anese authorities, against their better judgment, to outlaw payment for vaginal sex in 1958. More recently, however, demographic and economic factors have accelerated the change. Some 28% of the population is over 65, the highest proportion in the world. The old stay healthy for longer, but are after "softer, less explicit services", says Katsuhito Matsushima of Yano Research Institute in Tokyo.

Elderly, not abstinent

A recent edition of *Shukan Post*, a weekly magazine, described how some elderly men visit soaplands "just to talk to the babes". The owner of a "delivery-health" business, which dispatches girls to homes and hotels in Hiroshima, says that older people have replaced those in their 20s as his main customers. Rather than having intercourse, he says, they simply want to spend time in the company of young women.

Akira Ikoma, the editor of *My Journey*, a sex magazine, says that today his publication is aimed mainly at men in their 50s and 60s. The photos are demure: no genitalia and not many breasts. An elderly man with a walking stick shuffling around an outlet of M's Pop Life, a chain of adult stores, can find much aimed at him. One example is "silver porn", starring the likes of Maori Tezuka; she retired last year, at 80, after a nine-year career.

At the same time, the sex industry is ad-

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justing to cater to young Japanese who are also less interested in carnal pleasures. Once it was common for young men to lose their virginity to prostitutes in Yoshiwara, something known as *fudeoroshi*, meaning writing with a new brush. Now virgins often remain so indefinitely. A recent survey found that 42% of unmarried men and 44% of unmarried women had never had sex by the age of 35 (over 50% of Japanese men and over 60% of Japanese women are married by the time they are 30-34). Many young people see sex as *medokusai*, or tiresome, says Mr Yamada. Services for the young are often about "doing it by themselves—quasi-sex", Mr Matsushima says. Services that make masturbation more enjoyable are booming, such as websites that offer chats with naked girls or video parlours where men can watch adult DVDs in a private booth.

Some see all this as a sign of the decreasing confidence of Japanese men. Local media talk of "herbivores" who are fearful of independent women. Maid cafés, where women in frilly aprons blow on customers' food before spooning it into their mouths, are packed with men (and tourists). In *soineya* stores, or cuddle cafés, clients pay to lie next to a girl. If they pay extra they get a pat or the woman stares directly into their eyes. Sociologists reckon the lack of confidence may also account for another trend in the sex industry: the fetishism of young girls. Some businesses, for example, give men the chance to walk or lie with someone dressed as a schoolgirl, which is legal as long as the sex workers involved are not actually of school age.

Economics may be playing a part in the sex industry's evolution, too. Gone are the bubble years when there was lots of cash to throw around. Sex is expensive, says the owner of the delivery-health service, whereas a visit to a maid café can cost as lit- ►

► The as ¥1,000. Yet the decline in the conventional sex industry does not mean a decline in the overall business of adult entertainment. A study by Yano Research Institute found that sex-related facilities and services grew by 2.1% in 2014, and sales in sex shops by just under 1%, despite Japan's ageing and shrinking population. Pornhub, the world's largest porn site, says Japan is its fourth-largest source of traffic.

Mr Ikoma, the editor, attributes this in part to the business being more culturally accepted in Japan than elsewhere. Many companies still see fit to entertain clients in the equivalent of strip clubs, while pornographic magazines are sold in most convenience stores. And whether or not Japanese men are losing their taste for penetrative sex, they are not short of creative alternatives. ■

league, Tin Tin Win, he will not run again. Anyone could do his job, he says.

The NLD is also cutting itself off from people with ideas. Foreign advisers are regarded with growing suspicion because of their complaints about Myanmar's persecution of the Rohingya Muslim minority. Parliament is cooking up legislation to curb the activities of the UN and international NGOs. The NLD is even more hostile towards home-grown activists. The government has passed a law making it easier for police to ban protests. Mael Raynaud, a long-term observer of Burmese politics, notes that the NLD's imprisoned leaders did not witness the blossoming of civil society in the 2000s thanks to a loosening up by the army and in response to a devastating cyclone. Years of repression also fostered paranoia, which has left the NLD prioritising loyalty over competence.

The previous government, led by reformist generals, was hungry for legitimacy and hoped to redeem itself by instigating rapid change. The NLD has a mammoth popular mandate but doesn't have a clear idea of what to do with it. Things were easier before, says Sandar Min, a long-term NLD member. "When we were fighting the military we had a clearly defined enemy. Now it's not clear." ■

Politicians in Myanmar

Out of their league

TAUNGOO

After two years in power, the ruling party is disillusioned

TINTIN WIN never imagined she would become a politician. In Taungoo, a mid-sized city in the Burmese plains, she is mostly known as a family doctor. But three years ago she was asked to run for parliament by the National League for Democracy (NLD), the political party led by Aung San Suu Kyi, the activist whose long campaign for democracy was instrumental in ending military rule in Myanmar. She enthusiastically answered the call, and won.

Today her mood has dampened. She sits through long, boring parliamentary sessions in Naypyidaw, Myanmar's purpose-built capital. Sometimes she wonders what the point of it all is. She once sponsored a motion to introduce sex education in schools (she has seen too many desperate pregnant teenagers at her clinic). But her own party took it off the agenda without much explanation. Only halfway through her term, she has already decided that she will not run again in 2020.

March 30th marked two years since the army ceded power to the NLD. But it left in place a constitution that exempts it from civilian control, puts it in charge of internal security and grants it a quarter of seats in parliament, massively curtailing the new government's authority. The constitution also deliberately bars Ms Suu Kyi from the presidency, as the parent of foreigners (her children are British citizens). Ms Suu Kyi has at least got around that: she is, in her own words, "above the president". In late March the placeman she had installed in the presidency announced on Facebook that he was resigning to "take a rest". Parliament promptly elected a new one, Win Myint, an NLD loyalist like his predecessor. Little will change as a result. Ms Suu Kyi remains firmly in charge.

Some things have improved markedly since the NLD took office. Myanmar has jumped up Transparency International's corruption index, a survey based on public perceptions. Citizens are also much freer to speak their minds than they used to be. But NLD politicians are novices who struggle to put ideas into practice. Some were first elected in 1990, but were never allowed to take their seats in parliament. Instead, the army put many of them in jail. While Ms Suu Kyi runs the country, a clique of these ageing former political prisoners runs the party. They are not running much. The NLD is more a fan club than a party articulating policies and training future leaders. As a party whip puts it, "NLD minus Aung San Suu Kyi equals nearly zero."

The new generation of MPs, elected in 2015, come from all walks of life: they are dentists, vets, journalists, teachers and entrepreneurs. They tend to be younger than their predecessors, and even though they admire Ms Suu Kyi, they are not as deferential as the old guard. They are energetic but disillusioned. "We want to catch elephants, but we can't even catch ants," sighs a freshly minted lawmaker. Like his col-

Ancient Eurasian migrations

Steppe sons

DELHI

A new study squelches a treasured theory about Indians' origins

A CENTURY and a half ago linguists invented a new map of the world. Their research showed that a single family tree stretches its branches almost unbroken across most of Eurasia: from Iceland to Bangladesh, most people speak languages descended from "Proto-Indo-European". The philologists had a theory to explain why Sanskrit, the ancient forebear of Hindi, has closer cousins in Europe than in south India. They speculated that at some point before the composition of the Vedas, the oldest texts of Hinduism, an Aryan people had migrated into India from the north-west, while their kin pushed westward into Europe.

Long before the Nazis dreamed of an exalted master race, imperialists seized on what some dubbed the "Aryan invasion" theory to paint Britain's rule of India as the extension of a "natural" order. Indians, too, found a use for it. Caste-bound Hindu conservatives declared that the paler-skinned intruders must be ancestors of higher-caste Brahmins and Kshatriyas. Such talk stirred a backlash in southern India, where gener- ►



Suu Kyi is really above Win Myint

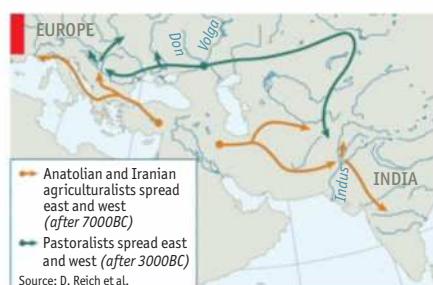
► ally darker-skinned speakers of Dravidian languages were urged to see themselves as a separate nation.

Hindu nationalists took a different tack. The West, some said, had made up the theory to set Hindus against each other. Christian missionaries and communists were using it to stoke caste hatred and so to recruit followers, they claimed. Worse, the theory challenged an emerging vision of Mother India as a sacred Hindu homeland. If the first speakers of Sanskrit and the creators of the Vedas had themselves been intruders, it was harder to portray later Muslim and Christian invaders as violators of a purity that good Hindus should seek to restore. So it was that some proposed an alternative “Out of India” theory. This held that the original Aryans were in fact Indians, who carried their Indo-European language and superior civilisation to the West.

Yet, even as Hindu nationalism has gained politically, culminating in the current rule of the conservative Bharatiya Janata Party (BJP), evidence has mounted against the out-of-India hypothesis. Philologists have determined with a fair degree of certainty that the Vedas were probably composed between 1500BC and 500BC. Archaeology, meanwhile, indicates that a sophisticated urban civilisation had flourished in the Indus Valley around a thousand years earlier, but had collapsed before the Vedic Age.

The culture depicted in Sanskrit texts has different traits. It was largely rural and pastoral, relied on iron instead of bronze and appears to have used horses, chariots and bows and arrows—all of which are absent from the original Indus settlements. Proponents of the Aryan invasion conclude that a large influx of outsiders would neatly explain all this. Another clue: the proportion of Indians who can tolerate cows’ milk decreases markedly towards the east, suggesting that cattle-herders migrated into the country from the west.

Even so, fierce exchanges in Indian social media have greeted every new study. Academic researchers have found themselves branded Christian missionaries, “sickularists” or even Chinese agents. Late- ly, however, such controversy has shifted from linguistics and archaeology to genetics. As techniques of extracting, analysing and tracking DNA through time and place improve, a clearer picture is emerging.



An accumulating pile of research using DNA from both ancient human remains and modern people indicates strongly that, beginning around 2000BC, northwest India was indeed infused with new blood. The newcomers appear to have shared the same roots in what is now southern Russia as did the invaders of a similar-sized peninsula to the west called Europe. Strikingly, too, the genetic markers identifying this group seem to be far more prevalent among modern north Indian Brahmins than among other Indians.

Because of the difficulty in collecting ancient DNA, such research has until recently relied on relatively few samples. But an international team of 92 scholars, including David Reich, a geneticist at Harvard University who has pioneered tech-

niques to analyse DNA more quickly and precisely, is set to publish data recovered from 362 “ancient individuals” from across South and Central Asia. Among their conclusions: there was probably an early migration of agriculturalists into India from what is now Iran, around 4000BC, and this was followed two millennia later—just before the Vedic Age—by a large influx from what is now southern Russia (see map).

The wider study not only confirms that “Aryans” (geneticists avoid the term) probably migrated from the steppes around the Volga and Don rivers to both India and Europe at around the same time. It also shows that their genetic markers later spread southwards across India, and are indeed particularly prevalent in “groups of priestly status”. ■

Asian media

All lies

SINGAPORE

A phoney assault on fake news

IF THE bill that the lower house of Malaysia’s parliament passed on April 2nd becomes law, those who publish or spread “any news, information, data and reports which is, or are, wholly or partly false” are liable to six years in prison and a fine of 500,000 ringgit (\$130,000). Critics scoff that the government is guilty of many such falsehoods, and will have to start by prosecuting itself. But the government contends that the bill is needed to patch gaps in existing legislation, allowing faster action to stop the spread of calumny through social media as well as in print. It will also punish third parties caught financing the dispersion of dodgy material.

The minister of communications, Salleh Said Keruak, says the bill is “clear and specific” and will not hamper free speech. “I think we can take comfort that we have not veered too far off a track that others may take. We just decided to be ahead of the pack,” says one of his staff.

In neighbouring Singapore, discussions about curbing “deliberate online falsehoods” are also under way. A parliamentary committee is considering more than 160 written submissions and hours of testimony from academics, activists and journalists. Existing laws cannot cope with the speed and scope of social-media sharing, argues Janil Puthucheary, an MP on the committee. “Our intent is to allow for much more informed discourse,” he says. It helps that Singapore’s constitution allows the government to limit free speech with “such restrictions as it considers necessary or expedient”.

In February the president of the Philippines, Rodrigo Duterte, banned a local



news website, Rappler, from covering his events on the ground that its reports were “fake news”. Ironically, the Philippines is awash with fake news claiming false accolades for Mr Duterte. Rappler, in contrast, is critical of the president.

A furore in India this week shows what can go wrong. The ministry of information issued rules that would have revoked the credentials of journalists found to be peddling falsehoods. Supportive ministers shared links from The True Picture, an online outfit supposedly dedicated to identifying fake news. But the site, it turns out, was actually run by the media team of Narendra Modi, the prime minister. He abruptly ordered the ministry to rescind its new rules, which had been in force for less than a day. Governments, it seems, are no better than anyone else at discerning genuine news from the fake sort or—worse—no more inclined to truthfulness than those whom they so eagerly denounce.

Corruption in South Korea

The presidential curse

SEOUL

Cases against two former presidents fit an alarming pattern

IT IS a busy time for anyone interested in the fight against corruption in South Korea. In mid-March a court in Seoul began hearing the case of three former spy chiefs who stand accused of funnelling 4bn won (\$3.8m) from the National Intelligence Service to the office of the former president, Park Geun-hye, who was impeached a year ago. A week later prosecutors arrested Lee Myung-bak, another former president, over allegations that he had collected more than \$10m in bribes while in office and had hidden his ownership of a profitable auto-parts maker. And on April 6th Ms Park is expected to be sentenced to many years in jail for taking bribes and abusing her power. (Prosecutors recommended in February that she get a 30-year sentence.)

All four of South Korea's living ex-presidents have now either been convicted of corruption offences, or are in jail being tried or investigated for such crimes. In addition to Ms Park and Mr Lee, Chun Doo-hwan and Roh Tae-woo, former generals who held office in the 1980s and 1990s, were found guilty under their civilian successor, Kim Young-sam, of extracting bribes from South Korea's big industrial conglomerates, the *chaebol*. And three deceased presidents were also touched by corruption scandals. Both Mr Kim and his successor, Kim Dae-jung, entered office pledging to eradicate corruption, but both saw their sons convicted of influence-peddling during their time in office. Roh Moo-hyun, who succeeded the second Mr Kim, committed suicide a year after leaving office. He had been accused of receiving bribes, funnelled through his wife and other relatives, from a wealthy shoemaker.

In short, corruption has long been a feature rather than a bug in South Korean politics. "Asking for money from *chaebol* executives in return for political favours was considered quite normal until very recently," says Kang Won-taek of Seoul National University. He believes the country's authoritarian past is to blame. The absence of democratic checks and balances encouraged politicians to identify the state's interests with their own, he argues.

That may partly explain the odd way in which Ms Park approached her trial, refusing to co-operate with prosecutors or even to show up to hearings, which many observers believe damaged her case. "She didn't have a sense of guilt," says Mr Kang. Mr Lee displayed similar contempt for the judiciary when he refused to answer pros-

ecutors' questions in March.

Before Ms Park, no president was vigorously investigated while in office. The president, after all, can staff the courts and the prosecutor's office with cronies, and therefore curb scrutiny of his or her own activities, says Park Jung-eun of People's Solidarity for Participatory Democracy (PSPD), a pressure group. The danger was being succeeded by a political opponent. "Prosecutors have tended to comply with what the government of the day wants," she says. Even then, bigwigs did not have too much to fear: studies show that high-powered defendants can expect shorter sentences. Pardons also used to be common.

Some ardent right-wingers argue that the current corruption probes fit this pattern. But many South Koreans have a sense that what is being put on trial is not so much two politicians but an entire system of politics, of which Ms Park and Mr Lee are merely lamentable examples. Four-fifths of South Koreans believe that improving political transparency is a precondition for a fairer society, according to a recent poll.

A break with the past

The convictions of Messrs Chun and Roh in the 1990s for their role in the massacre of democracy activists, as well as for corruption, symbolised a reckoning with the nastier side of military dictatorship. By the same token, says Mr Kang, the downfall of Ms Park and Mr Lee may help purge the last remnants of authoritarianism. "It's a sign that we're at last putting bad, old political habits behind us," he says.

The probe against Mr Lee, in particular,

enjoys widespread support. Fully 80% of South Koreans believe that the charges against him warrant punishment. No supporters showed up at the prosecutor's office to protest his innocence, unlike for Ms Park, who is still revered by older Koreans as a representative of her late father, Park Chung-hee, the dictator who presided over a period of unprecedented economic growth. Kim Jiyoong of the Asan Institute, a think-tank, says that while voters have always perceived politics as corrupt, they have recently grown more concerned by this fact. Maybe, she speculates, "people used to think corruption was a price worth paying for success."

But it will take more than a handful of corruption convictions to ensure that the old order symbolised by Ms Park and Mr Lee is abolished. The current president, Moon Jae-in, whose main electoral promise was to end the impunity of the political establishment and the cosy links between politics and business, is in a good position to keep up the momentum. He enjoys the support of over two-thirds of Koreans and is famously "clean"; he even forgoes professional meetings with friends to avoid the slightest whiff of suspicion.

Yet success is no foregone conclusion. A constitutional-reform bill intended to limit the power of the presidency is unlikely to pass the National Assembly. The bill needs a two-thirds majority to pass, but the opposition refuses to support it, arguing, somewhat ironically, that constitutional reform is too serious a matter to be done at the president's command. Draft legislation to create a separate agency to prosecute high-level crime, which Ms Park of PSPD believes is needed to counteract the leniency of prosecutors and courts, has been stuck in the assembly for more than a year. When voters were asked in 1995 if the arrest of Roh Tae-woo would rein in corruption, three-quarters said they thought that it would. Whatever sentence is imposed on Ms Park this week, they will presumably take a more jaundiced view. ■



The fallen foursome: Lee, Roh, Chun and Park

Banyan | Travel travails

Taiwan is once again becoming a source of conflict between China and America



IF THE partisanship of American politics unsettles you, take heart from a little piece of legislation that sailed through both houses of Congress with not a single vote opposed to it. And though the Taiwan Travel Act could have passed into law without a presidential signature, last month Donald Trump chose to put his cardiogrammatic scrawl to it. Given the chaos in Washington, the act reveals a remarkable consensus. It urges, though it does not mandate, high-level visits between America and Taiwan of the kind that successive administrations have discouraged, so as not to offend China.

That country's "one-China principle" decrees that Taiwan is an inalienable part of the Chinese motherland. The Chinese government wants all other countries to act as if Taiwan belongs to it. America has never agreed to the formulation since breaking off diplomatic relations with Taiwan in 1979 in order to establish them with China. It has made plain that Taiwan is a friend, to which it has long offered military support. But, in deference to China, American policy has never been to call Taiwan a separate country and always to "acknowledge" that both China and Taiwan agree on the principle that there is only one China, even if the two sides disagree over what exactly that means.

This is America's "one-China policy". The convenient untruth, whose side-effect has been to deepen Taiwan's diplomatic isolation, was formulated when dictatorships in both Beijing and Taipei, the Taiwanese capital, claimed to rule all of China. Taiwan has no such pretensions today. Many members of Congress have long wished to give the island more credit for its peaceful transformation into a flourishing democracy over the past three decades. The Taiwan Travel Act was born out of this. It even gets close to calling a spade a spade, and Taiwan a sovereign country: "Visits to a country by United States Cabinet members and other high-ranking officials are an indicator of the breadth and depth of ties between the United States and such country," one clause reads. This week President Tsai Ing-wen welcomed the act's congressional sponsors in Taipei.

More surprising is Mr Trump's support. It is true that as president-elect in late 2016 he took a congratulatory telephone call from Ms Tsai. That set off palpitations among Washington's China-watchers. Yet Mr Trump soon reaffirmed the one-China poli-

cy. He told a host on his favourite television channel that he would do nothing over Taiwan without first consulting the Chinese ruler, Xi Jinping. And the relationship he has subsequently developed with Mr Xi has been larded with admiration for the dictator's power and style. Nothing Mr Trump has said or done suggests a remotely similar admiration for Taiwan.

Yet a shift of sorts is under way. In January one pro-Taiwan China hawk, Randall Schriver, was put in charge of Asia-Pacific policy at the Pentagon. A more prominent hawk, John Bolton, is about to become Mr Trump's national security adviser. And in March Alex Wong, the official in charge of Indo-Pacific strategy at the State Department, was in Taipei to deliver a speech. Taiwan, he said, "can no longer be excluded unjustly from international fora. [It] has much to share with the world." With Taiwan barred from everything from the International Civil Aviation Organisation to Interpol, Mr Wong has a point. He assured Ms Tsai that American support for Taiwan has never been stronger.

China is not amused, although its increased diplomatic and military pressure on Taiwan since Ms Tsai's election two years ago has surely helped galvanise the American stance. Dignitaries visiting Beijing have been told that the sort of exchanges the travel act encourages could cross a red line, and that it is therefore more dangerous than two other big challenges facing Mr Xi. The first is the delicate summity around a nuclear North Korea. The second is the growing American assault on Chinese exports and China-first industrial policies—on April 3rd the Trump administration announced 25% tariffs on \$50bn of Chinese goods, from locomotives to snowblowers (see Finance section).

