

The Economist

India's cow economy

Democracy in Africa: slipping backwards

Bureaucrats, meet algorithms

Revenge fantasies in country music

AUGUST 20TH-26TH 2016

NIGHTMARE ON MAIN STREET



The horror underlying America's
housing market

MICHAEL BUBLÉ





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Politics



Aung San Suu Kyi, Myanmar's foreign minister and de facto leader, visited **China** to discuss border disputes, refugees and a suspended Chinese dam-building project, among other things. China hopes to regain some of the influence it enjoyed when Myanmar was under military rule, but Miss Suu Kyi, an icon of democracy, is wary.

Militants killed two soldiers and a policeman in an ambush in the Indian part of **Kashmir**. Last month the army killed a popular militant who fought against Indian rule, sparking ongoing protests that have claimed more than 60 lives. A curfew has been imposed in what is the worst surge of violence in Kashmir since 2010.

Australia said it would close a controversial detention centre for would-be immigrants that it operates in Papua New Guinea. The government insists none of the 854 inmates will be brought to Australia, but it has not revealed where they will be sent instead.

The number two at the **North Korean** embassy in London defected to South Korea and was placed under government protection. He is the most senior diplomatic defector since 1997.

A court in **Hong Kong** sentenced three prominent student leaders for their activities during Hong Kong's pro-democracy "Umbrella movement" in 2014. One of them, Alex Chow, was given a three-week prison sentence suspended for a year. Two others,

Nathan Law and Joshua Wong, were ordered to do community service.

Worthless money

Police in **Zimbabwe** broke up demonstrations in the capital, Harare, against plans by the central bank to introduce new local banknotes. The country has used mainly American dollars since 2009 after a bout of hyperinflation destroyed the value of its own currency.

Edgar Lungu, the president of **Zambia**, narrowly won re-election in a vote that the opposition said was rigged. Mr Lungu won 50.35% of the vote, just enough to avoid a second-round election.

Russian bombers conducted air strikes against targets in **Syria** from an airbase in Iran in a move that stepped up Russia's support for the regime of Bashar al-Assad. Meanwhile, Amnesty International reported that 18,000 people have died in Syria's prisons at the hands of the regime since the start of the conflict in 2011.

Forces aligned with the internationally recognised government in **Libya** recaptured most of Sirte from Islamic State fighters, narrowing the part of the city still held by jihadists. Their assault has been aided by American air strikes.

This season's colours

Burkinis are "not compatible with French values," according to Manuel Valls, the prime minister of **France**. Mr Valls threw his support behind mayors of three cities, including Cannes, who have banned the full-body swimsuits worn by Muslim women on beaches. In **Germany**,

Angela Merkel's Christian Democratic party wants to ban burqas in public places. The measures follow a wave of terrorist attacks in Germany and France.

In a big government shake-up, **Russia's** president, Vladimir Putin, dismissed his chief of staff, Sergei Ivanov. Mr Ivanov started the job in 2012 and has been one of Mr Putin's closest allies. He will be replaced by his little-known deputy, Anton Vaino. Mr Putin, who also reshuffled Russia's regional governors recently, is preparing the political ground for parliamentary elections in September.

Turkey's president, Recep Tayyip Erdogan, extended his crackdown on Turkish business leaders. Riot police raided the offices of 51 businesses and detained dozens of executives. The government also issued a decree allowing for the conditional release of 38,000 prisoners, which is seemingly designed to make room for the thousands arrested since the failed military coup in July.

Anjem Choudary, **Britain's** most prominent Islamic fundamentalist preacher, was found guilty of calling on Muslims to support Islamic State. Counterterrorism officials have spent two decades trying to secure a conviction against Mr Choudary for radicalising young men and women.

Tear down those walls

Colombia and **Venezuela** began a gradual reopening of their border, which Venezuela had closed a year ago to curb smuggling. Tens of thousands of Venezuelans crossed into Colombia to buy basic goods, which they cannot obtain at home. Price and currency controls imposed by Venezuela's government have led to acute shortages of food and medicine.

Brazilian authorities pulled two American **Olympic** swimmers off an aeroplane in Rio de Janeiro on their way to the United States. They were among four swimmers who

say they were robbed at gunpoint by people disguised as police officers in Rio. Police have cast doubt on their account of the robbery.

The son of Joaquín "El Chapo" Guzmán, the boss of **Mexico's** Sinaloa drug gang, was kidnapped by members of a rival gang, Jalisco New Generation. El Chapo, who escaped twice from Mexican prisons, was rearrested in January. He is appealing against the government's decision to extradite him to the United States.

A campaign under water

Amid a drubbing in the opinion polls, **Donald Trump** again revamped his campaign team, employing Stephen Bannon, who runs Breitbart News, a conservative website, as "chief executive". Paul Manafort, who stays as campaign chairman, has come under scrutiny for his work as a political consultant in Ukraine and ties to a pro-Russia party in the country.



Milwaukee, Wisconsin, was rocked by rioting sparked by the fatal shooting by a black policeman of an armed black man who ran after being pulled over for questioning.

Guccifer 2.0 has struck again. The **hacker** behind the release of embarrassing e-mails from the Democratic National Committee posted the personal phone numbers and addresses of current and former Democratic congressmen online. The Russian government has denied that its security services are behind Guccifer 2.0. ▶▶

Correction: Last week we said that Italy had been spared a fine by the EU for missing a deficit-reduction target when we meant Portugal (Italy is not entirely off the hook yet). Sorry.

Business

The **Bank of England** had little problem buying up government bonds from investors in the second round of its expanded quantitative-easing programme. In the previous round of purchases it had fallen short of obtaining its daily target for the first time since launching the policy in 2009, as investors were unwilling to part with longer-dated gilts.

Taking a back seat, for now

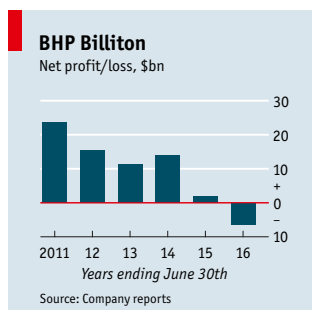
An activist hedge fund bought a 2% stake in **Morgan Stanley**. America's big banks have provided comparatively poor returns for investors since the financial crisis. **ValueAct**, best known for the management changes it wrought at Microsoft, is betting that Morgan Stanley, whose share price is down by a fifth in the past year, is undervalued. It has praised the bank's strategy, but could yet push for board seats.

The biggest trial to date of an auditing firm entered its second week in Miami. The American arm of **PricewaterhouseCoopers** is being sued for \$5.5 billion by the trustee overseeing the bankruptcy of Taylor, Bean & Whitaker, a former mortgage lender. The charge is that it failed to spot a fraudulent scheme that executives had concocted with staff at Colonial Bank, which had employed PwC as its auditor. PwC insists it complied with accounting standards.

Two big suppliers of industrial gases, **Linde** and **Praxair**, confirmed they were in merger talks. If a deal is sealed the combined company will overtake Air Liquide, which has itself recently merged with a rival, to become the biggest in the industry.

Saudi Arabia suggested it would like to restart talks at the end of next month with Russia and other non-OPEC oil producers about freezing output levels in order to lift oil prices. A similar deal fell apart in April because Iran, an OPEC mem-

ber, does not want to curtail production. Meanwhile, **Rosneft**, Russia's state-controlled oil company, reported a hefty drop in profit for the first half of the year because of weaker oil prices.



BHP Billiton reported an annual net loss of \$6.4 billion for the year ending June 30th. This was blamed on charges related to depressed energy markets and to a dam failure at one of its mines in Brazil, which killed 19 people and precipitated a compensation claim from the Brazilian government. Without the charges the Anglo-Australian mining giant made an underlying profit of \$1.2 billion. In 2011 it was reporting profits of more than \$20 billion.

Gawker, a muckraking online publication that was forced into bankruptcy after it incurred crippling legal costs,

was sold to **Univision**, a Spanish-language network. Gawker was sued by Hulk Hogan for publishing a sex tape in which he featured. The jury in the case, which was backed by Peter Thiel, an entrepreneur who has his own issues with Gawker, awarded the celebrity wrestler \$140m in damages. Gawker is Univision's second grab of a media site aimed at millennials, after taking a 40% stake in the **Orion**.

Good for what Ailes you

Rupert Murdoch restructured the role of chief executive at **Fox News**, choosing two veterans at the network to replace Roger Ailes, who has been forced out amid claims of sexual harassment. Jack Abernethy and Bill Shine will lead the network as co-presidents, reporting directly to Mr Murdoch as executive chairman of 21st Century Fox.

Saddled with burgeoning expenses from Obamacare, Aetna became the biggest **health-insurance company** so far to reduce sharply its participation in the state on-line exchanges where people buy cover. The large number of younger and healthy members that would balance the risk for insurers has not materialised, leaving Aetna and others with

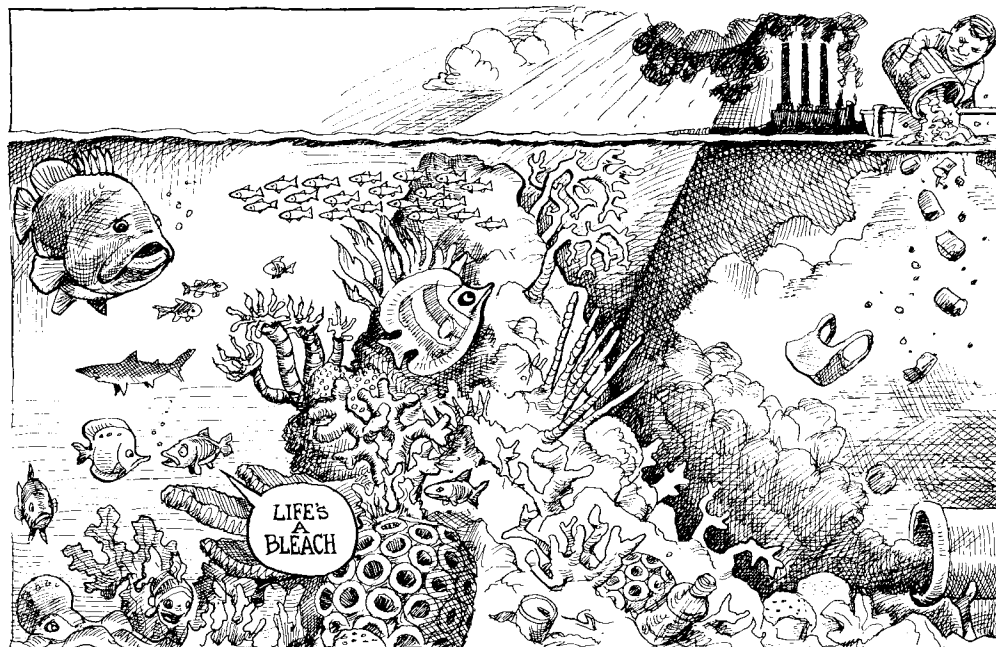
a big pool of older and sicker customers. It wants to merge with Humana, a rival, to cut overheads, but the government is challenging the deal on antitrust grounds.

Uber started legal proceedings against London's transport authority over new rules that, among other things, require private taxi firms to make sure their drivers can speak English and pass a written test. The ride-hailing app thinks its drivers should speak English, but that making them sit a written test is going too far.

Quantum leap

China launched the world's first satellite using **quantum-entanglement technology**, which in principle should ensure that communications cannot be hacked. Still in an experimental phase, quantum technology uses entangled particles of light to transmit messages (at a slower rate than radio signals) over long distances and detects the calling card of anyone trying to tamper with them. China is at the forefront of such research; it hopes to establish a quantum-communications link between Beijing and Shanghai soon.

Other economic data and news can be found on pages 68-69



Nightmare on Main Street

America's housing system was at the centre of the last crisis. It has still not been properly reformed



WHAT are the most dysfunctional parts of the global financial system? China's banking industry, you might say, with its great wall of bad debts and state-sponsored cronyism. Or the euro zone's taped-together single currency, which stretches across 19 different countries, each with its own debts and frail financial firms. Both are worrying. But if sheer size is your yardstick, nothing beats America's housing market.

It is the world's largest asset class, worth \$26 trillion, more than America's stockmarket. The slab of mortgage debt lurking beneath it is the planet's biggest concentration of financial risk. When house prices started tumbling in the summer of 2006, a chain reaction led to a global crisis in 2008-09. A decade on, the presumption is that the mortgage-debt monster has been tamed. In fact, vast, nationalised, unprofitable and undercapitalised, it remains a menace to the world's biggest economy.

Unreal estate

The reason the danger passes almost unnoticed is that, at first sight, the housing market has been improving. Prices in America have crept back up towards their all-time high. As a result, the proportion of households with mortgage debts greater than the value of their property has dropped from a quarter to under a tenth. In addition, while Europe has dithered, America has cleaned up its banks. They have \$1.2 trillion of core capital, more than double the amount in 2007, which acts as a buffer against losses. The banks have cut risk and costs and raised fees in order to grind out decent profits. Bosses and regulators point to chastened lenders and boast that the problem of banks "too big to fail" has been solved. Taxpayers, they say, are safe.

Only in their dreams. That trillion-dollar capital buffer exists to protect banks, but much risk lies elsewhere. That is because, since the 1980s, mortgage lending in America has been mainly the job of the bond market, not the banks as in many other countries. Loans are bundled into bonds, guaranteed and sold around the world. Investors on Wall Street, in Beijing and elsewhere own \$7 trillion-worth.

When those investors panicked in 2008, the government stepped in and took over the bits of the mortgage-guarantee apparatus it did not already control. It was a temporary solution, but political gridlock has made it permanent. Now 65-80% of new mortgages are stamped with a guarantee from Uncle Sam that protects investors from the risk that homeowners default. In the heartland of free enterprise the mortgage system is worthy of Gosplan.

The guarantees mean there is unlikely to be a repeat of the global panic that took place in 2008-09, when investors feared that housing bonds were about to default. Only a madman in the White House would think that America gained from renegeing on its promises. And parts of the system are indeed safer. The baroque derivatives that caused huge damage, such as mortgage-based CDOs, have shrivelled away. At least 10,000 pages of new rules exist to police reckless conduct.

The dangers of a nationalised system are more insidious (see page 15). The size, design and availability of mortgages is now decided by official fiat. Partly because the state charges too little for the guarantees it offers, taxpayers are subsidising housing borrowers to the tune of up to \$150 billion a year, or 1% of GDP. Since the government mortgage machine need not make a profit or have safety buffers, well-run private firms cannot compete, so many banks have withdrawn from making mortgages. If there is another crisis the taxpayer will still have to foot the bill, which could be 2-4% of GDP, not far off the cost of the 2008-09 bank bail-out.

Faced with this gigantic muddle, many politicians and regulators just shrug. The system is mad, but the thicket of rules and vigilant regulators will prevent crazy lending from taking place, they argue. Households have deleveraged, leaving them able to service their debts more efficiently.

That seems wildly optimistic. Because housing is seen as one of the few ways in which less-well-off Americans can accumulate wealth, there is an inbuilt political pressure to loosen lending standards. As a result, housing crises are a recurring feature of American life. Before the subprime debacle in 2008-10, there was the savings-and-loans fiasco in the 1980s. Since the crisis the share of households that own their property has fallen from 69% to 63%. Rather than welcoming this as a sensible shift towards renting, Donald Trump and others have portrayed it as a disgrace. Because global investors are hungry for safe assets, any bonds with an American guarantee are snapped up, adding to the incentive to borrow.

Rather than allow the cycle of remorse and repetition to repeat, better to complete the job of reform and make sure that the mortgage system cannot be used as a political tool to stimulate the economy. The simplest approach would be to give it the same medicine as the regulators administered to the banks. The nationalised mortgage firms that guarantee the bonds—and are thus in hock if the market collapses—should be forced to raise their capital buffers and increase their fees until they make an adequate profit.

The public would have to foot the bill, of around \$400 billion, making explicit the contingent liability for future losses that it already bears. The cost of mortgages, at a record low today, would also rise. But that would eliminate the ongoing hidden subsidy and create a level playing field so that private firms were able to do more mortgage lending. If that bill was too big to swallow, a second-best would be to impose the new rules on new mortgages, leaving the stock of subsidised existing loans to run down over the coming decades.

This House is for doing nothing

It is a massive job, made harder by the fact that so many groups have a stake in a rotten mortgage machine. Homeowners like cheap debt. Litigious hedge funds have their own agenda. The government uses an accounting quirk to book profits from the mortgage system, but does not recognise the potential cost to taxpayers. It is no surprise that Congress has shirked its duty. But until America's mortgage monster is brought to heel, the task of making finance safer will remain only half-done. ■

Political reform stalls

Africa's fragile democracies

Since the end of the cold war, multi-party democracy has flourished. In many countries it is now at risk



SOME call it Africa's second liberation. After freedom from European colonisers came freedom from African despots. Since the end of the cold war multi-party democracy has spread far and wide across the continent, often with impressive and moving intensity. Remember 1994, when South Africans queued for hours to bury apartheid and elect Nelson Mandela as president in their country's first all-race vote.

Many of Africa's worst Big Men were swept away. Mengistu Haile Mariam fled Ethiopia in 1991; Mobutu Sese Seko of Zaire (now the Democratic Republic of Congo) decamped in 1997; a year later Sani Abacha of Nigeria died in office (or, as rumour has it, in the arms of prostitutes). In parts of Africa autocrats are still in power and wars still rage. But most leaders now seek at least a veneer of respectability; elections have become more frequent and more regular; economies have opened up.

And yet, as our reporting makes clear (see page 33), African democracy has stalled—or even gone into reverse. Too often, it is an illiberal sort of pseudo-democracy in which the incumbent demonises the opposition, exploits the power of the state to stack the electoral contest in his favour and removes constraints on his power. That bodes ill for a continent where institutions are still fragile, corruption rife and economies weakened by the fall of commodity prices (one of the fastest-growing regions of the world has become one of the slowest). For Africa to fulfil its promise, the young, dynamic continent must rediscover its zeal for democracy.

Lost in democratic transition

The latest worrying example is Zambia. It was one of the first African countries to undergo a democratic transition, when Kenneth Kaunda stepped down after losing an election in 1991. This week Edgar Lungu was re-elected president with a paper-thin majority in a campaign marred by the harassment of the opposition, the closure of the country's leading independent newspaper, accusations of vote-rigging and street protests.

Especially in central Africa, incumbent leaders are changing or sidestepping constitutional term limits to extend their time in office, often provoking unrest. Kenya, where political tension is rising, faces worries about violence in next year's general election. Freedom House, an American think-tank, reckons that in 1973 only about 30% of sub-Saharan countries were "free" or "partly free". In its latest report the share stands at 59%. That is a big improvement, obviously, but it is down from 71% in 2008. Countries that are "not free" still outnumber those that are. A big chunk in the middle is made up of flawed and fragile states that are only "partly free".

The people of Africa deserve better. For democracy to work, winners must not be greedy, losers must accept defeat and both need trusted institutions to act as arbiters and stabilisers. Yet, in many places, some or all of these elements are missing.

The best way for democracy to flourish would be to expand and strengthen Africa's emerging middle class. Increasingly

connected to the world, Africans know better than anyone the shortcomings of their leaders. Take South Africa. Despite its model constitution, vibrant press and diverse economy, it has been tarnished under its president, Jacob Zuma. He has hollowed out institutions, among them bodies tasked with fighting corruption. And yet South Africa also demonstrates the power of voters. In municipal elections this month, the mighty African National Congress lost control of major cities. For the first time, a plausible alternative party of power is emerging in the liberal, business-friendly Democratic Alliance.

Free societies and free economies reinforce each other. African countries need to diversify away from dependence on exporting commodities, which in turn means liberalising markets and bolstering independent institutions. The rest of the world can help by expanding access to rich-world markets for African goods, particularly in agriculture.

To the victor the spoils

As well as promoting a middle class, diversification mitigates the curse of winner-take-all politics. When a country's wealth is concentrated in natural resources, controlling the state gives a leader access to the cash needed to maintain power. The problem is aggravated by the complex, multi-ethnic form of many African states, whose borders may have been created by colonial whim. Voting patterns often follow tribe or clan rather than class or ideology, so tend to lock in the advantage of one or other group. Losing an election can mean being cut out of the spoils permanently. Dealing with variegated polities requires doses of decentralisation (as in Kenya), federalism (as in Nigeria) and requirements for parties or leaders to demonstrate a degree of cross-country or cross-ethnic support.

Where democracies are fragile, the two-term rule for heads of government is invaluable, as it forces change. Mandela set the example by stepping down after just one term. The two-term rule should be enshrined as a norm by Africa's regional bodies, just as the African Union forbids coups.

Can the outside world do more than provide African countries with markets? China has become Africa's biggest trading partner, supplying aid and investment with few or no strings attached in terms of the rule of law and human rights. But even China, especially now that its own economy has slowed, is not in the business of propping up bankrupt African autocrats.

This means that Western influence, though diminished, remains considerable—for historical reasons, and because many African countries still look to the West for aid, investment and sympathy in international lending bodies. With the end of the commodity boom, growing numbers of countries face a balance-of-payments crisis. Any fresh loans should be conditional on strengthening independent institutions.

But the West has flagged in its efforts to promote democracy, especially in places, such as around the Horn of Africa and the Sahel, where the priority is to defeat jihadists. That is short-sighted. Decades of counter-terrorism teaches that the best bulwarks against extremism are states that are prosperous and just. And that is most likely to come about when rulers serve at the will of their people. ■

Data analytics

The power of learning

Clever computers could transform government



IN “Minority Report”, a policeman, played by Tom Cruise, gleans tip-offs from three psychics and nabs future criminals before they break the law. In the real world, prediction is more difficult. But it may no longer be science fiction, thanks to the growing prognosticatory power of computers. That prospect scares some, but it could be a force for good—if it is done right.

Machine learning, a branch of artificial intelligence, can generate remarkably accurate predictions. It works by crunching vast quantities of data in search of patterns. Take, for example, restaurant hygiene. The system learns which combinations of sometimes obscure factors are most suggestive of a problem. Once trained, it can assess the risk that a restaurant is dirty. The Boston mayor’s office is testing just such an approach, using data from Yelp reviews. This has led to a 25% rise in the number of spot inspections that uncover violations.

Governments are taking notice. A London borough is developing an algorithm to predict who might become homeless. In India Microsoft is helping schools predict which students are at risk of dropping out. Machine-learning predictions can mean government services arrive earlier and are better targeted (see page 55). Researchers behind an algorithm designed to help judges make bail decisions claim it can predict recidivism so effectively that the same number of people could be bailed as are at present by judges, but with 20% less crime. To get a similar reduction in crime across America, they say, would require an extra 20,000 police officers at a cost of \$2.6 billion.

But computer-generated predictions are sometimes controversial. *ProPublica*, an investigative-journalism outfit, claims that a risk assessment in Broward County, Florida, wrongly labelled black people as future criminals nearly twice as often as

it wrongly labelled whites. Citizens complain that decisions which affect them are taken on impenetrable grounds.

These problems are real, but they should not spell the end for machine learning as a policy tool. Instead, the priority should be to establish some ground rules and to win public confidence. The first step is to focus machine learning on applications where people stand to gain—extra help at school, say, rather than extra time in jail.

More can be done to assuage concerns about transparency. Algorithms can be modified to reveal which components of their inputs had the most influence on their decisions, for example. But full transparency has risks. If restaurants know that five-star reviews will guarantee fewer inspections, they may make them up. Even so, regulators should insist that government users know the factors behind predictions, and that these are explained to affected citizens upon request. Above all, algorithms should help people make decisions, not make decisions for them—as can be the case with credit-scoring.

Colour-blind computing

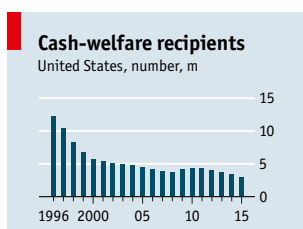
The trickiest issues lie in criminal justice, but here too machine learning could still do much good. The threat of racial bias can be minimised by paying close attention to the distribution of false-positive results while the system is being trained. With or without programs to help them, judges have to make plenty of predictions, for instance about whether a person will commit a crime or flee before trial. They can display lifelong bias (they are, after all, only human). The right machine could make their decisions fairer.

In the end Mr Cruise’s psychics were banished to an isolated island. Machine learning deserves no such fate. But to avoid rejection, it needs to be used in the right situations with the right caveats; and it must remain a tool in human hands. Do that, and the benefits promise to be vast. ■

Welfare reform

A patchy record at 20

Bill Clinton’s welfare reform of 1996 got more people into work, but failed to reduce deep poverty



WHAT duty does a rich society have to its poorest members? The answer in America’s welfare reform of 1996, the 20th anniversary of which falls on August 22nd, was that it has an obligation to help the poorest into work. The new law

changed the lives of millions of Americans. Its effects were also felt beyond America’s borders, as European countries copied “workfare” and middle-income countries like Mexico and Brazil attached strings to cash payments for the poorest.

One aim of the reform was, in President Bill Clinton’s

words, “to end welfare as we know it.” Judged by that standard, it succeeded. Welfare rolls fell by half and then fell by half again. That is both because the reform prompted welfare recipients to seek work, and because cash payments are eventually cut off to those who are not working (see page 25).

This success came at a price. Mr Clinton’s original proposal coupled the work requirement with a guarantee that the government would act as employer of last resort, as it had during the Depression. But that idea was dropped before the reform became law, partly because of cost and partly on ideological grounds, after control of the House of Representatives passed to Republicans in 1994. Scrapping cash welfare, but not replacing it with a job or training guarantee, created strong incentives ►►

▶ for the unskilled to find work—but at the cost of worsening poverty for those who could not get jobs. One study suggests that about 1.5m families now subsist for periods on almost no income at all. Roughly 3m children live in such families, about the same as the population of Iowa or Utah.

In retrospect, part of the problem lies with the way the federal government funded the reform. The annual cash payment provided to states—in the form of a “block grant”—was a fixed nominal sum. Twenty years of inflation have eroded its real value. Worse, this grant does not vary according to the overall health of the economy.

Blockheads

Yet states also deserve blame. With few restrictions on how the money can be spent, the grant was designed to encourage experimentation. However, given the freedom to innovate, too many states have spent their funds on schemes only vaguely related to poverty reduction. Several states spend less than 10% of their grant on cash assistance for the poor. Challenged to re-

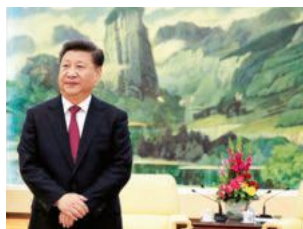
duce the number of people receiving welfare, many states merely shifted people onto disability insurance instead, declared victory and sent the bill to Congress. For those who believe that allowing states to decide for themselves what works best will usually lead to better policies, this has been depressing to watch.

How might the reform be reformed? Most vitally, by concentrating attention and resources on those 1.5m families at the very bottom. Since this is the hardest group to reach, the federal government should use its money to encourage states to find new ways to help them. A useful model is “Race to the Top”, an education initiative from the Obama administration which rewards states that achieve improvements with extra money, in the hope that others will copy their success. There are plenty of policies worth experimenting with: expanding tax credits for those without children, extra government help with finding a job and even public make-work schemes. But this must be experimentation with the right purpose—helping the poorest into work rather than simply cutting welfare rolls. ■

Chinese politics

Beach rules

Rumours in China have become everyone's problem



FEW beach resorts would boast of promoting “core socialist values”. The seaside town of Beidaihe, the nearest sandy getaway to the Chinese capital, Beijing, is not so bashful. Local media laud its barrage of propaganda designed to boost values

such as harmony and friendship.

The fanfare is because Beidaihe is home to a walled, heavily guarded compound where China's rulers usually take a working holiday in early August (see page 23). Yet it is likely that this year, amid the orange-roofed villas, harmony and friendship were in short supply. Communist Party rules require that a cohort of leaders retires at the party congress in the autumn of 2017. There is speculation that the looming changes to China's leadership are causing a struggle that reaches right to the top.

Such reports are everyone's business. Not just because China may be about to witness big changes, but mainly because nobody knows if the rumours are true—since nobody knows what goes on inside China's senior echelons. China is the world's second-biggest economy. It aspires to global leadership. It preaches stability. Yet its government is utterly opaque.

Sea change or see no change? You choose

Opacity makes it hard to understand the thinking behind policy. Show-trials this month of independent lawyers do not augur well. Their defence of human rights was condemned by the courts as “subverting state power”. A recent surge in the number of Chinese coastguard and fishing vessels near islands claimed by Japan in the East China Sea is a sign that the president, Xi Jinping, likes to pander to nationalists. Might he be tempted to biff a pipsqueak neighbour in the South China Sea or succumb to Japan-baiting, always a crowd-pleaser? (See page 22.) And the economy has been looking frailer. Perhaps

Mr Xi's politicking will distract him from healing it.

Without enough context, actions can be interpreted in radically different ways. Since coming to power almost four years ago, Mr Xi has waged a campaign against corruption. On one reading, this is to clean up the system before he undertakes political reform. On another, it is at its heart an old-fashioned purge of his enemies. Similarly, Mr Xi has centralised power, taking jobs and responsibilities that his predecessor delegated to others. Some observers think this shows he is strong; others conclude that he has been forced to act because he feels weak.

Such contradictions are the backdrop to rumours about the forthcoming leadership changes. The only certainty is that the churn will be enormous. By late next year, five of the seven members of the Politburo's Standing Committee will have reached retirement age. One-third of its 18 other members are due to go with them. In the coming months, as the combination of promotion and retirement cascades through official China, leadership posts will be shaken up at every level of the party. Hundreds of thousands of jobs will be affected, down to the level of rural townships and state-owned enterprises.

Mr Xi is the only person all but certain to keep his current titles. He has six more years to serve (indeed some gossip foresees a power-grab that will enable him to stay on even longer). Meanwhile, many of his retiring colleagues owe their position to his predecessors; getting his people into the senior posts they vacate will involve a bitter fight with rival factions. Some analysts speculate about the future of the prime minister, Li Keqiang—who is neither close to Mr Xi, nor seen as having done a good job.

China is not the only country whose government is so secret; in Russia, too, the machinations inside the Kremlin remain deeply mysterious (see page 38). But the sheer importance of China in the global economy makes its opacity more dangerous. The fact that gossip about Mr Xi's bickering in Beidaihe matters so much is a symptom of the world's fragility. ■

Egypt responds

Your articles on Egypt eschewed any objective analysis, focusing instead on spewing insults at Egypt's president ("The ruining of Egypt", "State of denial", August 6th). It is deplorable that such a professional publication resorted to using subjective and politically motivated terms to characterise the economic policies of a country. Although criticism is welcome in the spirit of a constructive and informed manner, *The Economist* did not undertake the effort of providing a thorough analysis of Egypt's economic policy and overlooked the accomplishments achieved across many economic sectors.

Your claim that President Sisi came to power through a "coup" completely disregarded the will of the Egyptian people, who demonstrated in the millions for the ouster of the Muslim Brotherhood's Muhammad Morsi and also voted in the millions for the election of President Sisi in a landslide victory. You accused him of "incompetence" in handling Egypt's economic policies. President Sisi does not micromanage Egypt's institutions and does not create economic policy in a vacuum; he is surrounded by institutions and consultants, an independent central bank and a cabinet of professionals who are in charge of decision-making in this area. The government is accountable to parliament and to Egypt's people, who have the final say as to what they consider sound policy and what constitutes "incompetence".

You claimed that Egypt's economy is sustained only through cash injections from the Gulf and military aid from the United States. It seems *The Economist* failed to notice the decline of US aid to Egypt in recent years. Mindful of the difficulties lying ahead, and the structural challenges that Egypt is wrestling with, any credible analysis would recall that the country has passed through an acute crisis since January 2011, which is still inflicting a high financial cost.

Creating a new economic model takes time. The economic package recently achieved with the IMF, and so sarcastically undermined by *The Economist*, is itself an indication that Egypt's economy is moving on the right track and can be considered as a clean bill of health for Egypt's economic outlook.

AHMED ABU ZEID
Spokesman
Ministry of Foreign Affairs
Cairo

The case for the defence

There are some important points to be made about the crisis facing the Brazilian criminal justice system ("Defendant-in-chief", August 6th). Many in Brazil, including Lula, its former president, are critical of federal prosecutors who leak their confidential but half-baked speculations to the media and of federal judges who unlawfully issue bench warrants and illegally disclose telephone intercepts in order to embarrass defendants. They also order indefinite pre-trial detention (ie, the refusal of bail) of "Car Wash" suspects to make them confess unreliably in order to get out of prison. It is against international norms when an oversuspicious investigating judge automatically becomes the trial judge, sitting without assessors or a jury. The testimony from Delcídio do Amaral, a former senator whom you referred to, was part of a plea-bargain agreement with the Federal Prosecutor's Office, allowing him to leave prison after his confession had incriminated others.

Lula is the leading candidate in every 2018 presidential poll, and the latest accusation against him demonstrates that this is a persecution and not a prosecution. Its objective seems to be to remove him from running for president. Lula has welcomed the investigation into corruption and has co-operated fully with it. It will be effective only if it is conducted fairly.

CRISTIANO ZANIN MARTINS
Lawyer for Luiz Inácio Lula da Silva
São Paulo

Sustaining sustainability

When I told *The Economist* that "sustainability is about being a little less awful" an onslaught of e-mails challenged my statement, so I feel obliged to explain why I believe it to be true ("In the thicket of it", July 30th). The Earth has lost half its wildlife in the past 40 years, society is increasingly unequal, and the last time there was this much carbon in the atmosphere humans didn't exist. The apparently continuous and accelerating decline in the planet's health is happening despite business and investors appearing to take social and environmental responsibility more seriously. To me, this is indicative of today's approach to sustainability which is, as I said, just about being slightly less awful.

Business must acknowledge this failure, regroup and seek a path towards true, science-based sustainability. Only then can we talk about sustainability being good and not just being less bad.

CHRISTOPHER DAVIS
International director of corporate responsibility
Body Shop International
Littlehampton, West Sussex

The effects of methane

When you stated that methane is "25 times as potent" a cause of global warming as carbon dioxide, you perpetuated the myth that there is a single conversion factor that translates the climate effect of methane into what would be caused by an "equivalent" amount of carbon dioxide ("Tunnel vision", July 23rd). The number you quoted is based on a measure called "global warming potential". This measure exaggerates the importance of methane because it fails to properly reflect the importance of the short (12 year) lifetime of methane in the atmosphere compared with carbon dioxide, which continues to transform the climate for centuries.

A simple financial analogy is useful. If you opened a bank account for storing your methane emissions, it would be as if

the account paid a negative interest rate of -8.3% annually (a concept which may become all too familiar in the real world of banking before long). The balance in the account represents the warming effect of the methane emitted.

If you deposited \$1,000-worth of methane today, in 50 years your account would be worth only \$16. A big pulse of methane released today would have virtually no effect on the temperature around the time we hope global warming will be peaking. If you were to deposit a steady \$100 of methane a year your account would be valued at \$1,205 in a few decades but would then stop growing. The only way to increase the amount of warming from methane is to increase the annual emissions rate. Not so with carbon dioxide, which acts more like a bank account with a zero interest rate (rather like a real bank account these days). A fixed emission-rate of carbon dioxide accumulates in the atmosphere, leading to warming that grows without bounds over time.

In fact, if warming causes the land ecosystems to start releasing rather than storing carbon, it would be as if your bank account had a positive interest rate. Not a bad thing for a real bank account, but bad news for climate if it is carbon dioxide you are banking.

RAYMOND PIERREHUMBERT
Professor of physics
University of Oxford

Critical rationalism

Abenomics is an apt analogy for much of today's politics and why voters worldwide are so dissatisfied ("Overhyped, underappreciated", July 30th). Perhaps Karl Popper expressed it best: "Those who promise us paradise on earth never produced anything but a hell."

ROB HINDHAUGH
London ■

Letters are welcome and should be addressed to the Editor at *The Economist*, 25 St James's Street, London SW1A 1HG
E-mail: letters@economist.com
More letters are available at: Economist.com/letters



MUSÉE INTERNATIONAL
DE LA RÉFORME

GENERAL MANAGER

International Museum of the Reformation

Created in 2005, the International Museum of the Reformation explores the living history of Geneva and the Reformation across the world. The museum is a private foundation. It seeks a senior executive to manage the museum as of the 1st of January 2017.

Main competencies required: promotion of the museum, locally and internationally; management of the institution and its staff; creativity in museology; network development in the circles concerned by the museum; fundraising capacity; fluency in French and English, and hopefully a third language.

Education and experience: university degree in history, Christian theology or universal culture; subsidiary education in business management - alternatively successful management experience of a company or institution for over five years, including staff management; positive experience in working for a museum or similar institution; successful fundraising experience.

Send your application by September 5th 2016 to Guillaume de Rham, member of the board, International Museum of the Reformation: derham@gdrtrust.com
www.musee-reforme.ch

Public-Private Partnership Specialists

Office of Public-Private Partnership

The Office of Public-Private Partnership (OPPP) was established to enhance the role of the Asian Development Bank (ADB) in supporting and enabling governments of its developing members to secure greater private investment and generate economic growth in the region. OPPP provides transaction advisory services (TAS) to developing member clients in order to develop bankable PPP projects. It also coordinates and supports PPP-related activities in ADB.

OPPP seeks qualified professionals to fill multiple vacancies for Public-Private Partnership Specialist positions to strengthen OPPP's operations, and work mainly in relation to TAS for the public sector. As a team member, the successful candidates will:

- support formulation and implementation of policies, strategies, transactions and programs of OPPP to expedite ADB's PPP and TAS operations in developing member countries (DMCs);
- support enhancement of external and internal relations, stakeholders' coordination, and knowledge management activities to accommodate PPP-related issues and challenges with innovative solutions; and
- support the origination, development, design, implementation, processing, negotiation, contracting, delivery and administration of individual PPP transactions and programs.

We seek candidates who have:

- at least 6-8 years of relevant professional experience in developing infrastructure projects including PPP transactions;
- PPP-related working experiences in major project finance banks; and
- master's degree, or equivalent in relevant fields.

To apply, visit www.adb.org/careers/160670.
Deadline for applications is on **26 August 2016**.

We encourage diversity in our workplace and support an inclusive work environment. Women are especially encouraged to apply.

ASIAN DEVELOPMENT BANK



Ministero
dei beni e delle
attività culturali
e del turismo

POSITION DESCRIPTION

DIRECTOR OF ITALIAN MUSEUM

Background

On August 2, 2016, the Italian Ministry of Cultural Heritage and Activities and Tourism (MiBACT) issued an **international call for applications** for the post of **Director** for the museum mentioned below:

Museo Nazionale Romano (Roma)

The Position

The new Director will provide **strategic leadership and management expertise** for the abovementioned museum and will lead the Administrative Board and the Scientific Committee of the museum.