The number two at the Chinese embassy in Washington, Li Kexin, warned Mr Trump not to sign the travel act. Last year he tried bullying Congress into watering down the National Defence Authorisation Act, which empowers (but again does not require) American naval vessels to call at Taiwanese ports. "The day that a US navy vessel arrives in Kaohsiung is the day that our People's Liberation Army unifies Taiwan with military force," he thundered at a reception in December. Last month Mr Xi himself warned that any actions to "split China" would face "the punishment of history". Such threats are having some effect in Taiwan. Even Ms Tsai's independence-leaning Democratic Progressive Party is split over how much support to give the travel act. Ms Tsai herself is instinctively cautious about upsetting China. Few Taiwanese want their country to be a pawn in a great-power game.

There Xi blows

A test comes in the summer, when America opens a gleaming building in Taipei to house its unofficial embassy, with rumours that a member of the cabinet may attend. Mr Bolton's presence might genuinely alarm China. Alternatively, it might interpret the Trump administration's steps over Taiwan as a mere prop to pressure on trade. Mr Xi's top economics official, Liu He, is in intense negotiations over China's gaping trade surplus with America. He is presumed to have Mr Xi's authority to offer to cut the surplus by tens of billions of dollars to avert a fully fledged trade war.

But what if China sees America as continuing to change the status quo on Taiwan after that? A few years ago Mr Xi said that the Taiwan "problem" cannot be left to future generations. Now that he has seized all the levers of power, nationalists would judge him harshly if he did not use them to stop Taiwan slipping away. So the island is shooting up the security agenda again—a reminder of the flashpoint it does not want to be, but still is. ■

**Water**

A massive diversion

BEIJING AND DANJIANGKOU

The world's largest infrastructure project does more harm than good

FOR the past drought-stricken year, most of the drinking water consumed in Beijing has travelled 1,432km (895 miles), roughly the distance from New York to Orlando, Florida. Its journey begins in a remote and hilly part of central China at the Danjiangkou reservoir, on the bottom of which lies the drowned city of Junzhou, reputed to be the birthplace of Taoism. The water gushes north by canal and pipeline, crosses the Yellow river by burrowing under it, and arrives, 15 days later, in the water-treatment plants of Beijing. Two-thirds of the city's tap water and a third of its total supply now comes from Danjiangkou.

This winter and spring, the reservoir was the capital's lifeline. No rain or snow fell in Beijing between October 23rd and March 17th—by far the longest drought on record. Yet the city suffered no supply disruptions, unlike Shanxi province to the west (see map, next page), where local governments rationed water. The central government is exultant, since the project which irrigates Beijing was built at vast cost and against some opposition. But the self-congratulation is not warranted.

The South-to-North Water Diversion Project—to give the structure its proper name—is the most expensive infrastructure enterprise in the world. It is the largest transfer of water between river basins in history, and China's main response to its worst environmental threat, which is (despite all the pollution) lack of water.

Four-fifths of the country's water is in the south, where half the population lives. But in the north, 11 provinces have less than 1,000 cubic metres per person per year, which is the internationally accepted measure of water stress. Eight have only half that amount. The arid ones include four of China's five biggest farming provinces. They produce 45% of the country's GDP and generate half of its power. It is no exaggeration to say the future of China's economy is threatened by lack of water.

From where it all flowed

Back in 1952 Mao Zedong concluded that “the south has plenty of water, the north much less. If possible, the north should borrow a little.” The project does this by linking the Yangzi river in the south with regions to north. The route between Beijing and Danjiangkou, which lies on a tributary of the Yangzi, opened in 2014. An eastern route opened in 2013 using the ancient Grand Canal between Hangzhou and the capital. (Jaw-dropping hydrological achievements are a feature of Chinese history.) A third link is planned on the Tibetan plateau, but since that area is prone to earthquakes and landslides, it has been postponed indefinitely.

The whole project, if ever completed, would transfer up to 45bn cubic metres of water a year, or 7% of China's water consumption. The two working stretches can divert 25bn tonnes of water annually from

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south to north. So far these have cost, according to the project's first director, Zhang Jiayao, 300bn yuan (\$48bn)—more than twice their initial budget.

The project was controversial from the start. In a rare example of public criticism, China's vice-minister for housing, Qiu Baoxing, called it difficult to sustain and unnecessary if China would only stop wasting water. Ma Jun, China's foremost environmentalist, warned that it would increase pollution (which was already bad) and claimed the mere expectation of the project was causing northern cities to use water recklessly. They were depleting local supplies, he thought, because they knew the inundation from the south would one day rescue them.

Officials dismiss such worrywarts. The first years of operation, they claim, show the project to be an unqualified success. More than 50m people, according to the water ministry, have been supplied by the system. The water table under Beijing had been subsiding at an alarming rate of between one and three metres a year because of pumping from wells. This has slowed. The project has revived severely eroded ecosystems nearby, such as Lake Juyanghai in Inner Mongolia, which had dried up in 1992. It also promises to boost GDP by 0.1-0.3 percentage points, since economic activities once constrained by water shortages are now able to run normally. But this is hard to measure.

► A triumph, then? Hardly. In reality, the project has not solved water shortages in Beijing. Nor has it dealt with the country's real problems. It has also added difficulties of its own. At best, it buys a little time in which to get water policies right.

The capital uses about 3.6bn cubic metres of water a year. The city has 2.1bn in local reservoirs and rivers, and the diversion scheme provides 1.1bn. So the project does not cover the current shortfall, which is made up by underground water. As the capital's population and economy grow, its water consumption could rise to more than 4bn cubic metres a year by 2020. If that happens, and assuming the scheme runs as advertised, it would plug only two-thirds of the gap. In north China as a whole, water demand is forecast by the government to reach 200bn cubic metres by 2050. The two parts of the water project built so far would cover just one-eighth of that. In short, the project would not solve north China's water shortages even if it were working as planned.

But it is not. Officially, 9.5bn cubic metres of water a year are supposed to be flowing through the middle route. But officials at the headwaters in Danjiangkou say that less than half of the planned extraction was taken out of the reservoir in 2017. This is partly because the price of reservoir water is high and therefore demand has been lower than expected. But it is also because the reservoir is relatively small: its capacity is 29bn cubic metres. Taking a third of that away each year, engineers worry, would stir up huge quantities of silt.

The capital still gets almost all the water it was promised. But the provinces surrounding it get barely a third. When the project was designed, officials were at pains to argue that all north China would benefit. In practice, the project has been largely a water-delivery system for the capital. Since Beijing is one of the wealthiest parts of China and the area around the reservoir is relatively backward, the project takes from the poor and gives to the rich.

Given that the project is operating at less than its capacity, it might be supposed that it would be causing less damage. Not

so. More than 380,000 people had to be moved to make way for the rising waters. Because planners worried about pollution, they closed many of the industries lining canals and reservoirs. These included the mainstays of Danjiangkou's economy: fish farming and turmeric processing. The result has been high resettlement costs and a reduced tax base.

Li Xuanxiu is one of those resettled. Tending her cow and calf beneath tangerine trees near an abandoned village, she says she had to move twice when the government raised the reservoir's level. Zhao Keqian, from a nearby village, says people understand the aim of the project but not the way the local government handled it. "The government doesn't care about us," he complains, matter-of-factly.

Mr Zhao says local officials paid him 450 yuan per square metre for his old house but charged 1,000 yuan per square metre for his new one. The government also took 40% of what it paid him for his land, claiming this was really the government's. Those rehoused, Mr Zhao thinks, end up with a new house, no savings, no job and 600 yuan a year of income support—not nearly enough to live on.

Downstream from Danjiangkou, pollution has proved intractable. By diverting water from the Yangzi, the project has made the river more sluggish. It has become less able to wash away contaminants and unable to sustain wetlands, which act as sponges and reduce flooding. To compensate for water taken from their rivers, local governments are also building dams wherever they can to divert it back again. Shaanxi province, for example, is damming the Han river to transfer water to its depleted river Wei.

Worst of all, the project diverts not only water but money and attention from China's real water problem: waste and pollution. In 2017 water in nearly one-tenth of samples taken from the Yellow river was deemed unfit even for farming. The land ministry says that half the groundwater in the north China plain is too dirty for factories. In Europe 80% of water in industrial processes is recycled. In China the share is half that. In 2015 a study in *Nature* magazine by Jon Barnett of the University of Melbourne found that China did not need the project. It could be self sufficient, he argued, if it saved water and cut pollution.

To give credit where it is due, the government has started to increase water prices to discourage waste. The project is playing a role. At the end of 2017 a new tariff system went into effect in nine of the 11 water-stressed provinces. Water from the diversion project is pricier than that from local sources, which in theory should mean it will encourage conservation. The trouble is that basic tariffs are still too low. The higher cost of diverted water is borne not by consumers but local governments

Artificial rain

High hopes

Could Tibetan clouds save China from drought?

DIVERTING water from the south of China to the north is not the country's only crazily ambitious drought-alleviation scheme. The government is also thinking about setting up what would be the world's largest cloud-seeding operation in Tibet.

China already uses the technique more than most. Now, says the *South China Morning Post*, a Hong Kong newspaper, a state-owned defence company has built 500 burners on Himalayan ridges in the path of the monsoon. They are testing a system that involves lofting particles of silver iodide from the machines into the atmosphere. When the water-laden air of the monsoon hits the particles, ice crystals are supposed to form and later fall as rain or snow. The hope is to build tens of thousands of these burners and increase rainfall by up to 10bn cubic metres a year in an area the size of Iran that feeds the Yangzi and Yellow rivers as well as others upon which China's neighbours depend.

But the largest study of iodine cloud-seeding so far, the Wyoming Weather Modification Pilot Programme, found in 2016 that, although the technique can increase precipitation if wind and other conditions are just right, it cannot do so reliably over a long period or on a large scale. Changing the weather in the fragile environment of Tibet could also be fraught with unintended consequences. The government should think twice before giving its go-ahead to what looks like another vast, risky way of avoiding conservation and pollution controls.

(such as Beijing's). So the project has no direct effect on usage. On top of that, urban water infrastructure has long been neglected. Sewers back up, pipes leak. Instead of trying to fix them and rein in demand, China is focusing on boosting supplies.

The South-to-North Water Diversion Project is a test for Xi Jinping, China's president. He frequently argues that China must stop blindly increasing GDP at the environment's expense. And he appears to recognise that the Yangzi basin needs protecting. Under a government reorganisation in March, the environment ministry took over supervision of the diversion scheme. Its new overlords should heed the advice of Mr Zhang, the project's first director. "The solution to China's water-supply problem is conservation," he said in 2013. "Using water diversion to sustain economic development is a dead end." ■





Household smoke

How the other half cooks

SOKONE, SENEGAL

For years campaigners have tried to change how poor people heat their food. They have been stunningly unsuccessful

IMAGINE building a small pile of wood and kindling in the smallest room in your house, and setting fire to it. You can keep the door open, to let out some smoke, but cannot switch on an extractor fan. You must tend the fire for an hour. Repeat the process three times a day.

This is how Fatou N'Dour lives. Her kitchen, separate from her home and built of mud bricks, measures roughly two metres by two. She usually cooks indoors because of the winds that whip across Lambayene, the village where she lives in central Senegal. Asked about ventilation, she points to a hole in one wall, which is about ten centimetres square. Other women in the village cook rice, couscous and meaty sauces in similar conditions, using wood from a nearby forest.

Wood and charcoal in Africa; coal in East Asia; wood and animal dung in South Asia—in much of the world, food is heated by burning primitive solid fuels. Each fire is tiny, but the International Energy Agency (IEA), a Paris-based research group, estimates that 5% of the world's primary energy demand in 2016 was supplied by "traditional solid biomass". Wind turbines and solar panels combined generated less than half as much energy.

The awful effects of these fires begin with their impact on human health. Household smoke is thought to be the world's most lethal environmental pro-

blem, killing 2.6m people a year. Where wood and charcoal are burned, trees often disappear. Africa loses some 0.5% of its forests every year, a higher rate of destruction than South America's. Soot from domestic fires also warms the planet, particularly when it settles on snow. Black carbon like that from dirty cookstoves is thought to be the third most important cause of climate change after carbon dioxide and methane.

Governments, aid agencies and charities have for decades tried to coax people towards cleaner fuels like liquefied petroleum gas (LPG) and electricity. Those who must burn wood and dung are prodded to do so in more efficient stoves.

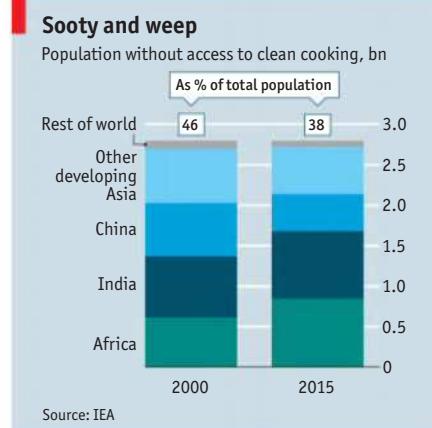
Progress has been astoundingly slow. Since 2000 the number of people living in extreme poverty has plunged from 1.7bn to about 600m. Neonatal deaths have fallen by 49%. Yet the number of people heating their food with dirty fuels has stuck at 2.5bn-2.8bn, according to the IEA, largely because of growth in Africa (see chart). The Global Alliance for Clean Cooking, which uses a slightly different measure, estimated in 2015 that the number might even have risen. As for those improved cookstoves, researchers who hand them out in a village almost invariably find, when they return several years later, that people have gone back to cooking over handmade mud stoves or large stones.

That efforts to change how people cook have fallen so short for so long can be blamed on weak markets, unco-ordinated charity interventions and muddled priorities. It also illuminates why development is so much harder in Africa than in Asia.

Cooking over an open fire is no fun, especially if you have to do it every day. In another village in western Senegal, Felane, women complain that their kitchens are always hot and smoky. The smoke stings and irritates—one woman blames it for colouring the whites of her eyes. Firewood is becoming ever harder to find. A local man, Cheikh Diouf, who has nine children, says that wood-collecting may take four trips a week, each one of up to four hours.

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54 Wood-burning in Europe



► Those who have a simple metal cook-stove with a clay liner, known as a *jambaar*, say it is better than the traditional method of balancing a pot over three big stones atop a fire. The *jambaar* is more efficient, needing less wood. Surveys in other countries show that many poor women realise this. A *jambaar* can also be moved outside when the weather allows. And it just feels superior: one woman in Lam bayene describes it as "civilised".

Yet *jambaar* stoves are seldom on sale at the weekly markets. People seem not even to know how much they cost. Gunther Bensch and Jörg Peters, both of the Leibniz Institute for Economic Research in Germany, gave *jambaar* stoves to Senegalese villagers in 2009. When they checked, in 2015, almost all had worn out. Hardly any had been replaced.

The problem is not only poverty. Mr Bensch and Mr Peters have tried auctioning *jambaar* stoves. They found that villagers often bid more than they would pay in nearby towns. Perhaps they do not buy them in markets because shopping is seen as women's work, and women are not allowed to spend much without consulting their husbands. Or perhaps it is too difficult to carry stoves from town to village. One urban stove vendor, Malick Niang, says he would not try to sell the stoves in villages. They are heavy and breakable, and demand there is uncertain. Another problem is that, being safe, poor and French-speaking, Senegal attracts charities and aid agencies. Some at times hand out stoves for little or nothing. That confuses people about their true value, and can wreck markets.

Even better cookstoves may not do much to improve health. The linkage between household smoke and harm seems not to be linear, says Kevin Mortimer of the Liverpool School of Tropical Medicine. Above a certain level, breathing more smoke might not make a person much sicker. Even the most efficient wood stoves expose cooks to many times the level of smoke that the World Health Organisation regards as safe. Mr Mortimer was involved in a large trial in Malawi, using a top-of-the-line stove, which found no evidence of an effect on rates of childhood pneumonia.

Perhaps it is better to pick a genuinely clean fuel (clean to cook with, not necessarily in the planet-preserving sense) and promote it hard. Brazil, Ecuador and Indonesia, among others, have all subsidised LPG. Since 2016 the Indian government has made LPG available to 34m households, giving them gas stoves and one cylinder free. The petroleum ministry says that four-fifths of the newly connected households have bought a replacement cylinder. On average, they buy four cylinders a year, which implies they get at least half of their cooking energy from wood, dung and the like. Still, this is rapid progress.

So switching fuels rather than stoves

seems the more hopeful approach. "We were fooling ourselves, thinking that we could pick any old fuel off the ground and make it burn cleanly," says Kirk Smith, an environmental scientist at the University of California, Berkeley, who is involved with India's programme. Not only is LPG much cleaner than solid fuel. It also feels like a step up in the world and is easier to use (even men can cook with it).

Subsidies make for poor policy tools. They are snaffled by wealthy, well-connected people. They create lobbies supporting them, and become hard to cut. Particularly in small countries, subsidised goods are likely to leak over borders. Subsidies may also vary from year to year with the government's budget. That is a particular danger in the case of cooking fuel, be-

cause cooks prize reliability. If people cannot always obtain clean fuel, they will probably revert to dirty stuff, says Radha Muthiah, the departing head of the Global Alliance for Clean Cookstoves.

These are mighty problems even for large middle-income countries with more-or-less competent governments. India, which for years frittered away money on LPG for the middle class, has managed to steer the subsidies—the world's biggest cash-transfer programme—more accurately towards the poor, partly thanks to the Aadhaar biometric-identity scheme. But in smaller, poorer, more corrupt countries, LPG subsidies are probably out of the question. India has found a tricky, costly way of clearing the air. In sub-Saharan Africa, the smoke lingers. ■

Wood-burning in Europe

Cosy and deadly

Wood fires are warm, cosy, green-seeming—and a big cause of air pollution

CHRISTMAS 2016 was *hygge*'s moment in Britain. A crush of books appeared seeking to explain how Danes—for the word is theirs—achieve *hygge*, which means comfort or convivial ease. An important ingredient, say the books, is a wood fire, around which one is supposed to sit, sipping something warming. British readers ought to have been prepared for that. A surprise publishing hit of 2015 had been "Norwegian Wood", a book that teaches how to chop and dry firewood.

About 175,000 new wood-burning stoves are sold in Britain each year. In 2015 an official survey found that 7.5% of Britons burn wood at home, usually to provide a little extra heat (most wood-burning households have central heating) or because they like looking at flames. Wood-burning is fashionable and seemingly environmentally friendly, since trees can be replanted. It is also, unfortunately, a big contributor to air pollution in Europe.

Gary Fuller of King's College, London, an air-pollution expert, has calculated that wood-burning is responsible for between 23% and 31% of all the fine particles generated in the cities of Birmingham and London. These particles, which are less than 2.5 micrometres (thousandths of a millimetre) in diameter, are blamed for various respiratory diseases and lung cancer. In fact, pollution from wood-burning seems to be falling gently, despite the rush to install stoves—perhaps because new stoves are cleaner than old ones, and much cleaner than simply burning logs in a fireplace. But that is still a lot of smoke.

In *hygge*'s homeland things are even worse. "If you ask Danish children to draw a house, they will draw a chimney with smoke coming out," says Karen Press Kristensen, an adviser to the Danish Ecological Council. Domestic wood-burning supplies about 3% of Denmark's energy consumption but accounts for 67% of fine-particle emissions. Unlike, say, a coal-fired power station, domestic wood-fires discharge pollutants straight into populated areas, and they do so at times of day when people are at home. Unlike other fuels, wood is untaxed in Denmark. Wood-burning increased 2.5 times in 2000 to 2015. Green-minded Europeans keen to change behaviour in poor countries might first sniff the air closer to home.



Toasty toes, wheezing lungs



Tesla

Driving to the next circle of hell

NEW YORK

Elon Musk's car company is heading for a cash crunch

“WE ARE sad to report that Tesla has gone completely and totally bankrupt.” So tweeted Elon Musk, boss of the electric-car company, on April 1st. He even posted a picture of himself supposedly drunk and inconsolable as proof. It was meant as an April Fool’s Day joke, but the gag backfired. It is uncomfortably close to the truth. America’s leading manufacturer of electric vehicles is under pressure. Mr Musk is fighting battles on many fronts and they all exacerbate his main threat: a financial squeeze that could eventually push Tesla over the edge.

Even Tesla’s shareholders, who are rarely put off by bad news, are jittery. Its shares have fallen by 16% since the end of February, most steeply after a Tesla using the firm’s Autopilot software crashed into a roadside barrier in California on March 23rd, killing the driver and raising questions about the safety of its system for semi-autonomous driving. The crash is being investigated by the authorities.

The pile-up of woes continued on March 28th when a judge in Delaware decided to let a shareholder lawsuit proceed against Mr Musk and Tesla’s board over an alleged breach of duty involving the firm’s \$2.6bn takeover in 2016 of SolarCity, a troubled solar-energy firm run by Mr Musk’s cousins. And on March 29th the firm announced a recall of around 123,000 older vehicles that may be susceptible to corro-

sion of a bolt that affects steering and parking. Such recalls are common among the world’s other carmakers. But in Tesla’s case it reinforces a view that the company is much better at developing the whizzy technology that underpins its cars than at mastering the humdrum business of making them in quantity.

Until recently Tesla made only small numbers of expensive long-range battery-powered cars. Its Model s saloon starts at \$74,500 and its Model x sport utility vehicle is pricier still. But Mr Musk has bet the future of his firm on mass-producing cheaper cars. The new Model 3, a smaller saloon costing as little as \$35,000 with a range still exceeding 220 miles, has attract-

ed over 400,000 deposits of \$1,000 each from eager customers. Much of his firm’s expected future revenue and its lofty valuation (it stands at roughly \$49bn today, even after the share-price falls) depends on rapidly scaling up production.

Alas, Tesla has repeatedly failed to meet its own targets (see chart). In July 2017 Mr Musk claimed that his firm would be cranking out 20,000 Model 3s per month by December of that year. In fact, it managed to produce fewer than 2,500 in the entire final quarter of 2017. He vowed to produce 2,500 Model 3s a week by the end of March, rising to 5,000 a week by the end of June. Despite superhuman efforts by workers and managers (Mr Musk is personally supervising production of the new model and claims to be sleeping at the factory), on April 3rd Tesla confirmed that it is producing only around 2,000 Model 3 saloons a week.

Expectations were so low among analysts and investors that Tesla’s flagging share price rebounded after that announcement. Glossing over the fact that it has yet again failed to hit its promised target, the company boasted that the Model 3 assembly line is now providing “the fastest growth of any automotive company in the modern era.” If Tesla’s production growth rate continues, it claimed, “it will exceed even that of Ford and the Model T.”

Such bluster does not withstand scrutiny. Tesla is struggling with bottlenecks in the production of battery packs at its “gigafactory” in Nevada as well as with assembly of the Model 3 at its car plant in Fremont, California. The central problem is that Mr Musk has overcomplicated the already difficult task of making a mass-market car. Rather than relying on the time-tested manufacturing methods used by established rivals, who still use people to ➤

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► do tasks that machines are as yet unsuited for, he wants his car factory to be a hyper-automated “machine that makes machines”, bristling with robots and keeping human involvement to a minimum.

Employees at the Fremont plant describe a chaotic workplace in which Silicon Valley ideals of nimble innovation and robotic automation clash with the unglamorous realities of car-making, from the safe use of fork-lift trucks on the shop floor to the dexterous insertion of plastic parts in car interiors. Max Warburton at Bernstein, an equity-research firm, argues that the big global carmakers have realised—owing to bitter experience with overzealous previous attempts at automation—that a sensible mix of man and machine produces the most efficient car-assembly for the time being.

Even if Mr Musk’s dream of turning his factory into an “alien dreadnought” of automated mass production really points to a better way of making cars, he could run out of money before proving his case. Tesla lost over \$2bn in 2017. Well before it confirmed the latest missed production target, investors worried about the firm’s cash-burn rate in 2018. In addition to the \$2bn or so of capital that may be required to expand production of the Model 3, Tesla has some \$1.2bn in convertible debt maturing by early next year. On March 27th Moody’s, a credit-rating agency, downgraded Tesla’s debt, cautioning that the firm “will likely need to raise additional capital during the second half of 2019”. Jef-feries, a bank, predicts that Tesla will need \$2.5bn to \$3bn this year.

EV cloud

Tesla maintains that there is no imminent cash crunch. In a statement released on April 3rd, the firm insisted that it “does not require an equity or debt raise this year, apart from standard credit lines.” Others think the moment of truth could come much sooner, perhaps in the summer. Whenever it arrives, the question is in what kind of environment Tesla will raise money. Rising interest rates, a wobbly share price and a continued inability to meet its own production goals would all conspire to make it harder for the firm to find capital. It does not help that General Motors, Volkswagen and other big rivals are making massive investments in EVs.

Many shareholders retain their belief in Mr Musk’s ability to overturn conventional wisdom. But many short-sellers are still betting on the firm’s demise and fixed-income investors, who tend to be more interested in getting their money back than changing the world, are becoming antsy. The price of Tesla’s junk bonds is well below the level at which they were issued last year. In another tweet this week, Mr Musk summed it up this way: “Car biz is hell.” This time he wasn’t joking. ■



The GDPR

The joys of data hygiene

Complying with Europe’s new data-protection law will be tough for businesses. But it will bring benefits, too

BOOK clubs usually meet to discuss literature. But members of DataKind, a group of volunteers that helps charities use data to improve their services, are gathering in London to study a legal text. The General Data Protection Regulation (GDPR), set to come into effect on May 25th, is arguably the most complex piece of regulation the European Union (EU) has ever produced. A thick print-out includes its 99 articles and 173 preliminary comments. Gianfranco Cecconi, a data scientist leading discussions, is poring over a lengthy section he has annotated in red pencil.

After years of deliberation on how best to protect personal data, the EU is imposing a set of tough rules. These are designed to improve how data are stored and used by giving more control to individuals over their information and by obliging companies to handle what data they have more carefully. Recent revelations that Cambridge Analytica acquired data on Facebook users in underhand, and possibly illegal, ways has underscored the need to tighten lax regimes. On April 4th Facebook raised its estimate of the number of people involved from 50m to 87m and admitted that many more may have had their details scraped from its website.

Mr Cecconi is not alone in trying to get to grips with the GDPR. The tentacles of the new regulations reach far beyond Europe. It applies to businesses and other organisations around the world if they collect or process the personal data of EU residents.

Unsurprisingly, there are many complaints from companies about the law’s

complexities and the bureaucratic burden it will impose. Critics also argue that the GDPR will stymie innovation in Europe: for instance, by making it more difficult for firms to develop artificial-intelligence services, for which data are the main input. When firms launch a new offering, they may have to ask people again whether they can use their information even if they have already stored it (although the GDPR allows for use of data for scientific and statistical purposes without further consent in some cases).

Yet amid the gripes, there are also positive noises. “The text is actually quite easy to read and it makes organisations like ours aware of the data they hold,” says Mr Cecconi of Datakind. “It has helped us to put our data house in order,” agrees Daniel Ross, a lawyer at Allscripts, an American firm that helps hospitals and doctors manage electronic health records. The unexpected welcome stems from the fact that the GDPR is “two-faced”, in the words of Viktor Mayer-Schönberger of Oxford University. It imposes costs but also structure.

The new law was mostly written by privacy-conscious Germans. Consent to collect and process personal data now has to be “unambiguous” and for “specific” purposes, meaning that catch-all clauses hidden in seldom-read terms and conditions, such as “your data will be used to improve our services”, will no longer be sufficient. “Data subjects” can demand a copy of the data held on them (“data portability”), ask for information to be corrected (“right to rectification”), and also request it to be de-

leted ("right to be forgotten").

The GDPR is prescriptive about what organisations have to do to comply. They have to appoint a "data-protection officer" (DPO), an ombudsman who reports directly to top management and cannot be penalised for doing his job. They also have to draw up detailed "data-protection impact assessments", describing how personal data are processed. And they have to put well-defined processes in place to govern the protection of personal data and to notify authorities within 72 hours if there is a breach. Companies that persistently ignore these rules face stiff fines of up to €20m (\$25m) or 4% of global annual sales, whichever is greater.

As a result the GDPR ensures that all organisations which collect and keep data will take their use (and abuse) much more seriously. Take the fines. Under the GDPR's predecessor, an EU directive dating from 1995, fines were negligible. The upshot was that firms gave data protection little attention and few resources. But the risk of hefty penalties has raised privacy to a board-level matter. "We have support from the top down," says Susan Bandi, who is in charge of data security and privacy at Monsanto, an agrochemicals company.

The GDPR obliges organisations to create an inventory of the personal data they hold. With digital storage becoming ever cheaper, companies often keep hundreds of databases, many of which are long forgotten. To comply with the new regulation, firms have to think harder about "data hygiene", explains Ms Bandi: what type do they have, what are the risks in keeping the data, how do they have to protect them and, not least, do they really need to keep them?

Mastercard, for instance, has built portals for card holders to check what data are being kept. Efforts of this sort have made the company "more mindful" about how it treats personal data, says JoAnn Stonier, Mastercard's chief data officer. Such mindfulness will spread. Firms have to make sure that businesses from which they receive personal data, and ones to which they send such information, are also in compliance. The idea is that the GDPR should become self-policing.

As the requirements for handling personal data become more testing, many organisations will increasingly outsource the task. According to Richard Hogg, IBM's "GDPR evangelist", they will eventually "run their business without even touching such information at all." IBM uses artificial intelligence to sift through a firm's contracts with business partners to find any privacy clauses that need upgrading. Teaming up with Mastercard, IBM also recently set up a data trust called Truata that offers to manage, analyse and protect data on behalf of other companies.

Many of Microsoft's products also

come with data-protection features. Azure, its computing cloud, offers tools that help firms with data-subject requests. To get there will take some time, but the GDPR is clearly speeding up the construction of a global "privacy infrastructure", in the words of Peter Swire of Alston & Bird, a law firm. The big questions are how far and fast this infrastructure will extend.

So far, of the many companies that need to comply, nearly 60% are not ready, according to some estimates. In some cases, cluelessness is the cause. Many smaller firms, says Liz Brandt of Ctrl-Shift, a privacy consultancy, do not have the re-

sources to organise themselves, at least not in the time European lawmakers have given them. Others are simply content to wait and see what transpires.

Indeed, the eventual impact of the GDPR will largely depend on how regulators and courts interpret the requirements. "The legislation is four to five times more complicated than existing law," says Eduardo Ustaran of Hogan Lovells, a law firm. "We'll probably spend the next 20 years figuring out what it means to be compliant." Mr Cecconi's optimism may fade if his book club is meeting to analyse the GDPR's text for years to come. ■

CBS and Viacom

Drama kings

NEW YORK

Viacom rejects a merger with CBS, its corporate sibling

NOTHING is ever easy at Sumner Redstone's media empire. For two months the boards of CBS and Viacom, two entertainment companies controlled by the Redstone family, have explored a possible combination, something long wished for by Shari Redstone, the ailing media mogul's daughter and anointed deputy. But on March 30th those talks turned to acrimony after CBS made an offer valuing Viacom below its market capitalisation of \$12.5bn, and reserved no leadership role at the combined firm for Viacom's CEO, Bob Bakish. Ms Redstone and Viacom's bosses regarded the offer as an insult, according to sources.

The tactics amount to a stunning power play by Les Moonves, the CEO of CBS. It leaves Viacom, owner of Paramount film studio and cable networks

including MTV and Comedy Central, in a state of limbo. Viacom's board made clear the offer was a non-starter, and is expected to make a counter-offer that would include a leading role for Mr Bakish, probably as second-in-command after Mr Moonves. CBS had proposed Joe Ianniello, its chief operating officer, as number two to Mr Moonves, who is believed to think that Viacom would benefit more from a merger and that, if CBS must take it on, he should run the combined firm and choose his deputy.

At the crux of this drama are not only entertainment-industry egos—always outsized—but also divergent priorities. Both firms would benefit from bulking up at a time when other media companies are consolidating. Scale confers more leverage with the distributors that carry their networks.

Mr Redstone had joined the firms together in 2000, only to split them apart again in 2006. Since then CBS, which also owns Showtime and a streaming service, as well as its broadcast network, has prospered. Viacom, meanwhile, floundered under its former CEO, Philippe Dauman, losing top talent and enduring steep ratings declines at its networks. Many analysts, however, believe Viacom has begun to turn round under Mr Bakish, who took over the firm in late 2016.

The Redstone family seems firmly behind Mr Bakish as well, and one source familiar with the family wonders if Mr Moonves may have "overplayed his hand". Mr Redstone, now 94 years old, does much of his communication nowadays with an iPad on which he plays pre-recorded answers to underlings, friends and family, according to the *Wall Street Journal*. These include "yes", "no" and "fuck you". Guess which best reflects his mood now.



Mr Redstone has a message for you



Supermarkets in China

Two Ma race

SHANGHAI

A contest in offline retail between online giants gets under way

THE season for the best *xiaolongxia* ("little dragon shrimp") is just beginning, and so on a recent evening four young friends tucked into a pile of steaming-hot crayfish. But rather than sitting in a restaurant they were at a table surrounded by supermarket aisles stocked with nappies, baby formula and cooking oil. Above them, groceries and made-to-order meals, gathered by store attendants from shelves and nearby cooking stations, were wafted on aerial conveyor belts into a storeroom. There they were packaged and whisked to Shanghai homes within a 3km radius, at any hour and in under 30 minutes.

"Eat-as-you-shop" is one innovation of Hema Xiansheng, a chain of fancy supermarkets. And these shops are themselves the showiest elements of a bid by Alibaba, a Chinese e-commerce emporium that handles more transactions than Amazon and eBay combined, to master "online-to-offline", or *O2O*, retailing, in which customers use digital channels to buy from physical businesses. Alibaba currently runs 40 Hema stores in ten cities. It wants to open 2,000 in the next five years.

The offline sector makes e-commerce giants salivate partly because 85% of Chinese still stubbornly buy their products from bricks-and-mortar stores, and partly because it is so fragmented. The five largest supermarket groups control 27% of the business, compared with 78% in Britain.

Filling the gap are over 6m independent corner shops, which account for a combined 10tn yuan (\$1.6bn) in revenue.

Alibaba is hoping to apply its online know-how to them with Ling Shou Tong, a free retail-management platform launched in 2016. Through it, shop owners can order products sourced by Alibaba from partners such as Procter & Gamble. It then uses its logistics affiliate, Cainiao, to ship them. Shops are given advice on what to stock based on Alibaba's trove of data—plenty of dog food in pooch-loving areas, say. In return Alibaba gets valuable data on spending habits in poorer cities, especially among older shoppers who buy offline.

A clearer signal of Alibaba's ambitions as a provider of services to other outlets came on April 2nd, when it bought the shares it did not already own in Ele.me, valuing the food-delivery platform at \$9.5bn. These services span online tools for inventory management to marketing and smartphone payments. They also include labour. Ele.me's network lets thousands of small restaurants ferry dishes to the doors of some of China's 700m smartphone users. Through the acquisition Jack Ma, Alibaba's founder, added 3m delivery people to the 2m of Cainiao, boosting the group's "last-mile" delivery capabilities.

The Ele.me acquisition is a direct challenge to Tencent, a gaming-and-social-media giant owned by Pony Ma (no relation to Alibaba's founder), which has a large stake in a rival delivery service run by Meituan-Dianping. It is just the latest offline battlefield between the two online giants. Since late 2016, each has spent about \$10bn to acquire stakes in big traditional retailers. Last year Alibaba bought a large stake in Sun Art, China's biggest private supermarket operator. In December Tencent responded with a stake in Yonghui Superstores, China's second-largest, and is considering another in the Chinese operations of Carrefour, a French hypermarket. Tencent is making another offline foray through JD, an e-commerce rival to Alibaba in which it holds an 18% stake and with which it has teamed up on big retail investments. Last year JD announced that it would open 1m convenience stores in the next five years.

Liu Zhangming of TF Securities, a brokerage, thinks that Tencent is on the back foot, investing in bricks-and-mortar because it fears that Alibaba's retail foray will help to promote its mobile-payment system, Alipay. That risks pushing Tencent's WeChat Pay out of swathes of the offline market. Hema stores, for instance, accept only Alipay or cash. Independent retailers are choosing their sides: Walmart, a partner with JD since 2016, announced on March 27th that it would accept only WeChat Pay in its stores in western China.

Of the ten biggest supermarkets in China by market share, only three have yet to claim a broader allegiance to either of the

Messrs Ma. Some observers argue that the sheer number of retailers means that the supermarket wars may not be won by either of the online titans. The tool-kits they are plugging may not be the ones embraced by all retailers, says Mr Liu.

Yet no firm can match these tech titans' tentacular reach into the everyday lives of Chinese consumers. Tencent has turned its WeChat messaging system into a super app that allows its 1bn users to order food, hail taxis and make payments; JD, like Alibaba, runs a supply platform for small businesses. Wai-chan Chan of Oliver Wyman, a consultancy, expects a shake-out in the distribution sector, as the two giants become middlemen for brands and physical stores. Many of their ventures are still experiments in how to make the most of fresh reams of data they can gather. Even if they end up not owning a dominant chain of stores, ultimately, says Mr Chan, they will "own the customer". ■

Semiconductor manufacturers

Shifting silicon

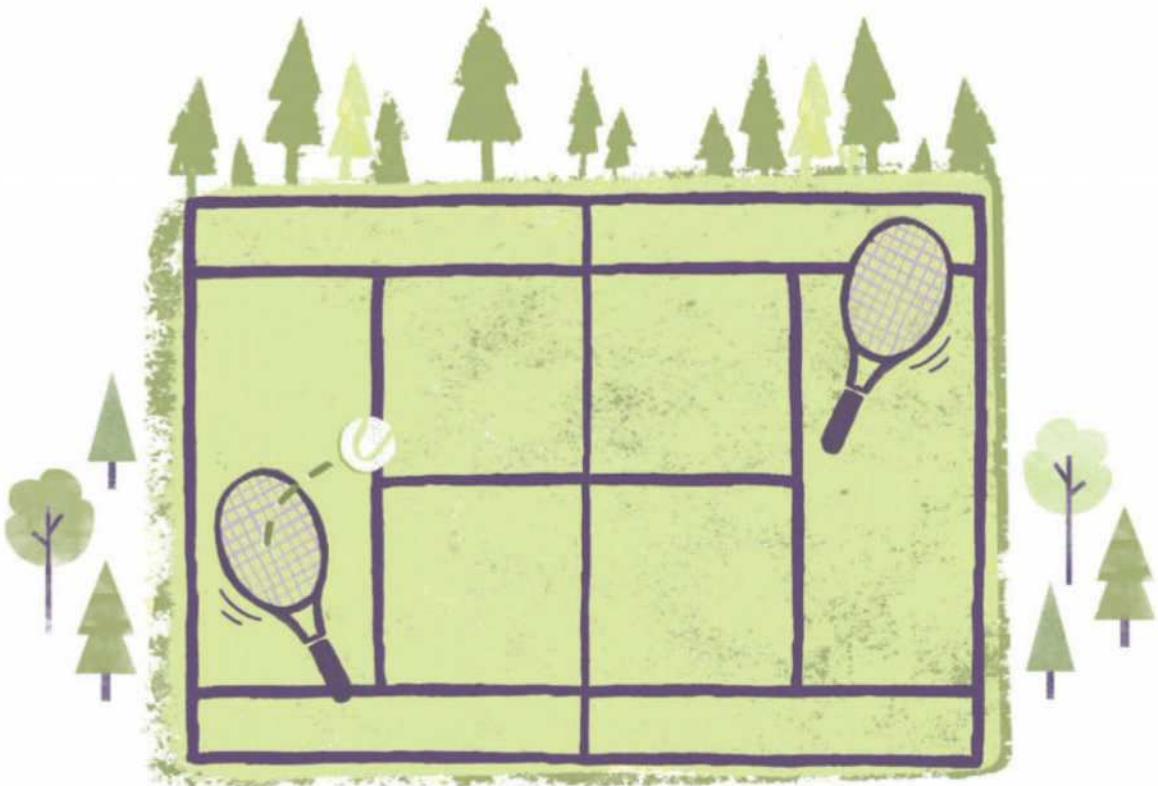
TSMC is poised to become the world's most advanced chipmaker

MORRIS CHANG is preparing for retirement. After 30 years in the role, the founder of Taiwan Semiconductor Manufacturing Company (TSMC), the island's largest firm, will step down as chairman in June. He will hand the reins over to the current co-CEOs, C.C. Wei and Mark Liu, the former becoming sole CEO and the latter chairman. Later that month the company will ship new semiconductors manufactured with its latest technology. For the first time the world's most powerful chips will be made by TSMC, not by Intel, its American rival.

Intel and TSMC are different sorts of company. Intel is an integrated device manufacturer (IDM). It both designs and manufactures chips. TSMC is a "foundry", making chips for designers without factories, or "fabs", which cost a fortune. TSMC's latest fab will cost \$20bn. The Taiwanese company pioneered this model and is its dominant exponent. In 2017 it had 56% of the foundry market, according to Trendforce.

Intel led the pack in squeezing more computing power onto chips. The company turned Moore's law—which states that computing power doubles every two years at the same cost—into a self-fulfilling prophecy. To do so they shrunk "nodes", the width of the channel etched into silicon chips. The narrower the channel, the more computing power can be squeezed ►

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► in. Intel currently makes chips using a ten-nanometre (billionth of a metre) node. TSMC's new ones are made with a seven-nanometre node. TSMC's rise to technological leadership is reflected in its valuation. In 2017, for the first time, its market capitalisation exceeded Intel's.

How the company surpassed the king of chipmaking is hotly debated. It is hard and expensive to shrink nodes. Smaller firms have stopped trying. One reason may be that by 2017 TSMC was investing close to \$3bn (8% of revenues) on research and development. Mr Liu claims TSMC spends more on node technology than Intel and Samsung, another IDM, combined.

The answer may also lie in the strength of the foundry model itself. Intel is renowned for making computer processors and Samsung for smartphone chips. TSMC serves both customers. It is ready to provide chips for new technologies as they arise. In 2017 crypto-currency miners brought in revenues of \$1bn. Their rise was one "we truly did not anticipate," says Mr Liu. As he puts it, the firm's top five customers always account for roughly half of revenues, but the names change. This variety helps TSMC to innovate.