The Director will supervise **(i)** the museum's managerial, organizational and financial planning activities; **(ii)** all cultural programs of the museum; **(iii)** all details of the museum's relations with visitors, local communities, national and international stakeholders, as well as national and international peer institutions.

Application guidelines and further details are available at the following link:

www.beniculturali.it/museitaliani

Deadline: **15 September 2016**



Comradely capitalism

How America accidentally nationalised its mortgage market

THE most dramatic moment of the global financial crisis of the late 2000s was the collapse of Lehman Brothers on September 15th 2008. The point at which the drama became inevitable, though—the crossroads on the way to Thebes—came two years earlier, in the summer of 2006. That August house prices in America, which had been rising almost without interruption for as long as anyone could remember, began to fall—a fall that went on for 31 months (see chart 1). In early 2007 mortgage defaults spiked and a mounting panic gripped Wall Street. The money markets dried up as banks became too scared to lend to each other. The lenders with the largest losses and smallest capital buffers began to topple. Thebes fell to the plague.

Ten years on, and America's banks have been remade to withstand such disasters. When Jamie Dimon, the boss of JPMorgan Chase, talks of its “fortress” balance-sheet, he has a point. The banking industry's core capital is now \$1.2 trillion, more than double its pre-crisis level. In order to grind out enough profits to satisfy their shareholders, banks have slashed costs and increased prices; their return on equity has edged back towards 10%. America's lenders are still widely despised, but they are now in reasonable shape: highly capitalised, fairly profitable, in private hands and subject to market discipline.

The trouble is that, in America, the banks are only part of the picture. There is a huge, parallel structure that exists outside the banks and which creates almost as much credit as they do: the mortgage system. In stark contrast to the banks it is very badly capitalised (see chart 2 on next page). It is also barely profitable, largely nationalised and subject to administrative control.

That matters. At \$26 trillion America's housing stock is the largest asset class in the world, worth a little more than the country's stockmarket. America's mortgage-finance system, with \$11 trillion of debt, is probably the biggest concentration of financial risk to be found anywhere. It is still

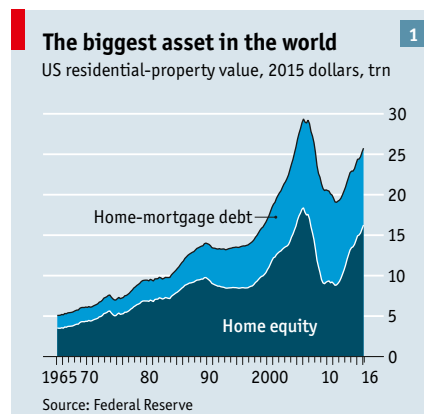
closely linked to the global financial system, with \$1 trillion of mortgage debt owned abroad. It has not gone unreformed in the ten years since it set off the most severe recession of modern times. But it remains fundamentally flawed.

The strange path the mortgage machine has taken has implications for ordinary people, as well as for financiers. The supply of mortgages in America has an air of distinctly socialist command-and-control about it. Some 65-80% of all new home loans are repackaged by organs of the state. The structure of these loans, their volume and the risks they entail are controlled not by markets but by administrative fiat.

No one is keen to make transparent the subsidies and dangers involved, the risks of which are in effect borne by taxpayers. But an analysis by *The Economist* suggests that the subsidy for housing debt is running at about \$150 billion a year, or roughly 1% of GDP. A crisis as bad as last time would cost taxpayers 2-4% of GDP, not far off the bail-out of the banks in 2008-12.

America's housing system has always been unusual. In most countries banks minimise their risk by offering short-term or floating-rate mortgages. American borrowers get a better deal: cheap 30-year fixed-rate mortgages that can be repaid early free. These generous terms are made possible by the support of a housing-finance machine that funnels cheap credit to homeowners and, in doing so, takes on the risk, thereby shielding both the borrowers and the investors.

For decades lightly regulated thrifts did most of this lending. But in the 1980s they blew up due to a mixture of risky lending, inadequate capital and bad bets on interest rates. Between 1986 and 1996, over 1,000 ▶▶



thrifts were bailed out at a cost to taxpayers of about 3% of one year's GDP.

The vacuum left by the thrifts was filled by the new technology of securitisation, which seemed, for a while, to make the risk vanish altogether. There are several steps. Mortgages are originated, or agreed, with millions of homeowners. The loans thus underwritten are then spruced up to look more attractive or realise some profits; for example sometimes insurance may be taken out against defaults, or the rights to "service" loans (collect interest payments) sold off. Next the loans are guaranteed and securitised. The bundles of bonds thus produced are then flogged to investors. After all this, derivatives contracts are created whose value is linked to these bonds.

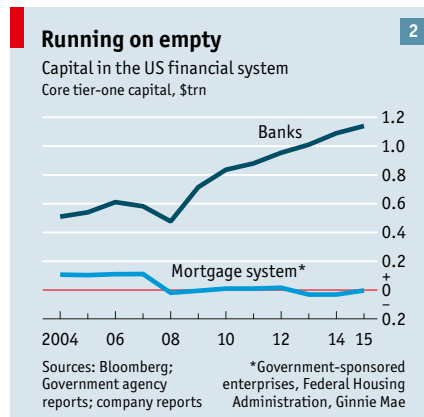
The machine blew up in 2006-10 for a host of reasons, the most important of which was wild and sometimes fraudulent underwriting. There was a run on mortgage bonds and on the firms that issued or owned them. There have since been three big changes.

The trouble with Gosplan

First, banks have partially withdrawn from the mortgage game after facing swathes of new rules and \$110 billion of fines for misconduct. They still own mortgage-backed bonds and they still make home loans to wealthy folk, which they keep on their balance-sheets. But with the exception of Wells Fargo they are less keen on writing riskier loans in their branches and feeding them to securitisers. New, independent firms like Quicken Loans and Freedom Mortgage have filled the gap. They originate roughly half of all new mortgages.

The second big change is that the government's improvised rescue of the system in 2008-12 has left it with a much bigger role (see chart 3). It is the majority shareholder in Freddie Mac and Fannie Mae, mortgage companies that were previously privately run (though with an implicit guarantee). They are now in "conservatorship", a type of notionally temporary nationalisation that shows few signs of ending. Other private securitisers have withdrawn or gone bust. This means that the securitisation of loans, most of which used to be in the private sector, is now almost entirely state-run. Along with Fannie and Freddie, the other main players are the Veterans Affairs department (VA), the Federal Housing Administration (FHA) and Ginnie Mae, which helps the FHA and VA package loans into bonds and sell them.

In all, these five bodies own or have guaranteed \$6.4 trillion of loans: a book of exposure three times larger than Mr Dimon's balance-sheet. The FHA, an agency tasked with promoting home ownership, has tripled its guarantee book since the crisis. The mortgage bonds into which these entities bundle their loans are perceived by investors to be almost as safe as Treasuries;



though they charge a fee for this protection, it is far lower than that which private companies that do not benefit from the backing of the state would have to charge if they were taking on the same risks. Thus they face no competition.

The last big change is the withering of the derivatives superstructure. The baroque instruments of the 2003-07 bubble, such as CDOs, CLOs and swaps on the ABX Index, have been stripped back after huge losses: trading activity has fallen by 90%. The mortgage machine is safer as a result. But even shorn of this amplifying mechanism, the machine is still connected to the broader world of global finance. American banks own 23% of all government mortgage bonds.

American officials who served during the crisis tell war stories about trying to persuade their counterparts in China and elsewhere not to dump all their mortgage bonds. As a result of their efforts foreign central banks, private banks and financial firms still hold 15% of all mortgage bonds; Barclays' mortgage-bond holdings are worth 22% of the bank's core capital. The rest are mainly owned by domestic investment funds and the Federal Reserve which, due to its asset-purchasing scheme, holds \$1.8 trillion of government mortgage bonds, or 27% of the total.

This new credit machine has plenty of flaws. Almost everyone in the business worries that regulation of the new mortgage originators which funnel loans to the government-guarantee firms is too loose, for example; supervisors are looking at tightening up. But the biggest issue is the danger that sits with the state-run securitisers that magically transform risky mortgages into risk-free bonds. With a dearth of reliable market signals and a diminished profit motive, the risk appetite of the mortgage system is now entirely controlled by administrative fiat. There are at least 10,000 relevant pages of federal laws, regulatory orders and rule books.

These are meant to prevent another blow-up by screening out undesirable loans before securitisation. They stipulate the profile of the borrower (a debt-servic-

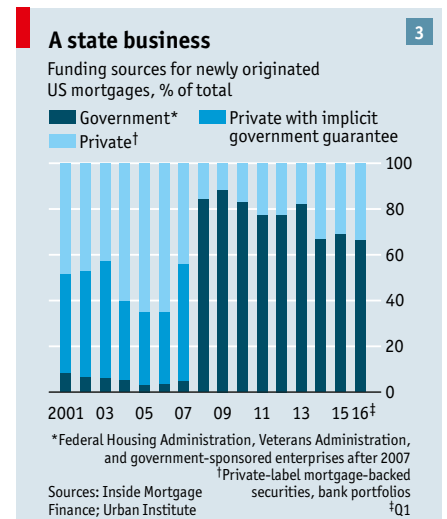
ing-to-income ratio of more than 43% is a poor lookout) and, indeed, the dimensions of the house (if prefabricated, it must be at least 12 feet, or 3.6 metres, across). They define the documentation required. They specify the design of mortgages: balloon payments (whereby repayment of the principal is pushed back to the end of the loan period) are a no-no, as are some fee structures. They impose rules on counterparties: mortgage insurers, for example, must have over \$400m of assets at hand. Although there are no government quotas for the volume of new loans there are soft targets.

Like water through cracks, risk still finds a way in. Federal law is silent on loan-to-value limits for borrowers, so this is one area where risky lending is booming, with a fifth of all loans granted since 2012 having LTV ratios of 95%, meaning homeowners are underwater if house prices fall by more than 5%. Most of these sit with the FHA. One big bank admits that it is selling at face value high-risk loans to the government that it expects will make a 10-15% loss due to homeowners defaulting.

My indecision is final

And all such rules are vulnerable to political pressure. Home-ownership rates have dropped to about 63% from a peak of 69% (see chart 4 on next page); many housing experts talk of an affordability crisis among the young and minorities. With Congress gridlocked and likely to remain so after the election, the mortgage machine is a largely off-balance-sheet way to funnel money to ordinary Americans, most of whom still want to own homes. Just as underwriting standards in the private sector gradually loosened over time before 2007, there are gentle signs of loosening evident today, too—rules on down-payments, for example, have been relaxed. Not yet frightening; but it never is, to begin with.

All the new rules are silent on the mortgage system's purpose. One potential justi- ▶▶



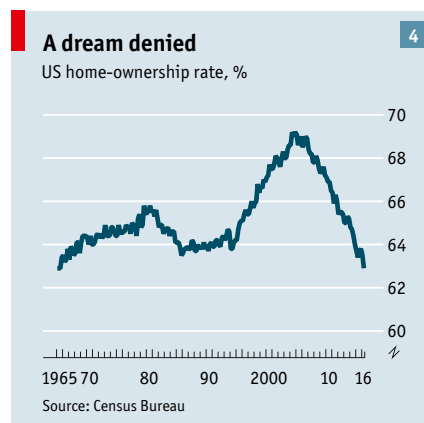
fication is simply to facilitate a liquid mortgage-bond market. By acting as a common guarantor, the state can ensure that mortgage bonds are homogenous and easy to trade (\$220 billion-worth change hands every day). Another is to subsidise home loans for a broader political or social purpose. In the absence of a grand design or clear political direction, the mortgage machine has assumed both roles.

One response to the new mortgage system is to leave it be. After all, the previous approach, in which private securitisers played a bigger role, was a disaster. Household debt is relatively restrained at the moment; measured by debt-service-to-income ratios it is 10% below the long-term average. Based on the post-war experience, housing-debt crises come only every 25 years or so; it is not yet time to worry about another one.

Leaving aside its fundamental irresponsibility, a course of inaction carries hard-to-quantify costs in the form of subsidies for borrowers. The securitisation industry believes there are reasons for not holding it to the same standard as the banks. But imagine that it were: that it had to carry the same level of capital as banks do and to make an adequate (10%) post-tax profit on that capital. The higher costs entailed give a sense of the scale of the current distortion. On this basis *The Economist* calculates the subsidy on mortgages to be running at \$150 billion a year, 1% of GDP. (This estimate includes the impact of the Fed's bond-buying on interest rates and the cost of tax breaks on mortgage-interest payments.)

And the status quo also means that, in the event of another crash, taxpayers would be landed with a big bill. How big? Consider a spectrum of scenarios. At one end, the cumulative mortgage-system losses are 10%, the same as the actual losses in 2006-14 according to estimates by Mark Zandi of Moody's Analytics. At the other, cumulative losses on all mortgages are assumed to be 4.4%—the level the Fed used in its stress tests of the banks in May 2016. Adjusting for the pockets of capital in the system, and the profits made by some parts of it, both of which can help absorb losses, this means that the total loss for taxpayers if another crisis strikes would be \$300 billion-600 billion, or 2-4% of GDP. Most of this would fall on Fannie, Freddie and the FHA, which would need to draw money from the government to pay out on the insurance claims made by investors.

Such a bill would hardly bankrupt America. But it would enrage it again. It is similar in size to the \$700 billion TARP bailout that Congress reluctantly passed in 2008. Lawmakers might be unwilling to pay for a repeat performance, especially with some of the benefit going abroad—and the mere possibility of their not stumping up would set the world's financial markets a-jitter. If Congress signed off,



a populist president might still be able to scupper the deal; the credit line through which Fannie and Freddie would be paid is governed by a contract between the Treasury and their regulator that comes under the executive. The catastrophic impact that a mortgage-bond default would have on the markets would almost certainly serve to ensure that the politicians did, indeed, act. But the capacity of American politics to disregard what used to seem almost certain is on the up these days.

How to waste a crisis

There is an alternative approach: force the mortgage machine to follow the same path the banks have. It would have to recapitalise and raise its fees enough to offer an acceptable profit on that capital. The subsidy would fall. Administrative controls could be eased. The risk of loss could be passed into private hands, either by privatising the mortgage-securitisation firms or by allowing them to shrink, with private banks and insurers now able to compete on a level playing field. Using the same approach as the Fed's bank-stress tests, the system would need about \$400 billion of capital. The cost of American mortgages would rise by about one percentage point.

There are various proposals for reducing the government's role in the system;

the White House floated several in 2013, and there is a range of reform bills floating around Congress, the best of which is known as Corker-Warner. But no one is in a hurry to pass reforms that would result in higher mortgage rates at a time when the middle class is struggling. A lot of policy discussions obfuscate the basic issues, assuming either that mortgages are now much safer than they were in the past or that the mortgage-guarantee firms can be safer than the banks even though not subject to the same stringent capital rules.

The government has pragmatic reasons to procrastinate. The coupons it gets on money loaned to Fannie and Freddie count as income but their debt doesn't end up on its books; that provides a nice fillip for the accounts. The status quo also lets it avoid confronting a noisy group of hedge funds taking legal action over the treatment of Fannie's and Freddie's shareholders in the bail-out. If the government were to recapitalise or restructure the mortgage firms, it would probably need to reach a settlement with the hedge funds or defeat them.

To be fair, some parts of the mortgage system are trying to find ways to push risks on to the private sector. Fannie and Freddie have written new "risk sharing" deals that take a slice of the risk on about \$850 billion of bonds, and package it into securities that are sold to investors or swap contracts with reinsurance firms. But even if these measures did not look a little too like some of the opaque instruments that blew up in 2007-08 to be entirely comforting, they would be no substitute for proper reform.

So the trigger for the most recent crisis remains the part of the global financial system that has been least reformed. Mortgages are still the place where many of America's deepest problems meet—an addiction to debt, the use of hidden subsidies to mitigate inequality, and political gridlock. In the land of the free, where home ownership is a national dream, borrowing to buy a house is a government business for which taxpayers are on the hook. ■



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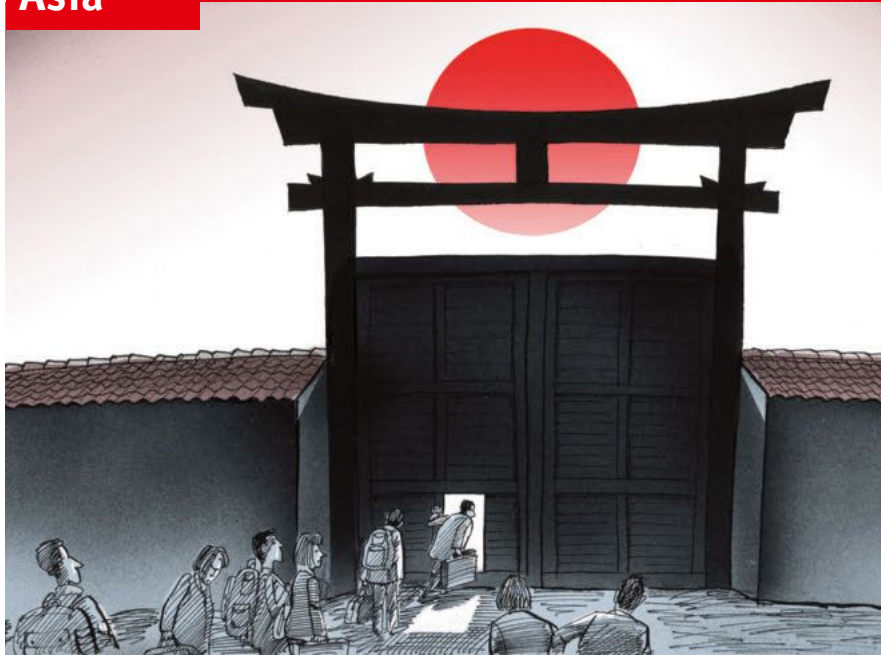
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Immigration to Japan

A narrow passage

SHIN-OKUBO

Begrudgingly, Japan is beginning to accept that it needs more immigrants

IN THE Shin-Okubo neighbourhood of Tokyo, smells of Korean food and snatches of the language waft in the air. A supermarket selling kimchi sits next to an Indian-run kebab shop—the latter complete with leaflets promoting Islam, the religion of the Calcutta-born owner. A local estate agent advertises staff that speak Chinese, Vietnamese and Thai alongside the floor plans for tiny Tokyo apartments.

Shin-Okubo is a rarity in Japan. The country has remained relatively closed to foreigners, who make up only 2% of the population of 127m, compared with an average of 12% in the OECD, a club of mostly rich countries. Yet Japan is especially short of workers. Fully 83% of firms have trouble hiring, according to Manpower, a recruiting firm, the highest of any country it surveys. And the squeeze is likely to become much worse. The population is projected to drop to 87m by 2060, and the working-age population (15-64) from 78m to 44m, because of ageing. The Keidanren, the Japan Business Federation, and prominent business leaders such as Takeshi Niinami, the head of Suntory, a drinks company, have long called for more immigration.

Shinzo Abe, Japan's prime minister, says he would prefer to raise the relatively low proportion of Japanese women who work, and to keep all Japanese working later in life, before admitting droves of foreigners. But his government has nonethe-

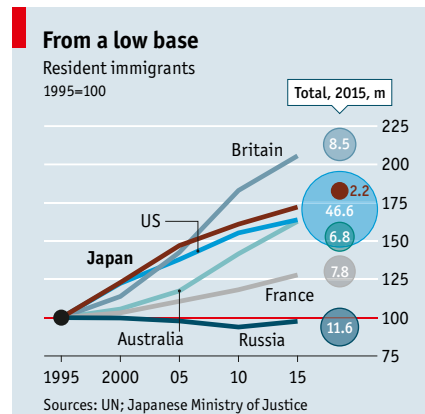
less taken a few small steps to boost immigration. It has quietly eased Japan's near-ban on visas for low-skilled workers, with agreements to allow foreign maids to work in special economic zones. It is now talking about relaxing requirements for Filipino carers. The authorities have also made student and trainee visas easier to obtain, and turned a blind eye to those who exploit them to recruit staff for jobs that involve very little study or training at *kombinis* (the ubiquitous corner stores, often staffed by Chinese) or in forestry, fishing, farming and food-processing. It may extend trainee visas from three years to five. Mr Abe has also boasted that he will reduce the time non-permanent residents

need to live in Japan before becoming eligible for permanent residence to the "shortest in the world"—probably to less than three years (far from the shortest) from the current five.

All this is starting to make a difference. Last year the number of foreign permanent residents reached a record 2.23m, a 72% increase on two decades ago—and the number of people on non-permanent visas is also rising. But the goal seems to be a sur-reptitious increase in the number of temporary workers and a more accommodating system for skilled workers, not the settlement of foreigners on a grand scale. Only tiny numbers of foreigners become Japanese citizens (see box on next page) and even fewer are granted asylum: only 27 in 2015, a mere 0.4% of applicants.

A few voices advocate opening the door more widely. Hidenori Sakanaka, a former immigration chief who now heads the Japan Immigration Policy Institute, a think-tank, reckons Japan needs 10m migrants in the next 50 years. At the very least the country needs a clear policy on bringing in menial foreign workers, rather than ignoring the abuse of student and trainee visas, says Shigeru Ishiba, a prominent lawmaker in the Liberal Democratic Party who is expected to challenge Mr Abe for the party's leadership in 2018. The government needs to lay out the specifics of how many people it wants to attract and in what time-frame, he says.

Public opinion seems to be gradually shifting. The authors of a recent poll by WinGallup were surprised that more Japanese favoured immigration than were against it—22% to 15%—although a whopping 63% said they were not sure. A warm embrace for lots of foreigners is unlikely. Japan's nationalists do not have the power of Europe's broad-based anti-immigrant



► movements. But the country prides itself on its homogeneity, and although the media no longer reflexively blame foreigners for all social ills, discrimination is still rife. Many landlords will not accept foreign tenants, ostensibly, says Li Hong Kun, a Chinese estate agent in Shin-Okubo, because they do not adhere to rules such as being quiet after 10pm and sorting the rubbish properly (a complex task). Others suggest terrorist attacks in Europe as a reason to keep Japan for the Japanese. Brazilians of Japanese origin, who were encouraged to migrate to Japan in the 1980s, have never really been accepted despite their Japanese ethnicity, notes Tatsuya Mizuno, the author of a book on the community.

Even Mr Sakanaka and Mr Ishiba think all migrants must learn the language and local customs, such as showing respect for the imperial family. But the economic case for a bigger influx is undeniable. For those, like Mr Abe, who speak of national revival, there are few alternatives. ■

Japanese citizenship

Inspectors knock

TOKYO

Getting a passport is not easy

TO BECOME a Japanese citizen, a foreigner must display “good conduct”, among other things. The rules do not specify what that means, and make no mention of living *wafu* (Japanese-style). But for one candidate, at least, it involved officials looking in his fridge and inspecting his children’s toys to see if he was Japanese enough (he was).

Bureaucratic discretion is the main reason why it is hard to get Japanese nationality. The ministry of justice, which handles the process, says officials may visit applicants’ homes and talk to their neighbours. It does not help that wannabe Watanabes must renounce any other passport: Japan does not allow dual nationality. And applicants must have lived in Japan for a minimum of ten years. Other requirements—speaking Japanese, holding sufficient assets—are similar to those in many countries, but still daunting.

Small wonder that so few people naturalise. Last year the government received just 12,442 applications, which take 18 months or so to process; it granted citizenship to 9,469 people, compared with almost 730,000 in America. But that at least suggests most applicants are successful. Koreans and Chinese make up the vast bulk of them. New citizens are no longer obliged to adopt a Japanese-sounding name. And there is no fee to apply, in contrast with a charge of \$595 in America and £1,236 (\$1,613) in Britain.

Protecting India’s cows

Cowboys and Indians

MUMBAI

An udderworldly debate

CLOSE your eyes and you could be in a farmyard: a docile heifer slurps a grassy lunch off your hand, mooing appreciatively. Now open your eyes to the relentless bustle of a huge city: the cow is tied to a lamp-post, cars swerve to avoid it and its keeper demands a few rupees for providing it with the snack. Across Mumbai, an estimated 4,000 such cow-handlers, most of them women, offer passing Hindus a convenient way to please the gods. In a country where three-quarters of citizens hold cows to be sacred, they form part of an unusual bovine economy mixing business, politics and religion.

India is home to some 200m cows and more than 100m water buffaloes. The distinction is crucial. India now rivals Brazil and Australia as the world’s biggest exporter of beef, earning around \$4 billion a year. But the “beef” is nearly all buffalo; most of India’s 29 states now ban or restrict the slaughter of cows. With such strictures multiplying under the government of Narendra Modi, a Hindu nationalist, entrepreneurs have sought new ways to profit.

One promising line of business has been to become a *gau rakshak*, or cow protector. Some of these run charitably funded retirement homes for ageing cows, including rural, ranch-style facilities advertised on television. Other *rakshaks* have proven more concerned with punishing anyone suspected of harming cows or trading in their meat. Such vigilantes have gained notoriety in recent years as attacks on meat-eating Muslims or on lower-caste Hindus working in the leather trade have led to several deaths. A mob assaulted a group of Dalits (the castes formerly known as untouchables) last month in Mr Modi’s home state of Gujarat, thinking they had killed a cow. In fact they were skinning a carcass they had bought legitimately; Dalits traditionally dispose of dead cows.

More commonly, India’s less scrupulous cowboys simply demand protection money from people who handle cattle. An investigation by the *Indian Express*, a newspaper, found that cattle breeders in the northern state of Punjab were forced to pay some 200 rupees (\$3) a cow to ensure that trucks transporting livestock could proceed unmolested. Under pressure from the *rakshaks*, the state government had also made it harder to get permits to transport cattle.

Earlier this month Mr Modi broke a long silence on the issue. Risking the ire of



Milking it

his Hindu-nationalist base, the prime minister blasted “fake” *gau rakshaks* for giving a good cause a bad name. If they really cared about cows, he said, they should stop attacking other people and instead stop cows that munch on rubbish from ingesting plastic, a leading cause of death.

In any case, vigilantism and the beef trade generate minuscule incomes compared with India’s \$60 billion dairy industry. The country’s cows and buffaloes produce a fifth of all the world’s milk. As Indian incomes rise and consumers opt for costlier packaged brands, sales of dairy products are rising by 15% a year. But although a milk cow can generate anywhere from 400 to 1,100 rupees a day, this still leaves the question of what to do with male animals, as well as old and unproductive females.

Not all can be taken in by organised shelters. This makes the urban cow-petting business a useful retirement strategy. A good patch (outside a temple, say) can generate around 500 rupees a day from passers-by. Feed costs just 20 rupees a day, says Raju Gaaywala, a third-generation cow attendant whose surname, not coincidentally, translates as cow-handler.

He inherited his patch in Mulund, a northern suburb of Mumbai, when his father passed away in 1998. His latest cow, Lakshmi, cost him 4,000 rupees around three years ago and generates around 40 ►►

The Ismailis of Tajikistan

A hopeful Aga saga

In the poorest bit of the former Soviet Union they look to a leader of yore

THE region of Badakhshan, which covers most of the eastern half of Tajikistan but hosts barely 3% of its population, is probably the poorest bit of the former Soviet Union's poorest country. Scraping a living at the rugged western end of the Pamir mountains, its people feel remote from the government in Dushanbe. Their biggest town, Khorog, where anti-government violence has broken out twice in the past four years, is slap on the border with turbulent Afghanistan to the south. Warlords and drug-traffickers, often one and the same, frequently hold sway on both sides of the frontier. The inhabitants, most of whom follow the Ismaili version of Shia Islam, were generally on the losing side of the vicious civil war that ravaged Tajikistan from 1992 to 1997.

Their biggest benefactor by far is the Ismailis' hereditary leader, Prince Karim Aga Khan. A Swiss-born British citizen, he is resident mainly in France; one of his horses recently won the Epsom Derby, one of the grandest British races of the year; he also skied for Iran in the 1964 Winter Olympics.

His most ambitious educational project in Badakhshan is a branch of the nascent University of Central Asia, created under the auspices of the Aga Khan Development Network (AKDN), which is said to employ 80,000 people in the 30-odd countries where the Ismailis' 15m-strong diaspora resides. Along with campuses in Kazakhstan and Kyrgyzstan, its remotest academic outpost is in Khorog. The AKDN does an array of other good works in eastern Tajikistan.

The authorities in Dushanbe have sometimes viewed the munificent 79-year-old Aga Khan with suspicion, as he is so much more popular than they are in the fastnesses of the Pamir. But he goes out of his way to stay on polite terms with them and to keep out of formal politics, paying for charitable works in the capital and elsewhere, and investing in telecoms, energy and tourism. The Serena Hotel, part of a worldwide chain his family owns, is the best hotel in Dushanbe. The Ismaili faith puts much emphasis on pluralism, education and social justice—things that Tajikistan still badly lacks.



Khorog at rush hour

► times that every year, enough to send his three children to English-language schools and, he hopes, to set them up in a different form of entrepreneurship.

The handlers fear their days may be limited. A nationwide cleanliness drive has targeted urban cow-handlers, who are in theory liable for fines of 10,000 rupees. In practice the resurgent Hindu sentiment under Mr Modi should help leave the cattle on the streets. It may kick up other oppor-

tunities, too. Shankar Lal, an ideological ally of the prime minister's, in an interview with the *Indian Express* extolled the many health merits of cow dung. Spreading a bit on the back of a smartphone, as he does every week, apparently protects against harmful radiation. Usefully for Indian farmers, only local cows can be used, not Western breeds such as Holsteins or Jerseys, he warns: "Their dung and milk are nothing but poison." ■

Australia and New Zealand

Transported

SYDNEY

New Zealanders are the unexpected victims of tighter rules for immigrants

"NO TWO nations could be closer," insists Malcolm Turnbull, Australia's prime minister, of his country's ties with New Zealand. Gary Howes is not so sure. Like many young New Zealanders, he moved to Australia with his family when he was a child. "Australia is my home," he says. But after a brush with the law Mr Howes, now 25 years old, was locked in an immigration detention centre and then deported to New Zealand, a country he says he barely knows.

Immigration detention centres in Australia now hold almost 200 Kiwis, more than any other nationality (Australia also keeps some would-be immigrants in camps in Papua New Guinea and Nauru). About 650,000 New Zealanders live in Australia, ten times the number of Australians in New Zealand. They are entitled to "special category" visas, which allow them to live and work in Australia without restriction. But they are not citizens, and so are subject to the tighter rules on the conduct of immigrants introduced by Tony Abbott, Mr Turnbull's predecessor. In particular, any foreigners who are jailed for a year or more lose their visas automatically.

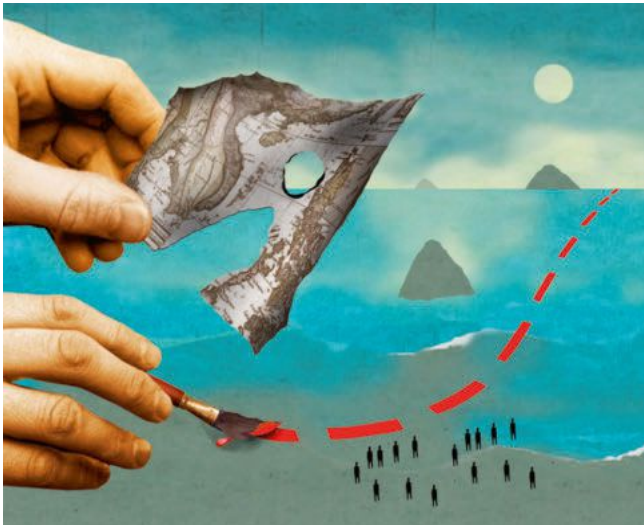
Because their visas are otherwise so accommodating, many Kiwis do not bother taking Australian citizenship even after many years' residence. So the new policy has scooped up relatively more New Zealanders than other nationalities. Mr Howes served a two-year prison term for theft. He returned for a shorter stint after breaking parole. While in prison, he received an official letter saying his visa had been cancelled and he would be expelled.

Peter Dutton, Australia's immigration minister, will not say how many New Zealanders Australia has deported since the law changed. Oz Kiwi, an advocacy group, thinks it is about 600. Joanne Cox of Oz Kiwi accuses Australia of applying the law retrospectively, even to some who had done prison time before the change: "They were juvenile offenders, now grandparents. Hardly the dregs of society."

Amid such outcry, Mr Turnbull six months ago announced a plan to drop visas for some New Zealanders and allow them permanent residence. Eligible Kiwis must have lived in Australia for five years and earn at least A\$53,900 (about \$41,000) a year. Mr Turnbull called it a "streamlined pathway to Australian citizenship". But that does nothing to stop the deportations of less well-paid New Zealanders. ■

Banyan | Full steam

If long-standing tensions ease in the South China Sea, China will ensure they rise elsewhere



WITH all respect to the endearing Fu Yuanhui, the Olympic swimmer whose goofy post-race interviews have made her a global star, the Chinese are creatures of the land, not the water. On the beaches of Sanya on the southern island of Hainan, China's new Hawaii, crowds of holidaymakers in tropical shirts dabble awkwardly at the water's edge; few actually plunge into the sea. In the Sanya market a fishmonger explains a national aversion to deep water more bluntly: the Chinese, she says, simply don't have sea legs. Refusing to go afloat herself, she buys her fish from the boat people living in the harbour, an ethnic subgroup whose generations have come into the world afloat and gone out the same way. Tanka, as these people are called in southern China, have historically faced discrimination. Even the name, "egg people", has the force of an insult in Chinese (they call themselves "on-the-water people").

So it is striking how large water now looms in China's diplomatic calculations and in the region's geopolitics, nowhere more so than in the South China Sea that Sanya looks out on. It is there that the gunboat diplomacy which China has employed in recent years to back expansive maritime claims has stirred nervousness among South-East Asian neighbours—and created fears of a collision with America.

Sanya is part of the story. An expanding deepwater naval base there is intended to project China's power far into the South China Sea and to support a new archipelago of artificial islands that China has built on reefs and atolls a long way from Chinese shores. Three of these bases in the Spratly islands have military-length runways, and recent satellite pictures show the construction of concrete bunkers, presumably for fighter jets. Back in Sanya, a base for nuclear submarines cuts into the mountainside. Even Hainan's lowly fishermen play a part. Formed into waterborne "people's militias", their vessels have grabbed fishing grounds far from home by chasing off their counterparts from neighbouring countries, such as the Philippines and Vietnam.

Last month an international tribunal in The Hague issued a ruling in a case brought by the Philippines that challenged, among other things, China's "indisputable historical claim" in the South China Sea. In a damning rebuke, the tribunal dismissed China's assertion of sovereignty over a vast area within a "nine-

dash" line that encompasses nearly all of the sea.

China reacted with fury. The nine-dash line has long been a matter of national pride. A recent letter to *The Economist* from the foreign ministry asserts that there are "ample historical documents and literature" to show that China was "the first country to discover, name, develop and exercise continuous and effective jurisdiction over the South China Sea islands". Bunkum. As Bill Hayton points out in his book, "The South China Sea", the first Chinese official ever to set foot on one of the Spratlys was a Nationalist naval officer in 1946, the year after Japan's defeat and loss of control of the sea; he did so from an American ship crewed by Chinese sailors trained in Miami. As for the story of the nine-dash line, it begins a only decade earlier with a Chinese government naming commission. China was not the first to name the islands; the commission borrowed and translated wholesale from British charts and pilots.

Yet no Chinese official could ever admit this. The nine-dash line has for decades graced maps of China in every schoolroom in the land—part of what one academic has described as a cartography of humiliation: a narrative about what China lost in the past to imperialist depredations and what it rightly owns today.

So what happens next? To some, laying bare China's claims will only raise the stakes. When a Singaporean author and former diplomat, Kishore Mahbubani, predicted earlier this month that tensions would not lead to military conflict between China and America, the auditorium broke into applause—as much for the boldness of his assertion as in the hope that he may be right. Some predict that China will take advantage of what is left of Barack Obama's presidency to start building on the disputed Scarborough Shoal, from which Chinese ships dislodged the Philippine navy in 2012. America has suggested that such a move would constitute a red line. But, fairly or not, Mr Obama does not have the reputation of an energetic enforcer of red lines.

China will not necessarily act provocatively. Challenging America, backed as it is by much of South-East Asia, carries risks. Besides, despite its legal setback, China's military position in the South China Sea is stronger than ever—even without a base on Scarborough Shoal. The trip to Hong Kong last week of a former president of the Philippines, Fidel Ramos, to meet senior Chinese officials and try to improve roiled relations, had the air of a vassal's visit. The imperial power could now be magnanimous, allowing Philippine fishermen to fish where they always have.

There are other seas full of fish

A pause, perhaps, but far from the end of the matter. Indeed, even if tensions ease in the South China Sea, they are rising again in the East China Sea, around the Senkaku islands which Japan controls but which China claims (and calls the Diaoyu). In recent weeks, fleets of Chinese fishing boats have crowded into the waters around the uninhabited islands, backed by Chinese fisheries-protection vessels, part of the coastguard. The incursions are the most intense since China began challenging Japan for control of the islands four years ago. Japan has protested at both the onslaught and a military radar found on a nearby Chinese oil rig.

China's latest actions may be to please a nationalistic audience back home. They may be to warn a new, right-wing cabinet in Japan against visiting Tokyo's militaristic Yasukuni shrine around the anniversary of the end of the second world war. (No member has.) Or they may simply be to show who calls the tune in East Asia these days—now it's Japan's turn to dance. ■

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Politics

Xi's day at the beach

BEIDAIHE

The leadership's annual retreat will not have been relaxing

RESPLENDENT in a pleated chef's hat, Yang Zhibin supervises the kitchens of Kiessling's restaurant in the resort town of Beidaihe, where he has worked since 1971 and where, every August, China's political elite gathers for highly secretive meetings. Now head chef, Mr Yang helps ensure that little changes at the resort's grandest restaurant. "There are over 20 dishes on the menu that we've been cooking for 100 years," he says. "We wanted to keep the traditional style." A diner who gives his name as just Houzi (meaning "monkey") says: "I first came to Kiessling's 30 years ago. Only the prices have changed."

The town of Beidaihe, a beach resort 175 miles (280km) east of Beijing, feels stuck in a time warp. Hotels even have embroidered sheets. Yet as the annual political gathering ended on August 16th, Beidaihe's staid, timeless feel was proving misleading. The country's politics has entered a period of unusual uncertainty and tension. In the coming months President Xi Jinping will supervise sweeping changes to the party's leadership at every level, culminating late next year in the unveiling of a new Politburo (which he will continue to lead). This five-yearly process will be overshadowed by bitter struggle between the president and rivals close to his predecessors, as well as growing concerns about the health of the country's economy. The leaders in their seaside villas will not have

been in the mood to party.