Chipmaking also now requires a close partnership between manufacturers and designers. Mr Liu describes this in painterly terms. "A decade ago a customer would design a simple pattern and the factory would make it for them. But current designs have many shades and colours." That may benefit large entrenched players. Whereas switching from one foundry to another was once trivial, now companies work within the TSMC "ecosystem" for years before chips are manufactured. Crypto-currency firms like Bitmain, a Chinese hardware manufacturer, which has been collaborating with TSMC for three years, are among hundreds of companies it works with. To switch fabs requires companies to duplicate R&D invested in TSMC's technology.

High switching costs may not be a product of technological complexity alone. GlobalFoundries, a smaller American competitor, argues that TSMC is deliberately increasing these costs, using loyalty rebates, exclusivity clauses and penalties. It has asked the EU to investigate. TSMC says the claims have no merit.

For now, TSMC is in a sweet spot. It uses steady revenues from firms like Apple, which are unwilling to switch to IDM firms like Samsung that are also competitors, to fund R&D that other foundry firms cannot match. This sharpens its technological edge, which in turn attracts new customers. Whether this can continue is unclear. Moore's law is running out of steam. Beyond the next cycle of shrinking nodes the future is less certain. As Mr Chang prepares to leave, investors will hope Messrs Liu and Wei are chips off the old block. ■

Airlines in China

Now boarding

DUBAI, HONG KONG AND SINGAPORE

Chinese carriers are the coming force in air travel

ANYONE who doubts the ambitions of China's airlines need only look over the plans for Daxing International Airport, which will serve Beijing after it opens in late 2019. It will be the world's biggest airport by far, with eight runways and room for 100m passengers a year. The new facilities are needed to serve a fast-growing appetite for air travel. The three Chinese carriers that will dominate the passenger traffic passing through Daxing's cavernous halls are all in rapid ascent. And that has rivals everywhere complaining about the sorts of subsidies that have fuelled airlines since the dawn of commercial aviation.

China's airlines are adding passengers at a rate not seen since Emirates, Etihad and Qatar Airways started to attract customers to their Gulf hubs, handily placed between Europe and Asia, with a winning combination of cheap fares and superior service. Between 2010 and 2017 passenger numbers on China's three biggest carriers grew by 70%, to 339m (see chart on next page). That growth has translated into some financial high-flying. At the end of March China Southern, Asia's biggest airline, and China Eastern both reported record annual profits. Air China's share price fell after it announced that it had only made its best profits since 2011.

As China's carriers expand, their Gulf rivals, which for a decade have seen passenger growth of over 10% a year, are languishing. Slower expansion—or in Qatar's case, shrinkage—has hit profits hard. It is natural to expect China's carriers to eclip-

se those from the Gulf, says Will Horton of CAPA, a consultancy. Those Gulf airlines rely on long-haul passengers connecting in their hubs. China's carriers are built on more solid foundations of fast-growing local demand. A total of 549m passengers took to the air last year, compared with 184m in 2007. The International Air Transport Association (IATA), a trade group, predicts that China will overtake America as the world's biggest aviation market by 2022, and will go on to hit a total of 1.5bn passengers by 2036.

Much of that growth is on international routes. Over the past decade airlines in mainland China have opened over 100 new long-haul routes. These flights mainly serve an increasing urge among Chinese for foreign travel. The number of tourists going abroad, mostly by plane, has rocketed in the past decade, from 41m a year to over 130m. As a result, Chinese airlines are gobbling market share, says Dave Emerson of Bain & Company, a consultancy. Between 2011 and 2017 the capacity on Chinese planes flying between China and America rose from 37% to 61%, reckons OAG, a flight-data firm.

The battle to fly the Chinese around the globe is not the front that most concerns the world's other big international airlines, however. The Gulf carriers took business from American and European airlines by getting the world to fly through their hubs. Chinese airlines are also now making the most of their location, and the largesse of the state, to offer connections to destina-



The Chinese have got their tails up



tions beyond their home market.

Chinese regulators limit competition on domestic routes, allowing airlines to make healthy profits to cross-subsidise loss-making international routes chosen to reward allies such as Cuba. China's smaller cities also give handouts to airlines (around \$1.3bn in 2016) to launch new long-haul routes from their airports. All this has created more seats than locals can fill. So the carriers are selling them cheap to foreign travellers looking for a long-haul bargain, explains Mr Horton. The Chinese authorities encourage the practice. They are, for example, loosening immigration checks on connecting travellers and giving some visa-free access to China for six days.

This is hitting regional rivals hardest. Many Asian carriers were struggling long before the threat from Chinese airlines arose. Carriers such as Malaysia Airlines had allowed costs to run out of control, thanks to poor management and political meddling. But since the visa rules changed, even comparatively well-run airlines, such as Cathay Pacific, have had to contend with a sea of red ink. Airlines globally may be enjoying an era of record profitability but earnings per passenger for those in Asia have slumped by a sixth since 2015, according to IATA.

Airlines in America and Europe have less at stake, even if many are already nursing losses on their Chinese operations. But coming on top of competition from low-cost rivals and the Gulf carriers, the arrival of the Chinese acts as another spur to calls for protectionism. America's three biggest carriers want the "open-skies" agreements that enable the Gulf carriers to fly to America revoked. In Europe, Air France-KLM and Lufthansa have been lobbying for a proposed reform of Regulation 868, which would allow the EU to impose sanctions on foreign airlines that get state subsidies.

These tactics will not work on China, warns Andrew Charlton of Aviation Advocacy, a consultancy. Unlike the Gulf states, China is an emerging superpower. It has the power to hit competitors where it hurts. Last June it fined Emirates 29,000 yuan (\$4,270) and banned it from expand-

Takeda and Shire

Foreign advances

Japan's biggest drugmaker is weighing a record purchase

WHEN it comes to foreign deals, Japanese drug companies are interested in buying the product, not the company, says Fumiyoji Sakai of Credit Suisse, a bank. So the news that Takeda, Japan's biggest pharmaceutical company, wants to buy Shire, a similar-sized Irish drugmaker that specialises in treatments for rare diseases, came as something of a surprise. At \$85bn, the combined value of the two firms would be in the ranks of industry behemoths such as Bayer and GlaxoSmithKline.

In recent years Takeda and its domestic rivals, Astellas and Shionogi, have bought a handful of small foreign firms. Most were American biotechnology companies with one or two specialist products. But the need to expand abroad is becoming a matter of greater urgency for Japanese drugmakers.

Their main domestic client, the government-run health system, accounts for 40% of drug spending. As Japan's ageing population puts ever more pressure on its budget, the health ministry is trying to cut back its outlays on drugs. It is promoting the use of generic drugs and pushing down prices, which it negotiates with the industry every two years.

A recent wave of mergers and acquisition in the global pharmaceutical industry has, however, left slim pickings for would-be dealmakers. Some analysts question whether acquiring Shire is the right move for Takeda, whose share price fell by 7.5% on March 28th, the day when the Japanese firm confirmed that it was considering a bid.

Shire's portfolio of drugs for rare neurological disorders—which fetch high prices and in which the firm is a market leader in America—is a good buy, says Andy Smith of Edison, a research firm in London. But the firm's drugs for haemophilia, acquired in 2016 through its

purchase for \$32bn of Baxalta, an American firm, are less appealing. Haemophilia drugs accounted for about 70% of Baxalta's profits before the acquisition. Since then Bayer, Roche and Novo Nordisk have launched competing drugs. Analysts from Bernstein, an equity-research firm, reckon that Shire's share of this market in America could fall from 49% in 2017 to 23% in 2025.

Shire's pipeline is a clearer draw for Takeda. The Japanese firm has only two new drugs with blockbuster potential in late-stage clinical trials: a vaccine for dengue fever and a therapy for Crohn's disease. Shire's late-stage pipeline contains more than a dozen treatments for rare diseases.

Takeda's big global ambitions might also be explained by its management. Foreign bosses are a rarity in Japan, but Takeda's head, Christophe Weber, is French. Several members of his executive team are foreigners, too. At Takeda, says Mr Sakai, "the mindset is different."



Takeda shows some bottle

ing in China for six months on trumped-up charges over safety lapses. A trade war over flying rights will hit the West harder than China, which is fast becoming a sizeable exporter of tourists.

Foreign airlines may yet get some respite. The growth in international passengers on Chinese carriers is already slowing, from a breakneck pace of 33% in 2015 to a merely rapid 12% forecast for this year. Many politicians are starting to ask whether some of the subsidies are value for money. And Chinese regulators are belatedly liberalising the domestic market by giving

up their control of fares, potentially leaving carriers with less spare cash to subsidise foreign operations. Some smaller airlines are already hitting financial trouble. Hainan Airlines, the country's fourth-largest carrier, looks wobbly and its owner, HNA Group, is struggling to pay creditors.

And foreigners have ways to fight back. Qantas and Singapore Airlines, for example, are keen to use ultra-haul-long direct flights to attract business travellers keen not to have a layover. The take-off of Chinese airlines looks unstoppable. That does not make them invincible. ■

Schumpeter | The subscription addiction

Who needs customers? Subscribers are the new, new thing



ONE of the most fashionable ideas in business is that companies should earn their crust from subscribers, who are "locked in" for a period of time, rather than from customers who can easily switch to another provider at any time. Subscription models are seen by many investors and executives as the holy grail, because they promise a recurring stream of revenue. But the approach suffers from three underappreciated problems. Acquiring subscribers can be eye-wateringly expensive. Their urge to run away is often only temporarily suppressed. And consumers may have more than one relationship at a time.

The best-known subscription model is probably Amazon Prime. It has about 80m members in America alone and for \$99 a year offers films and music, speedy delivery of goods and even discounts on goods such as baby food. There are many other examples. Netflix offers a wall of tv for a monthly fee. And more are coming. Venture-capital firms are pouring money into subscription-based home-delivery firms that bring to your doorstep meals, pills or even fresh underpants. Zuora, a software firm, talks of the rise of the "subscription economy".

Several star firms floating their shares this year have subscription models. Dropbox, a cloud-storage firm, listed on NASDAQ on March 23rd and is worth \$13bn. It boasts 500m registered users and wants to convert them into "paying users", of whom there are already 11m, who get a superior service. Spotify, a music-streaming firm that listed on April 3rd, has 159m users but derives its \$27bn valuation from 71m "premium subscribers" who pay to listen without adverts. On average each generates 13 times more sales and 27 times more gross profit than users who pay no fee.

The attractions of subscription businesses are obvious. Firms can predict the future better and build deeper relationships with customers who have less incentive to shop around. Some venerable firms discovered long ago how to transform one-off purchases into recurring sales. Gillette gets customers to "join" (by buying a subsidised razor) and then charges them "monthly fees" (buying replacement blades). Rolls-Royce, General Electric and Pratt & Whitney rarely sell passenger-jet engines in one-off transactions, but instead offer "power by the hour" through complex service contracts that tie them to airlines for decades.

Subscription models are becoming more popular, in part be-

cause technology has made it easier to rent rather than own assets. Instead of buying software, for example, users can get access to it as a cloud-based service. Data mining means that the insights gained from a sustained relationship are more valuable than before, for customers and firms—Netflix purports to know what viewers want to binge-watch. And after a scandal involving Cambridge Analytica's dubious acquisition of data from 87m Facebook users, there could be a shift from digital businesses built around advertising to subscription models that protect privacy.

The subscription approach also makes investors and creditors more comfortable with intangible businesses, which have no factories that can be relied on to generate goods and sales year after year. Instead, a subscriber base can be thought of as an enduring "asset" in which firms can invest. Businesses that rely instead on a frantic series of one-off transactions—Uber, for example—may be more volatile and vulnerable because barriers to entry are lower.

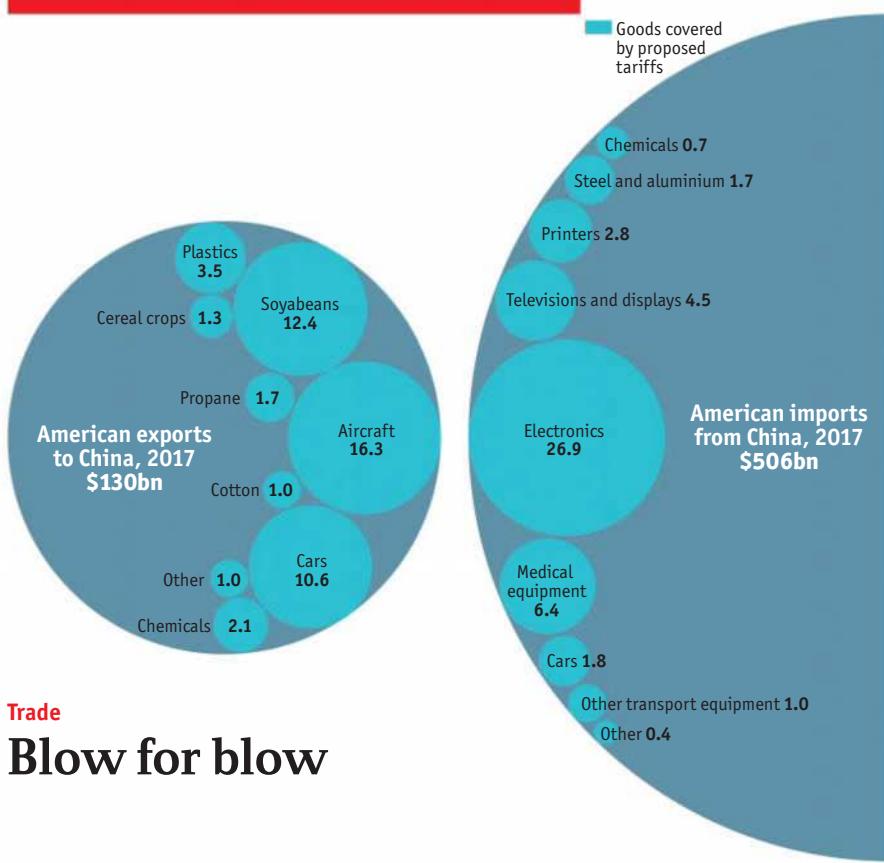
The subscription boom will doubtless continue. So much so that antitrust regulators may eventually become nervous if too many consumers are unable to switch from their providers, either because they are contractually bound in or because the cost of doing so is prohibitively high (for example, if they lose their historical data). Yet before assuming that world domination beckons, it is worth noting the flaws of the subscription approach.

First, firms have to pay upfront to attract new subscribers, either by keeping prices artificially low or by spending heavily on marketing. Consider half a dozen subscription-based firms: Amazon Prime (defined here as Amazon excluding Aws, its hosting business), Blue Apron, Dropbox, Hulu, Netflix and Spotify. Next, compare their meagre combined free cashflow last year to the amount they would need to earn a 10% return on capital. The total shortfall is \$14bn, or \$4bn excluding Amazon Prime. This is a proxy for the subsidy being paid to attract and retain subscribers. Eventually these firms may have to raise prices in order to boost profits, or sell a broader range of services, stepping on the toes of other subscription businesses. All these companies use statistical models to try to ensure that the "lifetime value" of a customer exceeds the cost of acquiring them, but it is still a guessing game.

The second problem is that subscribers are annoyingly disloyal. At the end of a contract period some turn to a different provider. Netflix is thought to lose less than 1% of its customers per month to "churn"; this is in line with established subscription-based firms such as mobile-phone operators. For Spotify, a music-streaming service, the figure is a more worrying 5%; for some meal-delivery firms, it is a lethal 10%. Churn could rise further for all these firms as competition intensifies or if they raise prices.

Ménage à trente-trois

The final shortcoming is the lack of exclusivity. Consumers love two-timing companies—corporate loyalty clubs have 4bn members in America alone, as people sign up with lots of different airlines and hotels. Saturation could occur in the digital subscription world, too. America's 118m households now have over 200m subscriptions to streaming media, e-commerce and other web-based services. The high valuations of the listed firms they subscribe to imply that this will grow to well over 350m by 2027. From newspapers' digital offerings to car-navigation services and startups selling web-based home-security services, America is at the forefront of a giant boom in subscription businesses. A first sign of trouble could be that there are not enough Americans to satisfy them all. ■

**Trade**

Blow for blow

A trade war between America and China takes shape

TALK of tariffs is in danger of developing into cries of trade war. On April 3rd America published a list of some 1,300 Chinese products it proposes to hit with tariffs of 25%. Just a day later China produced its own list, covering 106 categories. "As the Chinese saying goes, it is only polite to reciprocate," said the Chinese embassy in Washington, D.C.

According to the Peterson Institute for International Economics, a think-tank, America's list covers Chinese products worth \$46bn in 2017 (9% of that year's total goods exports to America; see graphic). China's covers American goods worth around \$50bn in 2017 (38% of exports). The sums were enough to move markets on April 4th, though the S&P 500 index soon made up lost ground.

Both countries' lists are, for now, no more than threats. Over the next two months America's list will be open for public consultation (there is no deadline for the tariffs to come into force). China has said that it will wait for America to move. There is still a chance the two sides will choose a deal over a trade war. Although America's list was drawn up in response to China's alleged theft of American firms' intellectual property, Mr Trump regards the trade deficit with China as a separate affront. Tariffs might yet be avoided by China agreeing to buy more American stuff.

But this skirmish follows others. On March 23rd America imposed tariffs on steel and aluminium from some countries, including China. That prompted tariffs covering around \$3bn of American exports to China. More retaliation is expected, as the Chinese react to separate American tariffs on solar panels and washing machines.

Historians of trade have an advantage over those who study wars of the military kind. Each side in a trade dispute lays out in detail the products to be affected. That makes it easier to analyse their strategies.

Mr Trump's tariffs on steel and aluminium turn out to be rather crude. They are an attempt to protect a single industry by blocking foreign competition, guided by a mistaken belief that this will make it stronger. By contrast, China's retaliation, and the latest American threats over intellectual property, are more sophisticated. Rather than coddling one industry, they are meant to prod a trading partner into changing its behaviour. They are means, not ends.

This week's American list is designed to hit products benefiting from China's industrial policy, including its "Made in China 2025" plan to dominate certain strategic sectors. Industrial robots, motors for electric vehicles and semiconductors are all in its sights. (At least 90 products, including aircraft parts and cars, recorded no Chinese exports to America in 2017 and may

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Buttonwood is away

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be intended as a pre-emptive strike.)

That might seem fair in Mr Trump's eyes. But bureaucrats crafting trade-protection policy face a trade-off between punching the other country and protecting their own consumers. Even before the latest announcement, some offending products had been dropped from America's list after government analysts identified them as "likely to cause disruptions to the US economy", or "subject to legal or administrative constraints". The final choice took account of the availability of substitutes from elsewhere. Analysts at Goldman Sachs, a bank, estimate that of the products proposed for tariffs, only around 20% of America's imports in 2017 came from China (the share is higher for LEDs, televisions, and printers and copiers).

The element of surprise

Some parts of America's strategy were unexpected. Minimising disruption to businesses would suggest tariffs on finished goods rather than their inputs. Some companies may not realise that their suppliers are buying from China, so higher costs for intermediate goods could travel along supply chains in unpredictable ways. Pricier parts could make American manufacturers less competitive than foreign rivals. However, although the two biggest tariff lines by value on America's list were colour-screen televisions and passenger vehicles, consumer products accounted for less than 20% of the affected imports.

What of China? In response to America's tariffs on steel and aluminium, it placed tariffs on \$0.2bn-worth of iron and steel tubes, pipes and hollow profiles, and \$1.2bn-worth of aluminium waste. This echoed Canada's response to the American Smoot-Hawley tariff of 1930, when it ►

► raised tariffs on eggs as retaliation for America doing the same. Douglas Irwin of Dartmouth College reports that the number of eggs Canada exported to America fell by 40% between 1929 and 1932. But the number going the other way plunged by 99%. Such tit-for-tat retaliation is intended to demonstrate that trade barriers make industries weaker, not stronger.

The list China published on April 4th is even bolder. It makes no effort to comply with World Trade Organisation rules, and aims at pressure points in America's democracy, including industries with powerful lobbies, such as aircraft and soyabeans, as well as products from politically sensitive states. Wisconsin is home both to Paul

Ryan, the Speaker of the House of Representatives, and a sizeable share of America's cranberry exporters. Mitch McConnell, the Republican leader of the Senate, represents Kentucky, home to America's bourbon exporters. Both products are included in China's \$50bn tariff threat.

Such methods have worked before. In 2003, when the European Union threatened to put tariffs on American products, including oranges, in retaliation for George W. Bush's tariffs on European steel, Mr Bush yielded. (Florida, a crucial swing state, is home to many orange-growers.) Mr Trump's pronouncements do not suggest he is ready to sue for peace. Nor does he seem aware of the risks of failure. ■

The New York Fed

Ringing the bell

NEW YORK

A new president for the New York Fed

THE president of the Federal Reserve Bank of New York is perhaps the second most important person in America's financial hierarchy, behind only the chairman of the Federal Reserve. Unlike the presidents of the other regional Reserve Banks, he sits permanently on the committee in Washington, DC that sets interest rates. The New York Fed supervises Wall Street and, during financial crises, often gathers bankers to hash out a fix or to impose one on them. On April 3rd it was announced that John Williams would be next in line to take charge of the institution, replacing William Dudley.