It was Mao Zedong who began the tradition of holding informal meetings at Beidaihe. The idea was to provide a forum at which current and former leaders could meet away from Beijing's sweltering summer and daily grind. In the 1980s and 1990s the discussions were a useful way for Deng Xiaoping, who was then pulling strings behind the scenes, to convey his views to those who were nominally in charge. But Mr Xi tries to keep interfering party elders at bay (his predecessor-but-one, Jiang Zemin, turned 90 on August 17th, though still retains influence). Unlike his immediate predecessor, Hu Jintao, Mr Xi appears to have far less time for the old boys.

Power plays

In theory it should be relatively easy for Mr Xi to place henchmen in positions of power during the reshuffles. The president is far more of a strongman than Mr Hu was. He has dismantled Deng's system of "collective" leadership, taking to himself more formal positions of authority than his predecessors did. As were Mr Hu and Mr Jiang, Mr Xi is the party's general secretary, state president and chief of the armed forces, but he is also much more. He has expanded a system of "small leading groups" under his own chairmanship, giving them sway over areas of policy that used to be the preserve of the government and the

party's highest bodies.

Mr Xi has also been engaged in a fierce campaign against corruption, which has spread fear throughout the bureaucracy; his rivals have been among its most prominent victims (the most recent, Ling Jihua, who once served as Mr Hu's aide, was sentenced to life imprisonment in July). In all, 177 people with deputy-ministerial rank or above have been investigated as part of the crackdown since Mr Xi took over in 2012. He has had over 50 generals arrested for graft and promoted his own men in their place, says Cheng Li of the Brookings Institution, a think-tank in Washington, D.C.

Even so, Mr Xi's authority remains hemmed in. True, his position at the highest level looks secure. But among the next layer of the elite, he has surprisingly few backers. Victor Shih of the University of California, San Diego, has tracked the various job-related and personal connections between the 205 full members of the party's Central Committee, which embodies the broader elite. The body rubber-stamps Mr Xi's decisions (there have been no recent rumours of open dissent within it). But the president needs enthusiastic support, as well as just a show of hands, to get his policies—such as badly needed economic reforms—implemented. According to Mr Shih, the president's faction accounts for just 6% of the group. That does not help.

Admittedly, this number should not be taken too literally: it is difficult to assign affiliations to many of the committee's members. Doubtless, too, many members who are not in Mr Xi's network support the president out of ambition or fear. Still, Mr Xi can rely on remarkably few loyal supporters in the Central Committee because he did not choose its members. They were selected at the same time he was chosen as party leader in 2012, a process overseen by ►►

▶ the dominant figures of that period, Mr Hu and the long-retired Mr Jiang.

Next year the party will appoint a new Central Committee at its regular five-yearly congress, which will probably take place in October. This time not only will Mr Xi be in charge of the process, he will also have more places than usual to fill. Normally 40-60 full members retire every five years when they reach the committee's retirement age of 65 (the age for the Politburo is 68). Assuming the retirement ages do not change, 85 committee members will leave in 2017. Seven more have been purged for corruption, bringing to 92 the total number of places Mr Xi will have available to fill. At Beidaihe this summer, the elite is thought to have had its first look at the new line-up.

Some of the jobs will be filled by the principle of Buggins's turn. But if Mr Xi were able to pick, say, half the new members, that would sharply increase the level

of his support in the committee—though even then he could not count on a majority of loyal backers. It would extend his power but not make it absolute. That would frustrate him. His predecessor, Mr Hu, likewise inherited a Central Committee stacked with members installed by the outgoing leadership, but he was a relatively weak leader who showed limited appetite for difficult economic reforms. At least rhetorically, Mr Xi has appeared more ambitious (there are even rumours that he wants to stay on after 2022, when he would normally be expected to step down).

These personnel battles will be fought behind closed doors over the next year or so. Mr Yang, the chef, will be kept busy. Members of the elite used to come to his restaurant to eat. Now, he says, he more often gets summoned to cook for them in their beach houses. Presumably while they plot to eat each other's lunch. ■

with the help of flood-taming exploits.

According to Mr Wu, a vast landslide, probably caused by an earthquake, blocked the course of the Yellow river as it flowed through the Jishi gorge on the edge of the Tibetan plateau. For six to nine months as much as 16 cubic kilometres (3.8 cubic miles) of water built up behind the accidental dam, which, when it finally burst, produced one of the biggest floods ever. At its peak, the authors calculate, the flow was 500 times the normal discharge at Jishi Gorge. Mr Wu reckons the ancient flood could easily have been felt 2,000km downstream in the area of the Yellow river said by Chinese historians to have been the realm of the Xia.

At about this time, either coincidentally or (more probably) because of the flood, the river changed its course, carving out its vast loop across the north China plain. The significance is that, while the river was finding its new course, it would have flooded repeatedly. This is consistent with old folk tales about Emperor Yu taming the river not through one dramatic action, but by decades of dredging.

The ancient flood can be dated because the earthquake that set the catastrophic events in motion also destroyed a settlement in the Jishi gorge. Radiocarbon dating of inhabitants' bones puts the earthquake at about 1920BC—not 5,000 years ago but close-ish. Xinhua, a state news agency, lauded the study as “important support” for the Xia's existence. Xu Hong of the Chinese Academy of Social Sciences challenged this, saying the scholars' findings had not proved their conclusions. The first dynasty has gone from myth to controversy. ■

History

The return of the Xia

BEIJING

Geological evidence has boosted a founding myth, and spurred controversy

CHINA'S leaders are immensely proud of their country's ancient origins. President Xi Jinping peppers his speeches with references to China's “5,000 years of history”. The problem is that archaeological evidence of a political entity in China going back that far is scant.

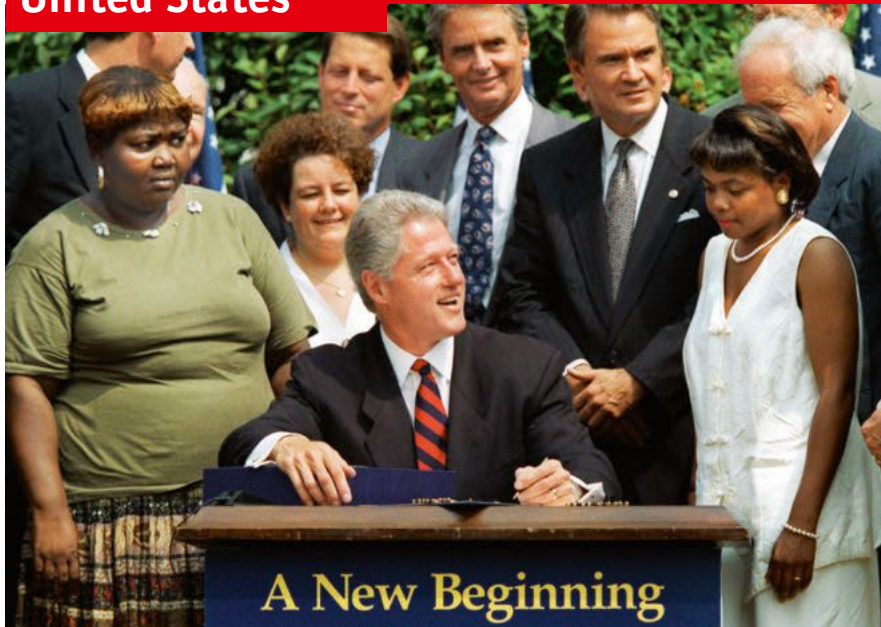
There is some, including engravings on animal bones, that shows the second dynasty, the Shang, really did control an area in the Yellow river basin about 3,500 years ago. But no such confirmation exists for the legendary first ruling house, the Xia. Even inside China, some historians have long suspected that the country's founding story—in which Emperor Yu tames flooding on the Yellow river (with the help of a magic black-shelled turtle, pictured), earns for himself the “mandate of heaven” and establishes the first dynasty—was either a Noah's-Ark flood-myth or perhaps propaganda invented later to justify centralised state power. This month, however, state-controlled media have been crowing over newly published evidence in *Science*, an American journal, that at least the flooding was real. This, they say, has made it more credible that the Xia was, too. Not everyone is so convinced.

Catastrophic floods leave their mark on soil and rocks. Qinglong Wu of Peking University and others have examined the geology of the upper reaches of the Yellow river. In the journal, they conclude that a vast flood did take place in the right area and

not long after the time for the supposed founding of the Xia. Although their evidence does not prove the existence of an Emperor Yu or of the dynasty he founded, it does provide a historical context in which someone might have gained power



If only the shell could be found



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Poverty in America

No money no love

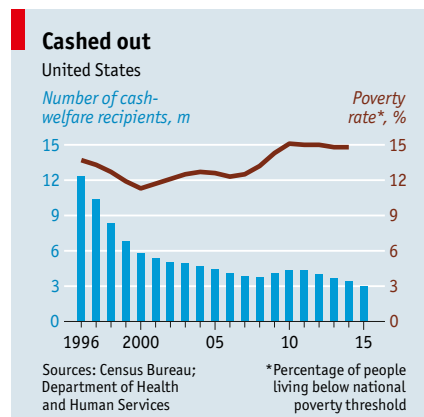
BALTIMORE AND WASHINGTON, DC

A row over Bill Clinton's landmark welfare reform highlights how much deprivation survived it

DANIELLE HUGHES wanted to graduate from high school. But after gangsters shot up her family home in New York, her mother ordered her to grab her baby son and flee. Now living with relatives in Baltimore, the 21-year-old single mother has no qualifications, no stable job and, having unsuccessfully sought government aid while interning as a receptionist, no prospect of a steady income. "I feel like I have lived through so much already," she says. She has applied for a job as a cashier, but, in a city where the unemployment rate among blacks is twice that among whites, is not optimistic. "Sometimes you feel like giving up."

A dismal feature of this year's election season is how little either of the main candidates has raised the endemic poverty that underlies such tough stories. Almost 15% of Americans are poor, including one in five children, and almost one in three households headed by a woman. That represents a level of deprivation, which rises and falls with the economy but has never dipped into single figures, higher than that of almost any other developed country.

Donald Trump's views on poverty alleviation are hazy; he is against teenage mothers getting welfare, "unless they jump through some pretty small hoops". Hillary Clinton's reticence on the issue is more telling, given her zeal for social policy. It reflects the complexity of the problem, the partisanship surrounding it and



the degree to which both are exacerbated by a festering row over the merits of America's last major welfare reform, which was signed into law by her husband 20 years ago on August 22nd 1996.

The reform made a huge change to how America treats poverty, which liberals still decry. In search of hard-edged credentials, Bill Clinton had promised to make a life on dole less commodious for the nearly 14m single mothers and their children then surviving on handouts. "Make welfare a second chance, not a way of life," was his slogan. Yet the bill concocted by Republicans in Congress was tougher than he wanted. It replaced an open-ended promise of federal support for needy women and children with a stricter regime, which capped the

largesse, henceforth known as Temporary Assistance for Needy Families (TANF), at \$16.5 billion a year, and put the states in charge of it. It also made TANF payments conditional on the recipient trying to find work; and it decreed that no one could receive them for more than five years in total.

Daniel Patrick Moynihan, a Democratic senator, predicted the reform would lead to half a million children in New York "sleeping on grates". Instead, it led to a huge drop in TANF claimants—their number fell by 66% in the first post-reform decade—which appeared, in the early years of the new regime, during which poverty fell, to come with no social cost and considerable gains. At a time of thrumming growth, most former claimants found jobs. This enabled them to enjoy both the dignity of work and a simultaneous increase in subsidies for low-paid work, including tax credits, which last year were worth around \$70 billion. For those unable to work, there was increasingly little cash available. Adjusted for inflation, spending on TANF has declined by a third—to \$11.1 billion in 2015 and, because some states divert it to other needs, such as child-care services, less than half of that was actually handed out. A big expansion in non-cash benefits, such as food stamps and housing vouchers, was meant to cover the shortfall.

The reform still looks broadly positive. Fewer Americans are dependent on TANF than ever; yet, even in the pits of the 2007-09 recession, the poverty rate did not surpass a recent high of 15.1%, recorded in 1993. But the fact that it has not increased the share of people in poverty is not much to shout about. And in the tougher economic conditions of the past decade, shortcomings have been evident in the welfare system at every level.

One concerns the quality of the jobs former claimants find themselves in. It was ▶▶

envisaged that, energised by honest toil, they would steadily climb the income scale. Yet the failures of the reform to provide the guaranteed public-sector jobs Mr Clinton had originally promised, and of the states to provide much useful training, have made that hard. A shift to low-grade services jobs across the labour market has done worse damage; the result is millions are stuck round about the poverty line. And for the minority who do prosper, high marginal tax rates, occasioned by the too-sudden withdrawal of tax credits and other in-work benefits, are a disincentive to progress. A single parent with children, climbing from the federal poverty threshold of \$11,770 a year, could pay an effective tax rate of 60%. Factor in child care and other costs and she may see no gains from doing more or better-paid work at all.

A more worrying contention is that dwindling payments have fuelled the creation of a new cash-poor underclass. Estimates by two scholars of poverty, Kathryn Edin and Luke Shaefer, suggested that, as a direct consequence of the two-decades-old reform, in 2011 there were 1.5m households, with 3m children, surviving on cash incomes of no more than \$2 per person, per day—the World Bank's global definition of poverty. A book published last September in which they advanced this thesis (“\$2.00 a day: Living on Almost Nothing in America”) has been influential, especially on the left. While campaigning for the Democratic primaries in April, Mrs Clinton felt compelled to soften her erstwhile support for her husband's reform, suggesting it was time “to take a hard look” at its legacy.

Other wonks—on the right but also including former members of the Clinton administration—take issue with the claims made by Ms Edin and Mr Shaefer. A forthcoming paper by Scott Winship of the Manhattan Institute, a think-tank, argues that, after factoring in non-cash benefits and underreported income, a sunnier picture emerges. The only groups he finds to be worse off than they were in 1996, including childless households, were unaffected by the reform. Meanwhile, he argues that “children, in particular those in single-mother families—are significantly less likely to be poor today than they were before.” As for Ms Edin's and Mr Shaefer's most emotive claim, he says, “no one in America lives on \$2 a day.”

Mr Winship is right that consumption is a better measure of poverty than income, and that there is scant evidence the reform increased the ranks of the poor. Yet cash is important; without the means to pay a phone bill or a haircut, no one, however well-nourished and sheltered, is liable to kick on. It is hard not to conclude that, even allowing for underreporting, the reform has denied too many poor Americans such means; between 1993 and 2013 the percentage of households on food stamps who

had no cash income more than doubled.

Instead of quibbling over the past, it would be better to ponder what America should do to cut poverty—and here there is more agreement, or at least potential for compromise. Concerned Republicans such as Paul Ryan, the Speaker of the House, argue for work-requirements to be extended to food stamps and other benefits. The record suggests that is a good idea; especially if, as Democrats want, in-work benefits such as tax credits are also boosted. But the safety-net for the least capable needs strengthening. That should include giving them more cash, by increasing TANF or limiting the ability of states to plunder it.

If Mrs Clinton, the favourite to win in November, could strike such a compromise, she would emulate the best of her husband's reform. If not, the debate over its merits may continue, for another decade or so, without easing the wretchedness of millions of American lives. ■

The campaigns

Fantastic people

WASHINGTON, DC

Donald Trump shakes up his team again

IN A bid to signal readiness to govern, Hillary Clinton, the Democratic presidential nominee, named the heads of her White House transition team on August 16th. The team—which will vet potential senior members of a Clinton administration and begin policy planning, in a standard practice for major party nominees—will be chaired by Ken Salazar, a centrist former senator from Colorado and ex-interior secretary, distrusted on the left for his pro-trade and pro-business instincts.

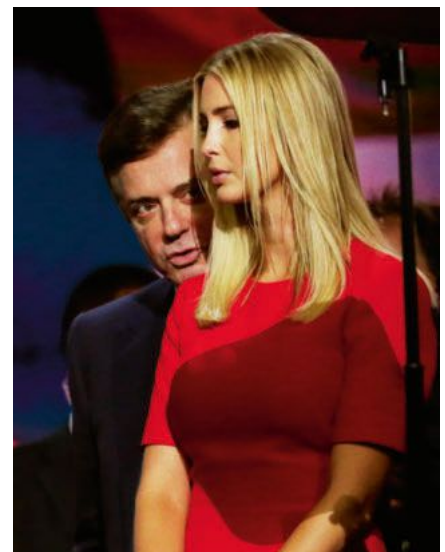
A day later, signalling his readiness to wage a bare-knuckle, brutally populist slugging-match to keep Mrs Clinton from power, Donald Trump, the Republican nominee, announced a shake-up of his own team, appointing as his campaign chief executive Stephen Bannon, the chairman of Breitbart News, a hard-right, conspiracy-tinged website. Aides to Mr Trump told the *New York Times* that the businessman is also being advised on his upcoming debates with Mrs Clinton by Roger Ailes, a vastly experienced media strategist who cut his teeth teaching Richard Nixon how to appear more likeable on television. Mr Ailes resigned as chairman of Fox News in July amid allegations of sexual harassment by female former employees.

This tale of two campaigns came as opinion polls showed Mr Trump continuing to shed support among college-educated whites, married women and other vot-

er blocs that have reliably skewed Republican in successive presidential elections. In interviews, Mr Trump has seethed at media reports that his campaign staff and prominent Republicans yearn for him to “pivot” to a more presidential approach, involving scripted attacks on Mrs Clinton read from a teleprompter. A leading advocate of such a pivot, Paul Manafort, remains Mr Trump's campaign chairman, but his clout appears diminished by the recruitment of Mr Bannon and a new campaign manager, Kellyanne Conway, a Republican pollster who has worked for Mike Pence, Mr Trump's running-mate, and Newt Gingrich, the former Speaker of the House of Representatives. It does not help Mr Manafort that he has spent days fending off reports about his time as a highly paid consultant to a Ukrainian political party with close ties to Russia.

Mr Trump still draws large, frenzied crowds to rallies, and appears unwilling to abandon the style—involving appeals to America-first nationalism, doomy talk of crimes committed by immigrants, vengeful attacks on a “lying” press and claims that the November election may be “rigged”—that reliably fires up such gatherings. After all, that approach won him the presidential primary contest. He maintains hefty leads among his most loyal voter blocs, notably older whites without a college degree. But paths to general-election victory involve winning an increasingly daunting number of such voters, in such battlegrounds as Florida, Pennsylvania and the post-industrial Midwest, where his polls are going the wrong way.

Mr Trump calls Mr Bannon and other hires “fantastic people who know how to win”. Republican leaders in Congress—routinely denounced as establishment shills and enemies of the working man by Breitbart News—may have different descriptions for the new Trump team. ■



Paul Manafort, Trump whisperer

Entrepreneurial transit

George Washington's bus

NEW YORK

The flourishing, efficient, semi-legal trade in ferrying New Yorkers around

IN PARTS of New York city, if you know what to look for, you will find a vast and quasi-legal transport network operating in plain sight. It is made up of “dollar vans”, private 15-passenger vehicles that serve neighbourhoods lacking robust public transport. With an estimated 125,000 daily riders, they constitute a network larger than the bus systems in some big cities, including Dallas and Phoenix.

Van drivers, like all entrepreneurs, have recognised a market and met demand. Some shuttle between Chinese communities not connected directly by public transport: for example, Flushing in Queens, Manhattan's Chinatown and Sunset Park in Brooklyn. Others serve Caribbean communities in Brooklyn and south-eastern Queens. The Utica and Flatbush Avenue corridors patrolled by the vans in Brooklyn are the borough's busiest and third-busiest bus routes, respectively. These vans offer what New York City buses fail to provide: speed and reliability. They are also cheap, at \$2 per trip.

Eric Goldwyn, an urban planner, compared a week's worth of ridership data from the B41 bus route along Flatbush Avenue with average travel times of dollar vans making the same trip. Buses took an hour with a standard deviation of 15 minutes, meaning that 68% of all rides lasted between 45 minutes and 75 minutes. That's a big window. Vans took just 43 minutes with a standard deviation of five minutes.

New York City's dollar vans trace their origins to 1980, when a massive public-transport strike sent customers looking for alternatives. Private vans surfaced to meet demand. The strike eventually ended, but the vans kept going. In 1993 the city took regulatory control over the industry and became responsible for licensing, inspections and insurance. In exchange for a licence to operate, drivers had to accept onerous legal requirements which few have complied with since.

Technically dollar vans can accept only pre-arranged calls and must maintain a passenger list. The idea was to protect yellow taxis' street-hail privilege and, according to Mr Goldwyn, elbow the vans out of business. But vans are flexible and spontaneous by their very nature; the street-hail prohibition goes ignored. In Brooklyn drivers cruise up and down Utica and Flatbush Avenues, tapping their horn to attract fares. Passengers wave and jump in, and the vans keep on rolling. Without street hails

there would be no business.

Dollar vans—even the 480 licensed ones—have been operating more or less illegally for decades. An estimated 500 more operate unlicensed. Law enforcement means that the “pirates”, as they are called, have little incentive to go above board. “Why drive a name brand when you can drive a regular vehicle and make more money?” asks Winston Williams, whose struggle to pay insurance in the face of rogue competition forced him to shrink his fleet by 21 drivers. Several bills before the City Council attempt to close the gap between law and practice by allowing street hails and ramping up enforcement.

Dollar vans—nimble and reactive as they are—might teach the Metropolitan

Transportation Authority (MTA) something about the needs and preferences of passengers. The vans are fast because they make fewer stops than buses, which tend to load and unload every two blocks. City buses are slowed down further by the lack of all-door boarding and well-enforced bus lanes. “There's a serious degree of policy inattention to operating the bus system in an effective way,” says Jon Orcutt of TransitCentre, a research group. Investment is much lower than in the subway, which carries 5.7m riders daily and commands \$14.2 billion from the MTA's five-year capital plan. Buses, which carry 2.1m riders daily, get just \$2 billion. As long as the city neglects its buses, dollar vans will be there to mind the gap. ■



Music and violence

Something in his whiskey

NASHVILLE

In country songs, at least, women are fighting back against domestic abuse

ON A recent night at the “Grand Ole Opry”, a live radio show that is a country-music institution, the songs' themes were familiar and unabrasive: homesick wayfarers, smoochy asseverations of love and the virtues of the simple life, God and corn whiskey. Until the guitars began twanging for “Church Bells”, sung by Carrie Underwood (above), the genre's reigning queen. The ballad tells of a backwoods beauty who marries up, but to a violent man. After a beating she finds herself “covered in make-up...sitting in the back pew /Praying with the baptist.”

As Robert Oermann, an expert on coun-

try music, says, unlike the sanitisations of pop, “country songs reflect the culture from which they spring.” Parts of the South, country's heartland, suffer badly from domestic violence. For example, proportionally more women are killed by men in South Carolina than in any other state. That blight has always featured in country lyrics—but traditionally from the perspective of male perpetrators, who are only sometimes punished or even regretful. In the 1920s tune “T for Texas”, Jimmie Rodgers sang of shooting “poor Thelma/ Just to see her jump and fall.” As late as 1994, in “Delia's Gone”, Johnny Cash's nar- ▶▶

rator “found [Delia] in her parlour...tied her to her chair,” and killed her.

For a long time, notes John Shelton Reed, a distinguished sociologist, country-music wives put up with their lot (as in “Stand by Your Man”); when they began fighting back, it was generally against the other woman rather than the creep, as when Loretta Lynn’s lyrics invited a love rival to “Fist City”. But gradually the reality of abuse crept in. The subject of a song by Reba McEntire from 1987 must “pretend that she fell down the stairs again”.

Eventually, these victims laid claim to country’s tradition of righteous vengeance. In the same year as “Delia’s Gone”, Martina McBride’s “Independence Day” depicted a mistreated mother incinerating her home—and husband—on July 4th. Later, in the Dixie Chicks’ “Goodbye Earl”, two friends see off the tormentor of one of them with a plate of poisoned black-eyed peas. In Miranda Lambert’s “Gunpowder and Lead”, a woman waits for her assailant with a shotgun and a six-pack: “He slapped my face and he shook me like a rag doll / Don’t that sound like a real man.”

Jenny’s liberation in “Church Bells”—she “slipped something in his Tennessee whiskey”—represents the apotheosis of this reversal. Pathbreaking as it was, “Independence Day” mixed its message with patriotism, a core country value, and, initially, some radio stations wouldn’t play it. “Goodbye Earl” is sardonic and, in its hymn to friendship, upbeat. “Church Bells” is triumphant—“How he died is still a mystery/ But he hit a woman for the very last time”—yet unflinching. And this time, no one is complaining or censoring it: on the contrary, it is wall-to-wall on country radio. As Beverly Keel of Middle Tennessee State University says, Ms Underwood is a crossover mega-star, who reaches “beyond the borders of country music to homes and cars across America”. (In another of her hits, “Blown Away”, a daughter lets her no-good father be swept away by a tornado.)

This self-assertion does indeed mirror a broader shift in the way society, and women themselves, respond to domestic violence, most obviously in new laws, facilities and tools like the restraining order taken out against the Dixie Chicks’ Earl. The trajectory of the overall problem is hard to gauge, since more reporting may signify lower tolerance of offences rather than a higher incidence; but while it remains an epidemic, affecting around 10m people annually, its most severe manifestation—femicide—has fallen in the past 20 years. Fresh portrayals in country music and other art forms may have nudged as well as recorded evolving attitudes. Judy Benitez of the National Network to End Domestic Violence, for which Ms McBride was formerly a spokesman, says that “hearing someone on the radio singing about your experience, when you feel like

no one else has gone through this or can understand, can be life-changing.”

But country music captures some darker truths, too. The propensity of its heroines to kill in self-defence is atypical—but their disinclination to use shelters remains sadly realistic. For all the improvements, a study in Georgia found that, in the five years before their deaths, just 15% of those who died by domestic violence had contact with support agencies. Such crimes are overwhelmingly perpetrated with guns, despite state and federal laws meant to keep them out of abusers’ hands: at the last count there had been 394 such fatalities in America this year. Guns, of course, are another staple of country music. Indeed, on the night Ms Underwood sang “Church Bells” at the Grand Ole Opry, one of the show’s sponsors was a firearms superstore. ■

Nashville

Hot sauce

NASHVILLE

The new mayor of Music City’s formula for growth

DURING last year’s mayoral race in Nashville, Megan Barry was accused of being an atheist; she duly went to church for a laying-on of hands. But if Music City remains traditional enough for politicians’ faith to be a sticking-point, it is sufficiently liberal to have installed Ms Barry, who as a councillor conducted its first same-sex wedding, as its first female mayor. Her experiences suggest a possible strategy for Democrats elsewhere, as well as the frictions they may experience.



Megan Barry, standing by

One has been with the Republican supermajorities in the Tennessee capitol, around the corner from her office—part of a widening stand-off between left-leaning southern mayors and conservative legislatures. In 2011 Nashville was involved in an early tussle over protections for gay and transgender people; this year a state bathroom bill like the one that ignited controversy in North Carolina failed, but a measure letting counsellors turn away patients on the grounds of “sincerely held principles” was passed. That cost Nashville at least three convention bookings, Mayor Barry laments, gently noting that the state relies on the city’s success, too. There have been disagreements over guns in parks (which the city was forced to allow last year), a putative rise in the minimum wage (nixed) and a plan to reserve 40% of work on big public projects for locals (ditto).

Overall, though, visitors and migrants are undeterred. By Ms Barry’s count, 81 people move to Nashville every day. The foreign-born population has risen from 2% in 2000 to 13%, a contingent that includes America’s biggest Kurdish community. “What a gift!” she says hearteningly of the 120 languages spoken by pupils. The city has escaped the Islamophobia that has erupted in other parts of Tennessee; the failure, in 2009, of a bid to make English Nashville’s sole official language seems to have squashed nativist sentiment.

Still, unsurprisingly, the boom has created its own tensions, such as rising housing costs and, say some, an exacerbation of racially tinged inequality. Critics on both left and right question the city’s generous business incentives, not least a \$1m bung for a fifth series of the country-music drama “Nashville”, despite its transfer from ABC to the cable network CMT. Ingrid McIntyre of Open Table Nashville, an interfaith advocacy group, worries that the “whole workforce is being pushed out”. Homelessness is conspicuous; the poverty rate is a stubbornly high 20%. “I liked the old Nashville,” Ms McIntyre says. Justin Owen of the Beacon Centre of Tennessee, a free-market think-tank, reckons the city’s subsidies are “creating a lot of the problems it claims it needs to solve”. Everyone moans about the traffic.

Ms Barry defiantly cites a swelling budget (up \$121m without new taxes), rattling off housing and job schemes the extra cash is paying for. As for those incentives: “If anybody ever says to you, ‘Should we have a TV show and name it after your city?’, say ‘Yes.’” She thinks this “special sauce”—social liberalism and business-friendliness, yielding an electoral coalition of honchos and hipsters—can work for other urban Democrats. Perhaps, though not many enjoy the same helpful mix of tourist attractions, creative industries and universities. At least while the good times roll, though, it seems to go down well in Nashville. ■

Putrid Pennsylvania

Kaned

NEW YORK

How the state's top prosecutor came to be convicted of criminal conspiracy

JOSHUA MORROW testified that he had been taken to a parking garage and searched for a recording device. His wallet, phone and keys were taken away. Mr Morrow, a political consultant, was patted down by the security detail of Kathleen Kane, the attorney-general of Pennsylvania, before they met for lunch. Over the meal, they hatched a plot to deny illegally leaking secret documents from a grand-jury proceeding. Mr Morrow's tale was one of many such details revealed during Ms Kane's trial. Her tenure in office, which started with such promise, ended in a conviction on nine charges, including perjury and conspiracy, on August 15th. She resigned a day later.

Ms Kane was elected in a landslide in 2012. Not only was she the first woman to become the state's attorney-general; she was the first Democrat to win since the job became an elected position in 1980. She had a good start. During her first year she earned praise for calling Pennsylvania's ban, then in force, on same-sex marriage "wholly unconstitutional" and refusing to defend the state in a federal lawsuit against it. She also took a stand in favour of gun control, preventing Pennsylvanians who had been denied state permits from buying guns in other states. Pundits speculated she would soon run for higher office.

During her election campaign, she vowed to review the handling of the Jerry Sandusky case. Mr Sandusky was a popular football coach at Pennsylvania State University, who had been accused of raping and molesting ten children. She suggested that the then attorney-general had slowed the investigation in the run-up to an election, so as not to upset fans of the Penn State football team. Mr Morrow testified under immunity that Ms Kane believed Frank Fina, a former star prosecutor who had headed the Sandusky case, had planted a negative story about her in a local newspaper. According to the complaint and testimony, Ms Kane began leaking secret documents from the grand-jury investigation to the press. She then concocted lies to cover up this abuse of power, blaming a senior deputy.

She leaves behind 750 demoralised staffers in the attorney-general's office. Cases have reportedly unravelled. Some lawyers have left, many who remain have been questioned, and some have filed suit. Earlier this month her office paid out \$150,000 to settle a former employee's lawsuit.

Ms Kane will be sentenced in October. She has already lost her law licence and faces up to 28 years in prison.

Pennsylvanians are accustomed to politicians and officials leaving office in disgrace. While she was riding high, Ms Kane's office investigated state employees, including two judges, and found they had exchanged thousands of pornographic, racist, homophobic and misogynistic e-mails on state computers. Some of the e-mails were released to the press, who of course dubbed the scandal "Porngate".

The Centre for Public Integrity, an NGO which grades state governments, gives Pennsylvania an F for its entrenched culture of malfeasance. It is ranked 45th in the country for integrity. Three former House Speakers and a former Senate president have all been convicted of corruption. State lawmakers have been involved in various public corruption cases going back at least four decades. In 1995 another attorney-general pleaded guilty to fraud involving campaign contributions. According to a poll by Franklin and Marshall College, Pennsylvanians are more concerned about corruption than the economy.

Ms Kane's case is a bit different. It was not about corruption in the typical way, says Terry Madonna of the Centre for Politics and Public Affairs at Franklin and Marshall College. It was not about illicit campaign contributions or bribery. "It was personal. It's a story about retaliation, retribution and revenge." ■



Flood and fire

Thirteen people have been killed and 30,000 forced to leave their homes by severe floods around Baton Rouge in Louisiana. For the second time this year the state's governor, John Bel Edwards, declared a state of emergency, which allows governors to tap state funds and some federal assistance. In March floods forced thousands from their homes and killed four people. The coast guard and an impromptu flotilla dubbed the Cajun Navy has come to the aid of many of the stranded. The state government is calling for more volunteers to help remove mud from homes as the waters recede. Returning residents have been warned to beware of snakes and ants also sheltering from the floods. In California 80,000 people have been ordered to leave San Bernardino County, to the east of Los Angeles, where a fire is advancing. The blaze, which began in the canyons around San Bernardino and spread quickly in high winds, has already burned up 30,000 acres, destroyed homes and made Interstate 15 impassable. It is just one of three fires wreathing parts of the Golden State in smoke. One in the northern part of the state, at Clayton, east of Oakland, is thought to be the work of an arsonist. The other is halfway between Los Angeles and San Francisco, near San Luis Obispo. California's governor, Jerry Brown, has declared three countywide states of emergency. The risks from fires in America are increasing: the Forest Service says that the fire season is on average 78 days longer now than it was in 1970.

Lexington | Normalising narcissism

Even before Donald Trump, appeals to selfishness and grandiosity were poisoning the right



THE website of the American Psychiatric Association warns members not to opine on the mental health of Donald Trump, Hillary Clinton or other challengers for the White House. The notice, first reported by the *Washington Post*, reminds psychiatrists that it is unethical to psychoanalyse public figures whom they have never met, though this election's "unique atmosphere" may make them want to try. The temptation is clear. Crack open the "Diagnostic and Statistical Manual of Mental Disorders", a widely used handbook, and the checklist for Narcissistic Personality Disorder could be notes for a Trump profile. Symptoms include abnormal attention-seeking, self-centredness, a sense of entitlement, exaggerated self-appraisal (ie, fibbing about achievements) and warped relations with others. The outside world is mostly of interest as a mirror, reflecting back on the narcissistic self. Mr Trump assured a recent interviewer: "I am much more humble than you would understand."

If Republicans hope to reclaim their party, they need to grasp how their leaders—including people who disagree with Mr Trump on many questions of policy—contributed to a wounded, resentfully navel-gazing psychological mood on the right that enabled the tycoon's rise. Put another way, Republicans need to understand that the bad cousin of rugged individualism—conservative America's founding value—is narcissism.

True, self-regard is not unknown on the left. Think of President Bill Clinton's private life, or those Democratic voters and public-sector workers who approach government budgets with a powerful sense of entitlement. But too often in recent years the right has taken such cherished principles as self-reliance and a stern moral code, often involving a sense of communion with a divine saviour, and let them sour into something darker.

Consider three totems of Republican politics: God, guns and grit. Start with God. The alignment of born-again Christianity with politics is old news. It seems quaint now that George H.W. Bush, a man of quiet faith, fretted when his son, George W., named Jesus as his favourite philosopher in a Republican primary debate—the older Bush hoped "the Jesus answer" would not hurt his boy "very much". By the 2016 election cycle, at least two candidates for the Republican nomination flatly declared that God wanted them to run. Announcing his candidacy, Scott Walk-

er, the governor of Wisconsin, e-mailed backers to say that after much prayer, he was certain that "this is God's plan for me".

When Lexington interviewed Ben Carson, a retired brain surgeon, on a campaign bus trundling through North Carolina, the softly spoken doctor explained his bargain with God: he would heed the call if his Creator opened the doors to a presidential run. Now, he said, those doors "appear to be flying open. So I am going to keep walking." Such talk thrilled Christian conservatives, who flooded Dr Carson with donations. Lexington wondered why this was not blasphemy. Michael Cromartie, an expert on politics and religion at the Ethics & Public Policy Centre, a think-tank in Washington, notes that branches of American Christianity, such as parts of the evangelical pietist and Pentecostal traditions, often claim that God speaks directly to believers and (typically) tells them what they want to hear. Both Dr Carson and Mr Walker flopped in the primaries, Mr Cromartie says, raising the question: "What do they now think that God was saying?"

Next, guns. Over the years the gun lobby has shifted from dry talk of a constitutional right to tote hunting rifles or visit gun ranges, to arguments that packing heat is the only sure defence when killers target loved ones, and the state is too incompetent or uncaring to help. Amid public alarm about terrorism, Senator Marco Rubio of Florida let it be known that he had bought a new gun last Christmas Eve, saying that if Islamic State visited his community or his family, his gun was "the last line of defence" and adding that "millions of Americans feel that way". Senator Ted Cruz of Texas called guns "the ultimate check against government tyranny", as if his supporters might battle the 101st Airborne should the feds suspend the constitution. This is an appeal to narcissism as well as to paranoia—a message that you, the heroic individual, will experience a very rare event (a coup d'état or terrorists crashing through your front door) and will be ready to fight back. This forces supporters of gun-control to tell gun-owners that they are deluded about being heroes, a hard message to sell.

Last, grit. The Republican nominee from 2012, Mitt Romney, is a bigger and better man than Mr Trump will ever be. He has admirably refused to endorse his successor. But the Republican National Convention that nominated Mr Romney four years ago resembled a self-centred gathering of business-owners and entrepreneurs, congratulating themselves on their own success. Repeatedly, speakers boasted of their hard work, and railed against a clumsily worded comment by President Barack Obama that business owners "didn't build" their companies, because they also relied on public investments in roads, schools or the internet. Republican delegates offered chants of "We built it". Mr Romney told supporters to stand and say: "I am an American! I make my destiny. And we deserve better!" It all sounded peevish and self-regarding at the time, and offered little to the majority of non-business-owning voters who just want a decent job.

The American dream takes a team

The risks of individualism have been debated since America's earliest days. Alexis de Tocqueville worried about frontiersmen withdrawing from society and believing that they "owe nothing to any man". Despots love to stoke selfishness among their subjects, he went on, because it usefully divides the masses. Happily, he believed, American democracy offered a solution, as so many citizens served in local government and civic bodies, which offer their members valuable lessons about interdependence. De Tocqueville would have loathed this election. ■



Brazil's economy

The only way is up

SÃO PAULO

The recession rages on. But there are incipient signs of recovery

FOR many Brazilians, the high point of the Olympic games in Rio de Janeiro came in the rain-drenched Engenhão stadium on August 15th. That was when Thiago Braz (pictured) won an unexpected gold medal, and set an Olympic record, in pole vaulting. Brazil's beaten-down economy is nowhere near performing a feat that would remind anyone of Mr Braz's jump. But it may be starting to pick itself back up.

The signs are still tentative. Manufacturers are investing again: imports of capital goods were 18% higher in dollar terms in June than in the same month last year, the first year-on-year rise since September 2014. Industrial production increased in June for the fourth consecutive month after two years of nearly uninterrupted decline. Firms' stocks of unsold goods are starting to shrink, and the number of lorries on motorways has stopped falling.

Firms are not yet ready to hire more people, says Arthur Carvalho of Morgan Stanley, a bank, but firings have slowed. That is making consumers less glum; one consumer-confidence index rose for the third straight month in July. After repeatedly reducing its growth forecasts, the IMF recently revised upward its projection for GDP next year. It now expects a modest expansion of 0.5% in 2017; in April the Fund was predicting no growth. Some private-sector economists expect the growth rate to be as high as 2% next year.

Much of the encouragement is coming from Brasília, the capital, which seems to

be moving towards a resolution of the country's prolonged political crisis. On August 25th the senate is due to begin the impeachment trial of Dilma Rousseff, Brazil's unpopular president, on charges that she tampered with government accounts. Although she denies this, few observers doubt that she will be removed from office, probably in September. The vice-president, Michel Temer, who has been acting president since May, would then serve out the remaining 28 months of her term.

He has lifted spirits just by not being Ms Rousseff. The stockmarket has boomed since he took charge (see chart). More probusiness than the left-wing president and wiliier in dealing with congress, Mr Temer promises confidence-boosting reforms. A bill to open up deep-sea oilfields to more

private investment is making its way through congress. Another would oblige the environmental regulator to decide on licences for projects within ten months; this can now take years, investors grumble. On August 25th the government will present a list of state-owned firms it wants to privatise. The real's sharp decline since 2011 makes Brazil's exports more competitive, another spur to optimism.

None of this means that the economy is yet in good shape. Household incomes are still falling and the unemployment rate is expected to rise by another percentage point, to around 12%, before it starts to dip sometime next year. Lenders and borrowers are still behaving cautiously. A privatisation of the Goiás state energy utility, planned for August 19th, was cancelled because it failed to attract bids from nervous investors. GDP data to be released this month are likely to show that the economy continued to contract sharply in the second quarter of this year.

To keep confidence alive, Mr Temer must reduce the budget deficit, now an alarming 10% of GDP. Otherwise, high interest rates will continue to depress growth or inflation will surge. Mr Temer wants to amend the constitution to freeze government spending in real terms and to reform overgenerous pensions. So far, though, he has ramped up spending. He cajoled congress to relax Ms Rousseff's target for this year's primary deficit (before interest payments) from 1% of GDP to 2.5%. He accepted big public-sector pay rises and gave federal debt relief to Brazil's bankrupt states.

Mr Temer's aides say generosity now will buy political support for fiscal reforms once Ms Rousseff is removed from office. The markets believe this: the cost of insuring against default on government bonds has dropped (see chart). But the cheers will fade unless Mr Temer clears the high bar he has set for himself and the country. ■

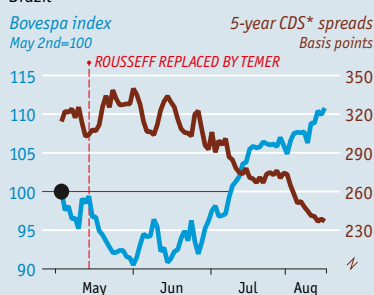
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The Temer effect

Brazil



Source: Thomson Reuters

*Credit-default swaps

Gay rights (1)

Open city

MEXICO CITY

The capital is progressive. The rest of the country is catching up slowly

OMAR GARCÍA CERVANTES, an aspiring novelist, was brought up in the state of Veracruz but moved to Mexico City 16 years ago. As a gay man, he is happier there than anywhere else. Mexico City has grown only more welcoming since he moved there. In November last year the mayor, Miguel Ángel Mancera, signed a declaration proclaiming its gay-friendliness. Gay marriage has been legal in the city since 2010; under a law passed in 2014, people can change their legal sex simply by applying to alter their birth records. Hate crimes against gays are almost unheard of, says Alejandro Brito of Letra s, a gay-rights activist group.

Outside the city, the climate is more forbidding. Fans of the national football team are wont to shout “*puto*” (“faggot”) at opposing goalkeepers. The Catholic church, the spiritual home of 80% of Mexicans, continues to denounce gay marriage as a threat to families. Its influence is especially strong in states north-west of the capital. A demonstration last year against gay marriage in Guadalajara, the second-largest city, attracted more than 50,000 people, says the organiser, an alliance of church groups and educational institutions.

Attitudes harden even a few miles outside Mexico City. Lorena Wolffer, an artist, noticed disapproving stares when she visited a hospital with her female partner recently. “We just turned to each other and said, ‘Of course, we’re in the state of Mexico,’” not the city, she recalls.

But there is progress. Last year the supreme court ruled that state laws preventing homosexuals from marrying violate constitutional protections against discrimination. Three of Mexico’s 32 states (Michoacán, Colima and Morelos) have recently passed laws permitting gay marriage, joining Mexico City, Campeche, Coahuila and Nayarit in a liberal group of seven. Four more allow gay marriage but have not passed laws sanctioning it.

In the 21 states that still forbid it, couples can now defy local laws by going to court; under the supreme court’s ruling, judges are obliged to give them permission to marry. In May this year Mexico’s president, Enrique Peña Nieto, proposed changing the constitution to make gay marriage legal throughout the country, though there is little prospect of that happening before the next presidential election in 2018.

The spread of gay rights has been accompanied by more reports of violence



Happily same-sex in the city

against homosexuals. The number of homophobic murders has jumped to 71 a year on average over the past decade from 50 a year during the previous ten years, according to Letra s. In June, in the northern town of Monclova, a lorry driver shot Jessica González Tovar and ran her over in the presence of her female partner.

But reports of more homophobic violence may be misleading. Letra s draws its data from newspaper reports, since the police do not report such crimes separately.

Gay rights (2)

Belize blazes a trail

A small Caribbean country sets an enlightened precedent

TINY Belize is having a moment of global fame. Simone Biles, the United States’ spring-loaded gold-medal gymnast, is also a citizen of the Caribbean state. Human-rights advocates, meanwhile, are more excited about the decision by its high court to decriminalise homosexuality. Section 53 of the criminal code, which threatens people who engage in “carnal intercourse against the order of nature” with up to ten years in prison, is unconstitutional, ruled the chief justice, Kenneth Benjamin, on August 10th. The decision may set a precedent for a conservative region.

It was a long time coming. Caleb Orozco, a leader of the United Belize Advocacy Movement, a gay-rights group, waited three years for a hearing after challenging the law in 2010. His campaign provoked attacks and insults. Churches fought it, both in the courtroom as “interested parties” and through the media. Lance Lewis, president of Belize’s National Evangelical Association, called the court’s ruling “an abomination”.

But it has given hope to campaigners in the ten other English-speaking Caribbean countries that still have Victorian-

The higher numbers may show that the press is reporting them more accurately, Letra s acknowledges. “There seems to be more homophobia,” says Nicolás Loza Otero of FLACSO, a university in Mexico City, “but I think there’s less.”

That hopeful assessment is probably right. Even the conservative areas north-west of Mexico City are changing. Fresnillo, a town in Zacatecas, elected Mexico’s first openly gay mayor, Benjamín Medrano, in 2013. Rubí Suárez Araujo became Mexico’s first transgender municipal councillor in Guanajuato in March this year. Sexual diversity is increasingly visible in Guadalajara, says María Martha Collignon of ITESO, a university there. A gay marriage takes place nearly every week.

Just under half of Mexicans support gay marriage, according to a poll conducted in 2013 and 2014 by the Pew Research Centre, a think-tank. But among those aged 18 to 34, 63% are in favour. Older Mexicans are becoming less censorious. “Parents aren’t saying they’re pleased at the news that their children are lesbian,” says Paulina Martínez of Metal Muses, a lesbian pressure group. “But they accept it more.” It will take years before Mexico becomes as tolerant as its capital, but gay people in the heartlands have grounds for hope. ■

era anti-sodomy laws on their books. Among them is Maurice Tomlinson, a gay Jamaican lawyer who has fled to Canada because of hostility at home. He has challenged Jamaica’s “buggery laws” in the high court. He faces fierce opposition from the attorney-general and from nine church-based groups.

Among Anglophone Caribbean countries, Jamaica is most hostile to gay rights. The prime minister, Andrew Holness, proposes a referendum to reaffirm anti-gay laws, which would probably pass. But opinion is growing more tolerant. The *Gleaner*, Jamaica’s most influential newspaper, argued in an editorial after the Belize judgment that “the state has no place snooping around the bedrooms of consenting adults.”

In Guyana, where a president in 2001 vetoed legislation to ban discrimination against gay people, the current leader, David Granger, is setting a different tone. In January he said that he would “respect the rights of any adult to indulge in any practice which is not harmful to others”. Now it falls to Guyana’s parliament, and those of its neighbours, to write that principle into their countries’ laws.



African democracy

The march of democracy slows

LUSAKA

Threats to democratic rule in Africa are growing, but time and demography are against the autocrats

MUSIC blasts from speakers mounted on the back of a truck in a rubbish dump in a corner of Lusaka, Zambia's capital. Young men with bandannas over their faces form a security cordon. Children climb on top of a dumpster to get a better view. A woman swigs from a bottle of local rum as she dances provocatively on the makeshift stage. A man in a suit steps up and the music stops. "Zambia!" he shouts. "Zambia!" roars back the crowd.

This is not a music festival. It is a political rally. Yet for all the jovial colour of the occasion, democracy in Zambia is not well. The rally was held on a stinking rubbish dump because the government refused to let Hakainde Hichilema, the main opposition candidate for the presidency, use any other public space in the area. Mr Hichilema was repeatedly refused permission to fly his helicopter to campaign elsewhere. The country's leading independent newspaper, the *Post*, was shut down, ostensibly over a tax bill, after it reported on what it said were plans to rig the election. Several rallies turned violent, leaving at least one person dead.

After the election, held on August 11th, the counting of the votes lasted four days instead of the usual two. On the third day, Mr Hichilema's party withdrew from the verification process, complaining that the electoral commission was colluding with the party of the incumbent, Edgar Lungu, to boost his vote. In the end Mr Lungu was

narrowly re-elected, despite a collapsing economy and an inflation rate of 20%.

Zambia's marred election is a particular disappointment. In 1991 it was the second country on the continent to expel an incumbent ruler at the ballot box, following Benin by a few months. It again booted out the ruling party in 2011, establishing a healthy pattern of alternation that now seems threatened.

Zambia is an unnerving example of how democracy, which had seemed finally to be about to bloom on the world's poorest continent, is still struggling to take root in many parts of it. Looked at through a wide lens of history, Africa's standard of governance is almost unimaginably better than it was at the end of the cold war. Then a dart thrown at the map would almost certainly have landed on a one-party state, military junta or outright dictatorship.

Economic liberty was much scarcer then, too: various forms of socialism abounded, from Tanzania to Ghana, Ethiopia to Angola. Freedom House, an American think-tank, reckons that in 1988, just before the cold war ended, only 16 countries in sub-Saharan Africa could be classified as "free" or "partly free". Since then, the organisation reckons that 29 of the 48 countries in the region can be considered "free" or "partly free".

Yet zoom in the historical lens to view the past few years and it seems that the picture is mixed. Some places are seeing pro-

gress. In South Africa, the African National Congress, which has ruled since the end of apartheid, lost its majority in several major cities in local elections this month. Despite efforts by its president, Jacob Zuma, to hollow out institutions such as the prosecutors' office, national broadcaster and anti-corruption agency, a critical press, independent judiciary and vocal opposition are keeping the government on its toes. In Nigeria, Africa's most populous country, a corrupt and incompetent ruling party was voted out for the first time since the end of military rule in 1999.

Yet elsewhere democracy appears to be withering. The most recent tally of free countries has fallen from a peak of 34 a decade ago (see chart). A number of countries which, like Zambia, had been becoming more open and free, have seemed to slide backwards.

It won't be built in a day

The most recent threats to democracy in Africa vary, even if some are familiar. They include the short-term interests of Western countries; a demand for minerals and oil; and the rising influence of new powers such as China. Underlying these are the bigger enduring problems of poverty and weak institutions.

Modern Africa's first taste of democracy came in the form of fledgling parliaments bestowed by departing colonial powers. As Britain and France dismantled ▶▶

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▶ their empires, they left behind crude carbon copies of their own forms of government (though Portugal, a dictatorship until 1975, left its colonies in Mozambique and Angola mired in civil war). Indeed, Sir Abubakar Tafawa Balewa, Nigeria's first prime minister, closed his speech at Nigeria's independence ceremony with the words, "God Save Our Queen".

Yet in the early days of independence most African leaders swiftly imposed their own stamp on the fragile states they had inherited, reshaping institutions they often condemned as colonial impositions. New ideas such as "African socialism" swept the region, along with the notion of a specifically African form of democracy. Leaders such as Julius Nyerere of Tanzania and Kwame Nkrumah of Ghana led the way in arguing that new states needed to put national unity ahead of multi-party democracy, often imposing one-party systems of government that swiftly turned into bullying autocracies. In many cases—witness Ghana and Nigeria—unity was supposedly saved by military coups that were easily mounted because armies were the only strong institutions inherited from empire.

Some military juntas did hand power back to civilians, but in many cases they led to dictatorship in whatever guise. An extreme example of this was Mobutu Sese Seko of Congo (or Zaire, as he renamed it), who, after taking power in a coup, became the archetype of an African dictator. Before the news was broadcast to the nation every morning on television, his face would emerge out of the clouds, framed by the sun. Mobutu declared that absolute rule was authentically African. "Can anyone tell me that he has ever known a village that has two chiefs?" he would ask anyone who questioned his authority.

Yet as superpower competition fell away after the collapse of the Soviet Union in 1991, so too did the no-strings-attached military and economic aid that had sustained many African dictators for so long. The failure of socialism and one-party states was laid bare both in Europe and Africa. In some parts of the continent—most notably Democratic Republic of Congo (DRC), which was renamed again in 1997—the result was the collapse of the state and the onset of civil war. But in many places the result was the spread of new, more open types of government. Ivory Coast had a multi-party poll in 1990; Benin and Zambia followed in 1991; then Kenya in 1992 and Tanzania in 1995. Ghana and Nigeria reverted to civilian rule with multi-party elections in 1996 and 1999 respectively. Since 1991 incumbents have been ejected peacefully at the ballot box at least 36 times. Among Arabs the figure is zero.

Such progress has continued in places such as Nigeria and Ghana, with the latter preparing for elections in December that are sure to be fiercely contested. In 2011 in

Liberia, Ellen Johnson Sirleaf, the continent's first elected female president, won re-election in a vote the Atlanta-based Carter Center called the "best run and most credible election in the country's history".

Yet in other places democracy seems to have eroded, thanks largely to presidents changing or flouting constitutions to cling on to power. In Uganda, Congo-Brazzaville and Burundi, Presidents Museveni, Denis Sassou Nguesso and Pierre Nkurunziza have all won flawed elections in the past year after dropping term-limits that required them to step down. In all three, opposition has been violently crushed.

Time for two-terming

Rwanda's president, Paul Kagame, will run for a third term in 2017 after changing his country's constitution last year. In DRC President Joseph Kabila seems set simply to ignore the constitution he helped enshrine in 2006. His final term comes to an end in December, but he has refused to hold elections, citing logistical problems.

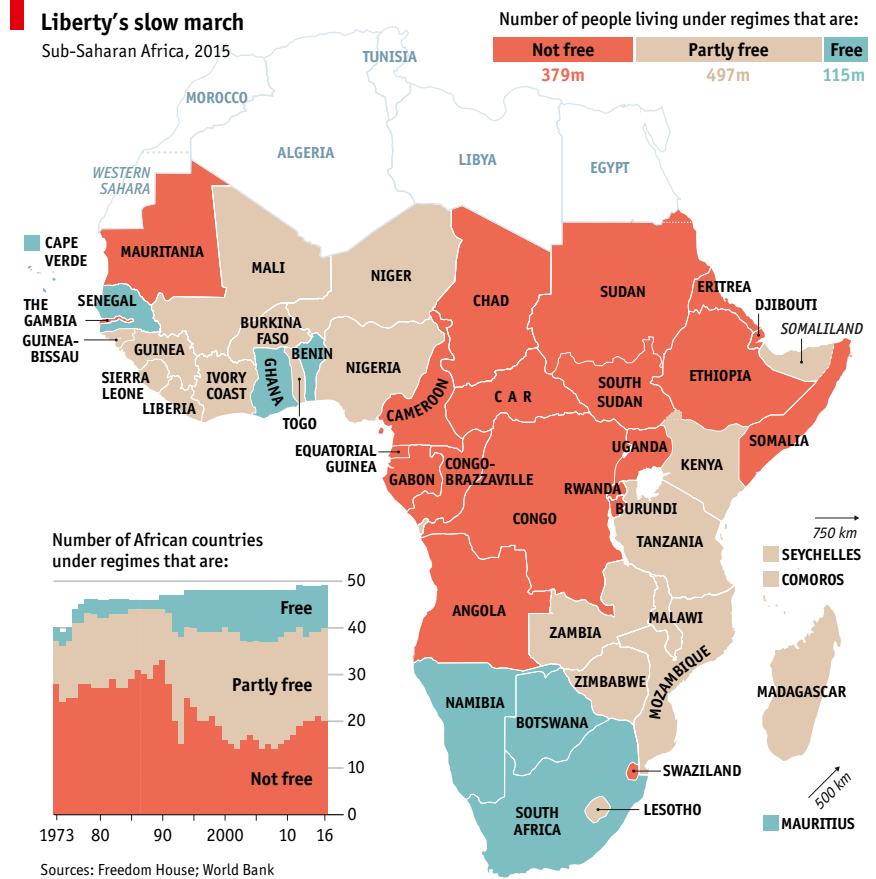
Optimists point out that three decades ago almost no African countries had term limits; since then, some 33 of 48 new constitutions enacted in Africa have included them. Most Africans say they like the idea. Afrobarometer, a polling firm, found that about three-quarters of people in 34 African countries said that presidential mandates should be restricted to two terms.

In parts of east Africa the problem is less the domination of politics by one man and more the fact that politics is often contested along tribal lines or dominated by powerful incumbents who blur the division between party and state. In Ethiopia, for instance, an authoritarian government dominated by the Tigrayan ethnic group has whittled down the opposition, imprisoning many of its people; in last year's election the ruling party won all the seats in parliament. In Tanzania, where a new president, John Magufuli, took office last year, his Chama cha Mapinduzi (Party of Revolution), the longest-ruling in Africa, was never likely to lose. When the people on the island of Zanzibar dared to vote for a different party, the result there was promptly annulled.

In Kenya President Uhuru Kenyatta and his allies seem determined at all costs to win next year's elections again. If the result is close, or people believe it to have been rigged, there is a risk that the violence that led to some 1,300 deaths in 2008 will recur.

In southern Africa the picture is mixed. Democracy looks entrenched in South Africa, it functions fairly well in Namibia and Botswana, and more or less in Malawi. But in Zimbabwe and Mozambique voting has failed to push out two of the most spectacularly corrupt regimes, and Swaziland is ruled by an absolute monarch.

So why has democracy across sub-Sa- ▶▶



▶ haran Africa's heterogeneous 48 countries recently stumbled? In some places it was never strongly rooted in the first place. Mr Kagame, for example, has always been an autocrat at heart, even though he rode to power with an initial vote of confidence. Under Mr Kabila, despite his messy election in 2006, DRC was never going to become a proper democracy.

And even where states embrace the outward forms of democracy, holding regular elections, few enjoy the checks and balances provided by strong institutions and independent courts and civil services. This shortcoming is compounded by the fact that in many African countries the strongest institution is the army.

Yes General, er, Prime Minister

Nicholas Cheeseman, an academic at Oxford University, reckons that of 91 presidents and prime ministers to have held office on the continent in civilian regimes since 1989, 45% once either served in the armed forces or were guerrillas before becoming politicians. This includes all four presidents in the Great Lakes region around eastern Congo, as well as Nigeria's Mr Buhari. Coups are far less common these days; the African Union, often an ineffectual organisation, has recently taken a firm stand against them. Yet the prevalence of so many former fighting men in civilian office highlights the influence that armies still wield in politics.

This may well be reinforced by a shift in the priorities of Western governments, from promoting democracy to fighting *jihād*. Uganda's contribution of 6,000 soldiers to suppress al-Shabab, a jihadist group in Somalia, means that Western governments are less inclined to criticise Mr Museveni. The same applies to Ethiopia's government, which also acts against al-Shabab. It has been accused by Human Rights Watch of killing more than 400 peaceful protesters since last November, yet Western criticism is muted at best.

African autocrats have also benefited from China's rise as an economic and political power. The authoritarian regime of José Eduardo Dos Santos in Angola, for instance, has turned to it for cash when it has disliked the conditions such as making its budget transparent which are imposed by organisations like the IMF.

Yet neither Chinese money nor Western apathy alone explains why things are getting worse in countries such as Zambia, Tanzania and Congo. Part of the explanation lies in the narrow nature of most African economies. Many of them rely on the export of one or at best a handful of commodities. In the likes of Angola, which depends hugely on its oil, or Zambia, which relies on its copper, the easiest path to riches is not by coming up with a new product or service, but by going into politics or befriending someone who has done so; the

government is funded by royalties from oil or by mining companies rather than by taxes on people who may start demanding better governance and services.

In turn, money is redistributed downwards in exchange for votes. At political rallies across the region people are paid in cash for turning up. On polling day they are bused in and given food and T-shirts.

Sir Paul Collier, an economist at Oxford University, thinks the defining feature of politics in much of the continent is that the winner takes all—and uses state power to try to keep it. Institutions such as the civil service, electoral commissions and the courts often lack independence. That creates a vicious dynamic, says Sir Paul. Instead of governing well, politicians are keener to steal money so as to bribe and rig their way back to power. Ideological differences and arguments over policy barely register in election campaigns. In many cases politicians fall back on appeals to tribal, religious or regional loyalties.

In Kenya, where five leading ethnic groups make up more than three-fifths of the population, tribal leaders generally campaign on variations of the promise that it is their group's "turn to eat". Politicians from two ethnic groups—the Kikuyu and the Kalenjin, a clutch of ten or so smaller tribes linked by language—have had the biggest say in running the country for most of its 52 years since independence. Politicians from another big tribe, the Luo, have tended to lead the opposition. Most Kenyan elections since the return of multi-party democracy have been marred by varying degrees of violence.

Across the African board, the winner-takes-all aspect is common almost everywhere, including South Africa, which has the most advanced economy and strongest institutions. Yet Mr Zuma, its president,



Just the beginning

was roundly criticised a few years ago for saying, "You have more rights because you're a majority; you have less rights because you're a minority. That's how democracy works." This tendency explains why elections in large parts of Africa so often result in riots and why relatively democratic countries, such as Ghana or Kenya, seem to suffer more from corruption than some more autocratic ones, such as Ethiopia or Rwanda.

Yet constitutional changes to devolve power can go some way to improving things. Kenya's newish constitution has given marginal groups more of a say over their own affairs. Democracy can plainly be improved by stronger institutions and less politicised civil services, as well as by a vibrant civil society and free media.

One big hope lies in the continuing rise of an educated, wealthier middle class. As Africa in general gets richer and the younger generation turns against the bribery and corruption of the old order, the demand for decent governance will get louder. According to a study by Sir Paul, democracies become less inclined to violence and patronage-based politics as incomes rise. Once GDP per head rises above roughly \$2,700, greater democracy generally begins to make countries more stable. Some 12 sub-Saharan countries have reached this level. Except for the corrupt petro-states of Equatorial Guinea and Gabon, they are the ones where democracy is performing best.

Urbanisation should also play a role in promoting openly contested politics. In Uganda and Tanzania national politics may still be dominated by parties long accustomed to rule, but the main cities of Kampala and Dar es Salaam are run by mayors from opposition parties. In South Africa the two cities that host Parliament and the seat of government are now run by parties opposed to Mr Zuma's ANC.

If it is true that urban voters, who on the whole are better educated and richer than their rural counterparts, tend to be more willing to kick out incumbents, then demography is on democracy's side. By 2050 more than half of Africans will live in cities, up from just a third today.

Technology may also lend a hand. In Nigeria young voters with smartphones snapped pictures of the tally at remote counting stations and posted the pictures on social media, stymying attempts by the ruling party to rig the vote. As smartphones proliferate and more people have access to the internet, crooked governments will be less able to ignore the voters' wishes. And as Africa becomes more urban and its middle class grows, so too will the demand—egged on by social media—for democracy. Whereas previous waves of democratisation in Africa came from abroad, expect Africans themselves to generate the next democratic tsunami. ■

Israel and Gaza

Alms for the enemy

JERUSALEM

Allowing humanitarian aid risks having it diverted to Hamas

THE indictments this month in an Israeli court of two Palestinians employed by international aid agencies have become a valuable weapon in the Israeli government's public-relations war against Hamas, the militant Islamist movement that has ruled Gaza since 2007. In the first, a local director for World Vision, one of the world's largest Christian aid organisations, stands accused of diverting millions of dollars to the armed wing of Hamas; the money, Israel alleges, was used to buy weapons, build fortifications and pay fighters. In the second, an engineer working for the UN Development Programme (UNDP) was charged with building facilities for Hamas.

Israeli intelligence officials claim that these cases are only the first in a series that will show how Hamas has co-opted international aid organisations to bankroll its military activities. Hamas denies the claims, and World Vision and UNDP maintain that their activities in Gaza have been closely audited. The evidence, collected by Israel's Shin Bet internal security agency, will now have to stand up in a civilian court. But the indictments were enough for Israel's foreign ministry to launch a major media offensive and for the prime minister, Benjamin Netanyahu, to claim in a video posted on Facebook that "Israel cares more about Palestinians than their own leaders do," since "Hamas stole critical support for Palestinian children so that they could kill our children."

Setting aside Mr Netanyahu's hyperbole, the revelations underscore not only the continuing efforts of Hamas to build up military capability but also the difficulty faced by aid agencies in getting help to those in desperate need of it in Gaza. All humanitarian organisations working in war-zones face pressure to juggle the often conflicting demands of helping people without being seen to favour one side or another (while also meeting strict rules on good governance and corruption when they may be forced to treat with armed groups to get their aid through).

Yet even by these standards Gaza is an especially difficult environment for humanitarian groups. Although Israel is not physically present in the strip (it dismantled its settlements and withdrew its forces in the summer of 2005), it controls nearly all access, bar the Rafah crossing, which is intermittently opened by the Egyptian government. Yet Israel forbids international organisations from interacting with Ha-

mas, which it (like several other governments) defines as a terrorist organisation. "Even the best-organised operations have no choice but to operate in a grey zone in Gaza," says Michael Sfar, an Israeli human-rights lawyer who advises humanitarian organisations working in the Palestinian territories. "Israel considers every civil servant who is paid by Hamas a terror operative, so even a medical-relief organisation that supplies incubators to a hospital in Gaza can be potentially accused of aiding terror."

Both Israel and Egypt justify the restrictions imposed on travel and imports to Gaza by citing Hamas's violent activities. Although Israel has kept Gaza under tight control since the Hamas takeover in 2007, the latest prosecutions highlight the difficulty of continuing to do so without prompting a humanitarian disaster. And

even Israel's own stance towards Hamas has informally softened with time. Israel co-ordinates the strip's civilian affairs through officials appointed and paid by the Palestinian Authority based in the West Bank. Meanwhile Hamas has its own parallel civil service, with which Israel will not officially deal. Yet only last month Israel allowed the Qatari government to transfer \$31m to make up for a shortfall in Gaza's finances and pay Hamas officials.

Israeli security officials say that allowing day-workers to enter Israel and building a seaport for Gaza would not only improve Palestinian welfare, but also reduce the chances of yet another outbreak of violence. Mr Netanyahu has said in recent closed briefings that he would consider such ideas. Yet given his intense public campaign against Hamas, such pragmatism would be a hard sell at home. ■



Christians in the Arab world (1)

Crimes and no punishment

MINYA

Violence is only one of the problems faced by Christians in Egypt

IT BEGAN with an argument over money, says a resident of Karam village in Minya. A shop-owner called Ashraf, a Coptic Christian, could not pay his Muslim suppliers. So they started a rumour that Ashraf was having an affair with a Muslim woman. In May a group of enraged Muslim men burned down his house along with several other homes owned by Christians. Ashraf's elderly mother was stripped naked and dragged around the village.

Tensions are rising between Egypt's two largest religious communities. The head of the Coptic church, Pope Tawadros (pictured above), says attacks against Christians, who make up between 5% and

15% of the population, occur about once a month. The Egyptian Initiative for Personal Rights (EIPR), a pressure group, counted 77 incidents of sectarian violence and tension in Minya, where there is a large Christian minority, since 2011. At least ten incidents this year have resulted in discord, death and destruction.

The EIPR's count excludes a spate of violence three years ago, when protesting supporters of Muhammad Morsi, an Islamist president who was ousted in 2013, were violently dispersed by the government. In response, they burned dozens of churches. Since then Abdel-Fattah al-Sisi, a former general who deposed Mr Morsi, ►►

▶ has tried to ease religious tensions. In 2015 he became the first president to attend (albeit briefly) Christmas mass at Cairo cathedral. “We’re all Egyptians, first and foremost,” he said. He attended again in 2016, vowing to restore churches and homes that had been burned down.

Pope Tawadros has staunchly supported Mr Sisi, whom he once referred to as a “saviour” and “hero”. But Christians are growing disenchanted with Mr Sisi’s lack of progress. “We were expecting it to be much better,” says Magdi Kemal Habib of Minya, who nevertheless backs the president. The church’s leader in Minya is more critical. “He just gives good feelings, but these feelings need to be translated into actions,” says Bishop Makarios. Christians still face discrimination in the job market and are under-represented in government. The authorities often treat them like second-class citizens. It is, for example, exceedingly hard to get the state to recognise conversions to Christianity from Islam.

When disputes with Muslims arise Christians say they are urged not to go to court. Instead officials rely on informal “reconciliation councils”. These invariably favour Muslims, who often face fines but no other punishment for crimes such as arson. Christians, on the other hand, tend to get harsh justice even for minor (or inane) offences: a teacher in Minya who filmed his students mocking the jihadists of Islamic State was convicted in court of blasphemy and sentenced to three years in prison. Four teenage students received sentences of up to five years in prison. Appeals are in the works, but a reconciliation council has expelled the teacher and his family from their village.

Sectarian violence often accompanies Muslim claims that Christians are trying to build new churches. The government has made church-building extremely hard by withholding permits; there are 2,869 churches in Egypt compared with 108,395 mosques. A new bill proposes to guarantee that building permits for churches will be processed within four months. Bishop Makarios does not expect it to pass; nor, if it does, to solve the problem. “Even if there is a law allowing Christians to build churches, there will be a security official who will stop them,” he says.

Some think the Coptic church has struck a Faustian pact with Mr Sisi. Despite the Bible’s direction to “defend the oppressed”, Pope Tawadros excuses the president’s human-rights abuses, while condemning the Arab uprisings of 2011 and echoing the government’s conspiracy theories. In return, Mr Sisi says all the right things. Last year he chastised Islamic scholars for not respecting other religions. “God did not create the world for the *umma* [Muslim community] to be alone,” he said. But Christians often feel that is exactly what Muslims in Egypt want. ■

Christians in the Arab world (2)

Under the gun

ERBIL

An archbishop laments his flock’s flight

“THE Lord is my shepherd,” says the psalmist, but Nicodemus Daoud Sharaf is finding it devilishly hard to tend his flock. As archbishop of Mosul’s Syrian Orthodox church, he has been chased out of one of Christianity’s oldest dioceses. Most of his congregation fled when the city was conquered by the jihadists of Islamic State (IS); now he ministers to what is left of it in Erbil, the capital of Iraq’s Kurdish region.

Archbishop Nicodemus says he was the last senior churchman to leave Mosul in July 2014. Since then, he says, 32 churches in Mosul and in the surrounding plain of Nineveh have been burnt or put to other uses. His cathedral is now a mosque dedicated to *jihad*. “For the first time in the history of Christianity, there are no Christians praying in Mosul,” he adds, weeping. “Even under the Mongol hordes and Hulagu Khan [in the 13th century] it wasn’t so bad.”

As the archbishop sees it, the IS takeover is the culmination of a lengthy campaign by assorted Muslims to squeeze Christianity out of the Middle East. During the first world war Sunni Turks and Kurds purged Anatolia of Greek, Armenian and Syriac Christians, partly in response to the earlier expulsions of Muslims from the Crimea and south-eastern Europe by Orthodox Christians. Since then, he says, Sunni Arabs have done most of the tormenting. When Iraq became independent in 1932, Christians made up 12% of its people. By the time Saddam Hussein was ousted in 2003, they had fallen to 6%. Since Ameri-

ca’s invasion, two-thirds of Iraq’s remaining 1.5m Christians have left.

Though Sunni jihadists have been in the vanguard of efforts to kill or expel Christians, Iraq’s Shia-led establishment has hardly been friendly: the government adorns its flag with the Islamic salute, *Allahu akbar* (“God is greatest”), implicitly demoting non-Muslims. “Christian Syrians were here first,” says the archbishop. “But our guests took us over”

Many of Iraq’s city centres, he adds, were once predominantly Christian—including Erbil, his Kurdish-run haven. The Kurds, he admits, have given sanctuary what is left of his flock. In Ankawa, a district of Erbil that has become the Christians’ Iraqi heartland, a statue of the Virgin Mary stands tall. On Sunday evenings Ankawa’s churches are full, mostly with people displaced by IS. A Catholic university opened last year. The Kurdish government’s religious-affairs ministry has departments for Christians, Yazidis and Jews. Its flag has no Muslim symbol.

Archbishop Nicodemus can do little more than vent his grievances on local television. Saddam’s rule was bad, he says. So is that of Syria’s leader, Bashar al-Assad. But the jihadists who have taken their place are worse. Iraq’s minorities were once the glue that straddled Iraq’s sectarian and ethnic lines and held the country together. No longer. In his father’s day, Christians would celebrate Easter by parading through Mosul’s streets, thumping their drums. It was the same in Damascus. Now the dwindling remnants stay indoors.



Tending a scattered flock



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Putin's personnel moves

Dancing in the dark

MOSCOW

Desk shuffles in the Kremlin signal something, but no one knows what

THE Kremlin's political nature resembles its physical structure: a walled fortress whose interior is invisible to those on the outside. On August 12th, when President Vladimir Putin sacked Sergei Ivanov, his powerful chief of staff, the Kremlin released only a cryptic video in which Mr Putin thanked Mr Ivanov for his 17 years of service. The move's real meaning was left to speculation. This aura of mystery is not happenstance, but a guiding principle. "We have a system that believes it can do anything without any explanation," says Gleb Pavlovsky, a former Kremlin advisor. "We have only a black box."

Mr Ivanov, like Mr Putin an ex-KGB man from St Petersburg, was seen as one of Russia's most influential figures, perhaps second only to the president himself. The decision to replace him with the 44-year-old Anton Vaino fits a broader pattern of Mr Putin's old comrades being pushed out in favour of younger loyalists. "Those who don't fit Putin's vision of the new aims are leaving," says Aleksei Chesnakov, a former presidential administration official. However, he adds, "no one except the president knows what those new aims are."

The switch comes at a sensitive time. Parliamentary elections loom in mid-September and the Russian economy remains weak. Tensions with Ukraine have escalated over Russian allegations of an attempted terrorist attack in Crimea. Russia is also

expanding its presence in the Middle East, launching bombing runs into Syria from Iranian bases this week.

So, Kremlinologists wonder, does the shake-up signal that Mr Putin wants early presidential elections next year, as a means to renew his mandate and launch needed economic reforms? Or does he instead plan to step down as president in 2018? Is Dmitry Medvedev, Mr Putin's successor in 2008, destined to return once more? Or is Mr Putin seeking a new heir? "The bottom line is we don't know much," says Mark Galeotti, a veteran Russia expert.

Certain trends can be divined. Last year the Russian Railways boss, Vladimir Yakunin, a close friend of Mr Putin known for his lavish lifestyle, was dismissed. Earlier this year, Mr Putin created a national guard force, pushing out longtime allies heading the drug enforcement agency and federal migration service. New faces have taken over the powerful economic-crimes department of the Federal Security Service (FSB). In July Andrei Belyaninov, chief of the lucrative customs service, stepped down after FSB agents raided his home and found stacks of cash. As budgets tighten, such blatant corruption has become too costly to tolerate, some analysts argue.

As for Mr Ivanov, the death by drowning of his son in 2014 may have left him exhausted. He retains his seat on the powerful Security Council, suggesting that any

falling-out with Mr Putin may be overblown. Yet he had reportedly been excluded from the inner circle for some time. Some analysts think Mr Putin is losing interest in the independent counsel of old friends who can speak to him as equals.

In any case, clearing out ageing comrades helps refresh (and intimidate) the country's elite. Without public politics, Mr Putin's system lacks effective means for generating new cadres. Where the Soviet Union had a Communist Party that trained and promoted new leaders, today's Russia relies on informal nepotistic ties.

As Mr Putin's long rule continues, he has become increasingly concerned with the personnel problem. When he returned to the presidency in 2012, he created new recruitment channels, says Nikolai Petrov, a political analyst. Primary elections earlier this year by the ruling United Russia party served as "an incubator of new faces", says Andrei Kolesnikov of the Moscow Carnegie Centre, a think-tank. The president even put his weight behind a national academy for gifted children in Sochi.

Buddy guards

Yet when it comes to new appointments, Mr Putin is still turning to people he knows personally. This year he appointed former bodyguards as governors in three regions. Another former bodyguard, Victor Zolotov, heads the national guard. The new generation of "Putin's people" tend to owe their careers entirely to the president. They should be "loyal, effective and non-ideological", says Evgeny Minchenko, a political consultant.

The president's new right-hand man, though not a bodyguard, has also spent his career by Mr Putin's side. Working in the administration's protocol department, Mr Vaino kept Mr Putin's schedule, accompa- ▶▶

nied him on travel and carried his umbrella. Oleg Matveychev, a former presidential administration official, says Mr Vaino developed a reputation as “rigorous, upright and well-dressed”.

The grandson of an Estonian Communist Party leader, Mr Vaino started out as a diplomat, serving in Tokyo. (Japanese observers wonder if Mr Vaino’s promotion augurs a deal over the disputed Kuril Islands.) As a bureaucrat unlikely to challenge Mr Putin, he may turn the administration into a less influential, more technocratic operation. But Mr Vaino is

also auditioning for future roles. Mr Putin’s former chiefs-of-staff have included Sergei Naryshkin (now speaker of the Duma), Sergei Sobyanin (mayor of Moscow), and Mr Medvedev (prime minister, for now).