Mr Williams has led the San Francisco Fed since 2011, when his predecessor in that job, Janet Yellen, moved to Washington. He is best known for his academic contributions to monetary policy. In

particular, his estimates of the "neutral rate" of interest, at which money is neither tight nor loose, are regularly cited. In recent years he has appeared moderately hawkish, claiming that the economy was nearing full employment as early as May 2015, when the unemployment rate was 5.5% (it is 4.1% today).

Not everyone is happy about the choice. Mr Williams, like each of his predecessors, is a white man. This annoys campaigners who want more diversity at the Fed. Additionally, the process by which presidents are chosen is galling to many.

The Federal Reserve system, with its component regional banks, was created in 1913 with the aim of spreading power around the country. The 12 Reserve Banks are capitalised by the private banks they regulate. Those banks pick six of the nine directors at each Reserve Bank—three to represent their own interests and three to represent the public. The final three are appointed by the Fed board in Washington, DC.

Since 2010 the three bank representatives have been unable to influence the choice of president. Yet some think the process warrants democratic oversight. In March, after reports that Mr Williams would be appointed, Elizabeth Warren, a left-wing Democratic senator from Massachusetts, said that he should have to testify before the Senate. She noted that at the San Francisco Fed, he had been responsible for regulating Wells Fargo, a bank which has been embroiled in a mis-selling scandal. Defenders of the current system say that politicising the role would lead to worse appointments. It is up to Mr Williams to demonstrate that technocracy works.



John Williams: a neutral answer

Spotify

Play list

The music-streaming service makes an unconventional stockmarket debut

WHEN Spotify, a music-streaming service, went public on April 3rd, its founder, Daniel Ek, rang no bells on the trading floor of the New York Stock Exchange. Rather than the "pomp and circumstance" of an initial public offering, the Swedish firm, which is widely credited with turning round the fortunes of the music industry, opted for an unusual direct listing. No new shares were issued. Bankers did not sign up new investors, set a target price or stabilise early trading. Existing investors were simply allowed to trade their shares publicly.

Despite the low-key approach, and even as other tech firms' shares wobbled, there was plenty of interest. That will cheer other firms considering going public. The share price ended its first trading day at \$149, comfortably above prices reached in private markets earlier this year. That values the company at \$26.5bn, making it the largest firm to list since Snap last year, and the eighth-largest tech listing ever.

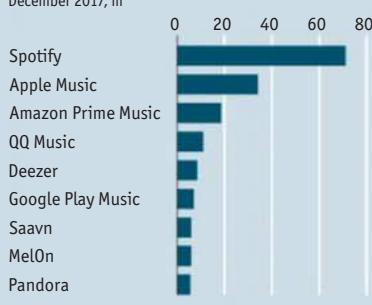
Like many other tech "unicorns", or startups valued at over a billion dollars, Spotify has yet to turn a profit. With over 70m paying users (see chart) and, by its own estimate, a 40% market share, it has plenty of appeal. But investors will be watching for signs of slowing revenue growth, says Laith Khalaf of Hargreaves Lansdown, a stockbroker. Spotify's main rivals, Apple, Amazon and Google, have deep pockets. Low prices and bundled services could lure its customers away. If record labels were to demand higher royalties, that would increase its costs.

Traders took a few hours to reach a price—hardly surprising, since sales were not lined up in advance. Oversupply did not flood the market, even though existing ►

Listen here

Music-streaming services, paid subscribers

December 2017, m



► shareholders were not subject to the usual lockup period. Nor did undersupply lead to jerky pricing, though there was some volatility the following day.

Spotify has shown that direct listing is feasible. Matthew Kennedy of Renaissance Capital, a research firm, reckons it saved over \$30m in fees to investment banks (although some were paid for advising on the listing). Bankers need not fret for their fu-

tures, however. Spotify was hardly typical of firms going to market. Its brand needed no introduction. It did not need to raise capital: the listing was a way for existing shareholders to cash out. Even if another company were in a similar position, its founders might prefer to pay bankers' fees rather than run the risk of early volatility. And some, no doubt, would like to have their moment in the limelight. ■

through Aon, an insurance broker, in many American cities. Drivers can choose to be covered against illness, disability and death for as little as \$0.04 for each mile they drive. Where it is offered, Uber has raised the rate it pays drivers by the same amount, making the resemblance to an employment benefit even stronger. For regulatory reasons, drivers must opt in. But a similar agreement between Uber and AXA, a French insurer, for Uber's food-delivery arm, UberEATS, in nine European countries gives all couriers accident, sickness and third-party liability coverage, with no need to opt in and no charge.

Uber's policy for its drivers in Ontario through Intact, a local insurer, and a similar offering from Lyft, Uber's rival, through Aviva, in Toronto, combine personal and third-party coverage. Both take a three-stage approach. The first kicks in when a driver launches the Uber (or Lyft) app. The second, with higher coverage, starts once a ride is accepted. The third runs from when passengers are picked up until they are dropped off. These schemes resemble commercial-fleet policies in structure, points out Mamta Kohli of Aviva, but differ in their sporadic nature.

Some gig-economy insurance schemes are more inventive still. A scheme from AXA for users of BlaBlaCar, a French long-distance car-pooling service, covers repairs and provides alternative transport if a car breaks down. Clutch, a car-subscription startup in America, has a commercial-insurance policy that covers users not only in any of its cars but also when they borrow a friend's car. This breaks the usual pattern of commercial policies being tied to specific vehicles, and of personal policies alone being tied to individuals.

Such innovation is not always easy for established insurers. Their software systems can be so ancient that policies have to be printed out with standard wording and modified with a typewriter, says Jillian Slyfield of Aon. Regulators can be slow to accept novel arrangements. And for a firm that pays by the hour and relies on workers having their own equipment, providing insurance can be an outsize expense. Ms Slyfield complains that some advertise coverage they do not in fact have.

In the longer term insurers face a more fundamental challenge: disintermediation. Airbnb, a platform for booking stays in private homes, has offered a "host guarantee" against theft and vandalism since 2011. Although it works like insurance, no specialist firm is involved. Airbnb makes payouts itself. Curtis Scott of Uber boasts that the firm is "perhaps the most educated purchaser of insurance ever". It does a lot of the calculations for pricing and underwriting its insurance risk, and has a potential sales platform in the form of its app. For Uber and its peers, the next step could be to expand their gig offerings into insurance. ■



Insurance and the gig economy

Your policy is arriving in two minutes

SAN FRANCISCO AND TORONTO

How insurance policies are being adapted to fit freelance working

THE rise of the gig economy means not only workers, but those who insure them, are having to adapt. Take third-party liability insurance—the sort that would pay out if, for instance, a courier hit and injured a pedestrian. An employee driving a company van would be covered by a standard commercial-insurance policy. But "gig" couriers, working when they wish and using their own cars, must often insure themselves. Even if they have personal cover, it will not usually pay out for accidents that happen while they are driving for work.

Among the firms seeking to fill this gap is Zego, which sprang up to serve scooter couriers such as those working for Deliveroo, a food-delivery service. Deliveroo and its rivals require proof of insurance from couriers, but had no easy way to check it was valid. Couriers, meanwhile, were often loth to pay stiff premiums. Harry Franks, formerly of Deliveroo and co-

founder in 2016 of Zego, spotted an opportunity and convinced insurers that a different model could be profitable.

Zego now brokers third-party liability insurance for couriers working in Britain for nearly a dozen different firms such as Amazon or Quiqup (it plans to expand to Ireland and Spain). Couriers pay by the working hour. Coverage starts when they activate the courier's app on their phone, and stops when they sign off.

Many gig workers want to go beyond third-party coverage and buy coverage for themselves, for example against illness. For platforms, which insist their workers are independent contractors, not employees (and thus do not create a liability for payroll taxes), providing such specialist insurance is a way to offer some of the perks normally associated with employment without having to concede that point.

A good example is the insurance that Uber, a ride-hailing company, now offers

Emerging markets

A new shade

HONG KONG

The next Japan is Thailand

TWENTY years ago Thailand was the most torrid of emerging markets. After a spell of overheated growth and wide current-account deficits, it had exhausted its foreign-exchange reserves and lost its currency's peg to the dollar. In the aftermath, inflation approached 10% and the Bank of Thailand (BOT) struggled to restore confidence in the baht. In a widely cited paper by Romain Rancière of the University of Southern California and two co-authors, Thailand was used as a stark illustration that dynamism and danger, fast growth and occasional crises, went hand in hand.

A few of today's emerging markets can still set the pulse racing—Turkey, for example, has combined breakneck growth with double-digit inflation and a worrying slide in the lira. But Thailand is not one of them. Private investment expanded by only 1.7% last year. Thailand's sovereign bonds yield less than America's. Inflation is once again a worry, not because it is too high, but because it is so stubbornly low. Consumer prices rose by only 0.8% in March, according to figures released this week. Inflation has remained below the BOT's target range of 1-4% for 13 months in a row. Core inflation, excluding raw food and energy, has been below 1% for almost three years.

"It's Japan," says one veteran observer of Thailand's economy. "It's got Japan's demographics from 25 years ago, [and] it's on the Japanese path of zero inflation, very low interest rates and a big current-account surplus." By 2022 Thailand will be the first developing country to become an "aged" society, according to the BOT, with more than 14% of its population over 65. The proportion of elderly is rising faster in Thailand than in China.

But a grey future is no excuse for a sedentary present. Thailand's demography should instead impart a sense of economic urgency. The country should be investing in infrastructure and machinery to ensure that tomorrow's smaller workforce is well equipped to provide for a large population of pensioners.

Unfortunately, Thailand's economic policymakers also exhibit some of the macroeconomic passivity that once paralysed Japan. The BOT has not cut interest rates since April 2015. At the BOT's most recent meeting one member even voted for an increase, lest people grow too accustomed to easy finance.

This conservatism runs deep. The BOT was founded in 1942, shortly before war-

time hyperinflation that left a lasting impression on Thai policymakers. The central bank's first governor liked to cite Weimar Germany as an example of what could go wrong if price stability were neglected. The bank's longest-serving boss, Puey Ungphakorn, believed that the money supply should not, as a rule, grow more than two to three percentage points faster than GDP. "In his view, economic stability was more desirable than rapid growth," write Peter Warr and Bhanupong Nidhipraba in "*Thailand's Macroeconomic Miracle*", published in 1996.

Thailand might be worried about America's response to further monetary easing, which would help reverse the baht's recent strength. America will decide this month whether to label any of its trading partners "currency manipulators". Thailand is the only country in Asia that meets all three of its criteria (a \$20bn trade surplus with America, a big current-account surplus overall and sizeable reserve accumulation), points out Capital Economics, a consultancy. But Thailand is probably too small to attract much interest, let alone ire, from Washington.

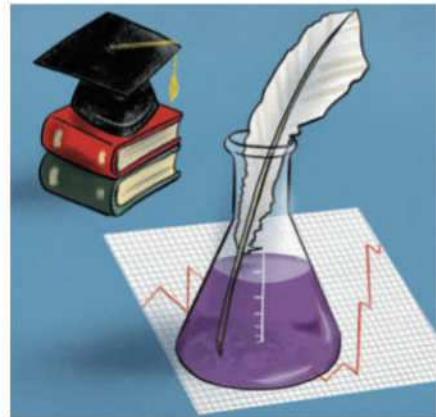
In the absence of monetary easing, Thailand must rely on more expansive fiscal policy. Unfortunately public investment, which shrank by 1.2% last year, has been beset by backtracking and delays. Only in December did workers break ground on a long-awaited high-speed rail project linking Thailand, Laos and China.

Thailand is also moving a little closer to Japan in its growing antipathy to immigration. The government last year imposed tough penalties on illegal migrants, many of them from Vietnam and Myanmar, who are viewed as stealing jobs, not rejuvenating an ageing workforce.

Thailand is keener to import spenders. Receipts from foreign tourists rose by 11.7% in 2017, boosting growth against a backdrop of weak domestic demand. The country is justly famous for sparkling beaches, pulsating nightlife and beguiling culture. Now the tourism authority wants visitors to discover its "new shades". In economics, Thailand's new shades are rather drab. ■

Baht news

Thailand, consumer prices
% change on a year earlier



Economics degrees

Name game

Luring students with a new label

ECONOMISTS do not much like their discipline being dubbed the dismal science. Some American universities are paying more attention to the noun than to the adjective. The reason is not philosophical, but pragmatic. Foreign STEM graduates (the acronym stands for science, technology, engineering and mathematics) can get visa extensions for three years of practical training (ie, work). Those from other disciplines are allowed only a year.

Two more years working in America means more earnings. It also means a better chance of finding an employer willing to sponsor an application for an H-1B visa, the main starting-point for skilled foreign workers who hope to settle permanently. In 2012 the Department of Homeland Security expanded the list of STEM courses. Now any reasonably crunchy economics degree can count as STEM with a tweak to its federal classification code, from economics (45.0601) to econometrics and quantitative economics (45.0603).

Economics departments appear to be catching on. Yale and Columbia have both changed the code for their economics major in the past few months; five of the eight Ivy League Universities have now done so. Students at Pennsylvania and Cornell are agitating for a switch.

Universities are doubtless acting in response to increased demand for H-1B visas. Just 65,000 are awarded by lottery each year to holders of bachelor's degrees. Their chance of success has been at best 30% in recent years. In 2011 the 65,000 visa cap was hit only in November. In 2017 it was hit on April 7th, within a week of applications opening. Whether students are being taught economics or econometrics, they are getting a fine worked example in regulatory arbitrage.

Deutsche Bank

Embattled

Too big for its home country but trailing the American giants elsewhere, Germany's biggest lender is in a pickle whoever runs it

JOHN CRYAN has spent almost three years on the thankless task of revitalising Germany's biggest bank. Deutsche Bank's shares fetch around €11 (\$13.50) each. That is less than half their price when he became joint chief executive in July 2015 (he became sole boss 11 months later) and an eighth of the peak in Deutsche's pre-crisis pomp (see chart). Paul Achleitner, the chairman of Deutsche's supervisory board—perhaps sharing investors' impatience, perhaps to shore up his own position—has reportedly sounded out possible replacements for Mr Cryan.

The two men are also said to disagree over the future of Deutsche's investment bank, with Mr Cryan wanting to shrink it further and Mr Achleitner not. But Mr Cryan insisted in a memo to staff on March 28th that there was "no difference of opinion" over the bank's strategy: the supervisory board (that's you, Mr Achleitner) had given its seal of approval, too. Laid out a year ago, the strategy involved raising €8bn in equity, selling part of the asset-management division and cutting costs, as well as merging Deutsche's two retail banks—the posh "blue" brand and the dowdier Postbank, bought from the German post office in 2008-10, which Mr Cryan had formerly hoped to sell. The corporate and investment bank would place more emphasis on serving companies (eg, merger advice, managing payments and hedging against shifts in interest and exchange rates) and become more selective in serving institutions such as hedge funds.

Some of the items on this list have been ticked off. The new shares were sold almost at once. Last month the sale of 22% of the asset manager, renamed DWS, raised €1.4bn. Deutsche's balance-sheet looks solid. At the end of 2017 its ratio of equity to risk-weighted assets, a key gauge of capital strength, was a robust 14%.

But the rest, and restoring profitability, will take time. Mr Cryan's target of a 10% return on tangible equity looks far off. Last year Deutsche reported an annual net loss of €497m—it's third net loss in a row—after December's reform of American corporate-tax law turned a pre-tax profit of €1.3bn red. Like other banks, Deutsche has suffered from eerily quiet trading: its fixed-income revenues plunged by 29% in the year to the fourth quarter. (Greater volatility in markets will help on this score.)

Last month James von Moltke, its chief financial officer, said that a strong euro and

track—at any rate, the least bad track available. In a recent report Morgan Stanley, a bank, and Oliver Wyman, a firm of consultants, forecast that banks' global revenues from corporate clients would grow by 4% a year in the next three years, against just 2% from institutional businesses. Even so, Morgan Stanley's analysts expect Deutsche to keep losing market share.

America's leading banks look better placed. They will gain from America's corporate-tax cuts and faster loan growth, and from its rising short-term interest rates. They are in stronger shape than European banks, having reorganised themselves more quickly after the financial crisis. In the past five years their share of European investment-banking revenues has risen by eight percentage points.

Kian Abouhosseini, of J.P. Morgan, argues that Deutsche may be wise to focus on serving European companies in their home continent and abroad, and cut back in America, where he estimates it made a return on equity of only 2% last year. Coalition, a research firm, says that Deutsche ranked second in European investment-banking revenues last year, but only eighth in America and joint fifth in Asia.

Such a retreat would bring Deutsche closer to its roots as corporate Germany's house bank. But Deutsche cannot live by German business alone. Making money in a land of 1,600 banks is hard, even when you are the biggest, and especially with interest rates at rock-bottom.

Twenty years ago Deutsche had stakes in several German companies. Now those firms, like their counterparts elsewhere, can pick and choose among the world's banks. Too big for Germany, dissatisfied with Europe alone, but trailing behind the American giants: you wouldn't start from here. It's a pity that Mr Cryan, or anyone daft enough to covet his job, will have to. ■

Grilled Frankfurters

Deutsche Bank, share price, €



Source: Thomson Reuters

*To April 4th

higher financing costs would set it back by €450m in the first quarter of 2018, compared with a year earlier. Delays in selling businesses mean that operating costs this year could be €1bn higher than planned.

There are bright spots, for example in merger advice. And the nomination on April 4th of John Thain, ex-head of Merrill Lynch, to Deutsche's supervisory board should add expertise. But whoever is in charge, Deutsche needs to do more on costs and revenues. Last year expenses were an unhealthy 93% of income, and pay jumped from 40% of revenue to 46%. The management board went without bonuses but other bankers were paid €2bn-plus, after a deep cut in 2016.

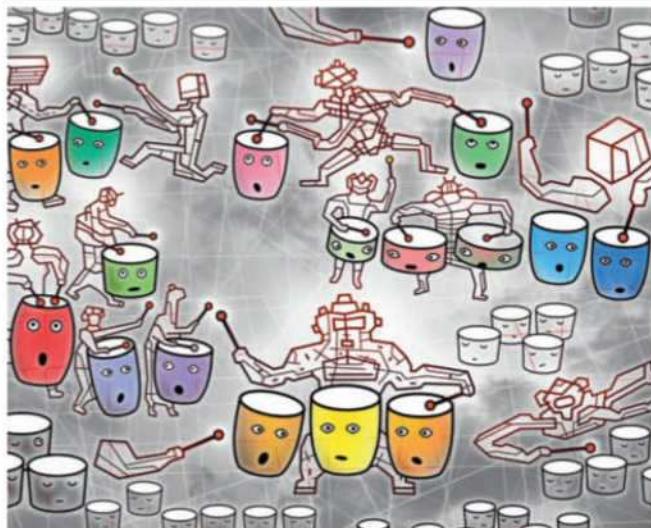
Quite probably, Mr Cryan is on the right



No walk in the park

Free exchange | Truth hurts

Fake news flourishes when partisan audiences crave it



THE theories lurk in odd corners of the web, occasionally bubbling into broader public consciousness. That President Donald Trump is working with Robert Mueller, for example, and preparing a hammer blow against the true threats to American democracy: Barack Obama, Hillary Clinton and their “deep state” allies. Such fabrications are not new. Yet the capacity of fake news to influence the outcome of political votes seems to have grown, and is provoking a backlash. France, for example, may soon allow judges to censor fake-news stories during election seasons. Malaysia’s government says it may jail those who publish or circulate fake news. Such steps risk enabling governments to limit legitimate speech (on April 3rd India’s government abandoned similar plans after widespread criticism). What is more, they are unlikely to do much to stem the flow of disinformation so long as there remains an audience of readers hungry for fakery.

Outrage over fake news is overwhelmingly targeted at the supply side: the creators and distributors of misinformation. That is understandable, since they are responsible for releasing half-truths and outright falsehoods into the wild. That impulse is also of a piece with the desire of many governments to improve the quality of material broadcast to news consumers. Plenty of governments subsidise highbrow fare, like sober news programmes and classical-music broadcasts, on the basis that they are public goods which lead to an informed, cultured population. Before 1987 America’s Federal Communications Commission enforced a “Fairness Doctrine”, which required broadcasters to give equal time to opposing sides on controversial issues. Some, including France, have strict laws against publishing material likely to inflame racial or ethnic tensions.

But the assumption behind these policies—that audiences are blank slates and easily steered by what they hear or read—is faulty. Rather, publishers both shape audience taste and also respond to it. For example, the political slant of newspapers tracks that of the regions they serve more closely than the leanings of their owners, according to research by Matthew Gentzkow of Stanford University and Jesse Shapiro of Brown University. Moreover, audiences often resist the attempts of news organisations to correct their misperceptions.

Brendan Nyhan of Dartmouth College and Jason Reifler of the

University of Exeter asked participants in an experiment to read news stories on politically charged subjects, such as America’s search for weapons of mass destruction in Iraq. They found that more conservative readers were more likely to believe (wrongly) that such weapons had in fact been found. And details intended to correct such misperceptions not only failed to do so, but made conservative readers more convinced that their initial belief was right. The study is one of several to suggest that efforts by media organisations to check statements made by politicians, or by social networks like Facebook to slap warning labels on stories judged by independent fact-checkers to be misleading, are unlikely to solve the fake-news problem. Those who find the correction ideologically unpalatable will reason their way round it.