Mr Vaino’s promotion may portend wider changes. Ministers may be swapped out after parliamentary elections. More old cronies, such as the Rosneft head, Igor Sechin, may find themselves under fire. Yet where these shifts will take the country remains a mystery. That is part of the point. As Kirill Rogov, a political analyst, explains: “They believe that secrecy is power.” ■

example, to deport refugees who commit crimes. On August 11th Thomas de Maizière, the federal interior minister, offered his own ideas to get even tougher. These range from increasing video surveillance to easing confidentiality requirements between doctors and patients, so that psychiatrists, say, can tell on people they deem dangerous (though doctors are already obliged to report such cases).

A few worry that the new measures represent panic, not sound policy. Even Mr de Maizière, a Christian Democrat himself, rejects some of his party colleagues’ more extreme ideas. He sees the burqa as a symbol of failed integration and the subordination of women, he says, but “you can’t prohibit everything you reject”.

Centre-left politicians, meanwhile, worry that the debate is veering off course. It was a government of Social Democrats and Greens that in 2000 liberalised citizenship laws, mainly so that the children of Turkish guest-workers no longer had to choose between their native and inherited nationalities. The premise was that they could then integrate better into society. (At the latest count, in 2011, 4.3m Germans had another citizenship, 530,000 of them Turkish.) If Germany now forces its Turkish citizens to choose one loyalty, says Sigmar Gabriel, the Social Democrats’ boss, that “would only help Mr Erdogan. He’s happy when we split people again, into Turks and Germans”.

Nonetheless, the debate will stay hot for the coming year, ahead of the federal election in the autumn of 2017. The campaign has, in effect, started already: two of Germany’s 16 regions, Mecklenburg-West Pomerania and Berlin, will elect new assemblies next month. In both contests a populist anti-immigrant party, the Alternative for Germany (AfD), is likely to enter state parliaments. In north-eastern Mecklenburg—the only state legislature where the NPD, a party considered to be neo-Nazi, is currently represented—the AfD is even polling at 19%, not far behind the Social Democrats and Christian Democrats, who govern the state jointly. But the AfD puts most pressure on the Christian Democrats, who view security as part of their brand. This is why the interior ministers of Mecklenburg and Berlin, Lorenz Caffier and Frank Henkel, are the driving force behind the “Berlin declaration”.

Fears that migrants may commit terror are justified. The domestic intelligence service knows of 340 cases in which Islamic extremists have entered refugee centres in search of recruits. But banning burqas and dual citizenship will not assist security or integration. It would be disastrous, warns Wolfgang Kubicki of the Free Democrats, a liberal party, if politicians eager to translate Angst into votes jeopardised “all that makes us different from Turkey under Erdogan and Russia under Putin”. ■

Germany’s new security measures

Integration panic

BERLIN

An incoherent batch of proposals to soothe anxiety about terrorism

EVEN by their own exacting standards, Germans are experiencing a lot of Angst this summer. They are still jittery after a series of terrorist attacks in July, including two by Muslim refugees. They are also newly nervous about the 3m German citizens and residents of Turkish descent, many of whom have staged demonstrations since last month’s coup attempt in Turkey in support of its president, Recep Tayyip Erdogan. Most Germans are wary of Mr Erdogan, who has been cracking down on opponents real and imagined at home and has requested the extradition of several suspects from Germany (see page 41). Between the attacks and the demonstrations, many Germans feel civilisations are clashing on their own streets.

In response to the anxiety, politicians

have come out with a burst of proposals claiming to get tough on terrorists, tough on security, tough on integrating refugees—in short, tough on the whole confused range of identity-politics issues that are making Germans nervous. On August 18th the eight interior ministers of German federal states who belong to the Christian Democratic Union, the centre-right party of Chancellor Angela Merkel, met in Berlin to issue a declaration summing up the proposals. Some of these, such as adding more police, are uncontroversial. Others that are politically explosive include restricting dual citizenship and banning the public wearing of burqas (veils covering both body and face).

Germany has already tightened asylum rules in the past year—making it easier, for



Clash of civilisations?

Match-fixing in Italy

You betcha

ROME

Italians are not the only ones throwing matches

WHEN the Italian football season opens on August 20th, fans who have been staving off their soccer cravings by following news of summer transfers will at last get a chance to watch some real competition. Or will they? Recent investigations have shown that an alarming number of matches are not contests at all, but choreographed performances, the results known to some of the participants before any whistle is blown.

The latest scandal, which led to ten arrests (including at least three players) in May, concerns two second-division games in the 2013-14 season, a 1-0 victory by Modena over Avellino and a 3-0 win by Avellino over Reggina. Also in May, two other judicial offensives reached turning points. In the northern town of Cremona a judge sent more than 90 people to trial, including a former player for Italy. The charges, arising from an investigation code-named Last Bet, relate to an alleged conspiracy to fix results in both senior divisions, Serie A and Serie B, as well as a junior one. Meanwhile, in the southern city of Bari, five people convicted of rigging major Serie B games in the 2007-8 and 2008-9 seasons were given suspended sentences.

June brought yet more evidence of football-related skulduggery: prosecutors in the southern city of Catanzaro sought the indictment of 63 people accused of involvement with criminal networks that rigged matches in the lower divisions. More than 30 teams were affected.

It is hard to say whether all this activity shows Italy's football to be unusually corrupt, or that its prosecutors are exceptionally diligent in pursuing match-fixing. The Last Bet case extends far beyond Italy. In 2013 evidence gathered by the prosecutor overseeing the case led to the arrest in Singapore of a businessman, Tan Seet Eng (more commonly known as "Dan Tan"), believed to have been the kingpin of a global match-rigging network that made millions of dollars out of games in Italy, Hungary and Finland. Mr Tan was held for two years under a law allowing for indefinite detention without trial in the interest of public safety. He was released last November, only to be re-arrested a month later on accusations of intimidating witnesses.

Corruption in sport is almost as old as sport itself, but the immense growth of betting in recent decades, especially on football, has multiplied the incentives for bribery. According to Sportradar, a Swiss-based



multinational that analyses sports data, bets worth €750 billion (\$845 billion) are placed each year, and more than half relate to football. Sportradar's fraud detection unit thinks about 1% of matches have been rigged. Recent high-profile cases have involved a top Zimbabwean official, a German referee and players in several Asian countries. Nor is football the only target. Evidence of corruption has emerged in cricket, baseball, tennis, snooker and, most recently, e-gaming, which now attracts betting just as traditional sports do. In April prosecutors in South Korea charged two of

the world's leading StarCraft players, Lee Seung Hyun (alias "Life") and Jung Woo Young ("Bbyong"), with accepting \$62,000 to throw matches.

What makes some of the current cases in Italy particularly serious is evidence of the involvement of mobsters. Gambling of all kinds has long been a way to launder ill-gotten cash. By fixing contests on which they bet, gangsters can ensure they make even more. In the scandal that triggered May's arrests in Italy, the alleged beneficiary is a clan of the Camorra, the mafia of Naples. Match-fixing is no game. ■

Turkish anger at the West

Duplicity coup

ISTANBUL

Turks are convinced that Europe and America had something to do with the attempted putsch

THE aftermath of the attempted coup in Turkey on July 15th has been fertile ground for conspiracy theories. Pro-government newspapers have alleged that CIA agents directed the coup from an island in the Sea of Marmara; that a retired American general wired billions of dollars to rogue Turkish soldiers; and that the United States directed Turkish forces to kill Turkey's President, Recep Tayyip Erdogan. An Islamist daily called Germany an enemy state, and pictured its chancellor, Angela Merkel, in a Nazi uniform.

The surge in anti-Western sentiment is widely shared. One poll found that 84% of Turks believe that the coup-plotters received help from abroad; more than 70% suspect America of having a hand. Mr Erdogan and his ministers have accused the West of double standards, and warn of a serious deterioration in ties unless the United States extradites Fethullah Gulen, the Pennsylvania-based Islamist cleric whom

they blame for orchestrating the coup. A senior American official complains that using Mr Gulen as the only yardstick for bilateral ties puts the relationship at risk. Mr Erdogan does not seem to care.

In part, Western governments have themselves to blame. With the exception of America and Germany, many were slow to condemn the coup attempt, fueling suspicions that they were waiting to see how it would play out. In response to the purge of government institutions that followed, Austria's chancellor urged the European Union to suspend membership talks with Turkey. Germany's top court banned Mr Erdogan from addressing a rally in Cologne by video link. To date, no EU head of state has travelled to Turkey to express solidarity with the victims. A visit to Ankara by America's vice-president, Joe Biden, due on August 24th, is seen as too little, too late. "The United States should have shown stronger political support ear- ▶▶

liar," says Unal Cevikoz, a former Turkish ambassador to Britain.

Turkish politicians, including those opposed to the ruling Justice and Development (AK) party, accuse the West of being more critical of the government's response to the coup than of the carnage that accompanied the putsch. Some Western diplomats acknowledge a failure to come to grips with the scale of the violence, which left some 270 dead, and with widespread support for the purges. "There is no understanding in Europe that things would have been much worse if the coup had succeeded," says one. "For the Turks, this was a test of loyalty, and Europe failed it."

Yet Europe is right to fear that the crack-down on suspected Gulen sympathisers has spun out of control. Over 80,000 people have been arrested, sacked or suspended, including soldiers, judges, teachers, policemen, businessmen and even football officials. Nearly 100 journalists have been detained and more than a hundred media outlets shut down; ordinary criminals have been set free to make room for political cases. Many of those purged appear to have only tenuous links to the Gulenists. But concerns about repression fall on deaf ears, writes Sinan Ulgen, a former Turkish diplomat. The West, he says, "has eroded its ability to gain influence in Turkey at a time when this leverage is possibly more important than ever".

Popular resentment against the West and the Gulenists has accomplished what Mr Erdogan had failed to in recent years: rally a large majority of Turks to his side. Since late June, the president's approval rating has jumped from 47% to a record 68%. A mass gathering addressed by Mr Erdogan earlier this month attracted over a million people, as well as the leaders of two of the three biggest opposition parties. The main pro-Kurdish party was left out.



All part of the conspiracy

The hunt for Gulenists

Extradition quest

ISTANBUL

Turkey's global dragnet for anyone it links to the coup

TURKEY has good news for inmates of its crowded prisons. A decree on August 17th made some 38,000 of them, excluding those convicted of serious crimes such as murder or rape, eligible for parole after serving half their sentences. The aim is to make room for the civil servants, soldiers, journalists and others detained in connection with Turkey's failed coup—35,000 at the last count.

Having sworn to crush the Gulen movement, an Islamic sect it blames for the coup, Turkey's government is now taking its purge abroad. The foreign ministry has recalled over 200 diplomats as part of the investigation. Of those, 32 are believed to be on the run. Eight soldiers who flew their helicopter to Greece have claimed asylum there; Turkey has asked for their extradition. It has issued an arrest warrant for Hakan Sukur, a retired football star living in America.

Turkey is also doing what it can to lean on foreign governments to dismantle a chain of Gulenist charities and private schools that spans 160 countries. Some have complied. Somalia recently closed two schools and a hospital. Azerbaijan fired 50 Turkish university teachers linked to the group and launched an

investigation into a local Gulenist network. Others are less likely to follow. In many parts of the world the schools offer a decent education, often in English, to the children of local elites. Indonesia and Kenya say they will play no part in a crackdown that conflates pro-coup Turkish bureaucrats with teachers and charity workers. Under Turkish pressure, Albania screened dozens of its own Gulen schools last year for any signs of wrongdoing. It found none.

Turkey's main target is the movement's septuagenarian leader, Fethullah Gulen, who has been ensconced in a farmhouse in Pennsylvania since 1999. Turkey's president, Recep Tayyip Erdogan, who once praised Mr Gulen, now calls him the coup's mastermind, and wants him extradited. Other than the testimony of the army's chief of the general staff, who says that one of the plotters offered to put him on the phone with the preacher, Turkey has not produced compelling evidence against Mr Gulen. "What documents do you need when 265 people have been killed, bombed from jets and run over by tanks?" the prime minister, Binali Yildirim, recently asked. It may take more than that to convince the American courts.

In Mr Erdogan's view, only one outside power has adequately backed his government: Russia. Before meeting Vladimir Putin in St Petersburg on August 9th, the Turkish leader praised him for wasting no time in offering his support. Unlike Western of-

ficials, Mr Erdogan pointedly remarked, "Putin did not criticise me on the number of people from the military or civil service who had been dismissed".

Such plaudits, along with Mr Erdogan's show of contrition for Turkey's downing of a Russian jet last November, are music to Mr Putin's ears. Yet much as the Russian leader might want to exploit the rift between Turkey and the West, his dalliance with Mr Erdogan has its limits. Mr Putin might offer Turkey some support against the Gulenists in Central Asia, where the movement runs a network of schools, says Soner Cagaptay of the Washington Institute, a think-tank. But the two countries will remain divided over the crucial issue of Syria, where they are still backing opposite sides in the country's civil war.

For now, says a Western diplomat, NATO need not fear that Turkey will stray far from the alliance. But, he continues, Mr Putin will continue to pit Turkey against America and the EU: "He can play that game better than anyone else." For a decade, Turkey's once pro-European government has been drifting away from the West. After the ambivalent American and European responses to the coup, that drift is accelerating. ■



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Counter-terrorism

Driving away the shadows

Early intervention to prevent terrorism is tough to get right. Britain does not do a bad job

ANJEM CHOUDARY had long, and skilfully, avoided the British criminal-justice system. Yet on August 16th the press was allowed to report, following the conclusion of a separate trial, that the charismatic radical cleric had been convicted in July of inviting others to support Islamic State (IS). Mr Choudary's former acolytes include Michael Adebolajo and Michael Adebowale, who murdered a British soldier in 2013; Siddhartha Dhar, a suspected IS executioner; and Omar Sharif, a suicide bomber who attacked Tel Aviv in 2003. In the words of a Home Office official, "He preyed on vulnerable individuals to fight his own wars for him." He now faces up to a decade behind bars.

Like other countries, Britain is keen to ensure that preachers like Mr Choudary are unable to spread hate (see page 45). But it puts as much, if not more effort into dissuading vulnerable people from following the extremists' proclamations. Much of this work comes under the Prevent strategy. Prevent is one of four strands of counter-terror efforts, alongside Pursue (to stop attacks), Protect (to reduce vulnerability) and Prepare (to minimise the impact of attacks). It includes Channel, a programme in which those identified as being at risk of radicalisation are offered a tailored package of education, counselling and support.

In the strategy's early years, after the London bombings of July 2005, Prevent

funded projects like sports teams and youth clubs in the hope they would improve integration. But some money found its way to extremist organisations. Partly as a result, in 2011 the Tory-Lib Dem coalition refocused the programme on terrorism. Last year the new Tory government passed a law placing a sweeping duty on public-sector bodies to stop people from being drawn into violent extremism.

That has led to a vast expansion of the government's counter-terror work. In 2012-13, 95,921 public employees were trained in how to spot future terrorists; last year 243,662 were. In the past five years 10% of Britain's 5.4m public-sector workers have been through the training. Other parts of the programme have grown, too. In 2015 social-media snoopers removed 55,000 pieces of propaganda, 22% more than in 2014. The government's counter-propaganda was viewed 15m times, compared with 3m times in 2014. A typical example features interviews with the parents of British IS fighters, interspersed with scenes of Syrian devastation.

Measuring success is hard, but there are some positive indicators. By the end of 2015, 760 people had travelled from Britain to the conflict in Syria and Iraq, the same number as from more-populous Germany and many fewer than the 1,700 who had travelled from France by May 2015. The government says that it stopped more than

150 attempted journeys to such places last year. Frank Foley of King's College London notes that Britain has been subject to fewer co-ordinated attacks than France, despite the uncompromising tactics employed by the French police, which include shutting premises suspected of hosting non-violent extremists and wider use of surveillance. Security types put Britain's record down to its intelligence expertise. Yet it has also seen relatively few "lone wolf" incidents, which can be minimised only by early intervention, says William Baldet, a Prevent co-ordinator in the Midlands.

Ramping up Prevent has upset some. Following news this month of the apparent death of Kadiza Sultana, a 16-year-old east Londoner who had joined IS in Syria in February, Rushanara Ali, the girl's local MP, said she had "huge concerns" about the programme. The training of public-sector workers is the main worry. More people will now be primed to see signs of radicalisation, says Miqdaad Versi of the Muslim Council of Britain, an umbrella group, meaning that "the natural consequence of the policy is discrimination."

One teacher says he attended a session that consisted of a 20-minute slideshow so basic it left people confused as to why they were there. The schools inspectorate has warned that some colleges view Prevent as little more than a "tick-box exercise".

Reasonable disagreements mix with myths. Many believe that a referral to Channel earns a criminal record (it doesn't); newspapers run stories about public officials referring people over absurd misunderstandings (often exaggerated). Prevent officers argue that such fears bear no relation to how the programme works. There has been a jump in the number of referrals to Channel and 80% are turned away. Yet the panels that adjudicate ►►

cases handle reports sensitively, checking they are not malicious or misguided, and those referred won't know unless their case is taken up, says Mr Baldet.

The work is similar to programmes that deal with sexual abuse or gang membership, says Sean Arbuthnot, a former police officer who had local responsibility for Prevent. Officers can educate people who make inappropriate referrals, he says. And "I would rather have 99 rubbish referrals than have one child who ends up in Syria."

Those who are taken on can leave the programme at any time. Some are helped to find a job or to reconnect with their family; others are gradually talked out of their beliefs. And although Channel focuses on Islamist radicals, in 2012-13 one in five of those referred was not a Muslim (most concerned far-right extremism).

Still, some Muslim parents now advise their children not to discuss politics or religion in public in case it is taken the wrong way. Teachers are similarly nervous, says Kenny Frederick, a former head teacher in Tower Hamlets in London. That is a shame, she says, as it stifles debate, which is the best way to change minds. Worse relations between the state and Muslim communities could undermine all of these efforts.

In many ways it is odd that the most moderate of Britain's counter-terror efforts provokes the most opposition. Prevent's supporters wish the Home Office would trumpet its achievements. Yet it is not that easy. Much of the programme involves vulnerable people; other parts would be less effective if state support were broadcast. As a result, Prevent is shrouded in secrecy. Perhaps the biggest secret, though, is that it is not as nasty as it seems. ■

The Brexit trigger

To pull or not to pull

The case for delaying the start of the Brexit process

HERESA MAY knew from the moment she became prime minister last month that Brexit would be her biggest test. Nobody has ever before tried to disentangle a large and sophisticated economy like Britain's from as intricate and regulated a body as the European Union, after it has been a member for 43 years. Before the June referendum, David Cameron's government noted that Brexit would be the start, not the end, of a process and warned that it could last up to a decade.

The administrative challenge alone is vast. Mrs May has passed much of it to pro-Brexit ministers known, inevitably, as the three Brexiteers: David Davis, Liam Fox



May with a mountain to climb

and Boris Johnson. Just setting up a new Department for Exiting the EU under Mr Davis is taking time. The department is now 150-strong, but it will have to expand to more like 400 (including officials in Brussels). Mr Fox's Department for International Trade needs 1,000 staff, including hundreds of trade negotiators. Relations between the two, and with Mr Johnson's Foreign Office, can be strained. Already Mr Fox and Mr Johnson have clashed over who runs economic diplomacy. Mr Fox and Mr Davis are hardly best friends.

Given all this, it is not surprising that there should be speculation about when to trigger the Brexit process under Article 50 of the Lisbon Treaty. Brexiteers have always disliked Article 50: it sets a two-year deadline that can be extended only unilaterally, and its voting rules exclude the exiting country. Moreover, it is meant to cover mainly administrative issues such as sorting out pensions, relocating EU agencies based in Britain and safeguarding multi-year projects (the Treasury has promised recipients of EU money that it will guarantee their funds, including paying farm subsidies until 2020).

But Article 50 also promises to take account of future relations with the EU. That means, above all, trade arrangements. Yet experienced negotiators say trade deals take far more than two years to negotiate: the Canada-EU agreement has taken seven and has still not been ratified. Brexit will require many such deals, including one with the EU and others with some 58 third countries such as South Korea that have free-trade deals with the EU. Mr Fox has talked grandly of "scoping out" free-trade agreements that Britain might make with Ameri-

ca and Australia. But these cannot be pursued seriously until there is more clarity over Britain's trade relations with the EU.

Some Brexiteers say the simplest course would be to revert to the rules of the World Trade Organisation (WTO), of which Britain is a member. But this would imply tariffs on some goods, and would not cover most services, including financial services. Nor is falling back on the WTO as easy as it sounds. Britain's membership is linked to the EU: to rejoin independently, it must agree on a new tariff schedule, which would be hard in areas with shared import quotas, like agriculture. The WTO's director-general, Roberto Azevedo, likens this to accession—and it needs unanimous approval, including from countries that are not always friends of Britain.

Could the Brexit process be delayed to allow several years of trade talks? Mrs May has said only that she will not trigger Article 50 this year. But letting the start date drift far into next year or even into 2018 could be testing. Tory Brexiteers (and voters) know that Mrs May was a Remainer, so they will pounce on any hints of backsliding. It may be tempting to wait for elections in other EU countries, notably the French presidential election next spring. But putting off Article 50 further might mean its two-year expiry clashes with the European elections and a new EU budget round, both due in 2019. And delays could irritate Britain's EU partners, who might refuse to negotiate seriously until the government shows that it really means to leave.

One alternative proposed by some in London is to seek prior political agreement to extend the Article 50 process beyond two years. But since the treaty requires unanimous approval at the end of the two years, it may not be possible to secure a guarantee that binds future EU leaders.

Another possibility is an interim arrangement to take effect during the hiatus after Article 50 expires, but before the final shape of future trade deals is clear. This would probably be an off-the-shelf model, such as temporary membership of the European Economic Area that includes Norway. This would preserve full access to the EU's single market. But it would have two drawbacks. One is that, in trade, the temporary often becomes near-permanent. The other is that, against Brexiteers' fervent wishes, it would imply continuing to accept free migration from the EU, make payments into the EU budget and abide by all single-market rules.

Life is clearly possible outside the EU. But the process of getting there is full of pitfalls and problems. It is no wonder that Mrs May, contemplating the future from her walking holiday in Switzerland, has said little more than that "Brexit means Brexit". And it is no wonder that she has dumped the responsibility for delivering it into the laps of the three Brexiteers. ■

Bagehot | Paddy Ashdown's grand design

A new movement preaching post-partisan centrism is welcome. But it faces an uphill struggle



ONE evening about five years ago, a group of political types gathered for a London dinner party. They included a former secretary of state on the modernising wing of the Labour Party, a senior Liberal Democrat in the then-coalition government and a prominent voice on the Conservative left. All three were—and are—household names in Westminster, and fairly well known beyond it. Wine and conversation flowed. The talk ranged from public services and the economy to foreign policy and party politics. By the time they were on coffee, the three agreed that they had a great deal more in common than with some or most of their own parties. How silly, they concluded, that the political system kept them apart.

Such is the compact at the heart of Britain's majoritarian system. First-past-the-post gives you broad, stable political families for the price of a distortive electoral system that, by rewarding such sprawling parties, blurs some political differences and accentuates others. It tends towards one big party of the left and one of the right. Many a time those with the political predilections of the dinner-party guests—liberal centrists, in other words—have struggled to work across that divide.

In the 1980s the right wing of the Labour Party split off and briefly soared but was killed by the electoral system and ended up merging with the Liberals. In the 1990s Paddy (now Lord) Ashdown, then the leader of the ensuing Lib Dem party, flirted with Tony Blair's Labour, but tribalism on both sides got in the way. After the inconclusive 2010 election Lord Ashdown scrambled in vain to midwife a "progressive coalition" encompassing both parties, plus various small centre-left and regional outfits.

Some reckon the referendum on Brexit offers fresh opportunities for such a force. Why? The result exposed the fragmentation of the old two-party electorate. It incensed many Remainers and thus provides a rallying point for liberals. The Labour Party has trooped off to the hard left, Theresa May's government is popular but at the mercy of hardline Brexiters, and the Liberal Democrats remain marginal and unloved. So various new groupings are trying to circumvent the parties and provide rallying points for centrists of all tribal allegiances and none. For example Hugo Dixon, a leading Remainer, and others have set up Common Ground, to campaign for an open, internationalist Britain.

The most prominent initiative is More United, an online campaign sporting a heart-shaped union-flag logo. Founded by Lord Ashdown and other like-minded public figures (including Martha Lane Fox, an internet entrepreneur), it takes its name from a phrase in the maiden parliamentary speech given by Jo Cox, the Labour MP whose murder in the mephitic final days of the referendum campaign brought thousands out on the streets in protest at the darkly divisive atmosphere. More United starts from those instincts: it wants a calmer, more collaborative politics. But it also wants to go further and build a centrist movement that transcends party boundaries and appeals, Lord Ashdown says, to those "who want to influence politics but, for whatever reason, don't necessarily want to do so through a political party."

"Phase One" (Lord Ashdown was once in the Royal Marines) was a toe-dipping exercise. A month after the referendum a website was created and expressions of support invited. At the time of writing these numbered 24,707, far more than More United had expected. So in the coming weeks it will progress to Phase Two: the creation of a constitution and perhaps a list of policies. At the next election the group hopes to channel donations towards candidates who conform to its principles (think: in favour of a close relationship with the continent, party-funding reform and a social market economy). Beyond that, it might provide scholarships to promising young politicians, nurture parliamentary links between like-minded MPs, deploy activists to favoured local campaigns or even, some reckon, catalyse a new political party.

The vital centre

In an age of Brexit, Britain needs voices for internationalism. Its referendum illustrated dual deficits, of strong champions of globalisation and of effective mechanisms to share its fruits. So a market-liberal credo combining openness with political reform and hard-headed dollops of economic progressivism is just the cocktail the country needs. A new force pushing for such things is thus welcome.

Still, More United faces an uphill struggle. The Brexit vote was momentous, but the old fealties live on. Some in the Labour and Conservative camps see the initiative as a Lib Dem front. Will candidates from those parties accept its support? Then there is the national picture. Nearly half of voters opposed Brexit, but they are concentrated in about a quarter of constituencies, in Scotland, London, other big cities and herbivorous university towns. Moreover, most post-party, internet-based politicians—Donald Trump in America, Beppe Grillo in Italy, Jeremy Corbyn and the Brexiters in Britain—tend to be anti-establishment. Lord Ashdown is proposing a bottom-up movement that, while reformist, will risk seeming defensive of Britain's status quo.

To be fair, Emmanuel Macron, France's centrist economy minister, has created one promising precedent in En Marche! (On the Move!), a cross-partisan, pro-openness movement. Brexit will give his British counterparts an insurgent edge. And long-term demographic trends, like the steep rise in university attendance, work in their favour. But the best opportunity for More United depends on an established party: Labour. On September 24th it will probably announce the re-election of Mr Corbyn, its far-left leader. That could tempt some on its moderate wing to split off. More United could offer them the infrastructure, funding and manpower they need to abandon the party but remain electorally competitive. Like the country at large, its prospects are—despite everything—in the hands of the two-party system. ■



 Also in this section

 46 Madrassas move online

Islamic education in Europe

Faith of our fathers

HAMBURG AND NOTTINGHAM

Fearing extremism and lack of integration, European governments want more of the continent's imams to be home-grown

FOR a snapshot of how Europeans, Muslim and non-Muslim, learn about Islam, visit the Centrum mosque near Hamburg railway station. A converted public bath, it is one of about 60 prayer spaces serving 200,000 Muslims in the city. This community's roots are in a Turkish Islamist movement, Milli Gorus (National Vision) which flourished among German Turks before propelling a pious government to power in Turkey, in 1996, for one turbulent year. On weekdays it bustles with people seeking solace, or reading matter in German, Arabic or Turkish. On Saturdays children take Koranic lessons.

Hundreds of non-Muslim adult Germans also file through this battered building: they are teachers taking courses in Islam. Ozlem Nas, a spokeswoman for the Schura, Hamburg's biggest mosque federation, explains: "They don't know what to do when, say, a Syrian pupil and a Chechen call each other bad Muslims."

For another picture of Islamic instruction, explore the redbrick streets of Nottingham in England's East Midlands. The Karimia Institute, a religious and cultural centre, is a hive of piety and learning. Nearly 1,500 children flock to after-school Koranic classes. These *madrassas* are respected, but there are some bad, brutal ones elsewhere in England and the government has vowed to reform this hitherto unregulated sector. As well as three mosques, the institute has a kindergarten and a private primary school (pictured above) where, in

the words of Karimia's founder, Musharraf Hussain, children imbibe a "British Islamic" culture. The uniform is traditional (girls wear a body-covering *jilbab*) but the stress is on good interfaith relations and obeying British law. British royal events are celebrated keenly, but human links with Pakistan remain, thanks to satellite television and online learning (see box on next page).

European governments fret over these fast-evolving combinations of local and imported influences. With so many Islamic teachers and clerics whose roots and ethos are far from western Europe, they fear for social cohesion; at worst they see fertile soil for terrorism, although the internet probably inspires more extremists than any mosque or school. They dream of a home-grown Islam that is less reliant on immigrants' countries of origin and sits well with democracy, led by teachers and administrators trained in national universities. In the background is wariness of Saudi Arabia, which sends few migrants or imams to Europe but finances mosques and literature reflecting its puritanical Salafi school of Islam. This is sometimes—though not always—a path to extremism.

One problem with "Europeanising" Islam is that home-grown need not mean emollient. Those Nottingham *madrassas* follow the relatively liberal Barelvi form of Islam, but that makes it harder to find British-schooled staff. The 50 teachers are mostly foreign-born. If they followed the stricter Deobandi school, they could hire

graduates from more than 20 "seminaries" of that persuasion in Britain which boys can enter at 12 and stay in for a decade. But these copies of an Asian prototype, forged under the Raj, hardly foster integration.

As European countries tackle Islamic education, each confronts its own history and long-settled deals regarding the state's relationships with Christianity and Judaism. Belgium, for example, was created as a Catholic kingdom; it subsidises both worship and teaching. Islam now benefits from that; more than half its imams are paid by the state. In state schools in Brussels, most children study the religion of their heritage; half select Islam. (Next school year, a civics course for all will partly replace these lessons, but some confessional teaching will stay.) A Muslim body advising the government is now led by a well-connected Moroccan; Morocco is almost co-managing Belgian Islam.

Bringing it home

Religious education in the Netherlands is shaped by an old compromise between Protestants and Catholics, entitling small groups to found confessional schools. This has facilitated the creation of more than 40 Muslim primary schools. Demand is surging, says Haci Karacaer, a Milli Gorus veteran who runs one. But he struggles to find Muslim staff who are qualified to teach in Dutch, although several Dutch universities excel in Islamic studies. Nor do many imams preach in Dutch. Government pressure to use the national language has been counter-productive, he laments. This suggests a worrying disconnect between government, academia, clerics and Dutch-speaking youngsters.

At the other extreme is France, where the regime of *laïcité* (secularism) instituted in 1905 bars religion from state education. But last month the prime minister, Manuel Valls, proposed some changes after the ▶▶

► grisly murder of a Catholic priest. France, he wrote, must become a centre of excellence in Islamic theology, and strategies must be found to replace foreign financing of mosques with national sources.

Under *laïcité*, state universities cannot have theology faculties, though they can offer related courses, say on Arab culture or religious sociology. Universities in Paris and Aix-en-Provence do that, as Mr Valls approvingly noted, and in Strasbourg (exempt from *laïcité* because it was not French in 1905) theology is allowed. With the will to give Islam a prestigious place in French higher education, there is certainly a way.

But that will not solve the problems faced by poor Muslim communities across Europe who can hardly pay imams anything, let alone a graduate salary. Their mosques seek practical solutions; whether that is foreign financing, or unsophisticated clerics from their homelands who will accept modest remuneration.

At least 70% of the 2,000-plus imams in France are foreign nationals. About two-thirds get no regular wage. Of the rest, 150 are paid by Turkey's government, 120 by Algeria's and 30 by Morocco's. France is cooperating more with these countries. Trainee imams from France now go to Morocco to attend a new Islamic seminary. A recent deal means that those in Algeria destined for France will study in both countries.

Germany's main source of imams is Turkey; it hosts 1,000 who are paid by the Turkish government, serving a third of its mosques. They enter on five-year visas under a deal with Ditib, the external arm of Turkey's religious-affairs directorate. But some Germans, including Turkish-descended ones, favour severing ties with Ditib, calling it a tool of Recep Tayyip Erdogan, Turkey's president. Since last month's failed putsch, Ditib has echoed him in blaming Fethullah Gulen, a preacher based in America. A network of Gulen-related schools, cultural centres and newspapers say they feel under threat from Ditib.

Post-war German politicians never foresaw having to accommodate Islam within this framework. They viewed religion classes in schools, provided by Protestant and Catholic churches, as a bulwark against totalitarianism. Now German states, responsible for education under the federal system, are trying to fit Islam into the system. Their approaches vary. Schools in Berlin do not routinely teach religion, but a group close to Milli Gorus won a legal battle to offer Islamic education where parents want it. In 2012 Hamburg struck an accord with most Islamic bodies in the city, including Ditib, giving them a role in comparative-religion studies.

Correction: In the article "Shedding light on the dark field" in our issue of August 13th we stated that counsellors in Germany's Prevention Project Dunkelfeld never pass evidence of child-abuse to police. In fact, they do if the abuse is ongoing.

Online Islamic education

World-wide mullahs

RAWALPINDI

The rise of the digital madrasa

WORK never stops at Jamia Sirat-ul-Mustaqeem, a *madrasa* in a run-down part of Rawalpindi in the Pakistani Punjab. After its 20 pupils are in bed, the teachers use Skype to connect to homes in Britain, France, Norway and Sweden, where teenagers attempt to read the unfamiliar Arabic script of the Koran. Many European parents find these online sessions more convenient than after-school classes at the local mosque.

The owner, Maulana Malik Muheisen Shafiq, decided to go round-the-clock four years ago to spread the message of Islam—and subsidise the education of the *madrasa's* poorer boys. He charges £35 (\$46) for three half-hour sessions a week, or £50 for five sessions. "People in Europe spend a huge amount of money seeking knowledge," he says.

Online Koranic academies range from one-man affairs to institutions more like

call-centres, with IT managers and teachers working shifts. Competition is getting tougher, Mr Shafiq says: he now offers free trial sessions to lure new customers.

Parents have no way to check teachers' backgrounds: one former fighter from Lashkar-e-Taiba, which the UN regards as a terrorist front group, teaches from Lahore. But proprietors say parents would quickly realise if teachers strayed beyond reading and reciting the Koran. "We don't discuss anything related to politics, violence and *jihad*," says Mr Shafiq.

Four miles away, in a smarter area, the Zakariyya mosque takes a more traditional approach to spreading the word. It is the Rawalpindi headquarters of the Tablighi Jamaat (TJ) missionary movement, which sends preachers round the world to attract Muslims to the Deobandi movement. This seeks to return to the perceived purity of seventh-century Islam and is in some respects similar to the Wahhabism of Saudi Arabia.

Although nearly all Pakistan's militant groups are within the Deobandi fold, experts disagree on whether the TJ is a security threat. On August 11th the army banned Tariq Jameel, one of its best-known preachers, from speaking at its institutions. And yet some militant groups regard TJ's peaceful proselytising and preaching of poverty as a cop-out.

Gulam Rasool, a missionary, has just returned from Indonesia. Britain is one of his favourite destinations, he says: "They're accepting the true version of Islam in large numbers." His globe-trotting life of prayer and preaching leaves little time for his family. He is yet to meet his youngest child. When he does see his family it is usually over Skype.



Window on the world within

In several other states Ditib has in recent weeks been shunned. Three have gone slow on collaboration with the agency. This reaction risks creating a vacuum, says Jonathan Laurence, an American scholar of European Islam; instead the authorities should push Ditib's German operation to loosen ties with Ankara.

Ditib's departure would leave a gap. It discreetly backs another German project fostering Islamic theology in higher education. Since 2010 the government has urged universities to train help future imams, teachers and chaplains. Places like Tübingen and Münster, famous for Christian scholarship, now offer Muslim studies.

Will Germany reap the desired harvest of home-grown scholars? Mohamed Taha

Sabri, a Tunisian-born imam in Berlin, says Muslim communities may shun people who have studied Islam in liberal places under non-Muslims. Dietrich Reetz of Berlin's Free University retorts that they will easily find work, say in mosque administration. However few will be imams, because most are women.

The vision of great European universities, some founded as Christian seminaries, helping to distil and domesticate Islam has appeal. But they move slowly, and needs on the ground evolve fast. Intensive vocational courses for anyone in charge of children, and strict monitoring of foreign teachers and preachers, might be the best focus. Governments cannot micromanage faith but they can regulate it better. ■



The future of television

Streaming on screens near you

Can Netflix stay atop the new, broadband-based television ecosystem it helped create?

COMING soon on your Netflix service: a Portuguese-language sci-fi thriller shot in Brazil; the second series of “Narcos”, about a Colombian drug cartel; a British series about the life of Queen Elizabeth called “The Crown”; and new episodes of “Black Mirror”, a dystopian vision of the future that originated on Britain’s Channel 4 but was snapped up by the streaming service for tens of millions of dollars. In the next year there will be new television series in Italian, German, Spanish and Japanese, and the second series of a French political drama, “Marseille”, starring Gérard Depardieu. Some of these shows will be excellent, and some will not (the first series of “Marseille” was panned by critics). But that is not the point.

Netflix was once a humble DVD-by-mail business based in Los Gatos, California. It is now becoming a global television network. The subscription service expanded early this year from a mere 60 countries into a total of over 190. It has 83m subscribers, including 47m in America, who pay between \$8 and \$12 a month for it. Appetite for its many-flavoured fare is strong. A Netflix household streams an average of nearly two hours of the service per day.

The 19-year-old firm’s many innovations have changed how consumers watch tv. It delivers programming on a global basis, on demand and without ad breaks. That has vastly accelerated viewers’ shift

away from the existing pay-tv and broadcast system that has been built along national borders, time schedules, release windows and sponsorships. Netflix’s interface employs an algorithmically-driven platform that knows what viewers watch, learns what they like and pushes new shows and episodes to them continuously. This has helped to usher in an era of online binge-watching.

Streaming of Netflix shows—a technology that did not exist a decade ago—now accounts for 35% of peak internet traffic in American homes, according to Sandvine, a consultancy. This shift is reshaping both supply and demand for tv. The firm’s bud-

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get for making and licensing content—\$6 billion this year—is now triple that of HBO, the original champion of quality subscription drama. This splurge is having a meaningful impact on the economics of tv production, and creating a windfall for studios, producers, writers and actors.

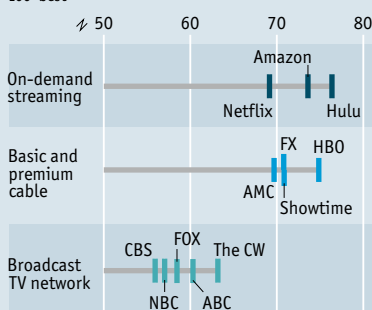
Yet many in the industry wonder how long Netflix’s winning streak can continue. The way in which the firm has changed tv is leading others quickly to copy it. It still has first-mover advantage. But keen and extremely well-funded rivals such as Amazon, YouTube and Hulu are catching up. A new, broadband-based tv ecosystem is forming around a number of firms. The question now is whether Netflix will keep its position on top of it.

There are reasons to worry. Netflix’s challenges are growing. After several years of rapid expansion, competition is looming larger, including from Amazon. It is having trouble finding a viable path into China, the world’s largest tv market, where it does not yet have a presence. The firm’s growth in subscribers has slowed of late, prompting concerns about whether it has taken on too ambitious a global mission, too quickly.

Yet Netflix has a history of adapting well. Sixteen years ago it could have been acquired by Blockbuster, a DVD-rental service that has since gone bankrupt, for around \$50m (there were reportedly talks about a deal but the older firm passed on the chance to buy the upstart). Its later transformation into a global producer of content came not in one well-judged leap but in a series of incremental steps. First it changed its focus to streaming. Then it learned to analyse customers’ viewing habits in real time and started pushing recommendations and keeping customers on the platform for longer. In 2010 it ventured ▶▶

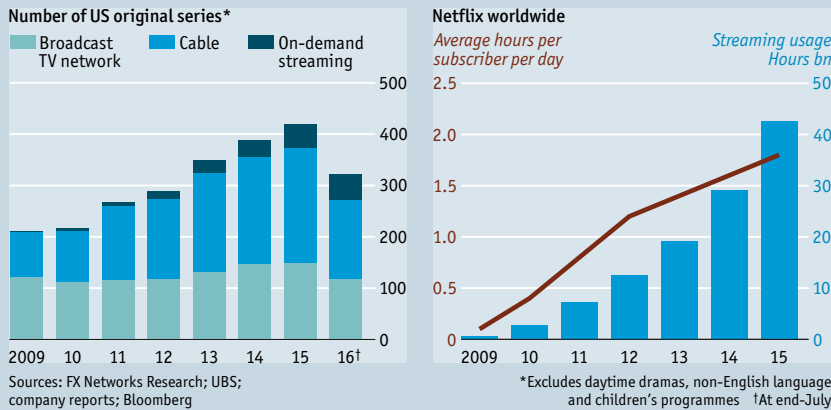
Sitcom to dotcom

Average critics’ ratings by US network, 2014–16
100=best



Source: Metacritic

Living the stream



▶ beyond America's borders. It entered Latin America in 2011. Britain and northern Europe came next, in 2012.

Finally, in 2013, Netflix became a studio in its own right, producing content for international consumption. This was momentous. A company that Hollywood had viewed merely as a distributor of its products had turned itself into a vertically-integrated manufacturer, armed with reams of data about what people liked to watch. There will be plenty of industry-changing milestones ahead, too, according to its cofounder and chief executive, Reed Hastings, who recently declared that "one day we hope to get so good at suggestions that we're able to show you exactly the right film or TV show for your mood when you turn on Netflix".

It took years for the television industry to fully appreciate the threat it faced from streaming. Netflix now has a market capitalisation of \$40 billion (making it almost as valuable as 21st Century Fox). Its rivals have woken up, and other recent entrants with international reach are now splashing out, too. Amazon and YouTube have recently spent heavily on paid streaming services. Hulu, backed by Disney, Fox, Comcast and Time Warner, is Hollywood's rival to Netflix in America. HBO and Showtime both offer direct streaming services.

In foreign markets, too, traditional pay-TV companies have started their own low-cost streaming options, including Rupert Murdoch's Sky Now in the UK and Vivendi's CanalPlay in France, which got its start before Netflix entered the French market. Studios are now more aware that when they sell shows to Netflix, they are empowering a competitor. Netflix's early acquisitions of the rights to stream Hollywood films and entire runs of TV shows—like AMC's "Breaking Bad"—came at relatively low cost, helping it expand its subscriber base more efficiently. Now the firm must pay more, and it must fight harder against rival services for subscribers.

The biggest threat to Netflix is probably Amazon, which unlike the smaller firm

does not rely on its video service for its profits. Rather, Amazon includes video with its Prime service and uses TV as a way to lure in more e-commerce customers. Its early strategy seemed oddly cautious. It offered less content than Netflix, and its shows were often more quirky than popular. But it is becoming more aggressive; last year it paid \$250m to sign Jeremy Clarkson and the team who made the BBC's series, "Top Gear", and it outbid Netflix for the streaming rights to "Mr Robot", a hit on the USA Network. Amazon recently said it would double spending on content in the second half of this year. For now, Amazon video is available only in America, Britain, Germany, Austria and Japan, but it is expected soon to expand to France, Italy and Spain. Futuresource Consulting, a research firm, reckons the service could have close to 40m users by the end of the year.

Netflix may have a bigger international footprint than Amazon, but it must overcome myriad obstacles to growth in the markets in which it operates or would like to. In emerging markets, broadband access is limited and relatively expensive. Payment systems tend to be antiquated and consumers will inevitably be less willing or able to pay for TV. In some developed countries, after a wave of early adoption, the pace of growth tends to slow, especially in markets where pay TV is cheap (unlike in America and Britain). Even in America, subscriber growth slowed considerably in the second quarter of this year, after a record first quarter. Netflix blamed a higher rate of churn of subscribers that it argues will be temporary, connected to the expiration of older, cheaper price plans. In a few big markets the firm faces resistance from governments. China's authorities earlier this year put a halt to a streaming service started by Disney with Alibaba, a Chinese internet giant; they are unlikely to be friendlier to Netflix. The European Commission is considering various onerous regulations, including a European content quota, and a requirement to contribute to subsidy pots for national production.

The big, background question for Netflix is whether it can continue to make and acquire content that appeals to a sufficient number of its subscribers. That is an expensive proposition, and one that requires achieving great scale to earn big and recurring profits for the firm. Netflix will have negative cashflow this year of more than \$1 billion, and it will increase its borrowings late this year or early next. The firm says it will be slightly in the black this year, and it expects profits to be significant next year. The variation between cashflow and profit is due to the fact that it spreads its heavy spending on content production over time. Yet there is no let-up in the vast quantities it plans to spend on programming. If the model works, Netflix's appeal as a platform will grow, allowing it to afford more content that in turn will attract more subscribers, forming a virtuous cycle. But the circle could turn if a competitor lures away Netflix subscribers with superior content.

Who's afraid of peak TV?

For now, what Netflix's peers see is the sheer scale of its outlays on programming. Its model raises questions about the ability of smaller players to compete. John Landgraf, who runs FX, a network owned by Fox that makes some of the best shows on TV, worries that Netflix wants to achieve a level of dominance in television production similar to that enjoyed by Facebook in social networking or by Google in search.

In his view, Netflix's spending spree is leading the industry towards "Peak TV"—the production of far more television than people have time to watch—and an industry consolidation in which Netflix could be dictating the terms. Similarly, pay-TV operators and cinemas around the world worry that Netflix will bankrupt them, offering a low-cost, commercial-free service with thousands of hours of content.

Such fears are overblown. Netflix will have plenty of competition in making the TV of the future. It is not in the same business as FX and other niche channels. It does not want to make only "prestige TV", but programming for all segments of its audience. Some of the shows may be terrible, but if they are watched by a sizeable slice of its subscribers, they still have value to the firm. This is another reason why it is old-fashioned broadcast networks that have the most to fear: they used to have the market for broad, popular fare to themselves. As for pay-TV and cinema owners, it is the internet (and the accompanying piracy) that has disrupted them, not Netflix in particular.

Netflix should have a large hand in shaping the future of television. Programming used to be awful. Creative choices were entirely driven by ratings and advertising, resulting in lowest-common-denominator shows that were popular but formulaic. The days of watching series that ▶▶

▶ were available on a certain channel at a certain hour—and only rarely crossed a national border—are long gone. Netflix and the other streaming services have intensified competition in quality TV production, using a model similar to that of the likes of HBO, which in the 1990s began competing solely on the basis of quality to win subscribers. They have brought what some call a “platinum age” of television, and the ability to see much of it on demand in a lot more places.

Some years hence, Mr Hastings envisages a future in which the main networks are Netflix, Amazon, YouTube, HBO, assorted sports networks and only a very few existing channels that are able to

thrive on the internet, including the BBC (which has its online iPlayer and a captive subscriber base thanks to Britain’s licence fee). Live sports will be delivered online in ultra-high definition. Scripted television could become still more cinematic and expensive. HBO’s “Game of Thrones” costs around \$10m an hour to make. Baz Luhrmann’s “The Get Down”, six episodes of which were released on Netflix on August 12th, cost roughly the same (see page 66). “What does \$20m-an-hour television look like?” Mr Hastings muses. Whether it is Netflix or one of its rivals that casts caution to the wind and splurges the cash will hardly occupy viewers’ minds as they lower the blinds and prepare to binge. ■

Workplace woes

The bane of brilliance

Some high-performing employees suffer for their success

WHO wouldn’t want to be a star employee? The salary is nice, as is the chance to climb to the top and tell others what to do. The downside is that your co-workers may hate you. The notion that jealous managers bully high-performing underlings, whom they see as a threat to the social order, has been well researched. But management theorists now say it is not only small-minded bosses that star workers need to overcome; it is also their colleagues.

A study by Theresa Glomb of the University of Minnesota and Eugene Kim of the Georgia Institute of Technology suggests that workers have a tendency towards what Leon Festinger, a social psychologist, defined as “upward social comparisons”. They overestimate their ability and judge their standing in the office against those with more talent. Falling short leaves average Joes envious and spiteful. Tall poppies, says Ms Glomb, are chopped down in a variety of ways, including ostracism at social events and humiliation before the boss.

All this rarely happens in industries such as the technology business, where outperformance is, by and large, admired by all. It is typically found in stagnant environments, says Sue Filmer of Mercer, a human resources (HR) consultancy: the more dynamic the business, the less the scope for peers to sit and stew. An HR manager at a property firm, employing around 400 staff, says that when he implemented a talent-management programme, those excluded immediately came to tell him why the chosen ones were undeserving. In small organisations, too, there can be little chance of a sideways move to escape the rut. Ivor Adair, an employment lawyer at Slater +



Gordon, a law practice, says such cases are widespread. In one recent instance he dealt with, a jealous worker at a professional-services firm was cited for leaning over a desk and screaming, hairdryer-style, into a talented colleague’s face.

High performers have their lives made difficult in other ways, too. A study by Gráinne Fitzsimons of Duke University showed that the most talented employees tend to have extra work dumped on them—not only the high-powered tasks they might relish, but also mundane chores, such as organising meetings.

In some cases, the stars have themselves to blame. It can be in the nature of successful people to display a level of ambition and self-absorption that can get up colleagues’ noses. And because high-flyers tend to have better cognitive skills, they could simply be more adept at spotting slights that stupider employees would overlook. If you find e-mails terse or colleagues offhand, in other words, it means you’re a high performer.

Terror and tourism in France

Not all shows must go on

PARIS

The accumulating costs of terrorism for French businesses

IN NOVEMBER Youssou N’Dour, from Senegal, and others will perform at the Bataclan concert hall in Paris. A year after gunmen killed 90 people there, the idea is to let audiences feel safe again. The best way to defy terrorists, and keep businesses going, is to resume normal routines.

That’s a fine ambition. Yet tourism, entertainment and other business in France are struggling. Heavily armed soldiers continue to patrol Paris’s streets, metro stations and riverside beaches, snapped by wide-eyed tourists as a new sort of postcard from the city. A national state of emergency, in place until January, plus pat-downs and bag searches at the entrance to any mall or cinema, are constant reminders of ongoing threats. A blues musician laments that concerts in his city are far less well-attended than before.

Fears are spreading that businesses face more than a temporary dip in custom. A hotelier grumbles that bookings fall each time a ruling politician declares that France is “at war”. Late in July AccorHotels, a big group, reported “a very pronounced drop” in demand this year, as its revenues in Paris fell by 12%. Across France they slid by more than 2%.

Though France hosted the Euro 2016 football championship without incident, passenger growth has stalled at Paris’s main airport, Charles de Gaulle. A 3.9% slump in June suggests deepening gloom, even as traffic surges across Europe as a whole. On July 29th Eurostar said cross-Channel passenger numbers fell too, with revenues down by a tenth in the second quarter compared to last year. That matches the general downturn for foreign-tourist arrivals. Late July brought 19% fewer flight reservations by Americans than in the same period last year. Trips by Brexit-pinched Brits fell even more. Nor are once-buoyant new markets helping: France’s embassy in Beijing says it had 15% fewer visa applications than last year.

In rich countries terror attacks are typically shrugged off by most businesses before long, as visitors resume postponed trips; financial markets routinely brush aside a single assault, even big ones. Roughly a year after attacks in Madrid (in 2004) and London (2005) hotel occupancy rates in each city were back at old levels.

But France has suffered a steady drumbeat of recurring attacks, which poses a worse threat to the world’s second-most-valuable tourist industry, accounting for ▶▶

▶ 2m jobs. After 14 assaults in two years, and more in nearby Belgium, gloom is deepening. In some cases official behaviour has gone from Gallic defiance to skittish anxiety. Nice scrapped a big European road-cycling event, due next month. Lille's mayor has called off a huge flea market, in September, which last year drew 2.5m visitors. The boss of a union of hotel workers talks of a "catastrophic" downturn.

Officials say that tourist revenue losses last year were around €2 billion in total. This year will be worse. Nor is terror the only problem. Spring strikes and floods were unhelpful. Cash-strapped Russian sun-seekers are retreating from beauty spots, including French ones. Lower oil revenues affect high spenders from the Gulf. Some firms that cater to tourists have themselves as well as terrorism to blame. Disneyland Paris says revenues and visitors fell by about a tenth from April to June compared to a year ago. It cites terror, but people are also fed up with its dowdy, badly-repaired theme park.

Paris's tourist office bravely claimed this year that it saw "growing tourist resilience in the face of terrorist attacks". But if the downturn lasts into a third year, or longer, it will have to learn from others' prolonged slumps. Thirty years of troubles clobbered private-sector job creation and tourism in Northern Ireland. Decades of violence in Corsica put off investors in tourism. Academics who studied the economy and tourism in Spain's Basque region, to the 1990s, found terrorism cut incomes by a tenth. In all three, tourism picked up again once stability returned.

Until then, it makes sense for local authorities to boost the sums they spend on private security firms, and to get them cooperating more closely with police. They can perhaps divert more anxious visitors



Wish you weren't here

to cruise liners or resorts where security measures can be more easily organised than on beaches or in flea markets. French officials have vowed to spend more promoting the country's attractions, though a boom in foreign visitors to Spain this year suggests other destinations could make headway faster. The resumption of shows at the Bataclan will also be a symbol of resilience—as long as the crowds turn up. ■

Measuring companies

The watchers

Alternative-data firms are shedding new light on corporate performance

FINANCIAL statements are both infrequent and backwards-looking, so getting a sense for how a business is performing in the present can be nearly impossible. But a cottage industry of a few dozen firms, mostly in America, is gleaming "alternative" data from novel sources, ranging from satellite images to obscure corners of social media.

The growth of small, low-cost satellites and machine learning means companies can quickly and cheaply parse millions of satellite images a day. A common trick is to analyse photos of car parks outside big-box retailers such as Walmart to get a sense of daily revenues. A Chicago-based data firm, RS Metrics, sells estimates on the productivity of factories by tracking the number of lorries parked outside. Bad weather can make such analysis difficult in some places, but satellite-image analysis of, say, Elon Musk's new "gigafactory" making batteries for Tesla's electric cars in Nevada is more straightforward under the desert's clear skies.

A bit of ingenuity along with some elementary geometry goes a long way. Data analysts estimate the size of oil stocks by looking at the lengths of shadows cast by oil tanks in satellite pictures (the height of the roofs of most crude-oil tanks varies depending on how full the tank is). Several firms, such as Orbital Insight, in Palo Alto, also study farmland to estimate crop yields before official statistics are reported by America's Department of Agriculture, and often do it better (see chart). Investors are particularly keen for firms to study pictures that yield rare data on, say, steel production in China or Russia, where official data can be patchy.

Dataminr, a startup in New York, mines social media for happenings on which to alert its clients, which include hedge-fund traders and big newsrooms. Twitter has taken a 5% stake in the firm. Early this year a local reporter tweeted that the FBI was

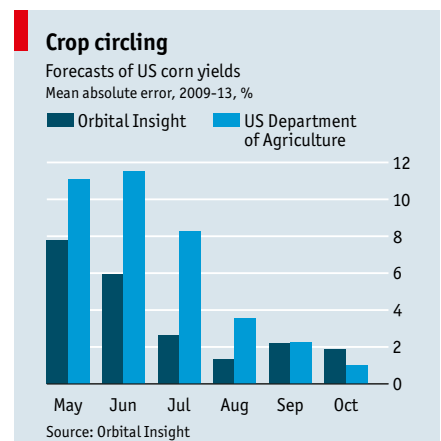
raiding the offices of United Development Funding, a sponsor of real-estate investment trusts in Grapevine, Texas. It took other investors around ten minutes to hear the news and to push its shares down by 50%, by which time Dataminr's clients had been able to short them.

Some social-media firms are themselves branching out into alternative data. Foursquare, which is known to consumers for its mobile app that provides restaurant recommendations based on its users' locations and histories, now sells data. Foursquare can accurately guess if someone is a patron of a particular shop based on how long he has stopped moving (five minutes or more is the trigger).

Alternative-data firms also offer insights into private companies, such as technology "unicorns" (firms that have yet to come to the stockmarket but are valued at \$1 billion-plus). Second Measure, based in San Francisco, claims it can show how many subscribers Netflix had this month, or how Uber, a ride-sharing service, is doing relative to Lyft, a rival. The information comes from data that Second Measure collects on credit-card transactions. For venture capitalists, alternative-data firms may be the only objective source of sales data.

There have been plenty of acknowledged triumphs. In a blog post earlier this year, the boss of Foursquare, Jeff Glueck, used his company's foot-traffic data to predict, correctly, that same-store sales at Chipotle, a restaurant chain affected by an outbreak of *E. coli*, would fall by 30%. Shares in Chipotle fell by 6% when the company reported earnings.

One impediment to broad adoption of alternative data is a cultural divide between west-coast techies and buttoned-up east-coast financiers, notes the boss of one data provider. He was dismayed to find, on a visit to one richly-resourced fund, that it was guilty of what techies consider the ultimate sin: using Windows computers. Such data is also expensive, and the payoff can take time. But the value of the information to hedge funds and other investors is growing fast. ■



Industrial gases

Something's in the air

Two giants of the industry may merge

ASIDE from oxygen-quaffing mountaineers and scuba divers, few consumers give a thought to the normally stable world of making industrial gases. Yet the sector, essential for much other manufacturing, is now gripped by discussion of mega-mergers as big firms on either side of the Atlantic jostle for advantage.

This week brought renewed talk of a long-expected tie-up. Analysts have speculated for a while about a possible family reunion between Linde, a German firm with a market value of \$30 billion, and Praxair, an American rival of similar value that is more profitable. Praxair originally sprang from its European parent over a century ago. The talks are at an early stage. A union would produce the leader in industrial gases, with a market share of about 40%.

It would suit the companies, less so consumers. Praxair does well selling gases for industrial use, chiefly in America. The food industry needs carbon dioxide, in fizzy drinks or to get caffeine from coffee, for example. Linde, in contrast, has expertise in the long-term growth area of gases for medical use. Supplying oxygen to hospitals is expected to be profitable as ageing societies see more elderly patients under long-term care.

Merging Praxair and Linde, probably by swapping shares, would reduce competition, which is worrying considering that four companies already control three-quarters of the global market, and in some countries more. The firms, by announcing their talks, presumably believe they have answers to antitrust concerns, and might offer to sell some regional businesses.

Consumers might prefer the talks to fail. The proposed merger is hardly the product of a sparkling imagination. Hamza Khan of ING, a bank, says that in a low-margin environment, the two firms are simply seeking efficiency by getting bigger. Innovation is limited, so competitors dream mostly of winning clout, buying rivals and especially getting more access to contracts as a dedicated supplier to a big customer, such as a steel plant.

Around a third of sales of industrial gas are of this sort, producing stable businesses living off contracts with guaranteed minimum fees and long terms. Even so, the industry does not look in fine fettle. Firms were overconfident, building too much production capacity. Returns on invested capital for the four big companies (the other two are France's Air Liquide and Ameri-

ca's Air Products) have slumped since 2011.

Linde undoubtedly needs the biggest shake. It has issued two profit warnings in the past two years, a sign the underlying business is in a fix. Internal squabbles haven't helped. An embittered finance chief, Georg Denoke, seemed to reckon he should be boss rather than Wolfgang Buchele, the current CEO, who looks unsure of how to take charge. Adding to the mess, a former CEO, Wolfgang Reitzle, became Linde's chairman in May. Ambitious, combative and publicly critical of the firm's recent showing, the former boss sounds like a tricky colleague. But he also has a recent record of pushing big mergers, and may be the one behind the talks with Praxair. ■



Self-driving lorries

A long haul

A revolution in the trucking industry is a distance down the road

“DUEL”, one of Steven Spielberg's early films, features a lorry apparently controlled by demonic forces rather than a driver. The sensors, cameras and software already steering the wheels of some of the world's lorries, in place of drivers, are regarded as a similarly malign power by truckers fearing replacement by technology. But they have little reason to worry about the arrival of self-driving lorries, and the benefits of safer roads and cheaper shipping should be felt more widely than any pain from job losses for years to come.

It has so far been carmakers and tech firms that have hogged the headlines in the race to develop autonomous vehicles. Ford announced on August 16th that it intends to have a car devoid of pedals and steering wheel on the road by 2021. But several firms have been working on driverless lor-

ries. Rio Tinto, a commodities giant, has put them to work at one of its iron-ore mines in Australia, and Volvo will soon begin testing a self-driving truck at a mine in Sweden. Mercedes-Benz, Iveco and most other lorry-makers have plans for autonomous vehicles, and a big beast of tech is also set to make a move on the kings of the road. As *The Economist* went to press, Uber, a ride-hailing firm, was expected to announce it had acquired Otto, an American startup that is developing self-driving kit to retrofit to any lorry.

Lorries have kept pace with cars in the race to commercialise self-driving vehicles for two reasons. As Lior Ron, a co-founder of Otto, points out, lorries offer businesses a clear return on investment through cost savings from greater efficiency. Self-driving cars, robotaxis aside, on the other hand, will be a discretionary purchase by consumers, aimed at making journeys more pleasurable.

But hauliers interested in autonomous systems will need to factor in that the existing technology does still require a driver (as, often, do regulations). Most autonomous systems are being designed for motorways, for manoeuvres such as accelerating and braking. A human will drive the lorry on smaller roads leading to and from main road arteries and would need to take the wheel in an emergency. There will still be benefits. Self-driving lorries may attract new drivers to a hard job. Vehicles could be driven for longer hours, and with optimised software should consume less fuel than they do under the sole guidance of leaden-footed truckers. Safety could also improve.

It is also easier to devise autonomous systems for lorries than for cars that have to negotiate all types of road. Driving on motorways is much easier to automate than city travel, as everyone is going in the same direction at high but regular speeds. There's no need to worry about pedestrians, and blind spots that come with a city's sharp corners.

The main roadblock is likely to be that trucking in rich countries is an old-fashioned business, dominated by small firms. Persuading these hauliers to adopt and pay for new technology will be tough. Otto reckons its kit, which still needs a human in the cab, should be available by around 2020 at a cost of \$30,000. As Stephan Keese of Roland Berger, a consulting firm, points out, the big cost savings will come only when higher levels of automation allow hauliers to get rid of drivers completely. That is still a long way off. Most observers reckon the technology for fully autonomous cars or lorries will not be ready before 2030, and will then take years to become commonplace. Unlike the truck in “Duel”, driverless lorries are unlikely to run the conventional business models of hauliers off the road for some time. ■

Schumpeter | Family values

Donald Trump is running his campaign like a family business



FAMILY businesses are different from other sorts—they are held together by strands of DNA as well as the logic of profit. They are rich in scarce resources, such as loyalty and flexibility, but also suffer from extreme challenges, such as family feuds and wayward patriarchs. At their best they are unbeatable. At their worst they are disasters.

Donald Trump's presidential campaign is as good an illustration of this point as any. He presents himself as a businessman who can offer America commonsense solutions backed up by professional management—"I'm going to get great people that know what they're doing, not a bunch of political hacks," he says. But in fact he is a very particular sort of manager: a second-generation family businessman who inherited a property company from his father, Fred, and relies on his three adult children, Donald, Ivanka and Eric, and his son-in-law, Jared Kushner, to run it.

The debate about the business skills of Mr Trump frequently misses this simple point. Critics lambast his chaotic methods: the Trump Organisation lists 515 businesses and has at various times branched out from property into TV, airlines, beauty pageants and gambling. They forget that family firms are often held together by nothing more than a name and a buccaneering spirit. Some argue that he would be richer if he had invested his inheritance in the stockmarket. But Mr Trump has lived the life of Riley while putting his name on towers in Manhattan, holiday resorts in Palm Beach and golf clubs in Scotland.

For all his braggadocio Mr Trump has avoided some of the most common failings of family businesses such as family rows and botched successions: witness the repeated feuds between the Koch brothers or the battle to see who will succeed Sumner Redstone. The Family Firm Institute says that only 30% of family firms last into the second generation and only 12% into the third. Mr Trump has not only kept his business intact through two divorces and numerous spats. He has also successfully groomed his children (and son-in-law) to take over.

Mr Trump is applying the same family-business formula to his presidential campaign, making all the key decisions himself, but also relying on his three adult children plus Mr Kushner to act as campaign aides, surrogates and all-purpose fixers. Eric and Donald junior have been particular assets with the hunting crowd

(who might have been suspicious of Manhattan socialites) thanks to their love of slaughtering African wildlife. Republican Party bigwigs have to go through the children if they want access to Trump senior.

Mr Trump's family-business style served him brilliantly when he was running for his party's nomination. Family outfits are good at spotting profit centres that corporate giants ignore. Sam Walton, Walmart's founder, recognised that Americans wanted "every day low prices" more than they wanted local stores. Mr Trump recognised that working-class conservatives were fed up with a political party that offered steak for the rich in the form of tax cuts but cheap labour and a bit of patriotic sizzle for the masses.

The same style is turning into a disaster now. Successful family businesses know when to consolidate their gains by adopting professional management methods. Mr Trump still thinks he is running in the primaries. Ivanka was potentially a huge asset to the campaign, her skills honed by years of appearances on her father's television show, "The Apprentice". But she has expended much of her energy cleaning up after his misogynistic comments rather than extending his brand.

Mr Trump's campaign now has all the classic signs of a failed family business—riven by faction fights, haunted by reminders of past business dealings with dodgy financiers and property developers, and humiliated by a properly run rival. On August 17th Mr Trump shook up his team for the third time—appointing Stephen Bannon, a conservative journalist, to a new role as campaign chief executive, and Kellyanne Conway, a veteran Republican pollster, as campaign manager. But he still has not mastered the basic arts of running a campaign, such as buying political advertising and establishing field offices.

Brace yourselves for the next show

Before celebrating Mr Trump's likely defeat in November it is worth remembering that family businesses can surprise everybody by turning themselves around. Rupert Murdoch's News Corporation increased in value after the restructuring that was triggered by a phone-hacking scandal. Mr Trump's children, who are reportedly the only people capable of reining him in, may yet be able to save his campaign from humiliation. And even if he loses he may be able to parlay political defeat into business success in the form of a conservative television channel fuelled by the rage that he has exploited and starring Ivanka and Co.

And before dismissing the Trumps' dynastic campaign as a weird aberration it is worth remembering that America is no stranger to political families. The Donald may be the first candidate to run his campaign like a family business but the Adamases, Kennedys, Rockefellers, Bushes and, of course, the Clintons have all regarded politics as a family business. Hillary Clinton is as professional as Mr Trump is slapdash. Yet there are some similarities. Mrs Clinton relies heavily on family members—not just on her husband, Bill, but also on her daughter, Chelsea. (The similarities between Chelsea and Ivanka are uncanny: they are, among other things, both in their mid-30s, and both married to men whose fathers have done time in prison). Mrs Clinton is also prey to conflicts of interest, particularly over the Clinton Foundation, which would be much more fiercely debated now if it weren't for Mr Trump's follies. Even if he loses the election America will not be rid of the problems that are created when families, businesses and politics collide. ■



Game theory

Prison breakthrough

The fifth of our series on seminal economic ideas looks at the Nash equilibrium

JOHN NASH arrived at Princeton University in 1948 to start his PhD with a one-sentence recommendation: “He is a mathematical genius”. He did not disappoint. Aged 19 and with just one undergraduate economics course to his name, in his first 14 months as a graduate he produced the work that would end up, in 1994, winning him a Nobel prize in economics for his contribution to game theory.

On November 16th 1949, Nash sent a note barely longer than a page to the Proceedings of the National Academy of Sciences, in which he laid out the concept that has since become known as the “Nash equilibrium”. This concept describes a stable outcome that results from people or institutions making rational choices based on what they think others will do. In a Nash equilibrium, no one is able to improve their own situation by changing strategy: each person is doing as well as they possibly can, even if that does not mean the optimal outcome for society. With a flourish of elegant mathematics, Nash showed that every “game” with a finite number of players, each with a finite number of options to choose from, would have at least one such equilibrium.

In this series

- 1 Akerlof’s market for lemons
- 2 Minsky’s financial cycle
- 3 The Stolper-Samuelson theorem
- 4 The Keynesian multiplier
- 5 **The Nash equilibrium**
- 6 The Mundell-Fleming trilemma

His insights expanded the scope of economics. In perfectly competitive markets, where there are no barriers to entry and everyone’s products are identical, no individual buyer or seller can influence the market: none need pay close attention to what the others are up to. But most markets are not like this: the decisions of rivals and customers matter. From auctions to labour markets, the Nash equilibrium gave the dismal science a way to make real-world predictions based on information about each person’s incentives.

One example in particular has come to symbolise the equilibrium: the prisoner’s dilemma. Nash used algebra and numbers

to set out this situation in an expanded paper published in 1951, but the version familiar to economics students is altogether more gripping. (Nash’s thesis adviser, Albert Tucker, came up with it for a talk he gave to a group of psychologists.)

It involves two mobsters sweating in separate prison cells, each contemplating the same deal offered by the district attorney. If they both confess to a bloody murder, they each face ten years in jail. If one stays quiet while the other snitches, then the snitch will get a reward, while the other will face a lifetime in jail. And if both hold their tongue, then they each face a minor charge, and only a year in the clink (see diagram on next page).

There is only one Nash-equilibrium solution to the prisoner’s dilemma: both confess. Each is a best response to the other’s strategy; since the other might have spilled the beans, snitching avoids a lifetime in jail. The tragedy is that if only they could work out some way of co-ordinating, they could both make themselves better off.

The example illustrates that crowds can be foolish as well as wise; what is best for the individual can be disastrous for the group. This tragic outcome is all too common in the real world. Left freely to plunder the sea, individuals will fish more than is best for the group, depleting fish stocks. Employees competing to impress their boss by staying longest in the office will encourage workforce exhaustion. Banks have an incentive to lend more rather than sit things out when house prices shoot up.

Crowd trouble

The Nash equilibrium helped economists to understand how self-improving individuals could lead to self-harming crowds. Better still, it helped them to tackle the problem: they just had to make sure that every individual faced the best incentives possible. If things still went wrong—parents failing to vaccinate their children against measles, say—then it must be because people were not acting in their own self-interest. In such cases, the public-policy challenge would be one of information.

Nash’s idea had antecedents. In 1838 August Cournot, a French economist, theorised that in a market with only two competing companies, each would see the disadvantages of pursuing market share by boosting output, in the form of lower prices and thinner profit margins. Unwittingly, Cournot had stumbled across an example of a Nash equilibrium. It made sense for each firm to set production levels based on the strategy of its competitor; consumers, however, would end up with less stuff and higher prices than if full-blooded competition had prevailed.

Another pioneer was John von Neumann, a Hungarian mathematician. In 1928, the year Nash was born, von Neu- ▶▶

The prisoner's dilemma

		Prisoner B	
		Confess	Keep quiet
Prisoner A	Confess	Both go to jail for ten years	Prisoner B gets life imprisonment, A goes free
	Keep quiet	Prisoner A gets life imprisonment, B goes free	Both go to jail for one year

mann outlined a first formal theory of games, showing that in two-person, zero-sum games, there would always be an equilibrium. When Nash shared his finding with von Neumann, by then an intellectual demigod, the latter dismissed the result as “trivial”, seeing it as little more than an extension of his own, earlier proof.

In fact, von Neumann's focus on two-person, zero-sum games left only a very narrow set of applications for his theory. Most of these settings were military in nature. One such was the idea of mutually assured destruction, in which equilibrium is reached by arming adversaries with nuclear weapons (some have suggested that the film character of Dr Strangelove was based on von Neumann). None of this was particularly useful for thinking about situations—including most types of market—in which one party's victory does not automatically imply the other's defeat.

Even so, the economics profession initially shared von Neumann's assessment, and largely overlooked Nash's discovery. He threw himself into other mathematical pursuits, but his huge promise was undermined when in 1959 he started suffering from delusions and paranoia. His wife had him hospitalised; upon his release, he became a familiar figure around the Princeton campus, talking to himself and scribbling on blackboards. As he struggled with ill health, however, his equilibrium became more and more central to the discipline. The share of economics papers citing the Nash equilibrium has risen sevenfold since 1980, and the concept has been used to solve a host of real-world policy problems.

One famous example was the American hospital system, which in the 1940s was in a bad Nash equilibrium. Each individual hospital wanted to snag the brightest medical students. With such students particularly scarce because of the war, hospitals were forced into a race whereby they sent out offers to promising candidates earlier and earlier. What was best for the individual hospital was terrible for the collective: hospitals had to hire before students had passed all of their exams. Students hated it, too, as they had no chance to consider competing offers.

Despite letters and resolutions from all manner of medical associations, as well as the students themselves, the problem was only properly solved after decades of tweaks, and ultimately a 1990s design by Elliott Peranson and Alvin Roth (who later won a Nobel economics prize of his own). Today, students submit their preferences and are assigned to hospitals based on an algorithm that ensures no student can change their stated preferences and be sent to a more desirable hospital that would also be happy to take them, and no hospital can go outside the system and nab a better employee. The system harnesses the Nash equilibrium to be self-reinforcing: everyone is doing the best they can based on what everyone else is doing.

Other policy applications include the British government's auction of 3G mobile-telecoms operating licences in 2000. It called in game theorists to help design the auction using some of the insights of the Nash equilibrium, and ended up raising a cool £22.5 billion (\$35.4 billion)—though some of the bidders' shareholders were less pleased with the outcome. Nash's insights also help to explain why adding a road to a transport network can make journey times longer on average. Self-interested drivers opting for the quickest route do not take into account their effect of lengthening others' journey times, and so can gum up a new shortcut. A study published in 2008 found seven road links in London and 12 in New York where closure could boost traffic flows.

Game on

The Nash equilibrium would not have attained its current status without some refinements on the original idea. First, in plenty of situations, there is more than one possible Nash equilibrium. Drivers choose which side of the road to drive on as a best response to the behaviour of other drivers—with very different outcomes, depending on where they live; they stick to the left-hand side of the road in Britain, but to the right in America. Much to the disappointment of algebra-toting economists, understanding strategy requires knowledge of social norms and habits. Nash's theorem alone was not enough.

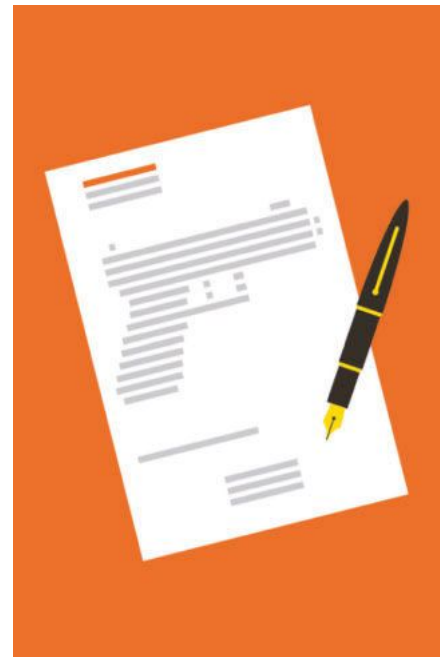
A second refinement involved accounting properly for non-credible threats. If a teenager threatens to run away from home if his mother separates him from his mobile phone, then there is a Nash equilibrium where she gives him the phone to retain peace of mind. But Reinhard Selten, a German economist who shared the 1994 Nobel prize with Nash and John Harsanyi, argued that this is not a plausible outcome. The mother should know that her child's threat is empty—no matter how tragic the loss of a phone would be, a night out on the streets would be worse. She should just confiscate the phone, forcing her son to fo-

cus on his homework.

Mr Selten's work let economists whittle down the number of possible Nash equilibria. Harsanyi addressed the fact that in many real-life games, people are unsure of what their opponent wants. Economists would struggle to analyse the best strategies for two lovebirds trying to pick a mutually acceptable location for a date with no idea of what the other prefers. By embedding each person's beliefs into the game (for example that they correctly think the other likes pizza just as much as sushi), Harsanyi made the problem solvable. A different problem continued to lurk. The predictive power of the Nash equilibrium relies on rational behaviour. Yet humans often fall short of this ideal. In experiments replicating the set-up of the prisoner's dilemma, only around half of people chose to confess. For the economists who had been busy embedding rationality (and Nash) into their models, this was problematic. What is the use of setting up good incentives, if people do not follow their own best interests?

All was not lost. The experiments also showed that experience made players wiser; by the tenth round only around 10% of players were refusing to confess. That taught economists to be more cautious about applying Nash's equilibrium. With complicated games, or ones where they do not have a chance to learn from mistakes, his insights may not work as well.