You might suppose that people would benefit from having the best available information and would quickly correct false beliefs when they are pointed out. Alas, humans are more complicated than that. Becoming well-informed takes time and money, and is more worthwhile in some cases than others. People take pains to consult credible sources before buying a car, for instance, so as not to spend large sums on a clunker. But a quick scan of the sports pages is all you need to prepare for conversation around the water cooler.

However desirable it might be that voters study the details of, say, different health-care systems, few will regard the effort as worth the investment, since a single vote is highly unlikely to swing an election. Instead they engage in “group learning”, gathering some information from what they read and watch but relying heavily on cues from friends, relatives, colleagues and others. The more members of a group reinforce each other’s *Weltanschauung*, the more sceptically they will view dissonant news reports—and, correspondingly, the greater is the economic incentive for news organisations to produce ideologically satisfying news, no matter how poorly it matches reality.

That is disconcerting in light of the ideological sorting in recent decades in many countries, notably America. Mr Gentzkow and Mr Shapiro reckon that face-to-face interactions among friends and neighbours in America are even more ideologically segregated than news consumption. The market for news is catching up, however. Readers can gorge on their preferred political content online, however dubious it may be. Mainstream media can also be guilty of creating separate, incompatible realities.

A recent paper by Gregory Martin of Emory University and Ali Yurukoglu of Stanford University examines the influence of Fox News, a right-wing cable-television channel, on American politics. Removing Fox from television in 2000 would have reduced the Republican share of the presidential vote by 0.46 percentage points, they estimate. But in 2008 Fox swung the race by 6.34 percentage points. Fox attracts viewers in search of ideologically palatable news and reinforces their views, they say. It pushes them rightward and then moves further right itself.

Deep threat

Supply-side solutions to the problem of fake news are not hopeless. The media business remains concentrated. Better behaviour by the giants, from Facebook to Fox, could limit the spread of untruths. But well-intentioned media organisations can only do so much, as long as a population is ideologically divided and hungry for bias and misinformation. Time to face facts. ■



African science

Count down

KIGALI

An ambitious project to encourage science in Africa is getting into its stride

AFRICA is home to what may be the world's oldest counting tools. The Ishango bone from the Democratic Republic of Congo (both sides of which are pictured above) and the Lebombo bone from South Africa date from 20,000 years and 43,000 years ago respectively. Both are baboon fibulae that have been notched by human hand. Some archaeologists think they were used as tally sticks.

These artefacts were cited last week at a gathering of the Next Einstein Forum, held in Kigali, Rwanda, as examples of Africa's historical role in developing mathematics. The forum seeks to promote both science in Africa and African scientists. Its meeting in Kigali was the largest general scientific gathering ever held in Africa. Nearly 1,600 people attended.

The forum exists because, regardless of how things stood in the upper Palaeolithic, in modern times Africa lags behind other continents in world-class scientific research. According to a report by the World Bank and Elsevier, a scientific- and medical-journal publisher that is part of the RELX Group, sub-Saharan Africa accounted for less than 1% of the world's scientific research between 2003 and 2013. Yet the need for science to help find answers to local problems is great. Agricultural productivity is low. Disease is rife. Natural re-

sources such as water and forests are mismanaged.

The forum's goal is to help change this. Neil Turok, founder of the Next Einstein Initiative, of which the forum is part, is a South African physicist who is also head of the Perimeter Institute, a cosmology-research centre in Canada. The names of both initiative and forum come from Dr Turok's desire, proclaimed in 2008, to find the "next Einstein in Africa".

African re-genesis

Last week's meeting was the second of what it is hoped will become a biennial event (the first was in Dakar, in Senegal, in 2016). It saw the launch, by Elsevier, of *Scientific African*, a publication intended specifically as an outlet for African science.

It also included presentations by a score of African scientists under 42, selected by a forum committee as "Next Einstein Fellows" and willing to act as role models for youngsters. Among them were Yabebal Fanteye, an Ethiopian cosmologist who is now a researcher at the African Institute for Mathematical Sciences (AIMS) in Muizenberg, South Africa; Yvonne Mburu, a Kenyan immunologist who founded Med in Africa, a network that connects African doctors and scientists; Jonathan Esole, a Congolese mathematician who studies

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the geometry of string theory at Northeastern University in Boston, Massachusetts; and Justus Masa, a Ugandan chemist who works on hydrogen fuel cells at Ruhr-University Bochum, in Germany.

That range of topics shows the breadth of the initiative. But it does also highlight the question of what sort of research an organisation like the forum should be promoting. To put it crudely, do cosmology and the geometry of string theory really matter when the pressing task is boosting development or tackling social problems on the African continent?

Dr Turok is clear that they do—though not necessarily directly. As he observes, "students want to answer big questions. Inspiration is fundamental. We use cutting-edge science to motivate students. Exceptional ones go into pure science. The rest are enriched and take what they learned into the real world."

That approach does not, though, eschew the pragmatic. To cultivate practical mathematical and scientific skills for recent African graduates, the Einstein Initiative has also helped set up the AIMS at which Dr Fanteye now works. Besides the campus in South Africa, which opened in 2003, there are now five others—in Ghana, Senegal, Cameroon, Tanzania and Rwanda. AIMS intends to create nine more.

Courses at the AIMS have unconventional curriculums, which emphasise analytical thinking and problem-solving rather than the rote learning that has, Dr Turok says, "traumatised" African students. They have no exams. Instead, candidates are assessed throughout their courses—again unusual in Africa.

Besides covering a wide range of mathematical and scientific topics, the AIMS ➤

► also disseminate management and communication skills that will help students develop their careers. Together, the various AIMS have already awarded more than 1,500 masters' degrees to students from more than 40 countries.

The different arms of the New Einstein Initiative are not alone in trying to cultivate science in Africa. Carnegie Mellon University, in Pittsburgh, Pennsylvania, established a campus in Rwanda in 2011. Carnegie Mellon University Africa, as this campus is known, awards masters' degrees in information technology and in electrical and computer engineering. As Crystal Rugege, its director of strategy and operations, observes, information technology "cuts across all sectors when you're trying to develop an economy".

Ms Rugege also points out a systematic problem of African academia, which is that universities on the continent rarely encourage their professors to do research. The emphasis is on teaching, which is the criterion for career progression. Reforming the academic-promotion system would thus help spur research.

Will ye no come back again?

Equally crucial is the process of giving talented students a route to the top. To do this properly would require school reform that is beyond the remit of the New Einstein Initiative but, by creating African institutions of international standing in the form of the AIMS, it can enable those who have got to university to do graduate work without the expense and disruption of travelling to North America or Europe.

Keeping African talent in Africa in this way during people's life-defining early 20s may also reduce the proportion of those who go on to make their careers abroad. In this context Dr Masa's path is perhaps instructive. He grew up in the mountains of rural Uganda, on a family farm that lacked electricity and running water. He excelled at school, obtained a place at Makerere University in Kampala, entered Uganda's national mathematics competition, and came second. To pursue research, though, he had to take a scholarship at Bochum—and, apart from a stint at Oxford, he has remained there ever since.

In his case, he might eventually go back home. He muses about returning to Uganda to teach at a university, even if it means not pursuing ground-breaking research. In Uganda, he thinks, he can make a bigger splash than in Germany. "Sometimes," he says, "you do things for the larger good." Not everyone will be so altruistic, though. Even putting aside the higher salaries found abroad, spouses and social networks there are powerful anchors. If the New Einstein Initiative can encourage those anchors to be forged and dropped nearer home, it will have done Africa a considerable favour. ■

Automotive engineering

The art of reflection

How paint jobs can make autonomous cars safer

CUSTOMERS could, Henry Ford once quipped, have a car in any colour they wanted so long as it was black. In the end consumer choice got the better of him; cars now come in all manner of complexions. Black, nevertheless, remains popular. Some 17% of new cars sold around the world are black, second only to white, at 37%. White is favoured in hot countries because, along with silver, it is good at reflecting light—including the infra-red wavelengths that carry most of the sun's heat. Black, grey and other dark colours, in contrast, absorb light, thereby warming cars painted in those hues.

Despite Ford's equivocations, none of this has, until recently, presented carmakers with much of a problem. That is changing because, besides absorbing sunlight, dark shades also tend to absorb much of the signal transmitted from the increasing number of sensors being fitted to vehicles.

Radar sensors are used to operate safety systems such as automatic braking. They transmit radio waves and measure the time it takes for those waves to bounce back, and any changes in their frequency. From this it is possible to determine the range, position and velocity of objects around a vehicle. If some or all of the signal is absorbed instead of being reflected, though, radar sensors can miss things.

The same is true of lidar, which is similar to radar except that it employs infra-red laser light instead of radio waves. At present lidar is big and bulky (the blob-shaped roof racks on self-driving cars are lidar sets) but miniature versions are being developed.

Though self-driving cars have suffered setbacks recently (in March a pedestrian was killed in Arizona by an Uber test vehicle fitted with lidar and a Tesla running on radar-assisted Autopilot crashed and killed its driver in California), both radar and lidar are likely to be used more widely as cars become more automated.

To improve the reliability of sensors it would help if all vehicles were painted in colours that are good at reflecting a wide range of wavelengths. But that is not going to happen, for the same reason Ford had eventually to introduce shades other than black—namely that colour is an essential part of vehicle design and marketing. But PPG, a firm in Pittsburgh that is one of the world's biggest suppliers of paints and coatings, believes it has an answer. Its researchers are tampering with paint at a molecular level so that whatever colour a coat of it appears to be to the human eye, it will still be highly reflective to the signals from a car's sensors.

Painting cars has become a high-tech process. Painted surfaces are now so good that cars barely rust as they once did. Arriving at this perfection involves the extensive cleaning and preparation of the surfaces in question, and the spraying of several layers of different formulations of paint in precise ways, usually by robots. As the layers dry, chemical reactions can change the size and spacing of pigments within them to produce such effects as vibrant colours or deep, rich tints. It is this sophistication that has allowed PPG's paint technologists to make dark colours reflective to the sig- ►



Reflecting on times past

nals from sensors.

The clue as to how to do this came in the form of an aubergine (or eggplant, as it is known in America). The aerospace division of PPG had already solved a different problem—that of keeping aircraft painted in dark colours cool—by basing the way they paint these aircraft on the dark-purple skin of aubergines. Instead of absorbing infra-red radiation, an aubergine's skin permits such wavelengths to pass through. They are then reflected back out again by the vegetable's white interior flesh. That way, an aubergine in a sunny field remains cool. By dispersing specially engineered pigments in a dark-coloured surface layer over the top of a reflective white underlayer, PPG was able to achieve the same thing for aircraft paint.

And, as David Bem, PPG's chief technology officer, observes, what works for solar heat also works for the sensor radiation bounced back from cars. This permits a similar approach to be taken to the painting of vehicles in dark colours. Dr Bem also reckons that a reverse approach could be used to tone down, in relevant frequencies, road signs that are designed to be super bright to people but thus risk blinding lidars. In such cases, Dr Bem says, it is possible to engineer the pigments and layers of paint in ways that retain the brightness for human eyes but tone down the dazzling effect on artificial ones. ■

Psychology

Heart and soul

Links between musical preferences and personality are put on a firm footing

PAST attempts to link personality to musical taste have foundered on the rocks of small sample sizes, culturally homogeneous samples (usually of undergraduates at universities in rich countries) and the fact that most such studies relied on the participants themselves defining what genres they enjoyed. But Jason Rentfrow of Cambridge University and Gideon Nave of the University of Pennsylvania think they have bypassed these obstacles. As a consequence they believe, as they write in *Psychological Science*, that they have shown how personality traits can indeed predict musical preferences.

To overcome problems of sample size and diversity Dr Rentfrow, Dr Nave and their colleagues used the internet to recruit 22,252 participants of different ages and backgrounds from all around the world. In particular, 45% of their volunteers were over 22 and thus unlikely to be undergraduates. To work around the problem of let-

Palaeontology

Eyes of the beholder

An ancient lizard had an extra pair of peepers

UNLIKE invertebrates, most of which have at least four eyes, vertebrates usually have only two. Yet, there are exceptions. Some fish, amphibians and reptiles have a third, so-called parietal, eye. This organ, a modification of a brain structure called the parapineal gland (itself an associate of the better-known pineal gland, which regulates an animal's body clock), is usually covered with skin and sits on the top of the head, as the picture below shows. It helps those creatures that possess it to detect low-level illumination, and so aids navigation by moonlight or starlight.

For vertebrates to have four eyes, however, is unusual in the extreme. The only ones known that are so endowed are the lampreys. These have two conventional eyes and two parietals, one derived from the parapineal and the other from the pineal. But lampreys' exceptionalism in this respect has just been challenged. This week Krister Smith, a palaeontologist at the Senckenberg Research Institute, in Germany, reports in *Current Biology* that, 49m years ago, the four-eye club had another member—a lizard called *Saniwa ensidens*.

The specimens which led Dr Smith to this conclusion have languished in Yale University's palaeontology collection since their discovery in Wyoming in 1871. Initial examination of them revealed an odd extra pair of holes in the skulls behind the eye sockets. But, since these holes were roughly a tenth the size of the eye sockets, the examiners concluded that they were passages for blood vessels and the strangeness of the lizards was soon forgotten.

Dr Smith stumbled on the specimens while conducting a study on lizard diversity. He found it hard to accept that the extra holes were for blood flow, reason-

ing that if they were, indeed, there to permit the passage of blood vessels, then re-entry holes of a similar size would exist elsewhere on the skulls for the blood to return to the rest of the body. But none such could be found.

What he did find, by comparing the locations of the holes with the skulls and brains of 179 living lizard species, was that they would have been above *Saniwa's* pineal and parapineal glands. Moreover, when he used computerised tomography, a sophisticated form of x-ray scanning, to study the insides of the fossil skulls, he discovered within each hole a cup-shaped structure with a stalk behind it. This anatomical arrangement is characteristic of eyes of all types. The cup is the retina. The stalk carries the retina's nerve connections and blood supply. Given all this Dr Smith and his colleagues argue that *Saniwa's* extra skull holes were the sites of pineal- and parapineal-derived eyes of the sort possessed by lampreys. If so, they have discovered a first—a four-eyed terrestrial vertebrate.



Spot the eye in the back of the head

ting participants define what they liked, they presented each of these volunteers with 25 excerpts of music that had not been publicly released but had been assessed and classified by expert musicologists. Each volunteer was also given a standard personality test that rates the five main components of personality: openness, conscientiousness, extroversion, agreeableness and neuroticism.

Openness, Dr Rentfrow and Dr Nave found, was associated with an appreciation of "sophisticated" music (defined as inspiring, complex and dynamic) and a converse lack of appreciation for "mellow"

music (romantic, relaxing and slow) and "contemporary" music (percussive, electric and not sad). Extroverts, by contrast, showed a preference for "unpretentious" music (uncomplicated, relaxing and acoustic). Those who scored high on agreeableness showed the appropriateness of that assessment by rating all the clips highly, regardless of genre. And those with elevated neuroticism scores did the reverse, rating everything as bad. Only the trait of conscientiousness failed to predict musical taste in any way. Perhaps conscientious people have better things to do than sit around all day listening to music. ■

Rocket science

East of Eden

MAHIA

A small rocketry firm reckons New Zealand the world's best launch site

THE Mahia peninsula, on the east coast of New Zealand's North Island, has been a holidaymakers' haven for decades. It offers sandy beaches, hot springs and scenic trails. And, for those of a technological mindset, it also offers the world's first private orbital-rocket-launching base.

Launch Complex 1, as this base is known, sits at the tip of the peninsula and thus on the edge of the South Pacific ocean. Beyond it, the waters stretch uninterrupted by land for thousands of kilometres (see map). Few ships ply the area and few aircraft fly over it. A misfire or rocket stage falling into this wide expanse will thus inconvenience no one. Mahia is farther from the equator than most launch sites (lifting off from an equatorial pad extracts maximum additional velocity from Earth's spin), but that is also an advantage. The sacrifice of some spin-assisted lift makes it easier to reach certain sorts of useful orbit, such as those that pass over the poles.

The builder and owner of this paradise of rocketry is Rocket Lab, a firm which, though American (its headquarters are in Huntington Beach, California), was founded and is led by a New Zealander. By his own admission, Peter Beck, the Kiwi in question, has been obsessed with rockets since childhood. Now, he is close to turning that obsession into a successful business.

Rocket Lab's launch vehicle, a multi-stager called "Electron", underwent its first test in May 2017. Its second happened on January 21st, 16 days before the more widely publicised launch of a much bigger experimental vehicle, SpaceX's Falcon Heavy. Unlike the Falcon Heavy, though, which carried an old sports car into space as a joke, the Rocket Lab test had a real payload, in the form of three small, commercial satellites. (It also carried a reflective, geodesic sphere dubbed the Humanity Star, which was visible to the naked eye when it passed over at night until it re-entered the atmosphere in March.) That second test having gone well, Mr Beck now deems the time for testing over. Electron's third outing, scheduled for sometime in the fortnight starting April 20th, will be a fully commercial flight.

On its launch pad an Electron stands 17 metres tall and has a diameter of 1.2 metres. The engines that power it are named after New Zealand's most famous physicist, Lord Rutherford, who discovered the atomic nucleus and much else. The first stage has nine Rutherford engines. The sec-



ond has but one. These lift into orbit a third, "kick" stage that carries the payload. The kick stage is fitted with a different sort of rocket engine, Curie, which can be started, shut down and restarted as needed. That lets it manoeuvre the kick stage and thus dispatch different parts of the payload into different orbits.

All systems go

Both Rutherford and Curie are made from components that have been 3D-printed from sintered metallic powder, rather than being cast and machined in the conventional way. This speeds things up. Rocket Lab's facility in California can produce a new engine from scratch in just a few days. The engines also use electric turbopumps, rather than the more conventional option of gas turbines, to push propellant into their combustion chambers. This eliminates the complex plumbing required to make a gas turbine work. The rocket itself



To infinite profits and beyond

is made of a carbon-fibre composite that is much lighter than the metal usually employed for rocket bodies. This reduces the launch mass, saving fuel.

Though 17 metres is pretty lofty (about the height of four stacked double-decker buses), it pales beside, say, the 70 metres of SpaceX's Falcon 9 launcher, the firm's current commercial offering. The two rockets, however, are aimed at different markets. SpaceX's main businesses are lifting large, expensive satellites into orbit and carrying provisions to the International Space Station. Rocket Lab has its eyes elsewhere—on the fast-growing market for "CubeSats", which are small and cheap.

A CubeSat can be anything a customer wants to launch that will fit inside one of a number of standard cuboids. The CubeSats on board the launch in January were an Earth-imaging satellite and two weather and ship-tracking satellites. Those on the upcoming mission belong to various telecommunications companies.

Large communications satellites of the sort SpaceX deals with are usually boosted into what are known as geosynchronous orbits, 35,786km above the equator. These take 24 hours to complete, so that a satellite in such an orbit will appear to hover over the same point on Earth's surface. CubeSats, which generally operate in packs, occupy much lower orbits. Often, such orbits are sun-synchronous, meaning that a satellite passes over the same spots on Earth's surface at the same local times every day, which makes changes below easier to spot. Fleets of CubeSats can thus carry out large-scale monitoring. Sun-synchronous orbits pass almost over Earth's poles at altitudes of around 500km. Manoeuvring CubeSats into such orbits is Curie's job.

At the moment, customers who want to use an Electron to launch the most popular design of CubeSat, a 3U (which measures 10cm x 10cm x 30cm and weighs no more than 4kg), can do so for around \$240,000 (ie, \$60,000 a kilogram). That is a premium price; a trip to low Earth orbit is possible on a Falcon 9 and costs \$2,700 a kilogram. But Rocket Lab believes that it offers a premium service. Unlike its competitors' launchers, into which CubeSats are packed almost as an afterthought if there happens to be space available once the main payload is accounted for, its vehicle is dedicated to CubeSat launches.

The intention is that the location of Launch Complex 1, combined with the Curie-steered kick stage, will give customers a wide range of orbits to launch into. The complex is licensed to dispatch a rocket every 72 hours for the next 30 years. That proposed launch frequency means satellites can be got away quickly. Mr Beck claims that Rocket Lab's decision to build Launch Complex 1 is coincidental to his nationality. In his view Mahia really is the best available site. Time will tell if he is right. ■

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American theatre

Animals in captivity

NEW YORK

Edward Albee's compassionate portraits of complex women have made his plays freshly relevant

AMERICAN playwrights of the 20th century were a macho bunch. Their stages were full of overbearing fathers, frustrated sons, fast-talking salesmen and broken dreams. The women tended to be decorative—nagging mothers, put-upon wives or melancholic sisters. On a rare occasion when one claimed centre stage, such as Blanche DuBois in Tennessee Williams's "A Streetcar Named Desire", she was a tragic figure, too fragile, too hysterical for the brutality of this world. As Williams wrote of Blanche in his stage directions, "There is something about her uncertain manner...that suggests a moth."

So Martha, the caustic, boozy heroine of "Who's Afraid of Virginia Woolf?" was a revelation. Edward Albee's play, first performed in 1962, depicts an unenviable marriage on an unending night in a quiet college town. "I'm loud, and I'm vulgar, and I wear the pants in the house because somebody's got to," Martha says with unrepressed bitterness to her husband George. This wisecracking, sexually voracious woman—she beds another man before the night is through—had her premiere a year before Betty Friedan publicised women's exasperation in the "The Feminine Mystique". Martha is not only more vital than George, a history professor, but also more ambitious. Her visceral anger comes from having to live so much of her life vicariously through a disappointing man. At 34, Albee created a female character who

belted out her own story.

Martha was not alone. Over the course of a long career, which ended with his death in 2016, aged 88, Albee portrayed women who ran laps around their men. They also get the best lines. "Albee is one of the few major American male playwrights who really fleshed out female characters in engaging ways," says Matthew Roudané of Georgia State University. "It's not surprising that some of the best female actors pick Albee plays to act in." This has made him a timely and resurgent playwright—an unexpected bard of the #MeToo era.

The good stuff and the bad stuff

"Everyone wants to have a go at Martha," says Elizabeth McCann, who produced many of Albee's later works in New York. Imelda Staunton did so in an acclaimed revival in London's West End last year. Other productions are emerging everywhere from Tennessee to Germany. The Signature Theatre in Manhattan has just wrapped up "Edward Albee's 'At Home at the Zoo'", which knits together "The Zoo Story" (1959), his unsettling debut about a conversation between strangers that turns violent, with "Homelife", a one-act play he wrote in 2004 to accompany it.

The show features a living-room conversation between a husband and wife at odds over how their marriage ought to feel. "I thought we made a decision...that what we wanted was a smooth voyage on a safe

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ship," says Peter, a buttoned-up textbook publisher. "Yeah; sure," replies Ann, his charismatic and disenchanted wife. Marriage, and the messy arrangements people make to fortify themselves against life's uncertainties, were subjects Albee returned to again and again. Lila Neugebauer, the director of "At Home", calls him "one of our most astute chroniclers of the human animal in captivity".

Other Albee plays cropping up on smaller stages include "Occupant" (2001), Albee's amusing portrait of Louise Nevelson, a New York sculptor, and—also in California—"The Goat, or Who Is Sylvia?" (2000), his provocative and darkly funny play about a marriage undone by a man's affair with a goat. Yet the biggest event is the Broadway premiere of "Three Tall Women", directed by Joe Mantello, which opened at the Golden Theatre on March 29th. Starring Glenda Jackson, Laurie Metcalf and Alison Pill, the play is a conversation between three characters (called A, B and C) who represent the same woman at different ages (in their 90s, 50s and 20s).

"Three Tall Women" may be Albee's most autobiographical work, inspired by Frances Cotter Albee, his narcissistic and domineering adoptive mother, who married into money and had little love for her inconveniently sensitive and gay son. Albee ran away from home as a teenager, looking back only through his art. He never saw his father again, but he rekindled a kind of relationship with his mother before she died in 1989. "I think her death made it easier for him to write more freely about her," says Ms McCann. "But I'm sure she was the model for all of his women."

When Albee wrote the play in 1991, most American producers rejected it. It seemed risky, not only because women have all the speaking roles, but also because it had been decades since Albee had ►

► found commercial success. But when the play finally arrived in New York in 1994 it earned him his third Pulitzer. Its beauty lies in Albee's compassion. He shows his subject evolving from a clever, romantic young woman into a cynical yet strong (if senile) old biddy. "Parents, teachers, all the others...don't tell us things change—that Prince Charming has the morals of a sewer rat, that you're supposed to live with that ...and like it, or give the appearance of liking it," says the 50-something B. Albee's protagonist salvages what she can from a life chiselled by disappointments and constrained by its times.

Albee said the play helped him come to terms with his mother's failures, even to develop a grudging respect for her: "It's all there on stage, all the good stuff and the bad stuff." The text overflows with his pre-occupations: the tension between dreamy youth and wizened old age, the compromises of marriage, the elusiveness of familial love, the imminence of death and the absurdity of life (like much of his work, it is full of grim humour). He gives dazzling monologues to each of the three parts. "That final speech that C has is one of the great gifts to anybody in American theatre," says Ms Pill of her own monologue.

Critics justly rue the paucity of female playwrights on Broadway. But the revival of "Three Tall Women", alongside so many of Albee's works, is some compensation. His confidence in the power of women's stories, and insight into the female condition, remain both refreshingly shrewd and troublingly rare. ■

Russian ideology

Getting into their heads

The Road to Unfreedom: Russia, Europe, America. By Timothy Snyder. *Tim Duggan Books; 360 pages; \$27. Bodley Head; £25*

IT IS a long way from the stranger corners of Russian philosophy to the bloody events which began on the streets of Kiev in early 2014. Yet Timothy Snyder, a Yale historian and prolific writer on central Europe, sees an intimate connection. "The Road to Unfreedom" documents a determined effort by Vladimir Putin's Russia to undermine liberal, law-based democracy. But it also examines the ideological underpinnings of that effort.

His narrative flashes from protests in Kiev, the Russian takeover of Crimea and the Russian-backed "uprising" in eastern Ukraine to the ideas pumped out by Russian officialdom, including Mr Putin himself, to justify the Kremlin's actions. The Russian president's favourite thinker is



The thinker

Ivan Ilyin, one of the intellectuals the Bolsheviks deported on one of the "philosophers' ships" in 1922. An ideologue of the Russian diaspora, Ilyin admired Italian fascism, though he fell out with the German Nazis under whom he lived in the 1930s. He thought a monarch, rather than laws or constitutions, should be the supreme authority in Russia.

Also present in Mr Putin's thinking is an even more extreme anti-liberal ideology: that of Lev Gumilev, who thought that nations draw their collective drive, or *passionarnost* (an invented word), from cosmic rays. In this bizarre understanding of the world, the West's will to exist is almost exhausted, whereas Russia still has the energy and vocation to form a mighty Slavic-Turkic state, spanning Eurasia.

What these ways of thinking have in common, Mr Snyder argues, is a quasi-mystical belief in the destiny of nations and rulers, which sets aside the need to observe laws or procedures, or grapple with physical realities. The spiritual imperative transcends everything, rendering politics, and the pursuit of truth in the ordinary sense, superfluous or even dangerous.

As Mr Snyder shows, the lines coming from Moscow during Ukraine's conflict have shown a bizarre disconnection from reality—but have been in many quarters insidiously persuasive. For example, state-guided media claim that Russia's enemies are Nazism and a Western decadence epitomised by homosexuality. In the West, leftists fear the first and social conservatives the second. But Russians seem open to persuasion that they constitute a twin menace. Faced with such adversaries, no response could be too draconian.

Mr Snyder also traces the Kremlin's efforts to undermine the European Union by fostering Eurosceptic parties on the extreme right and left, as well as its drive to weaken America's body politic. He be-

lieves that the election of Donald Trump, and the discrediting of Hillary Clinton, were with good reason seen in Moscow as a sweet success, achieved above all with the manipulation of electronic messages. In his view, this mood of triumph was felt not so much because of the policies that Mr Trump would follow, but because his cavalier attitude to the rules of the political game was subverting the American system. As Mr Snyder sees it, Russia finds flawed democracies easier to live with than healthy ones.

The book lucidly argues that getting into the heads of Americans and Europeans has become easier than it was during the cold war. The Soviet Union had to offer physical evidence that it was achieving more, scientifically and materially, than the West. But when voters spend hours a day in front of electronic screens, much can be achieved simply by a deft use of the messages flashing in front of them.

Combining topical reporting with delvings into the history of ideas and some political-philosophical musing in the author's own voice, this relatively short book covers a vast canvas. The tone often shifts between intelligent but polemical journalism and metaphysical reflection.

That might sound an impossible mix, but Mr Snyder carries it off. He might defend his choice of material by pointing out that geopolitics and political discourse are both shifting at a furious pace. A roller-coaster world calls for a news editor's skill in processing facts and a philosopher's ability to dissect ideologies. He has both. ■

A radical year

Born to be wild

The Long '68: Radical Protest and Its Enemies. By Richard Vinen. *Allen Lane; 411 pages; £20*

"IF YOU can remember the Sixties, you weren't really there." The old saw is attributed to everyone from The Who's Pete Townshend to Timothy Leary (the decade's most famous advocate of LSD). The reality, as Richard Vinen proves in a meticulously researched book, is that plenty of people do remember the Sixties—but not all the same way.

For the French, "68" is May 1968, when alarmists feared that cobblestone-throwing students might overthrow the Fifth Republic. Fifty years later, *soixante-huitard* ("sixty-eighter") remains shorthand for a certain type of baby-boomer in modern France, with nuances ranging from sexual liberation to illusory dreams of social equality. But Mr Vinen, a historian at King's ►

► College London, notes that France's May 1968 was actually part of a political and social ferment that affected most of the West for much of the 1960s and into the 1970s—the period he calls "the Long '68".

What linked the demonstrations that rocked (and mocked) the establishment from Berkeley to London, Paris to Berlin? Mr Vinen proposes several answers. One was a generation's anger at the Vietnam war (the Vietcong's Tet offensive, which showed that an American victory was nowhere near, began in January 1968). Another was a reaction to the aftermath of colonialism. In France memories of the Algerian war, which had ended in 1962, were still raw and divisive. In Britain Enoch Powell's "rivers of blood" speech against immigration in April 1968 infuriated students even as it delighted dockers.

A third was the cascade effect of different groups' fights for their rights. One activist from Queen's University Belfast argued that events in Northern Ireland were linked to "the black struggle in the US, the workers' fight in France, the resistance of the Vietnamese, the uprising against Stalinism in Czechoslovakia". Television linked these struggles. As Mr Vinen wryly notes: "Filming in Berlin or Berkeley could offer the same arresting images of violence without entailing the risk of real war. Television could flatten the contours of violence so that war, riot and boisterous demonstrations could appear the same."

But none of these answers is entirely satisfying. Young rebels and striking workers struggled to work together smoothly. Although some starry-eyed students, especially in France, joined the assembly line to spread the revolution, most workers—like Britain's striking miners—were in their guts conservative rather than radical.

Baby-boomers reliving their youth will be impressed by Mr Vinen's research. It includes plenty of detail on well-known characters from America's Black Panthers to Germany's Red Army Fraction (the Baader-Meinhof Gang) and Italy's Red Brigades. But it also features the occasional surprising gem—for example, that in the 1950s a young Henry Kissinger tried to persuade Albert Camus to write for him.

Capitalism is still with us, and so is the class system. So Mr Vinen's verdict on the 1960s is a recognition of "a change in personal behaviour that is hard to measure and hard to dismiss". Meanwhile, some of the period's militants have gone from notoriety to respectability, including Dany Cohn-Bendit, a Franco-German former member of the European Parliament, and Joschka Fischer, a German former foreign minister. Tariq Ali edited the *Black Dwarf* and then the *Red Mole* (Marxist papers which—perhaps oddly, given their influence with British radicals of the era—are not discussed in much detail). But Mr Ali is now a venerable member of Britain's literary establish-

ment, a fitting destination for a former president of the Oxford Union.

The pity of this otherwise admirable book is that it misses that spirit. The forensic scrutiny of the scholar cannot quite capture the era's heady conviction that all was possible. In retrospect, the dreams of the 68ers—remember John Lennon's "Give Peace a Chance" or Scott McKenzie's "San Francisco"—seem hopelessly naive. But for baby-boomers they were real enough at the time. For all his academic expertise, Mr Vinen is a little too young to have smelled the flowers in their hair. ■

critical, closeted, conscious of his owl-like glasses and large nose, despairing of his "demon" epilepsy, melancholy and lonely, "forever roaming with a hungry heart".

Lear was born in 1812 in north London, one of somewhere between 17 and 21 children. His mother was distant but he was lovingly brought up by his sisters, in particular Ann, 21 years older, and would always feel women were "equals and companions". He resented his unstable financial start to life after his father, who worked in the City, fell into debt. With a flair for the dramatic, Lear described selling drawings and teaching art for "bread and cheese".

He had an interest in natural history at a time when expeditions all over the world were bringing new species to Britain. He drew lemurs and macaws at the zoo in Regent's Park soon after it opened in 1828, and painted stuffed birds and animals at an estate in Lancashire. His watercolours went far beyond accuracy, Ms Uglow says, displaying "intimate perception" and great feeling. His "dizzying sense of the overlap between animal and human" brought out the character of creatures. He had a special affinity with birds. Like them, he rarely settled, always wanting to fly away.

He turned restlessness into a profession by becoming a landscape painter, travelling to Italy, Greece, Albania, the Levant, Egypt and India. He also began making money from publishing the nonsense poems and ditties he wrote for friends. While proud of their success, he wanted to be taken seriously as an artist. Though his pictures are well regarded today, in his lifetime he often had to reduce their prices. Money was always a worry and he relied heavily on friends' patronage.

Delving into journals and letters, Ms Uglow also teases out the importance of his many friends in his personal life. He never married, and though many papers relating to his intimate relationships were burned, Ms Uglow describes his pain at realising that the great love of his life, Frank Lushington, was an impossibility. Instead, he filled his life with hundreds of correspondents and several close friends including Alfred and Emily Tennyson—"10,000 angels boiled down". But his most significant friend may well have been Giorgio Kokali, a servant who worked for him for 30 years. Their headstones stand together in a cemetery in San Remo, Italy.

With careful attention Ms Uglow gets to the heart of a man who found joy in the absurdities of life and whose enjoyment of people and the world around him saved him from "the moribunds". In 600 pages, her tome never tires the reader. As she unpicks Lear's layers, at points she seems to inhabit him. His love of language bubbles through her own, leaving a striking and memorable portrait of the man she describes as "an eerie, queery, sometimes weary, sometimes cheery Edward Lear". ■



Edward Lear

Sometimes weary, sometimes cheery

Mr Lear: A Life of Art and Nonsense. By Jenny Uglow. *Farrar, Straus and Giroux; 608 pages; \$45. Faber & Faber; £25*

“**P**LOFFSKIN, Pluffskin, Pelican jee!” sing the birds in Edward Lear's poem “The Pelican Chorus”. The joyful wordplay is typical of the man who created the “Yonghy-Bonghy Bò” and the “Dong with a luminous nose”, made limericks fashionable and imagined odd yet devoted pairs in his poems, most famously an owl and a pussycat. But the nonsense works for which he is best known are only part of his story. He was an artist by calling, a wanderer by habit and an outsider by nature.

Jenny Uglow's new biography journeys with “Mr Lear” all the way “to the borderlands of self”. The biographer and historian has found a wonderful subject in the affable Edward. She masterfully shows how he became, on the one hand, a successful artist and writer, brimming with “warmth and wit” and surrounded by friends; and on the other, desperately self-

Historical fiction from Africa

Continental crossings

Myth, superstition, dreams and magical realism soak historical novels set in Africa

EVEN before "Black Panther" became the highest-grossing superhero movie of all time in America, Hollywood film-makers were casting round for stories to hitch to the Africa bandwagon. Lupita Nyong'o, one of the stars of "Black Panther", set in the fictional African kingdom of Wakanda, is an increasingly powerful Hollywood producer, and looks set to be one of the first out of the blocks. She is likely to star in "The Woman King" alongside Viola Davis, a fellow Oscar winner. Set in west Africa and based on historical events surrounding an all-female military unit that fought to protect the Kingdom of Dahomey from the French in the 18th and 19th centuries, the film has a potent mix of clear plot, black heroes and as many gorgeous warrior women as you can shake a stick at.

In truth, Dahomey's Amazons had a far messier history. They slaughtered elephants, recruited child soldiers and were heavily involved in supplying the Atlantic slave trade. Hollywood is likely to simplify this inconvenient complexity. So anyone wanting a deeper and more imaginative exploration of Africa's history would be advised to avoid the cinema and open a book instead. Over the past two years, a number of African novelists have struck out beyond narrow identity politics to harness stories from the past as a way of trying to make sense of Africa's tangled fictions and multiple memories.

Patrice Nganang is a Stony Brook University professor who was deported from his native Cameroon back to America last December after being accused of criticising Paul Biya's government. In "Mount Pleasant" (2016), he used a nine-year-old slave girl who is sent to the court of the exiled Sultan Njoya to tell the stories of those swept up in early 20th-century colonialism and the birth of modern Cameroon. Peter Kimani, a Kenyan now teaching at Amherst College, used his latest novel, "Dance of the Jakaranda" (2017), to explore how Kenya's British colonial masters imported labour from India to build the railway that would link the Indian Ocean to Lake Victoria and thus unite the country. Mr Kimani, born in the village of the ruling Kenyatta family in 1971, eight years after Kenya's independence, took the unusual step of making his hero Indian as a way of exploring Kenya's complex racial legacy—probably the first time that has ever been done by a Kenyan writer. Petina Gappah, a prizewinning novelist and lawyer from

Woman of the Ashes. By Mia Couto.

Translated by David Brookshaw. *Farrar, Straus and Giroux*; 272 pages; \$26

Zimbabwe, is taking another tack by recasting the oft-recounted story of David Livingstone's travels in southern Africa from the viewpoint of one of his African porters.

In their exploration of myth, dreams, power and fear, these books draw from the tradition of storytelling across Africa. Perhaps the most interesting is "Woman of the Ashes", the first book of a trilogy called "Sands of the Emperor". Written in Portuguese by a Mozambican writer, Mia Couto, "Woman of the Ashes" is just coming out in English for the first time in a lyrical translation by David Brookshaw.

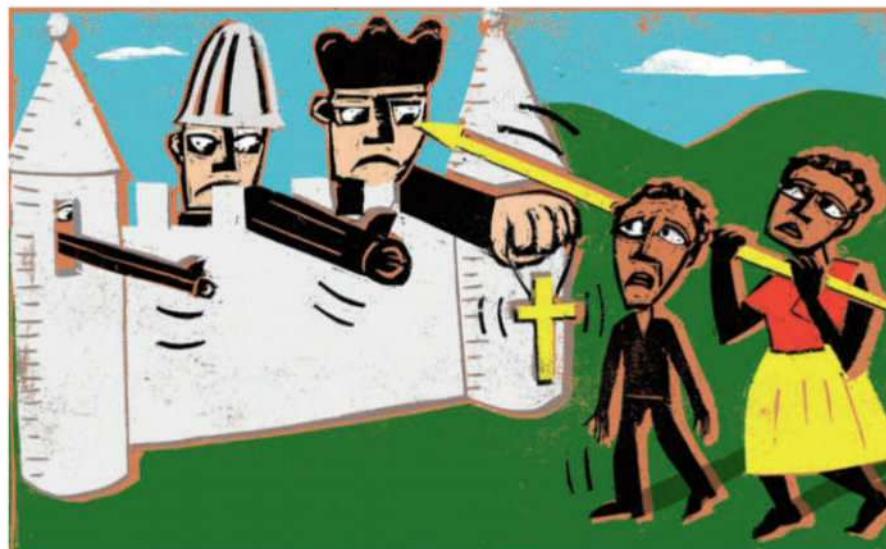
Henning Mankell, a Swedish crime writer and dramatist, called Mr Couto "one of the richest and most important authors in Africa". Having written more than two dozen volumes of poetry, short stories and longer fiction, Mr Couto is widely read in Africa and continental Europe, where he won the Portuguese Camões prize in 2013 and came close to winning the Man Booker International prize in 2015. His work is complicated, which may be why he has struggled to find a bigger following in the English-speaking world. He is also a working biologist. But unlike Primo Levi, who used his training as a chemist to create an orderly fictional world, Mr Couto puts biology to work in his novels by creating panoramas that are both organic and mes-

merising. A white man who has lived all his life in Mozambique, Mr Couto unites different worlds. Never has this been truer than in his latest work.

"Woman of the Ashes" is set in the late 19th century. The tribal lands in southern Mozambique are plagued by war between those who are fighting the Portuguese colonists and those who side with them. Mr Couto uses a simple structure to magnify the many voices of the two sides. In alternate chapters, a panicky Portuguese sergeant, Germano de Melo, promises to protect those Africans who have pledged their support, while at the same time he whispers in letters to a fellow would-be empire-builder about the fears that beset him day and night. Interspersed with these are chapters featuring Imani, a 15-year-old girl who speaks perfect Portuguese and who moves unhampered between her tribal family and de Melo, the man who lusts after her while claiming to defend her people against common enemies.

What makes this novel so contemporary and, in contrast to Hollywood stories, so subversive is that Mr Couto is not afraid to point out many unhappy truths about all sides of the colonial project. Portuguese power was exported abroad to hide weakness at home. Despite their weapons and their missionaries, the Portuguese were so thinly stretched that they could rule only by fear ("the most powerful of generals"). Anything else would have ended in failure. Mr Couto is also unafraid to show how war begets war, cruelty begets cruelty. Africans who are bullied in turn became bullies, just like everyone else.