The Nash equilibrium nonetheless boasts a central role in modern microeconomics. Nash died in a car crash in 2015; by then his mental health had recovered, he had resumed teaching at Princeton and he had received that joint Nobel—in recognition that the interactions of the group contributed more than any individual. ■





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Machine learning

Of prediction and policy

Governments have much to gain from applying algorithms to public policy, but controversies loom

FOR frazzled teachers struggling to decide what to watch on an evening off, help is at hand. An online streaming service's software predicts what they might enjoy, based on the past choices of similar people. When those same teachers try to work out which children are most at risk of dropping out of school, they get no such aid. But, as Sendhil Mullainathan of Harvard University notes, these types of problem are alike. They require predictions based, implicitly or explicitly, on lots of data. Many areas of policy, he suggests, could do with a dose of machine learning.

Machine-learning systems excel at prediction. A common approach is to train a system by showing it a vast quantity of data on, say, students and their achievements. The software chews through the examples and learns which characteristics are most helpful in predicting whether a student will drop out. Once trained, it can study a different group and accurately pick those at risk. By helping to allocate scarce public funds more accurately, machine learning could save governments significant sums. According to Stephen Goldsmith, a professor at Harvard and a former mayor of Indianapolis, it could also transform almost every sector of public policy.

In hospitals, for instance, doctors try to predict heart attacks so they can act before it is too late. Manual systems correctly predict around 30%. A machine-learning

algorithm created by Sriram Somanchi of Carnegie Mellon University and colleagues, and tested on historic data, predicted 80%—four hours in advance of the event, in theory giving time to intervene.

Policing may be helped, too. Last year a policeman in Texas, who had responded to two suicide calls that day, was dispatched to a children's pool party and ended up pulling out his gun. Ideally, the station would have sent a less stressed officer. Many police chiefs already have a simple system to flag "at risk" officers. No one can be sure that machine learning would have prevented the Texas scare. But a system developed by Rayid Ghani at the University of Chicago and others increases the correctness of at-risk predictions by 12% and reduces the incorrect labelling of officers as

being at risk by a third. It is now being used by the Charlotte-Mecklenburg police department in North Carolina.

Chicago's Department of Public Health is another early adopter. It used to identify children with dangerous levels of lead in their bodies through blood tests and then cleanse their homes of lead paint. Now it tries to spot vulnerable youngsters before they are poisoned. And in India, Microsoft and the state government of Andhra Pradesh are helping farmers choose the best time to sow their seeds. This month, eyeing new government contracts, Microsoft held its first machine-learning and data-science conference in Bangalore.

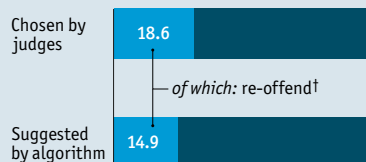
But the case for code is not always clear-cut. Many American judges are given "risk assessments", generated by software, which predict the likelihood of a person committing another crime. These are used in bail, parole and (most controversially) sentencing decisions. But this year *ProPublica*, an investigative-journalism group, concluded that in Broward County, Florida, an algorithm wrongly labelled black people as future criminals nearly twice as often as whites. (Northpointe, the algorithm provider, disputes the finding.)

To limit potential bias, Mr Ghani says, avoid prejudice in the training data and set machines the right goals. Machines are trained to find patterns that predict future criminality from past data. They can therefore be told to find patterns that both predict criminality and avoid disproportionate false categorisation of blacks (and others) as future offenders. When a new defendant is tested against these patterns, the risk of racial skewing should be lower.

Bail decisions, in which judges estimate the risk of a prisoner fleeing or offending before trial, seem particularly ripe for help. Jens Ludwig of the University of Chicago ►►

His honour the machine

Prisoners released on bail*
%



*From a representative sample of the US Department of Justice database 1990-2009
 Source: Jens Ludwig, University of Chicago
 †Failure to appear in court and re-arrest before trial

▶ and his colleagues claim that their algorithm, tested on a sample of past cases, would have yielded around 20% less crime (see chart on previous page), while leaving the number of releases unchanged. A similar reduction nationwide, they suggest, would require an extra 20,000 police officers at a cost of \$2.6 billion. The White House is taking notice. Better bail decisions are a big priority of its Data-Driven Justice Initiative, which 67 states, cities and counties signed in June.

Still, people want to know how decisions that affect them are made. The European Union is considering giving citizens

affected by algorithmic decisions the right to an explanation. “Transparency, transparency, transparency” is needed, says Jay Stanley of the American Civil Liberties Union. But private companies may be loath to divulge their special sauce. For Boston’s chief information officer, Jascha Franklin-Hodge, that is a motivation to develop machine learning in-house. Analytical skills, however, are scarce.

Other obstacles may also slow adoption. Getting enough data for a project can be hard. Combining supposedly confidential data sets can heighten the risk of accidentally identifying individuals. Some ap-

plications may be thought unethical. Mr Mullainathan and his colleagues show that machine learning can help predict the risk of death. That could, say, help focus hip replacements on those likely to live longest. Some may think that a step too far.

Prediction is anyway probabilistic, not perfect. Officials still have to act. Getting rid of lead paint may be easy; even with clever algorithms, stopping traumatised policemen from drawing their guns is not. For governments that embrace machine learning, the future will depend on how well they marry its predictive power with old-fashioned human wisdom. ■

Buttonwood | To have and to hold

The endowment effect among stockmarket investors

ADAM SMITH remarked that no dog ever made a free and fair exchange of one bone for another. Many pooch-owners will agree, having spent frustrating minutes trying to wrestle a stick or a ball off their pets.

But humans are supposed to be rational. They should not value things they own more highly just because they already possess them. Experiments in the classroom have shown, however, that people may be subject to this trait, dubbed the “endowment effect”. In a classic study, students were randomly given a mug. Those who received the mugs were asked what price they would sell them for; the mean was \$5.78. Those who did not were asked what they would buy them for; the average was \$2.21.

In a similar test, students were asked to state their preference between a mug and a chocolate bar; 56% favoured the former and 44% the latter. Two other groups of students were then randomly assigned the mug or the chocolate and then asked whether they were willing to swap; in each case, around nine in ten of the students were unwilling to do so. You might say they were “possessed”.

That is the kind of result that gets behavioural economists excited, since it suggests people are not the rational calculating machines (*Homo economicus*) that standard models assume them to be. Traditional economists, by contrast, are sniffy about such experiments, arguing that they bear little relation to the kind of decisions made in the real world.

But a new paper* claims to spot the endowment effect at work among a supposedly hard-headed group of individuals: stockmarket investors. It looks at the flotations—initial public offerings, or IPOs—of companies on the Indian market.

When Indian IPOs are oversub-



scribed, issuers often use a lottery to assign shares to eager investors. Winning investors are allocated shares at the flotation price; losing investors can buy only after the issue starts trading.

In theory, both groups should be equally keen to own the shares. After all, they applied on the same basis. But the authors found that 62.4% of winners were still holding the shares after a month, while just 1% of losers had bought them. Now, these groups will have paid different prices, since the losers have to buy in the secondary market; the average IPO increases in price by 52% on the first day of trading. On the surface, it makes perfect sense that the losers would not want to pay what they perceive to be an inflated price.

However, if this were the driving force, you would expect to find more losers buying IPOs when the initial gain was small or when prices fell. But the authors found no relationship between the endowment effect and early price movements.

Furthermore, in cash terms, IPO investors’ trading gains are limited. In order to apply for shares, investors have to put an average of around \$1,750 into an escrow ac-

count, but are allotted shares worth only around one-eighth of that. That means the average first-day trading gain is just \$62. Would this really drive such a big difference in behaviour?

Another puzzle is that, after its initial gain, the average IPO falls in price as time goes on; after 12 months, it is 54% below the issue price. So it would make sense for the lottery winners to offload their holdings after the first day’s trading and for the losers to try to buy the stock on the cheap later. But that doesn’t happen: after a year 45.8% of the winners are still hanging on to their stock, whereas only 1.7% of the losers have piled in.

Perhaps inertia is the driving factor? Investors simply might not get around to trading. But the authors reject that explanation; the endowment effect is still present when they study investors who make more than 20 other stockmarket trades in the month of the IPO.

Another possibility is that those winners who hold onto their shares are naive investors; more experienced traders are more rational. So the authors looked at investors who had taken part in more than 30 IPOs, and found there was still a substantial endowment effect; winners were four times more likely than losers to hold shares at the end of the first month.

It looks, therefore, as if the act of winning the IPO lottery makes investors more willing to hold on to their shares, regardless of their profit or loss. So next time your dog refuses to give up his ball—the very ball he expects you to throw for him to fetch—show him some sympathy. He is only imitating his human owner.

* “Endowment Effects in the Field: Evidence from India’s IPO Lotteries”, by Santosh Anagol, Vimal Balasubramaniam and Tarun Ramodorai.

Morgan Stanley

Poacher to prey

NEW YORK

An activist investor nibbles at a Wall Street giant

SINCE the 1930s Morgan Stanley has been dispensing advice to America's most prominent companies. Now sound counsel may be needed at home. The Wall Street firm must ponder how to respond to a \$1 billion investment by a hedge fund with a history of stirring up changes on boards and in executive suites.

The purchase, by ValueAct, a San Francisco fund, ought not to be a surprise. Judged on the measures often used as a first screen to identify takeover targets, Morgan Stanley has long looked vulnerable. A letter from ValueAct to its own investors early this month noted that the investment bank was trading at only 70% of book value, implying that a break-up could be lucrative. Since news of its investment emerged on August 15th, that has risen to 80%, providing an immediate return without undermining the thesis (see chart).

Predictably, Morgan Stanley said it welcomed its new shareholder (as it would any investor). There may be at least some truth in this. ValueAct's letter extolled Morgan Stanley's virtues and its strategy. The fund has not demanded board seats or changes, as it has elsewhere.

This flattery may partly reflect Morgan Stanley's position on Wall Street. It is about as inside the club as any firm could be. When ValueAct tries to shake up a board, Morgan Stanley will surely be on one side or the other. The fine words may also be sincere. In 2013 the bank acquired Citigroup's vast brokerage operations for a song and has since integrated them into its own operations. In so doing it has slowly shifted away from businesses where risks and capital requirements were particularly high, notably fixed income. James Gorman, its chief executive, is broadly thought to have done a good job.

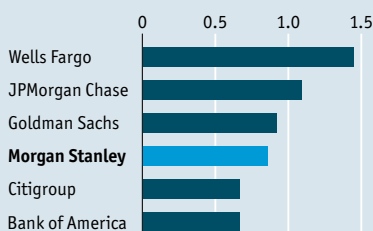
For all that, results remain barely adequate. Mr Gorman has set a target for return on equity of 9-11% in 2016, up from last year's 8% but hardly stellar. It is much less than JPMorgan Chase and Wells Fargo, two universal banks, expect.

Ordinarily, that might prompt a possible bid. But no rival is faring brilliantly, and any takeover would be tricky. The logical domestic acquirer, Wells Fargo, could face antitrust objections: a merger would combine two of America's three largest brokers. And the Federal Reserve is unlikely to allow a bank already considered too big to fail to become bigger still.

Mitsubishi UFJ of Japan already owns

Value proposition

Price-to-book ratio, August 17th 2016



Source: Thomson Reuters

more than 20% of Morgan Stanley and could in theory buy the rest, but big cross-border bank deals have all but vanished. National regulators, considered the guarantors of institutions on their patch, are sceptical everywhere. America's would surely be reluctant to approve a deal.

Any other buyer would need to be big: Morgan Stanley's market valuation is \$58 billion, and a takeover would require a premium. ValueAct says it has bought 2% of the firm. That is enough to draw attention, but no more. Regulatory restrictions would anyway limit the inclusion of leverage in any deal.

Still, a deal is not wholly unthinkable. Several private-equity firms are sitting on huge piles of cash and they like to think they can create new structures. That might even temper their habitual affection for debt. Morgan Stanley's brokerage and advisory businesses surely could thrive as a privately owned business. Underwriting can be done with little capital. The trading business is shrinking. ValueAct says in its letter that public shareholders do not understand or properly value the firm. Perhaps others would. ■

Italian distressed debt

Bargain hunt

Structural obstacles make Italian banks' bad loans hard to sell

AFTER years of economic stagnation and questionable lending, bad loans at Italian banks have piled up. The gross value of non-performing loans (NPLs) is around €360 billion (\$406 billion), or almost one-fifth of Italian GDP. Hasty repairs and rescues have been arranged for troubled lenders—notably Monte dei Paschi di Siena, the third-biggest, in July. But what can be done about the loan mountain?

The IMF has suggested building a robust market in NPLs, thus placing the burden of bad loans with distressed-debt specialists, freeing Italian banks to provide

more credit to the real economy. But although the market for bad debts has started to pick up in Italy, with volumes increasing steadily to reach €22 billion so far this year, structural obstacles mean such markets may be less successful than in other European countries.

Distressed-debt investors tend to buy loans in bulk, and hence prefer loans with easily recoverable, tangible collateral. The NPLs of stricken British, Irish and Spanish banks in recent years were largely mortgages: being backed by property, they could be valued from current real-estate prices. British and Irish courts are also pretty efficient at dealing with claims on collateral. Many Italian NPLs, by contrast, are uncollateralised loans to small businesses or consumers. Even when collateral has been pledged, Italian courts are much slower than those elsewhere to recover it.

Most significant, Spain and Ireland set up "bad banks" a few years ago that used pots of public money to buy NPLs from banks' balance-sheets and then sold them gradually, creating enough transaction volume for a vibrant market to form. Newly tightened European rules, however, prevent Italy from doing likewise.

Of course, Italian NPLs can still be attractive investments if the prices are low enough. But the gap between banks' and investors' valuations is troublesome. Banks have not tended to mark down their loans to any lower than around 40% of their original book value, whereas investors may be willing to pay only 20%. This makes Italian banks even less keen to sell, as it would force them to take a large hit to their already thin capital buffers when selling the duff loans.

Prevented from setting up a bad bank, the Italian government has pinned its hopes on securitisation of NPLs. It has set up a guarantee scheme called GACS for senior tranches of NPL-backed securities. Josh Anderson of PIMCO, an asset manager, reckons that carefully structured transactions could allow NPLs to be transferred from banks' balance-sheets at something close to current book value.

However, it is too early to be confident. The GACS scheme has not yet been tested and comes with many strings attached. NPL cashflows may be "too lumpy and unpredictable" to appeal to institutional investors, says David Edmonds of Deloitte, an accounting firm. There are few precedents for securitising NPLs, in Italy or abroad, that provide a useful guide.

Given investors' reluctance to stump up new capital, transactions that allow banks to thicken their capital cushions through asset sales may provide an alternative. Investors in distressed debt often have private-equity arms too, and have offered to buy businesses from banks to compensate for the capital hit from bad-loan sales. One firm, Apollo Global Management, recently ►►

▶ bought the insurance division of Banca Carige, a regional Italian lender. Loan-servicing units, which pursue individual debtors, are especially appealing targets.

Novel approaches hold promise for both banks and troubled business borrowers. KKR, a large private-equity firm, launched a platform called Pillarstone last autumn that combines NPL resolution with corporate restructuring. Like a buy-out firm, Pillarstone seeks to take control of overindebted, troubled firms and turn them round with new capital from KKR. The novelty is that it also manages the bank loans of those firms, with the aim of achieving repayment and giving banks part of any extra profits, too.

HIG Bayside Capital, a distressed-debt specialist, recently announced a €260m fund that goes a step further: it both plans to restructure companies burdened by loans and allows banks to sell those loans at current book value in exchange for a stake in the fund. This should improve banks' capital ratios while diversifying their sources of income. More such creative ideas will surely be needed to sort out Italy's bad debts. ■

China's budget deficit

Augmented reality

SHANGHAI

The fiscal hole is much bigger than meets the eye—but under control

IF A country's fiscal deficit hit 10% of GDP five years running, you might reasonably conclude that its public finances were parlous. So it is understandable that China has bristled at suggestions that it is veering into such territory. Officially, China is a paragon of fiscal rectitude: its annual deficits have averaged just 1.8% in the past half-decade. But the IMF, Goldman Sachs and others have come up with "augmented" estimates of nearer to a tenth of GDP, more than five times the official number.

At face value, these estimates imply that China is suffering from a budget gap—not to mention a credibility gap—of Greek proportions. Are things really that bad? Almost certainly not. The augmented figures form a clearer picture of China's fiscal health. But they also differ from conventional measures in important ways, and so are potentially misleading.

The IMF devised the alternative concept a few years ago, to track the vast amount of spending that occurs off China's public balance-sheet. Because the central government places tight limits on local-government debts, provinces and cities have long used arm's length companies, known as local-government financ-



Keeping the budget on track

ing vehicles (LGFVs), to borrow from banks and issue bonds. That these are really just stand-ins for public borrowing is an open secret. The augmented deficit is a way of making this explicit. Consider the projections for 2016: the government is on course for an official deficit of roughly 3% of GDP. But adding in LGFV borrowing, the IMF forecasts that it will rise to 8.4%.

The augmented estimates also catch other forms of quasi-fiscal spending. Over the past year the authorities have made liberal use of China Development Bank, a "policy bank" specifically charged with supporting government initiatives. Land sales are also an important source of funding. Totting up all the different items, the IMF says China's augmented deficit will rise to a jaw-dropping 10.1% of GDP in 2016 (see chart). The government is thus giving the economy a fiscal push more than triple the size of its official target.

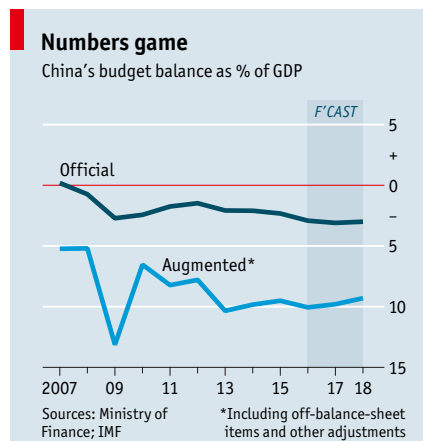
Although that stimulus may be welcome now, an obvious question is whether public debt is far greater than advertised. Repeated fiscal blow-outs—declared or not—will eventually appear on the balance-sheet. Sure enough, the Chinese gov-

ernment tacitly confirmed the augmented estimates, at least in part, when it added off-balance-sheet debts to its official tally a couple of years ago. Its debt jumped to 38.5% of GDP in 2014 from 15.9% in 2013.

But the augmented deficit is not as frightening as it looks—and certainly not as worrisome as China's vast corporate debts. First, it does not represent new hidden debt: it is an attempt to assign responsibility, putting the government on the hook for implicit liabilities. Second, spending funded by land sales does not add to debt. Sales must be handled prudently—once an asset is sold, it's gone—but they are like a development bonus, topping up the coffers so long as urbanisation continues.

Finally, China's deficit is different from those of developed economies. Outlays on social programmes, though rising, are still low. Much of the deficit stems instead from investment in roads, railways and so forth. "These are not just general spending," says Helen Qiao, an economist with Bank of America Merrill Lynch. "They generate assets for the government." So long as the assets are decent, net debt will remain under control, allowing China slowly to rein in its deficits. Indeed, the IMF expects the augmented deficit to average 9% until 2021.

This, however, raises a different concern: that the deficit should in fact be more like those elsewhere. At around a tenth of GDP, social spending is half of what it is in rich countries. And with China's population about to age rapidly, the gaps in pension, welfare and health-care systems will soon get much wider without more public money. A strong state backstop would also give people confidence to spend more, supporting the economy's rebalancing towards consumption. So while China can afford to tame its deficit gradually, it must be quicker to shift its spending habits. More should go on hospitals and pensions, less on power stations. ■



Free exchange | Medalling prosperity

If the Olympics teach anything about growth, it is that there are no shortcuts

THERE is nothing (one imagines) quite like standing atop an Olympic podium, a disc of bullion around your neck, while your national anthem plays for all to hear. It is an experience Britons have enjoyed with surprising frequency in recent days. As *The Economist* went to press, Team GB's gold-medal haul in Rio trailed only America's. Governments are keen to crack the code of Olympic success, both to buoy national spirits and bask in athletes' reflected glory. Performances like Britain's encourage those who see a role for state planners. Since a string of woeful tallies in the 1990s the main organisation promoting British athletics, UK Sport, has been more active in picking potential winners and showering them with resources. Why, some wonder, should their government not perform the same trick for, say, manufacturing? Some caution is in order.

For a start, in chasing Olympic success it helps to be rich already. To be sure, a large population is an advantage: nations with more people are likelier to contain individuals of exceptional ability. But numbers matter little if a country cannot tap its human endowment. In 2012 India, the world's second-most populous country, captured just six medals, none of them gold. New Zealand, with just 4m people, won 13. An analysis in 2008 suggested that although India's population is large, its pool of potential Olympians is far smaller. In areas stricken by poverty, disease and malnutrition, many struggle to be healthy at all, let alone become champion athletes.

Rich countries tend to have healthier populations and more resources to devote to sport. In 2000, when China's GDP per person (adjusted for purchasing power) was less than \$4,000, it won just 58 medals. By 2012 GDP per person had quadrupled, and the count rose to 88. Indeed, in a paper published in 2004 Andrew Bernard of Dartmouth University and Meghan Busse of Northwestern University concluded that, because population and GDP per person have similar effects on medal count, total GDP is a good predictor of how much hardware a country can expect to win. Our chart supports this intuitive result.

This is of little use to either rich countries or poor ones seeking Olympic success (which is anyway among the least important reasons for reducing poverty and improving health). But while some countries dramatically underperform these fundamentals, others punch above their weight. Some suspiciously so: Russia's impressive medal hauls in past games look different since the discovery of a state-sponsored doping regime. Across other rich

countries, attention has increasingly focused on the nuts and bolts of Olympic industrial policy.

Throwing money at the problem seems to work. In Britain funding for athletes—paid for largely by the national lottery—rose almost fivefold between 2000 and 2012, from just over £50m (\$76m) to over £250m; the medal count rose in tandem. Hosting the games yields a temporary dividend, though at great expense: Britain's medal count rose by nearly 40% from 2008 to 2012, when the games were staged in London at a cost of about £9 billion.

Aiming money more precisely seems to make more sense. Athlete-development programmes are essential, to identify prospective winners and provide them with coaching, equipment and living expenses. Countries can also make strategic choices about which sports to specialise in. They may choose events in which they have a strong tradition, which other countries neglect, or in which there are several sub-disciplines and so plenty of medals on offer (eg, cycling). Britain's medal success is due in part to ruthless decisions to cut funding to sports and athletes with little chance of victory, and to divert the largesse to those with better prospects. Cyclists' strong performance in 2012 was rewarded with more cash; failure at volleyball meant the budgetary axe. A similarly unsentimental programme once brought Australia success, but the tally has fallen since the Sydney games in 2000 and the retirement of a brilliant sporting generation. A revised version has not yielded the hoped-for returns in Rio.

Therein, it would seem, lies the answer. For a rich country unhappy with its lot in matters of global competition, all that's needed is for government to identify and support the athletes—or industries—likeliest to win. The only way to lose is not to play.

Fool's gold

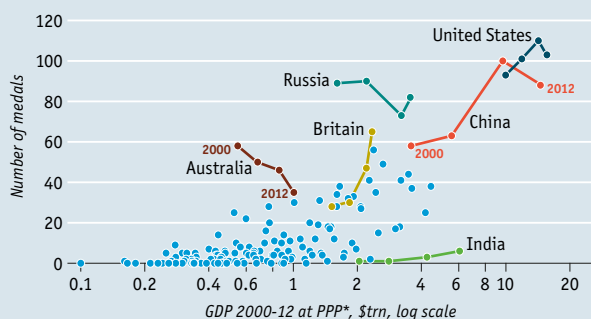
Governments tempted to deploy Olympic strategies elsewhere should think twice, however. The Olympics are not like most aspects of economic life. There are only three spots on the podium. Home athletes and fans may sigh when a foreigner throws a javelin farther or performs better on the pommel-horse. Coming fourth in global production of steel is not something to fret about—unless the government is wasting money on unproductive plants to achieve that result. That suggests governments should focus more on investment in public goods that buoy performance across a range of industries rather than risking waste by climbing league tables that do not matter.

Perhaps just as important, the desire to best other countries can lead to blinkered decision-making, even in financing Olympic sports. The short-run advantage from finely targeted funding, like Britain's, may be offset in the long run by the erosion of the fan base and infrastructure of neglected sports. Neither is it obvious, enjoyable as it is to watch your compatriots win, that money spent chasing gold medals would not do more good elsewhere: building public pitches and pools in disadvantaged neighbourhoods, for instance, or supporting early-childhood education.

A government which competes with other countries to build the best public goods—the best universities or railways—does not lose if it fails to come top of the league tables in published research or passenger miles. To believe that success in the Olympics provides evidence of the value of industrial policy, you need to believe that governments are wise to spend on Olympic prowess in the first place. Yet bread matters more than circuses. ■

Gold rush

Countries' performance at summer Olympic games



Sources: IMF; sports-reference.com *40 largest countries at purchasing-power parity



Aviation and robots

Flight fantastic

Instead of rewiring planes to fly themselves, why not give them android pilots?

THE idea of a drone—an aircraft designed from scratch to be pilotless—is now familiar. But what if you want to make pilotless a plane you already possess? Air forces, particularly America's, sometimes do this with obsolete craft that they wish to fly for target practice. By using servomotors to work the joystick and the control surfaces, and adding new instruments and communications so the whole thing can be flown remotely, a good enough lash-up can be achieved to keep the target airborne until it meets its fiery fate. The desire for pilotlessness, though, now goes way beyond the ability to take pot shots at redundant F-16s. America's air force wants, as far as possible, to robotise cargo, refuelling and reconnaissance missions, leaving the manned stuff mostly to its top-gun fighter pilots. This could be done eventually with new, purpose-built aircraft. But things would happen much faster if existing machines could instantly and efficiently be retrofitted to make their pilots redundant.

Shim Hyunchul and his colleagues at KAIST (formerly the Korea Advanced Institute of Science and Technology) think they can manage just that. They plan to do so by, quite literally, putting a robot in the pilot's seat. As the photograph shows, this robot—called PIBOT (short for pilot robot)—has a human body plan, with a head, torso, arms

and legs. The head is packed with cameras, which are thus in the same place as a human being's eyes, and the arms and legs can operate an aircraft's controls, just as a human being would.

Call me George

To design PIBOT, Dr Shim and his colleagues broke the task of piloting down into three areas—recognition, decision and action. They then developed the machine intelligence and sensory software needed for a robot to carry all three out well enough to fly a plane.

The recognition part was fairly easy. Trainee pilots have to learn to ignore irrelevant stimuli and concentrate on the instruments, which is trivial for a robot. And most recognition tasks during flight involve reading simple text displays and markings, tasks for which modern optical-recognition software is more than adequate. For looking out of the cockpit, meanwhile, PIBOT has edge-detection software that recognises features like the horizon and runway markings.

Decision-making is similarly simple to program in. Here, PIBOT works like a standard autopilot, following the rules set down in the handbook of whichever aviation authority has to approve it. Programming in the actions consequent on these decisions, though, was trickier. Every such

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action—for example, flicking a particular switch or moving the joystick a prescribed amount—has to be expressed as a combination of arm- or leg-joint movements that have to be calculated precisely and then added to the robot's memory.

The first PIBOT, a scaled-down version based on a commercially available 'bot called BioLoid Premium, was demonstrated in 2014. Though just 40cm tall, this had the same articulation as a full-sized device. When strapped into a cockpit simulator with miniature controls, it was able to go through a complete flight sequence, from turning on the engine and releasing the brakes to taxiing, taking off, flying a pre-determined route and landing safely at the destination. Crucially, it was then able to do the same in a real, albeit miniature aircraft—though it needed some human assistance with the tricky procedure of landing.

Now, Dr Shim has unveiled PIBOT2, a full-sized version of his invention. This flies a simulator as well as its predecessor did, though it has yet to be let loose in a real cockpit. If it can outperform that predecessor in the landing department, then it will fulfil the United States Air Force's requirement for a "drop-in robotic system" that can be installed quickly without modifying an aircraft—and will do so at a unit cost of \$100,000, which is \$900,000 less than the cost of converting an F-16 for a trip to the great shooting gallery in the sky.

From an air force's point of view there is a lot to like. PIBOT's autonomy removes the risks of jamming or loss of a communication link that goes with remote control. The robot is immune to g-forces, fatigue and fear, requires neither oxygen nor sleep, needs only a software download—rather than millions of dollars of flight training—to work out how to pilot an aircraft, ►►

Weed control

Now try this

Milkweed is toxic and hard to get rid of. The answer? Train rabbits to like it

IF HUMAN beings could have conversations with animals, many a conservationist would bring up the subject of invasive plants. “Try this one,” they would plead with their fauna. “It’s new, it may take some getting used to, but it’s nutritious. And it really, really needs a natural enemy around here.”

Such a meeting of minds has taken place, after a fashion, in Hungary. The animals in question are rabbits. A group of biologists led by Vilmos Altbäcker of Kaposvar University have persuaded these lagomorphs to add common milkweed to their diet.

Milkweeds are native to North America, and famous there as host of the caterpillars of the monarch butterfly. Elsewhere, though, they can be pests, for they are poisonous to many grazing animals, notably cattle, sheep and horses. But not to rabbits, at least not the common milkweed, *Asclepias syriaca*, that has been overwhelming Kiskunsag National Park in Hungary. When confined to cages, and offered little other food, rabbits will eat it and thrive.

That is a far cry from persuading wild rabbits of milkweed’s virtues. But Dr Altbäcker thought this could be done, based on an earlier discovery of his—that the rabbits of Kiskunsag have dietary traditions. In one corner of the park, for instance, their favourite winter food is juniper. In another part, by contrast, they shun that plant. Experiments he conducted with transplanted junipers proved the difference was not in the food. Rather, it was a matter of the local rabbits’ culinary preferences.

Persuading animals to acquire a taste for a previously shunned plant is not unprecedented. Some farmers train their livestock to eat certain weeds as well as grass, and calves will even pick up the habit from the example of their elders. Dr Altbäcker’s goal, though, was to perform this feat with a species in the wild, where such cultural transmission is much harder to engineer—particularly because

rabbit kittens leave the nest as soon as they are weaned, and thereafter fend for themselves, giving them little chance to learn by example.

But observing their mothers is not the only way that kittens might learn what to eat. The chemistry of the milk they are drinking might give them clues, as might the edible faecal pellets all rabbits produce as a way of digesting their fibrous vegetable food twice. And Dr Altbäcker did indeed establish that both milk and pellets from rabbits which had consumed milkweed would cause the next generation to prefer that plant to regular laboratory food.

This still left one obstacle to milkweed’s introduction into rabbit cuisine. Young rabbits are born in winter and early spring, whereas milkweed plants do not pop up until May. On the face of things, milkweed molecules thus have no way to get into rabbits’ milk and edible faeces in the wild. But Dr Altbäcker backed a hunch that such molecules might hang around in a mother’s body long enough (perhaps stored in her fat) to carry a message from the previous season. He therefore tested the preferences of kittens born to mothers taken off milkweed three months beforehand (long enough to mimic the time between the end of the milkweed’s growing season and the beginning of the rabbits’ breeding season) and found that although these youngsters were not quite as happy to consume milkweed as those in the earlier experiment, they liked it better than control litters did.

The next step would thus seem to be to introduce milkweed-primed rabbits into Kiskunsag and see what happens. Unfortunately, says Dr Altbäcker, Kiskunsag’s management is not minded to accept an addition to the park’s rabbit population. It may even have a point. In Hungary, rabbits are themselves an invasive species, brought from Iberia in Roman times. Why take the chance of introducing a souped-up version?

▶ and can constantly be upgraded with new skills in the same way.

Moreover, Dr Shim sees the military use of **PIBOT** as just the beginning. It could also provide an economical replacement for a human co-pilot on commercial flights. It could revolutionise ground transport, too—providing, as an alternative to purpose-built driverless cars, the possibility of a robo-chauffeur. Dr Shim says he is already

working on a **PIBOT** able to drive a car, a task which is, he says, “easier in some parts and more difficult in others” than piloting a plane. If successful, this approach could turn millions of existing vehicles into driverless ones quickly and easily. And the owner could still put the robot in the back seat (or even the boot) whenever he wanted to experience the old-fashioned thrill of taking the wheel himself. ■



Reversing deafness

Gone today, hair tomorrow

Sea anemones may hold an answer to the problem of hearing loss

PEOPLE’S ability to hear depends on bundles of tiny hairs found inside their ears. When these bundles vibrate in response to sound, cells at their base send signals to the brain, which then translates them into the rich symphony that fills the world. In normal circumstances, this symphony leaves the hairs unharmed. But exceptionally loud noises—close cracks of thunder, the emissions of rock-concert loudspeakers and so on—can disorganise the bundles, traumatising and sometimes killing the cells they are connected to. Doctors have long believed such damage to be irreversible, but an experiment led by Glen Watson of the University of Louisiana, Lafayette, and published in the *Journal of Experimental Biology*, suggests an ointment containing proteins harvested from sea anemones may do the trick.

Some anemones, such as *Nematostella vectensis*, pictured above, have a primitive sense of hearing: tiny hair bundles scattered along their tentacles sense when animals that they can sting are nearby. Wounds from battles with struggling prey often disorganise these bundles but, unlike the hair bundles found in the ears of mammals, anemone bundles mend themselves in the space of four hours.

During previous work, Dr Watson noticed that a mixture of 37 proteins from *Nematostella*, including several known to help either repair or destroy misfolded proteins, were used by the anemones to reorganise their dishevelled bundles. He therefore wondered whether these could repair other animals’ hair bundles, too. To find out, he isolated the anemone protein mixture and applied it to damaged sensory hair bundles from blind cavefish. He knew from another study on these fish that their ▶▶

► hair bundles usually took nine days to recover after being damaged. Applying the anemone proteins reduced the recovery period to a little over an hour. This led him to try the same thing with mammals.

He and his colleagues removed the organs of Corti, home of the hair bundles, from the ears of mouse pups, and cultured them on microscope-slide cover slips. Once the team were sure the cultures were stable, they exposed them for 15 minutes to one of two solutions. The first contained healthy levels of calcium. The second was calcium-free, a fact they knew would cause the bundles to lose their structure. They then incubated the slips in another sort of solution—in this case either enriched in anemone repair proteins, or not. After an hour of this, they stained the samples and studied them under a microscope.

To quantify matters, they examined transects 50 microns long from each sample. Such transects would traverse six bun-

dles in a healthy animal. They assigned a score of 1.0 to bundles that were clearly healthy and well organised, a score of 0.5 to those that were disorganised but present, and a score of zero to sites where hairs should have been but weren't. Scored this way, transects from healthy controls averaged 5.9 while those from untreated traumatised tissue averaged 2.2. Traumatized tissue that had been treated subsequently with the anemone-repair-protein solution, though, had an average score of 5.1. It had indeed been repaired.

While repairing hair bundles in samples of mouse-pup ear tissue is not the same thing as repairing those inside the ears of people suffering from hearing loss, Dr Watson's findings suggest that a treatment of this sort may be possible in the not too distant future. If he is right, those who regret that front seat at Madison Square Garden in their misspent youths may have a chance to redeem themselves. ■

the outliers from the mundane travellers. A second classifier, primed with information about pickpocketing hotspots gleaned from police reports and social-media posts, then tried to spot the pickpockets among these outliers.

In this, it succeeded. It identified 93% of known pickpockets (ie, those caught by the police during the period in question). However, a second goal is to cast suspicion on as few innocents as possible. Here, its performance was equivocal. Only one out of every 14 suspicious individuals was a known pickpocket. On the other hand, that number presumably included some unknown pickpockets, too.

Even with a false-positive rate this high, though, Dr Xiong thinks he has developed a powerful tool. Monitoring a suspicious few using closed-circuit cameras is less daunting than following millions of riders. He says the technology will soon be piloted in Beijing and rolled out subsequently in other Chinese cities.

Not all experts are convinced. Shashi Verma, chief technology officer at Transport for London, and thus the man ultimately responsible for the smooth operation of that city's Oyster card system, says his records show millions of ordinary people making all sorts of "weird, wonderful, complicated" journeys. Picking the criminal needles from the haystack of innocents is not as easy as it sounds. Dr Xiong is, however, confident in his team's approach—so confident that they propose to investigate the movement patterns of other "asocial groups" such as "alcoholics, drug-users, homeless people and drug-dealers" on public-transport networks. Such mission creep is precisely what gives freedom lovers the willies. Picking up pickpockets is one thing. Using artificial intelligence to pursue those at the margins of society is quite another. Technology does not know the difference. But people need to. ■

Crime prevention

Cutpurse capers

Artful dodger, your time may be up

SMART-CARD public-transport ticketing systems let people hop between buses, subways, trams, surface rail and river boats—even when these are operated by different companies—without having to buy new tickets. This undoubted good, though, has ramifications. One is that anyone with access can, by following individual passengers (or, at least, their cards), study precisely where people are going.

Companies use this knowledge to optimise services—again, an undoubted good. But many other things, some disturbing to freedom lovers, might also be done with smart-card data. One, outlined in San Francisco this week at the Knowledge Discovery and Data Mining conference, seems completely sinister on the face of it. This is to use such data to catch pickpockets.

The idea is the brainchild of Xiong Hui of Rutgers University, in New Jersey, and Du Bowen and Hou Zhenshan of Beihang University, in Beijing. Together, they studied the movements of passengers on Beijing's buses, trains and subways. As might be expected, most moved swiftly from A to B—taking the least time or smallest number of transfers to do so, and made similar journeys day after day. A small proportion, though, undertook trips that made little sense, or suddenly varied in their pattern.

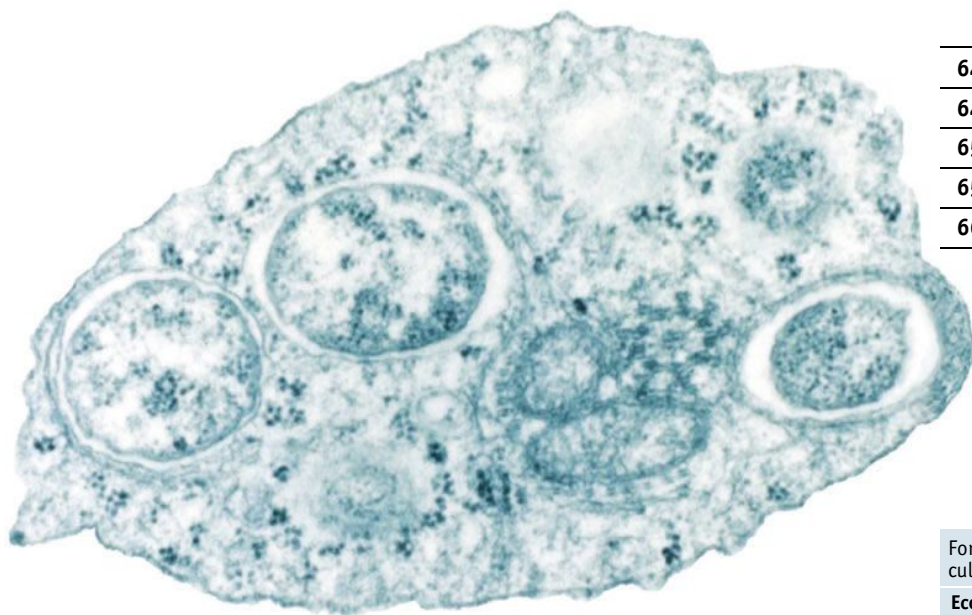
Many of these anomalies have innocent explanations: a forgotten briefcase, perhaps, or a journey in an unfamiliar part

of town. But sometimes the cause is more nefarious—a pickpocket plying his trade on the network, possibly employing a stolen travelcard to do so.