In the end, however, he is not a scold but a generous spirit. His heroine is his metaphor for Africa at its truest: powerful and enchanting. In the use he makes of stories—about dreams and superstitions, spiders and stones that talk—Mr Couto has created a work of rare originality and imagination. Read it and remember. ■



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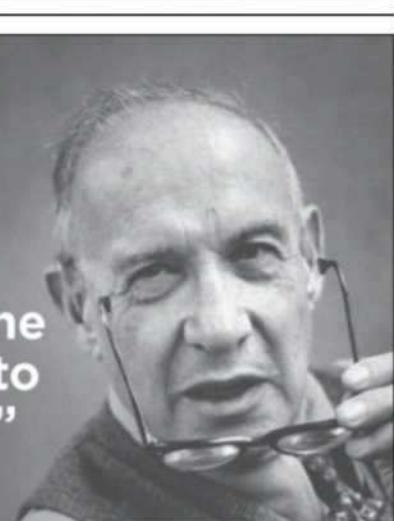


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The Economist April 7th 2018

Economic data

% change on year ago

	Gross domestic product			Industrial production latest	Consumer prices latest	Unemployment rate, %	Current-account balance		Budget balance % of GDP 2018†	Interest rates, % 10-year gov't bonds, latest	Currency units, per \$ April 4th	Currency units, per \$ year ago		
	latest	qtr*	2018†				latest 12 months, \$bn	% of GDP 2018†						
United States	+2.6	0.4	+2.9	+2.8	+4.3 Feb	+2.2 Feb	+2.3	4.1 Feb	-466.2 Q4	-2.7	-4.5	2.74	- -	
China	+6.8	0.4	+6.6	+6.6	+7.2 Feb	+2.9 Feb	+2.3	3.9 Q4§	+164.9 Q4	+1.3	-3.5	3.65§§	6.30	6.89
Japan	+2.0	0.4	+1.6	+1.4	+1.4 Feb	+1.5 Feb	+1.0	2.5 Feb	+200.1 Jan	+3.7	-4.9	0.02	107	111
Britain	+1.4	0.4	+1.6	+1.5	+1.6 Jan	+2.7 Feb	+2.6	4.3 Dec††	-106.7 Q4	-4.4	-2.8	1.41	0.71	0.80
Canada	+2.9	0.4	+1.7	+2.2	+2.4 Jan	+2.2 Feb	+1.9	5.8 Feb	-49.4 Q4	-2.6	-1.8	2.17	1.28	1.34
Euro area	+2.7	0.4	+2.4	+2.5	+2.7 Jan	+1.4 Mar	+1.5	8.5 Feb	+463.4 Jan	+3.1	-1.0	0.50	0.81	0.94
Austria	+2.9	0.4	+1.6	+2.2	+6.1 Jan	+1.8 Feb	+1.8	5.2 Feb	+7.7 Q4	+2.0	-0.7	0.61	0.81	0.94
Belgium	+1.9	0.4	+2.1	+1.9	+6.6 Jan	+1.4 Mar	+1.8	6.4 Feb	-0.8 Dec	-0.3	-1.5	0.74	0.81	0.94
France	+2.5	0.4	+2.8	+2.2	+1.2 Jan	+1.5 Mar	+1.5	8.9 Feb	-15.5 Jan	-0.9	-2.7	0.72	0.81	0.94
Germany	+2.9	0.4	+2.4	+2.5	+5.5 Jan	+1.6 Mar	+1.7	3.5 Feb†	+311.8 Jan	+7.8	+0.8	0.50	0.81	0.94
Greece	+1.8	0.4	+0.4	+1.6	-1.7 Jan	+0.1 Feb	+0.8	20.8 Dec	-1.7 Jan	-1.4	-0.2	4.10	0.81	0.94
Italy	+1.6	0.4	+1.3	+1.5	+4.0 Jan	+0.9 Mar	+1.1	10.9 Feb	+53.9 Jan	+2.6	-2.0	1.76	0.81	0.94
Netherlands	+2.9	0.4	+3.1	+2.8	+7.1 Jan	+1.2 Feb	+1.5	5.0 Feb	+84.9 Q4	+9.8	+0.7	0.66	0.81	0.94
Spain	+3.1	0.4	+2.7	+2.8	+4.0 Jan	+1.2 Mar	+1.5	16.1 Feb	+25.5 Jan	+1.6	-2.6	1.09	0.81	0.94
Czech Republic	+5.5	0.4	+3.2	+3.3	+5.5 Jan	+1.8 Feb	+2.3	2.4 Feb†	+1.9 Q4	+0.9	+0.5	1.84	20.6	25.4
Denmark	+1.2	0.4	+3.9	+1.9	+4.7 Jan	+0.6 Feb	+1.3	4.1 Jan	+24.5 Jan	+7.8	-0.7	0.54	6.06	6.97
Norway	+1.4	0.4	-1.1	+1.8	-0.7 Jan	+2.2 Feb	+2.0	4.0 Jan††	+20.2 Q4	+5.5	+4.9	1.93	7.83	8.60
Poland	+4.3	0.4	+4.1	+3.8	+7.4 Feb	+1.3 Mar	+2.4	6.8 Feb§	+1.2 Jan	nil	-2.7	3.12	3.42	3.99
Russia	+0.9	0.4	na	+1.8	+1.3 Feb	+2.2 Feb	+3.3	5.0 Feb§	+35.2 Q4	+2.7	-1.0	8.13	57.6	56.3
Sweden	+3.3	0.4	+3.5	+2.7	+9.2 Jan	+1.6 Feb	+1.9	6.3 Feb§	+17.1 Q4	+4.2	+0.5	0.68	8.41	8.99
Switzerland	+1.9	0.4	+2.4	+2.0	+8.7 Feb	+0.6 Feb	+0.6	2.9 Feb	+66.6 Q4	+9.7	+0.8	0.04	0.96	1.00
Turkey	+7.3	0.4	na	+3.9	+12.9 Jan	+10.2 Mar	+9.9	10.4 Dec§	-51.6 Jan	-5.2	-2.1	12.72	4.00	3.66
Australia	+2.4	0.4	+1.5	+2.8	+1.6 Q4	+1.9 Q4	+2.2	5.6 Feb	-32.3 Q4	-1.8	-1.2	2.61	1.30	1.32
Hong Kong	+3.4	0.4	+3.3	+2.8	+0.6 Q4	+3.1 Feb	+2.0	2.9 Feb††	+14.3 Q4	+4.5	+0.8	1.95	7.85	7.77
India	+7.2	0.4	+6.6	+7.2	+7.5 Jan	+4.4 Feb	+4.8	6.2 Mar	-39.1 Q4	-2.0	-3.5	7.29	65.2	65.0
Indonesia	+5.2	0.4	na	+5.4	-0.4 Jan	+3.4 Mar	+3.5	5.5 Q3§	-17.3 Q4	-1.9	-2.3	6.56	13,766	13,328
Malaysia	+5.9	0.4	na	+5.5	+3.0 Jan	+1.4 Feb	+2.9	3.4 Jan§	+9.4 Q4	+2.8	-2.8	3.95	3.87	4.43
Pakistan	+5.7	2017**	na	+5.4	+9.5 Jan	+3.2 Mar	+5.7	5.9 2015	-15.7 Q4	-5.0	-5.6	9.00†††	116	105
Philippines	+6.6	0.4	+6.1	+6.1	+21.8 Jan	+4.3 Mar	+4.0	5.3 Q1§	-2.5 Dec	+0.1	-1.9	6.69	52.1	50.2
Singapore	+3.6	0.4	+2.1	+3.0	+8.9 Feb	+0.5 Feb	+0.9	2.1 Q4	+61.0 Q4	+19.5	-0.7	2.31	1.31	1.40
South Korea	+2.8	0.4	-0.8	+2.9	-6.4 Feb	+1.3 Mar	+1.9	4.6 Feb§	+71.7 Feb	+5.1	+0.7	2.62	1,060	1,122
Taiwan	+3.3	0.4	+4.3	+2.4	-1.9 Feb	+2.2 Feb	+1.3	3.7 Feb	+84.1 Q4	+13.6	-0.8	1.00	29.1	30.3
Thailand	+4.0	0.4	+1.8	+4.0	+4.6 Feb	+0.8 Mar	+1.3	1.3 Feb§	+49.3 Q4	+10.6	-2.3	2.42	31.2	34.4
Argentina	+3.9	0.4	+3.9	+3.1	+4.2 Feb	+25.5 Feb	+20.3	7.2 Q4§	-30.8 Q4	-4.8	-5.6	4.19	20.2	15.4
Brazil	+2.1	0.4	+0.2	+2.6	+2.8 Feb	+2.8 Feb	+3.5	12.6 Feb§	-7.8 Feb	-1.3	-7.0	8.04	3.35	3.12
Chile	+3.3	0.4	+2.6	+3.2	+8.9 Feb	+2.0 Feb	+2.4	6.7 Feb†††	-4.1 Q4	-0.6	-2.1	4.48	605	662
Colombia	+1.6	0.4	+1.1	+2.5	+1.0 Jan	+3.4 Feb	+3.3	10.8 Feb§	-10.4 Q4	-2.9	-2.0	6.52	2,790	2,872
Mexico	+1.5	0.4	+3.2	+2.1	+0.9 Jan	+5.3 Feb	+4.2	3.3 Feb	-18.8 Q4	-2.0	-2.3	7.29	18.2	18.9
Peru	+2.2	0.4	-1.3	+3.7	+0.2 Jan	+0.4 Mar	+1.4	8.7 Feb§	-2.7 Q4	-1.3	-3.5	na	3.23	3.25
Egypt	nil	0.4	na	+5.1	+11.1 Jan	+14.4 Feb	+16.9	11.3 Q4§	-9.3 Q4	-4.0	-9.8	na	17.7	18.1
Israel	+2.9	0.4	+3.6	+3.9	+6.9 Jan	+0.2 Feb	+0.9	3.8 Feb	+10.5 Q4	+3.5	-2.4	1.67	3.54	3.65
Saudi Arabia	-0.7	2017	na	+1.0	na	+3.0 Feb	+4.4	5.8 Q3	+15.2 Q4	+4.0	-7.2	na	3.75	3.75
South Africa	+1.5	0.4	+3.1	+1.5	+1.5 Jan	+4.0 Feb	+5.0	26.7 Q4§	-8.6 Q4	-2.7	-3.6	8.07	11.9	13.5

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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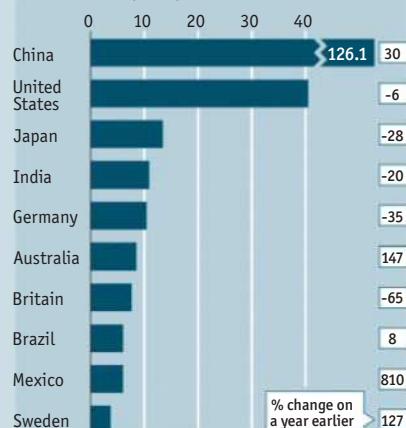


Markets

	% change on			
	Index Apr 4th	one week	in local currency terms	in \$
United States (DJIA)	24,264.3	+1.7	-1.8	-1.8
China (SSEA)	3,279.1	+0.3	-5.3	-2.1
Japan (Nikkei 225)	21,319.6	+1.4	-6.3	-1.0
Britain (FTSE 100)	7,034.0	-0.2	-8.5	-4.7
Canada (S&P TSX)	15,164.4	nil	-6.4	-8.6
Euro area (FTSE Euro 100)	1,165.6	+0.2	-3.6	-1.3
Euro area (EURO STOXX 50)	3,340.4	+0.3	-4.7	-2.4
Austria (ATX)	3,390.2	-1.1	-0.9	+1.5
Belgium (Bel 20)	3,808.3	-1.1	-4.3	-1.9
France (CAC 40)	5,141.8	+0.2	-3.2	-0.9
Germany (DAX)*	11,957.9	+0.1	-7.4	-5.2
Greece (Athex Comp)	781.1	-1.2	-2.6	-0.3
Italy (FTSE/MIB)	22,442.8	+0.5	+2.7	+5.2
Netherlands (AEX)	526.2	-0.2	-3.4	-1.0
Spain (IBEX 35)	9,513.3	-0.4	-5.3	-3.0
Czech Republic (PX)	1,111.9	-0.6	+3.1	+6.5
Denmark (OMXCB)	870.8	-2.0	-6.1	-3.9
Hungary (BUX)	37,275.4	+1.3	-5.3	-3.4
Norway (OSEAX)	902.9	-0.5	-0.4	+4.0
Poland (WIG)	58,355.0	+0.3	-8.5	-6.9
Russia (RTS, \$ terms)	1,240.4	+1.1	+7.4	+7.4
Sweden (OMX30)	1,494.7	-1.2	-5.2	-7.7
Switzerland (SMI)	8,553.7	-2.3	-8.8	-7.4
Turkey (BIST)	113,975.6	-0.1	-1.2	-6.3
Australia (All Ord.)	5,863.7	-0.6	-4.9	-6.0
Hong Kong (Hang Seng)	29,518.7	-1.7	-1.3	-1.7
India (BSE)	33,019.1	+0.2	-3.0	-5.0
Indonesia (JSX)	6,157.1	+0.3	-3.1	-4.5
Malaysia (KLCSE)	1,815.9	-2.3	+1.1	+5.7
Pakistan (KSE)	46,103.6	+2.1	+13.9	+8.8
Singapore (STI)	3,339.7	-1.3	-1.9	-0.1
South Korea (KOSPI)	2,408.1	-0.5	-2.4	-1.4
Taiwan (TWI)	10,821.5	-0.4	+1.7	+3.8
Thailand (SET)	1,725.0	-3.4	-1.6	+2.7
Argentina (MERV)	31,318.5	+0.7	+4.2	-3.0
Brazil (BVSP)	84,359.6	+0.6	+10.4	+9.2
Chile (IGPA)	27,759.9	+1.3	-0.8	+0.9
Colombia (IGBC)	11,712.6	+3.5	+2.0	+9.2
Mexico (IPC)	47,457.5	+2.9	-3.8	+3.1
Peru (S&P/BVL)*	21,012.7	+2.2	+5.2	+5.6
Egypt (EGX 30)	17,509.7	+1.2	+16.6	+17.2
Israel (TA-125)	1,269.3	-3.0	-7.0	-8.8
Saudi Arabia (Tadawul)	7,871.7	-0.4	+8.9	+8.9
South Africa (JSE AS)	54,602.7	-0.3	-8.2	-4.5

Renewable energy

New investment in renewable energy globally increased by 2% last year, to \$280bn, still 13% below the record set in 2015. Developing economies accounted for the lion's share of the spending, with China making up 45% of the global total. Most renewables investment in China is in solar power. It installed 53 gigawatts of capacity last year. European investment fell by 36% because of big declines in Britain and Germany. The closure of subsidy programmes helped drive down investment in Britain; Germany was affected by a shift to auctions for onshore wind power. Mexico's renewable-energy sector is booming, partly in response to a government target for 13.9% of power generation to be green by 2022.

New investment, 2017, \$bn

Source: UN, Frankfurt School-UNEP Collaborating Centre, Bloomberg New Energy Finance

Other markets

	% change on			
	Index Apr 4th	one week	in local currency terms	in \$
United States (S&P 500)	2,644.7	+1.5	-1.1	-1.1
United States (NAScomp)	7,042.1	+1.3	+2.0	+2.0
China (SSEB, \$ terms)	325.4	+0.9	-4.8	-4.8
Japan (Topix)	1,706.1	+0.4	-6.1	-0.7
Europe (FTSEurofirst 300)	1,439.3	-0.5	-5.9	-3.6
World, dev'd (MSCI)	2,061.3	+0.7	-2.0	-2.0
Emerging markets (MSCI)	1,155.6	-0.6	-0.2	-0.2
World, all (MSCI)	503.8	+0.5	-1.8	-1.8
World bonds (Citigroup)	973.2	-0.2	+2.4	+2.4
EMBI+ (JP Morgan)	819.4	+0.4	-2.0	-2.0
Hedge funds (HFRX)	1,262.5 [§]	+0.1	-1.0	-1.0
Volatility, US (VIX)	20.1	+22.9	+11.0 (levels)	
CDSs, Eur (iTRAXX) [†]	60.2	-0.5	+33.4	+36.7
CDSs, N Am (CDX) [†]	64.1	-2.9	+30.5	+30.5
Carbon trading (EU ETS) €	13.1	-1.6	+60.6	+64.5

Sources: IHS Markit; Thomson Reuters. *Total return index.

[†]Credit-default-swap spreads, basis points. [§]Apr 3rd.

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The Economist commodity-price index

	2005=100			
	Mar 27th	Apr 3rd*	% change on one month	% change on one year
Dollar Index				
All Items	151.2	152.3	-2.5	+6.9
Food	156.7	158.2	-1.8	+5.0
Industrials				
All	145.6	146.2	-3.4	+9.1
Nfa [†]	138.9	138.9	-3.4	-0.4
Metals	148.5	149.3	-3.4	+13.5
Sterling Index				
All items	194.5	197.2	-3.7	-5.3
Euro Index				
All items	151.7	154.3	-1.5	-7.1
Gold				
\$ per oz	1,342.8	1,330.2	-0.6	+5.8
West Texas Intermediate				
\$ per barrel	65.3	63.5	+1.5	+24.5

Sources: Bloomberg; CME Group; Cotlook; Darmenn & Curl; FT; ICCO; ICO; ISO; Live Rice Index; LME; NZ Wool Services; Thompson Lloyd &

Ewart; Thomson Reuters; Urner Barry; WSJ. *Provisional

[†]Non-food agriculturals.





A dangerous woman

Winnie Madikizela-Mandela, anti-apartheid activist turned Soweto mafia matriarch, died on April 2nd, aged 81

FROM the very start Winnie Mandela knew this partnership would be bizarre. Their courtship, when Nelson would arrive in gym attire and drive her to the hall just to watch him sweat. His sudden so-confident proposal, after a picnic on a white farm, when he said he knew a good seamstress to make her wedding dress. (He was married already, but he would see to that.) His constant dashing off to political meetings, so that life with him was clearly going to be life without him. The secret meetings, he in heavy disguise, in the years of his treason trial. Dazzled by his glamour and also crazy about him, she felt in real danger of losing her identity and fizzling into an appendage. She vowed that was never going to happen to her.

Then from 1964, only six years into their marriage, he disappeared into prison for almost three decades, mostly on Robben Island. She could visit him once every six months, but not touch. There were letters, yet no simple memories of sitting round a table together, eating a meal with their daughters. Since she never really lived with him, she wondered later whether she had had enough time to love him. But when he left the scene she was more than ready to take on the fight against apartheid in his place. The harder they tried to silence him, the louder she would shout.

That came naturally. No men, especially Afrikaners, were going to subjugate her. Growing up in Pondoland she had run barefoot with the boys, played stick-fights, set animal traps. She had been head girl at her school, then the first qualified black medical social worker at Baragwanath Hospital in Soweto. Tall, regal, exuding elegance, she was bound to catch Nelson's eye. And she looked as fierce and fine in combat fatigues and leather jackets, marching with the Defiance Campaign to end white rule. She was harassed, put under house arrest, tortured until she swelled up and passed blood. Sent into internal exile to Brandfort in 1977, she made the place a shrine to the cause. The white colonels found there was no pain she couldn't bear and nothing, nothing, she feared.

Matches and necklaces

Her ideas of liberation raged on even when Nelson's changed. She did not speak, or associate, or deal, or do deals, with whites. In the townships, among her people, she praised bloodshed and preached violence. Poor blacks might have no guns but they had stones, matches, and old tyres to fill with petrol, jam over a collaborator's head and set alight, necklaces of fire. In the 1980s she held sway in Soweto with the help of the Mandela United Football Club, "Win-

nie's boys", who hung around her house to carry out kidnappings and beatings. In 1989 they went too far, kicking 14-year-old Stompie Moeketsi around like a football and cutting his throat with shears, then shooting dead the doctor who examined him. The courts eventually found her "negligent". She was barely sorry; as a rule, never sorry. For God's sake, was it her responsibility to control their every move?

By the next year, with Nelson at last out of jail, she became more careful. She was only part of the collective, the struggle; but she had to take her place in the ruling circle of the African National Congress once, in 1994, Nelson was president. From then on her reaction to bad raps, dozens of counts of fraud and theft as well as the killings, was to raise a defiant fist, then to wait as the ANC retreated from her, then to appeal. She always won milder sentences, for the courts and the party feared to cross her and she could loudly proclaim how the people loved her, even though her marriage to their hero had foundered and in 1996 they divorced. Back she would sail to the ANC's executive council and its Women's League, resplendent in her tribal jewellery and brilliant satins, the mother of the nation, especially the poor. For yes, she had stayed in Soweto rather than move to a once-white suburb—even if her house was a multi-million fortified affair with six bedrooms, in one of which she would spend careful hours perfecting her morning toilette.

The new South Africa disappointed her. Compromise and forgiveness, Nelson's way, had let too many whites off the hook for apartheid and left the economy in their hands. Meanwhile, she couldn't bear the factionalism and disrespect shown in Parliament and within the ANC. The fact that she herself was expelled from the government in 1995 for disobeying Nelson's orders and sowing division was neither here nor there. She could do as she pleased where he was concerned. Confident as she always was that "her people" would support her, she hustled for higher office—deputy president had a good ring to it—and lectured the callow new ANC men, Thabo Mbeki and Jacob Zuma, on how to behave. Strong, charismatic, unifying leaders appeared to be nowhere in sight.

Yet she was there, and still bore the name Mandela. Often enough she had tried to keep her distance from it. The role of ornamental First Lady of South Africa held no interest for her. She was not Mandela's product, his meek woman. When he was in prison, even when he was out of it, she had plenty of affairs with younger men. But after their divorce she had not dropped the name, that name that kept her in everyone's eye, and all the more so as Nelson aged and faded into silence. Silence and fading were not things he could ever have expected from her. ■



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