Thankfully, pickpockets are rare. But that makes detecting them all the more challenging. Dr Xiong used a two-step system. First, a computer program called a classifier looked at the peregrinations of 6m travelcards in and around Beijing between April and June 2014 and separated



Big Brother really is watching you



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Microbes and humans

With a little help from my friends

The microbiome gets a worthy biography

ED YONG is a fan of David Attenborough. So much so that to celebrate the naturalist's 90th birthday on May 8th this year, Mr Yong, a science journalist, re-visited 79 episodes of Sir David's "Life" documentary series and ranked them from best to worst or, as he put it, "from least great to greatest".

Now, in his first book, "I Contain Multitudes", Mr Yong has turned an enthusiastic naturalist's eye on the bacteria, viruses and other minuscule organisms that cohabit the bodies of humans and other animals; creatures which, if those bodies magically disappeared, would be "detectable as a ghostly microbial shimmer, outlining a now-vanished animal core".

Humans and microbes have been on a war footing since the mid-19th century, when Louis Pasteur's experiments provided support for the germ theory of disease. The improvements in sanitation that followed have saved millions of lives. But the focus on preventing disease also sidelined the study of beneficial microbes, a problem exacerbated by the fact that these indigenous microbiota, exquisitely sensitive to the conditions inside the body, were almost impossible to grow in the lab.

It would be over a century before new genetic tools would allow scientists to dispense with trying to culture these recalcitrant microbes. By sequencing the tiny amounts of DNA from these critters pre-

I Contain Multitudes: The Microbes Within Us and a Grandeur View of Life.

By Ed Yong. Ecco; 368 pages; \$27.99. Bodley Head; £20

sent in environmental samples, they could begin studying them without the need for a robust culture in a Petri dish. The number of new species of bacterium known to science exploded in the 1990s, and the field of metagenomics—the study of entire microbial communities—was born.

Mr Yong explores the vital role these symbionts are now known to play in animals, affecting their development, immune systems, nutrition and even, in some cases, their sex. In the same way that a flower in the wrong place is a weed, Mr Yong notes that microbes are not necessarily either our friends or our foes. Context is king, and in the right place, bacteria are indispensable. A remarkable example in humans comes from milk, which is packed with sugars called oligosaccharides. Newborns cannot digest them. They exist to feed one subspecies of bacterium, *Bifidobacterium longum infantis*, which digests the sugars in order to produce molecules that feed an infant's gut cells and regulate its nascent immune system.

Then there is the male-hating microbe *Wolbachia pipientis*, which Mr Yong endearingly names his "favourite bacteri-

um". It can be passed on only via eggs, so it has evolved many ways of keeping the egg-producing female share of a population high—by harming males. *Wolbachia* can kill the male larvae of some host species, for example, or allow the females of another to reproduce without males. Yet this seeming villain of a microbe also confers a range of different benefits to its various hosts, protecting them from other pathogens or providing vital nutrients missing from their diets.

Mitochondria, the power-generating structures in plant and animal cells, perhaps best illustrate the dual nature of the relationship between microbes and their hosts. Thought to be the result of an ancient symbiosis, mitochondria structurally and genetically still resemble the bacteria they once were. Despite over a billion years of evolution, however, mitochondria that leak into the blood following an injury trigger a misplaced immune response that can be fatal.

Gut bacteria have now been linked to a long list of ailments including obesity, alcoholism, irritable-bowel syndrome and rheumatoid arthritis. For a lesser writer, the temptation to oversimplify the science or to sex up unwarranted conclusions might have proved irresistible. Mr Yong expertly avoids these pitfalls. The ecosystem of the gut is complex, he says, and the earliest studies in a comparatively new field are frequently wrong. He also examines probiotics, and finds little evidence that the sort included in some yogurts and drinks today prevent illness or provide health benefits.

No matter. Mr Yong has no need for such hype in his book. "I Contain Multitudes" bowls along wonderfully without it. His hero, Sir David, would surely approve. ■



Russian history

Prison without a roof

The House of the Dead: Siberian Exile Under the Tsars. By Daniel Beer. *Allen Lane*; 487 pages; £30. To be published in America by Knopf in January

“HERE was a world all its own, unlike anything else,” wrote Fyodor Dostoevsky. Like hundreds of thousands of Russians before him, and many more after, Dostoevsky had been in Siberian exile, banished in 1850 to the “vast prison without a roof” that stretched out beyond the Ural mountains for thousands of miles to the Pacific Ocean. The experience marked him for ever. Siberia, he wrote later, is a “house of the living dead”.

It was no metaphor. In 19th-century Russia, to be sentenced to penal labour in the prisons, factories and mines of Siberia was a “pronouncement of absolute annihilation”, writes Daniel Beer in his masterly new history of the tsarist exile system, “The House of the Dead”. For lesser criminals, being cast into one of Siberia’s lonely village settlements was its own kind of death sentence. On a post of plastered bricks in a forest marking the boundary between Siberia and European Russia, exiles trudging by would carve inscriptions. “Farewell life!” read one. Some, like Dostoevsky, might eventually return to European Russia. Most did not.

Successive tsars sought to purge the Russian state of unwanted elements. Later, as Enlightenment ideas of penal reform gained prominence, rehabilitation jostled with retribution for primacy. But the penal

bureaucracy could not cope. The number of exiles exploded over the course of the 19th century, as an ever greater number of activities were criminalised. A century of rebellions, from the Decembrist uprising in 1825 to the revolution of 1905, ensured that a steady supply of political dissidents were carted across the Urals by a progressively more paranoid state. The ideals of enlightened despotism—always somewhat illusory—were swept away. Exiles re-emerged—if they ever did—sickly, brutalised and often violently criminal.

In the Russian imagination, the land beyond the Urals was not just a site of damnation, but a *terra nullius* for cultivation and annexation to the needs of the imperial state. Siberia, Mr Beer writes, was both “Russia’s heart of darkness and a world of opportunity and prosperity”. Exile was from the outset a colonial as much as a penal project. Women—idealised as “frontier domesticators”—were coerced into following their husbands into exile to establish a stable population of penal colonists. Mines, factories, and later grand infrastructure projects such as the trans-Siberian railway were to be manned by productive, hardy labourers, harvesting Siberia’s natural riches while rehabilitating themselves.

But in this, too, the system failed utterly. Unlike Britain’s comparable system of penal colonisation in Australia, the tsars never brought prosperity to Siberia. Fugitives and vagabonds ravaged the countryside, visiting terror on the free peasantry, Siberia’s real colonists. A continental prison became Russia’s “Wild East”.

In the end, the open-air prison of the tsarist autocracy collapsed under the weight of its own contradictions. The exiled and indigenous populations were engaged in low-level civil war, with resentful Siberian townsfolk up in arms protesting the presence of exiles thrust on them by the state. A land intended as political quarantine became a crucible of revolution. And modernisation—above all the arrival of the railway—ultimately turned the whole concept of banishment into an absurd anachronism. With revolution in 1917, the system simply imploded.

But it never really disappeared. The tsars’ successors, the Soviets, proclaimed lofty ideals but in governing such a vast land they, too, became consumed by the tyrannical paranoia that plagued their forebears. Out of the ashes of the old system rose a new one, the gulag, even more fearsome than what it replaced. Mr Beer’s book makes a compelling case for placing Siberia right at the centre of 19th-century Russian—and, indeed, European—history. But for students of Soviet and even post-Soviet Russia it holds lessons, too. Many of the country’s modern pathologies can be traced back to this grand tsarist experiment—to its tensions, its traumas and its abject failures. ■

Annals of brain science

No more memories

Patient H.M.: A Story of Memory, Madness, and Family Secrets. By Luke Dittrich. *Random House*; 440 pages; \$28. *Chatto & Windus*; £18.99

PATIENT H.M. is probably the most famous human case-study in the history of science. In 1953 he was suffering from severe epilepsy, so he underwent a drastic surgical procedure. The medial temporal lobes, including structures called the hippocampi, were mostly removed on both sides of his brain. The procedure failed to cure him, but it did have unintended consequences. H.M. developed anterograde amnesia: from the age of 27 he never formed a new long-term memory. The moment a thought ceased to be suspended in his consciousness, it was gone. “Every day is alone in itself. Whatever enjoyment I’ve had, and whatever sorrow I’ve had.”

His great loss was an immeasurable gain for science. Studies on H.M. teased apart different types of memory and showed that the hippocampi were required for some of them, demonstrating that there is indeed functional specialisation in specific brain regions. But Mr Dittrich also shows something of the man behind the acronym: Henry Molaison. He dispels the myth that Molaison existed in a sort of nirvana, serenely content in the present. He suffered, and he was manipulated by scientists. In life, his identity was jealously guarded; in death, the dissection of his brain was streamed live on the internet.

Much has been written about H.M., but here Mr Dittrich is uniquely qualified: his ►►



▶ grandfather, William Scoville, was the neurosurgeon who operated on him. This book is not simply about H.M., but rather uses him as a springboard to explore the history of neuroscience, from the first records of brain surgery in Egyptian writings to 20th-century psychosurgery and beyond. The story of psychosurgery—operating on the brain to treat mental illnesses—is a dark one, and his grandfather played a key role in it. “None would perform as many lobotomies as [Walter] Freeman,” Mr Dittrich writes of another leading doctor of the time, “who was as prolific as he was passionate. My grandfather, however, would come in a close second.”

Mr Dittrich has honed the narrative to a fine edge by the time his grandfather is standing over H.M.’s brain, scalpel in hand, unable to find the epileptogenic focus, the brain region responsible for the seizures. Most surgeons would simply have sewn him up again. A risk-taker might have removed the temporal lobe from one side of the brain, theoretically giving a 50% chance of removing the focus without removing too much brain tissue. But Scoville did something unexpected—something unjustifiable—in removing both temporal lobes. The personal side of Mr Dittrich’s book wonders why his grandfather did it, and what kind of a man he was. H.M.’s fate is not the book’s only shocking tale. The family secret referred to in the book’s subtitle is foreshadowed early on, but its revelation is no less powerful when it comes. ■

A history of skyscrapers

The up and up

Building the Skyline: The Birth and Growth of Manhattan’s Skyscrapers. By Jason Barr. Oxford University Press; 437 pages; \$49.95

THE world is in the middle of an unprecedented skyscraper boom. Last year more than 100 buildings over 200 metres tall were built. What forces drive such ambition? A new book by Jason Barr, an economist at Rutgers University-Newark, focuses on Manhattan, and shows why these behemoths develop, in a conversational style that almost makes you forget that you are reading a book about economic history.

Why is Manhattan synonymous with skyscrapers? In the late 19th century the island was booming: demand to be in particular areas was so high that the only option was to build up. But geography also played a role. The famous grid pattern of the city’s streets, imposed early in that century, meant that the average plot of land in the city was fairly small. Manhattan is itself a thin piece of land, making it hard for eco-



No “skyscraper curse” in sight

nomic activity to spread out, Mr Barr notes.

New York’s first skyscraper, the 11-storey Tower Building, went up in the 1880s. Situated on Broadway, it was a technological breakthrough. The architect, Bradford Lee Gilbert, realised that supporting a super-tall building using conventional techniques would require walls so thick that there would be little floorspace left. So he created an iron frame for the building (after which the only function of the walls was to keep the rain out). On a gusty morning in 1888, New Yorkers anxiously watched Gilbert as he climbed right to the top.

Along the way, Mr Barr punctures some skyscraper myths. For instance, there are relatively few towers between Downtown and Midtown. Urban folklore has it that New York’s geology is the reason: the bedrock in that part of town, the assumption goes, cannot support tall buildings.

A better explanation is New York’s economic history. Mr Barr argues that the area between Downtown and Midtown historically had low land values. In the 18th century the rich lived in Downtown areas close to the port and the seat of government. The poor lived just outside. The wealthy reacted to the gradual introduction of public transport in the 1820s and 1830s by moving far out, eventually as far as Midtown, a less-developed area which could be built to their tastes. The in-between zones thus left behind were undesirable, and few people thought it profitable to build skyscrapers there. The spatial economics of the 19th century continues to shape Manhattan’s skyline today.

Mr Barr tackles another popular myth, often referred to as the “skyscraper curse”. Some economists reckon that a boom in skyscraper construction artificially forces up the price of land; developers want to build an even taller building than their rivals, so they furiously compete for plots. This can push an economy into bubble territory, the thinking goes. Indeed, the 1920s

was a period of frantic floor-adding, often with little economic rationale. It culminated in the opening of the Empire State Building in 1931—just as the Great Depression bit. However, Mr Barr’s careful statistical analysis indicates that over the long sweep of history, skyscraper construction is rational: bursts of activity tend to follow an increase in land values, but not the other way round.

Economists will appreciate Mr Barr’s careful use of wonky concepts; architects and historians will enjoy his keen eye for detail. But whatever your persuasion, after reading this book you will never look up at a skyscraper the same way again. ■

Europe’s single currency

On course to fail

The Euro: How a Common Currency Threatens the Future of Europe. By Joseph Stiglitz. Norton; 416 pages; \$28.95. Allen Lane; £20

THOSE in search of an antidote to the anxieties that arise from Britain’s vote to leave the European Union should avoid the latest book from Joseph Stiglitz. Its subject is the euro, which has hitherto been the main font of fears for Europe and (his analysis suggests) will soon be once again. It is a meaty subject, suited to a big-name economist. Mr Stiglitz has won a Nobel prize, served as a feather-ruffling chief economist for the World Bank and written several books with a fair claim to prestige, notably, “Globalisation and Its Discontents”, published in 2002.

The main argument of his new book is that, on its current course, the euro is certain to fail—and indeed, that it was fatally ▶▶

flawed from birth. It entails a fixed exchange rate and a single interest rate for its members, which means countries must forgo the option to devalue in times of economic weakness. To make up for that loss, the euro's architects should have created institutions, such as jointly issued bonds, mutual backing of bank deposits and a common fund for unemployment insurance, so the costs of righting each economy are shared. Instead the burden falls on individual countries through austerity policies, such as tax rises and wage cuts. The results have been ugliest in Greece, where national income has shrunk by a quarter since 2007 and where the unemployment rate is 24%. There is still time to put in place better policies, thinks Mr Stiglitz. But an amicable divorce would be preferable to the current situation, which puts the considerable achievement of European integration at risk.

A good chunk of the book is taken up with a critique of policymakers' efforts to address the euro crisis. Mr Stiglitz rightly takes issue with the blame-the-victim analysis of the euro's failings that is commonly heard in Germany. The persistent trade surpluses of Germany and the vast deficits of boomtime Spain, Portugal and Greece are two sides of the same coin. Indeed, in a world short of aggregate demand, German thrift is the bigger failing, argues Mr Stiglitz. He favours the remedy, first proposed by John Maynard Keynes, of forcing creditor countries to adjust by taxing their trade surpluses. But in redressing the balance, Mr Stiglitz gives too little weight to the mistakes of crisis countries. The book has other shortcomings. The strident tone and frequent self-references will put off many readers. If sentences that contained the word "I" or "my" were expunged, the book would be rather slimmer. In places it reads as if the miseries of the euro zone stem from sinister corporate forces and not misplaced idealism. Similar arguments crop up in several chapters, a further irritation and a symptom of careless structure.

Mr Stiglitz is not the first economist to make dark predictions about the euro, though it is clear that he favours its success. A fuller reckoning of the blame for the mess the euro zone is in would not undermine Mr Stiglitz's main arguments; it would strengthen them. It is only right at the end of the book that he presents the euro story as mostly tragedy: "It was created with the best of intentions by visionary leaders whose visions were clouded by an imperfect understanding of what a monetary union entailed." It is a shame that such a dispassionate tone does not permeate the earlier chapters. Mr Stiglitz is at his best when coolly analytical and at his most trying when settling scores. Yet on the essentials, he is surely right. Without a radical overhaul of its workings, the euro seems all but certain to fail. ■

"The Get Down"

All beat, no heart

An extravagantly empty tribute to 1970s New York and the birth of hip-hop

BAZ LUHRMANN, the director of "The Great Gatsby" and "Moulin Rouge", is known for stylistic rambunctiousness, not artistic reserve. So Netflix executives should not have been too surprised when the Australian auteur reportedly overshot the budget of his first television series, "The Get Down", by \$30m. At a cost of \$120m, the show is among the most expensive ever made in an industry engaged in an apparently limitless game of creative one-upmanship.

Set in the Bronx in the late 1970s, "The Get Down" does not brush over the borough's history of poverty, crime and urban neglect. On a tour as a presidential candidate in 1980, Ronald Reagan compared it to London during the Blitz, and archive footage woven into the show affords a glimpse of this bleak milieu. The first six episodes, available on Netflix, take place in the scorching summer of 1977. (The remaining episodes will be released next year.) In the stifling heat, chaos feels close. Fires rip through abandoned tenements. One character asks, "Yo, is it just me today, or is it like the Bronx is getting closer to the sun?"

Rather than dwell on blight, though, "The Get Down" celebrates the tenacity and vim of the area's black and Latino youth. It chronicles the generation who revolutionised music by breaking from disco to invent hip-hop. For the protagonists, DJing, graffiti, breakdancing and rapping offer an escape from drug-pushing and gang war. "Had to find my rope/To pull

me up/Because I needed some kind of hope/To fill me up," raps the narrator in the prologue. Mr Luhrmann's stamp is felt in the show's glossy, hyper-real shots saturated with colour, and his freewheeling camera-work has found a perfect subject in the disco dance-floor.


There was a time when film directors would not touch television shows. Writers and producers were deemed to wield too much power. The picture is different in today's much-praised age of television, where producers court big names with the promise of increased creative control. Mr Luhrmann, who initially saw "The Get Down" as a film, was persuaded to oversee the series from start to finish by Ted Sarandos, Netflix's chief content officer, according to *Variety*, an entertainment-industry magazine.

Mr Luhrmann spared no expense or detail in realising his vision. A pioneering rapper, Grandmaster Flash (also a character), and Nelson George, a journalist covering African-American culture in the 1970s, were consultants, and the cast were taught on set to breakdance and mix on turntables as they did in the 1970s. Nas, a hip-hop artist and producer, scored original music; he has sold more than 25m records and probably did not come cheap.

It is not clear that the investment has paid off. The creative direction is muddled: Mr Luhrmann directed only the first episode, but worked closely on them all, resulting in an uneven quality. Stuffed with characters, subplots and flashy song-and-dance numbers, the show resembles a musical. That works fine for the big screen. But television gives time for characters to grow and plots to unspool, keeping viewers coming back. As a director, Mr Luhrmann is more interested in melodrama and spectacle than drawing the audience in. "The Get Down", like a disco ball, glitters on the outside, but is hollow at its heart. ■




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Economic data

% change on year ago

	Gross domestic product			Industrial production latest	Consumer prices		Unemployment rate, %	Current-account balance		Budget balance % of GDP 2016 ^f	Interest rates, % 10-year gov't bonds, latest	Currency units, per \$	
	latest	qtr* 2016 ⁱ	2016 ⁱ		latest	2016 ⁱ		latest 12 months, \$bn	% of GDP 2016 ^f			Aug 17th	year ago
United States	+1.2 Q2	+1.2	+1.7	-0.5 Jul	+0.8 Jul	+1.4	4.9 Jul	-473.1 Q1	-2.5	-2.9	1.58	-	-
China	+6.7 Q2	+7.4	+6.5	+6.0 Jul	+1.8 Jul	+2.0	4.1 Q2 [§]	+256.1 Q2	+2.7	-3.8	2.52 ^{§§}	6.63	6.39
Japan	+0.6 Q2	+0.2	+0.5	-1.5 Jun	-0.5 Jun	-0.1	3.1 Jun	+163.5 Jun	+3.4	-5.0	-0.07	100	124
Britain	+2.2 Q2	+2.4	+1.6	+1.6 Jun	+0.6 Jul	+0.7	4.9 May ^{††}	-161.9 Q1	-5.1	-4.0	0.64	0.77	0.64
Canada	+1.1 Q1	+2.4	+1.4	-2.8 May	+1.5 Jun	+1.7	6.9 Jul	-47.6 Q1	-2.4	-2.5	1.05	1.29	1.31
Euro area	+1.6 Q2	+1.1	+1.5	+0.4 Jun	+0.2 Jul	+0.3	10.1 Jun	+392.0 May	+3.0	-1.8	-0.06	0.89	0.90
Austria	+1.6 Q1	-0.7	+1.3	+0.8 May	+0.6 Jun	+1.2	6.2 Jun	+10.5 Q1	+2.3	-1.4	0.14	0.89	0.90
Belgium	+1.4 Q2	+2.0	+1.3	+1.7 May	+2.3 Jul	+1.7	8.5 Jun	+6.5 Mar	+1.1	-2.8	0.18	0.89	0.90
France	+1.4 Q2	-0.2	+1.4	-1.3 Jun	+0.2 Jul	+0.3	9.9 Jun	-21.4 Jun [‡]	-0.5	-3.3	0.19	0.89	0.90
Germany	+1.7 Q2	+1.7	+1.5	+0.5 Jun	+0.4 Jul	+0.4	6.1 Jul	+307.7 Jun	+8.1	+0.7	-0.06	0.89	0.90
Greece	-0.1 Q2	+1.1	-0.6	+7.4 Jun	-1.0 Jul	-0.2	23.5 May	+0.9 May	-0.1	-4.6	8.22	0.89	0.90
Italy	+0.7 Q2	nil	+0.9	-1.0 Jun	-0.1 Jul	nil	11.6 Jun	+47.7 May	+2.1	-2.6	1.12	0.89	0.90
Netherlands	+2.3 Q2	+2.5	+1.5	+1.6 Jun	-0.3 Jul	+0.3	7.5 Jun	+62.0 Q1	+9.9	-1.5	0.07	0.89	0.90
Spain	+3.2 Q2	+2.8	+2.8	+1.0 Jun	-0.6 Jul	-0.4	19.9 Jun	+22.0 May	+1.3	-4.3	1.06	0.89	0.90
Czech Republic	+2.7 Q1	+3.6	+2.3	+3.8 Jun	+0.5 Jul	+0.5	5.4 Jul [§]	+2.7 Q1	+1.1	-0.5	0.33	24.0	24.3
Denmark	-0.1 Q1	+2.7	+1.2	-0.8 Jun	+0.3 Jul	+0.7	4.2 Jun	+18.3 Jun	+6.0	-2.5	0.11	6.61	6.72
Norway	+0.7 Q1	+4.0	+1.0	-9.0 Jun	+4.4 Jul	+3.5	4.7 May ^{††}	+29.3 Q1	+6.6	+3.0	1.10	8.22	8.22
Poland	+2.5 Q1	+3.6	+3.3	+6.0 Jun	-0.9 Jul	-0.8	8.6 Jul [§]	-1.7 Jun	-0.8	-2.9	2.72	3.80	3.76
Russia	-0.6 Q2	na	-0.8	-0.3 Jul	+7.2 Jul	+7.2	5.3 Jul [§]	+38.4 Q2	+2.9	-4.1	8.33	64.1	64.7
Sweden	+3.1 Q2	+1.2	+3.5	-1.4 Jun	+1.1 Jul	+1.0	7.6 Jun [§]	+28.2 Q1	+5.7	-0.4	0.06	8.42	8.51
Switzerland	+0.7 Q1	+0.4	+1.0	+1.0 Q1	-0.2 Jul	-0.5	3.3 Jul	+71.9 Q1	+9.2	+0.4	-0.48	0.96	0.98
Turkey	+4.8 Q1	na	+3.4	+1.1 Jun	+8.8 Jul	+7.5	9.4 May [§]	-29.4 Jun	-4.7	-2.0	9.72	2.93	2.83
Australia	+3.1 Q1	+4.3	+2.7	+4.8 Q1	+1.0 Q2	+1.3	5.7 Jul	-62.3 Q1	-4.5	-2.1	1.91	1.30	1.36
Hong Kong	+1.7 Q2	+6.5	+1.5	-0.3 Q1	+2.5 Jun	+2.6	3.4 Jun ^{††}	+11.7 Q1	+3.0	nil	0.92	7.76	7.76
India	+7.9 Q1	+9.6	+7.4	+2.1 Jun	+6.1 Jul	+5.1	4.9 2013	-22.1 Q1	-1.2	-3.8	7.11	66.8	65.0
Indonesia	+5.2 Q2	na	+5.0	+9.1 Jun	+3.2 Jul	+4.0	5.5 Q1 [§]	-18.7 Q2	-2.4	-2.3	6.81	13,096	13,788
Malaysia	+4.0 Q2	na	+4.3	+5.2 Jun	+1.6 Jun	+2.0	3.4 Jun [§]	+5.3 Q2	+2.8	-3.4	3.51	3.99	4.08
Pakistan	+5.7 2016**	na	+5.7	-1.4 May	+4.0 Jul	+3.7	5.9 2015	-2.5 Q2	-0.8	-4.6	8.03 ^{†††}	105	102
Philippines	+7.0 Q2	+7.4	+5.8	+8.5 Jun	+1.9 Jul	+1.7	6.1 Q2 [§]	+6.7 Mar	+3.0	-1.0	3.35	46.3	46.2
Singapore	+2.1 Q2	+0.3	+1.4	-0.3 Jun	-0.7 Jun	-0.8	2.1 Q2	+58.4 Q2	+19.5	+0.7	1.77	1.34	1.41
South Korea	+3.1 Q2	+2.9	+2.5	+0.8 Jun	+0.7 Jul	+1.2	3.5 Jul [§]	+105.5 Jun	+7.5	-1.2	1.44	1,092	1,174
Taiwan	+0.7 Q2	+0.1	+0.5	+0.9 Jun	+1.2 Jul	+1.1	4.0 Jun	+74.8 Q1	+13.3	-1.0	0.67	31.2	32.1
Thailand	+3.5 Q2	+3.2	+2.7	+0.8 Jun	+0.1 Jul	+0.2	1.0 Jun [§]	+40.1 Q1	+6.2	-2.6	2.07	34.6	35.3
Argentina	+0.5 Q1	-2.7	-0.8	-2.5 Oct	—	—	5.9 Q3 [§]	-15.0 Q1	-1.6	-4.9	na	14.7	9.24
Brazil	-5.4 Q1	-1.1	-3.5	-5.9 Jun	+8.7 Jul	+8.0	11.3 Jun [§]	-29.4 Jun	-1.1	-8.2	11.84	3.19	3.47
Chile	+2.0 Q1	+5.3	+1.6	-3.8 Jun	+4.0 Jul	+4.1	6.9 Jun ^{§††}	-4.7 Q1	-2.1	-2.5	4.25	650	685
Colombia	+2.5 Q1	+0.6	+2.0	+6.6 Jun	+9.0 Jul	+7.8	8.9 Jun [§]	-16.9 Q1	-6.1	-2.9	7.48	2,919	2,981
Mexico	+2.6 Q1	+3.3	+2.2	+0.6 Jun	+2.7 Jul	+3.0	3.9 Jun	-30.5 Q1	-3.0	-3.0	5.83	18.0	16.4
Venezuela	-8.8 Q4~	-8.4	-15.1	na	na	+546	7.3 Apr [§]	-17.8 Q3~	-3.0	-24.2	11.52	9.99	6.31
Egypt	+6.7 Q1	na	+3.0	-16.5 Jun	+14.0 Jul	+12.1	12.5 Q2 [§]	-18.3 Q1	-6.6	-11.5	na	8.89	7.82
Israel	+2.6 Q2	+3.7	+2.2	+0.8 May	-0.6 Jul	-0.5	4.8 Jun	+14.7 Q1	+4.0	-2.5	1.66	3.79	3.77
Saudi Arabia	+3.5 2015	na	+0.9	na	+4.1 Jun	+4.4	5.6 2015	-59.5 Q1	-8.6	-13.1	na	3.75	3.75
South Africa	-0.2 Q1	-1.2	+0.4	+4.3 Jun	+6.3 Jun	+5.7	26.6 Q2 [§]	-13.4 Q1	-3.0	-3.3	8.45	13.3	12.8

Source: Haver Analytics. **% change on previous quarter, annual rate. [†]The Economist poll or Economist Intelligence Unit estimate/forecast. [§]Not seasonally adjusted. ^{††}New series. ~2014 **Year ending June. ^{†††}Latest 3 months. ^{††††}3-month moving average. ^{§§§}5-year yield. ^{***}Official number not yet proved to be reliable; The State Street PriceStats Inflation Index, June 36.96%; year ago 26.70% ^{†††††}Dollar-denominated bonds.

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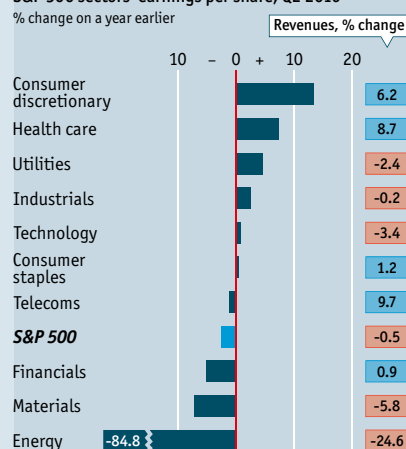
Markets

	Index Aug 17th	% change on		
		one week	in local currency	in \$ terms
United States (DJIA)	18,573.9	+0.4	+6.6	+6.6
China (SSEA)	3,255.3	+3.0	-12.1	-13.9
Japan (Nikkei 225)	16,745.6	+0.1	-12.0	+5.5
Britain (FTSE 100)	6,859.2	-0.1	+9.9	-3.0
Canada (S&P TSX)	14,697.6	-0.5	+13.0	+22.0
Euro area (FTSE Euro 100)	1,019.2	-1.0	-6.9	-3.3
Euro area (EURO STOXX 50)	2,980.5	-1.3	-8.8	-5.3
Austria (ATX)	2,251.5	-0.7	-6.1	-2.5
Belgium (Bel 20)	3,495.5	+0.1	-5.5	-1.9
France (CAC 40)	4,417.7	-0.8	-4.7	-1.1
Germany (DAX)*	10,537.7	-1.1	-1.9	+1.8
Greece (Athex Comp)	567.5	nil	-10.1	-6.7
Italy (FTSE/MIB)	16,528.4	-1.6	-22.8	-19.9
Netherlands (AEX)	447.6	-1.0	+1.3	+5.1
Spain (Madrid SE)	854.4	-1.9	-11.5	-8.1
Czech Republic (PX)	850.8	-1.0	-11.0	-7.6
Denmark (OMXCXB)	826.0	-1.6	-8.9	-5.2
Hungary (BUX)	27,791.0	+1.0	+16.2	+22.5
Norway (OSEAX)	666.2	-2.0	+2.7	+10.5
Poland (WIG)	48,006.8	-0.8	+3.3	+7.1
Russia (RTS, \$ terms)	965.4	+2.0	+11.8	+27.5
Sweden (OMXS30)	1,392.1	-1.0	-3.8	-3.6
Switzerland (SMI)	8,153.8	-0.7	-7.5	-3.8
Turkey (BIST)	78,147.8	+0.2	+9.0	+8.5
Australia (All Ord.)	5,628.1	nil	+5.3	+11.3
Hong Kong (Hang Seng)	22,799.8	+1.4	+4.0	+4.0
India (BSE)	28,005.4	+0.8	+7.2	+6.2
Indonesia (JSX)	5,371.8	-1.0	+17.0	+23.1
Malaysia (KLSE)	1,694.3	+1.3	+0.1	+7.1
Pakistan (KSE)	40,057.5	+0.6	+22.1	+22.2
Singapore (STI)	2,843.4	-1.1	-1.4	+4.1
South Korea (KOSPI)	2,043.8	nil	+4.2	+10.2
Taiwan (TWI)	9,117.7	-0.9	+9.4	+14.3
Thailand (SET)	1,531.6	-1.1	+18.9	+23.3
Argentina (MERV)	15,402.3	+0.4	+31.9	+16.3
Brazil (BVSP)	59,323.8	+4.2	+36.8	+68.4
Chile (IGPA)	20,439.3	nil	+12.6	+21.3
Colombia (IGBC)	9,926.7	+2.1	+16.1	+26.6
Mexico (IPC)	48,258.9	+1.0	+12.3	+6.6
Venezuela (IBC)	12,112.7	-1.2	-17.0	na
Egypt (Case 30)	8,347.4	+0.7	+19.1	+5.1
Israel (TA-100)	1,283.7	+0.2	-2.4	+0.1
Saudi Arabia (Tadawul)	6,220.3	-2.1	-10.0	-9.9
South Africa (JSE AS)	52,309.7	+0.2	+3.2	+18.9

Corporate profits

Another mediocre earnings season: second-quarter earnings per share for S&P 500 firms are expected to be 2.5% lower than a year earlier, the fourth fall in a row. The strong dollar has depressed overseas demand and multinationals' earnings, while subdued oil prices have hurt energy groups (earnings are down by 85%). Companies selling discretionary consumer goods have seen earnings rise thanks to lower oil prices and car sales, though they are levelling off. Low interest rates have helped capital-intensive utilities, while some tech companies have benefited from the shift towards cloud computing. Aggregate earnings growth for S&P 500 firms is expected to turn positive by the end of the year.

S&P 500 sectors' earnings per share, Q2 2016*



Source: Thomson Reuters I/B/E/S *Reported and estimated

Other markets

	Index Aug 17th	% change on		
		one week	in local currency	in \$ terms
United States (S&P 500)	2,182.2	+0.3	+6.8	+6.8
United States (NAScomp)	5,228.7	+0.5	+4.4	+4.4
China (SSEB, \$ terms)	355.2	+2.4	-14.9	-16.7
Japan (Topix)	1,311.1	-0.3	-15.3	+1.6
Europe (FTSEurofirst 300)	1,341.2	-1.0	-6.7	-3.2
World, dev'd (MSCI)	1,730.9	+0.2	+4.1	+4.1
Emerging markets (MSCI)	915.6	+1.4	+15.3	+15.3
World, all (MSCI)	420.2	+0.3	+5.2	+5.2
World bonds (Citigroup)	971.1	+0.1	+11.6	+11.6
EMBI+ (JPMorgan)	812.3	+0.5	+15.3	+15.3
Hedge funds (HFRX)	1,188.5 [†]	+0.3	+1.2	+1.2
Volatility, US (VIX)	13.3	+12.1	+18.2 (levels)	
CDSs, Eur (iTRAXX) [†]	65.5	-2.7	-15.1	-11.9
CDSs, N Am (CDX) [†]	71.0	-1.5	-19.6	-19.6
Carbon trading (EU ETS) €	4.7	-1.9	-43.3	-41.2

Sources: Markit; Thomson Reuters. *Total return index. [†]Credit-default-swap spreads, basis points. [‡]Aug 15th.

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The Economist commodity-price index

2005=100

	Aug 9th		% change on	
	Aug 16th*	one month	one year	
Dollar Index				
All Items	138.0	138.5	-0.3	+4.2
Food	158.1	159.1	-0.2	+2.9
Industrials				
All	117.2	117.0	-0.4	+6.2
Nfa [†]	128.3	125.2	-0.5	+9.6
Metals	112.4	113.5	-0.3	+4.6
Sterling Index				
All items	193.2	194.2	+1.1	+25.8
Euro Index				
All items	154.4	152.9	-2.5	+2.1
Gold				
\$ per oz	1,340.1	1,348.1	+1.3	+20.8
West Texas Intermediate				
\$ per barrel	42.8	46.6	+4.3	+9.9

Sources: Bloomberg; CME Group; Cotlook; Darmann & Curl; FT; ICCO; ICO; ISO; Live Rice Index; LME; NZ Wool Services; Thomson Lloyd & Ewart; Thomson Reuters; Urner Barry; WSJ. *Provisional [†]Non-food agricultural.

Ageing Societies

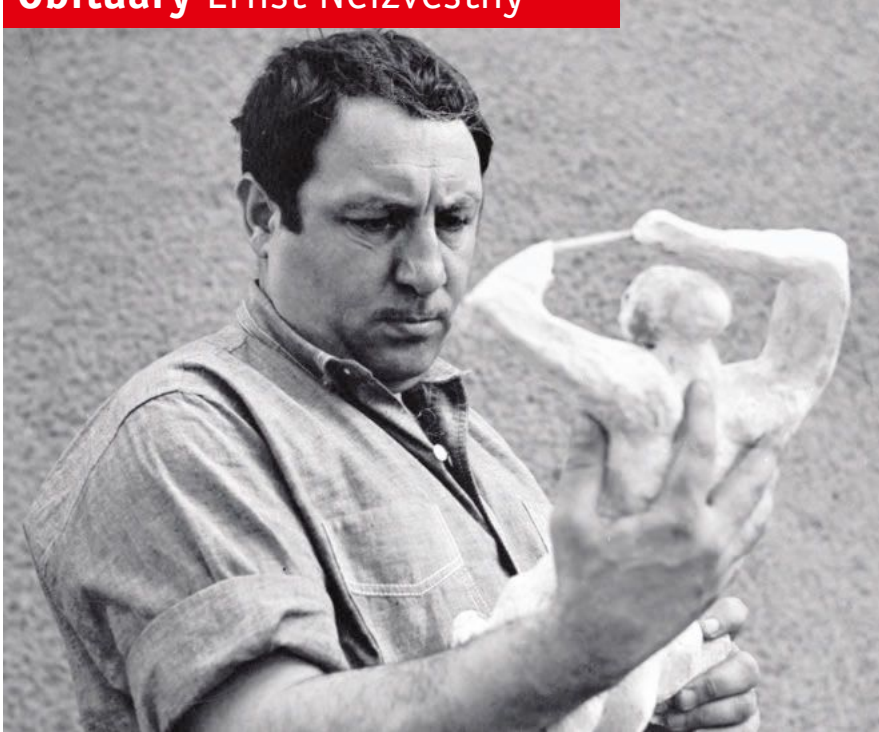
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The unknown warrior

Ernst Neizvestny, sculptor, artist, philosopher and defier of the Soviet regime, died on August 9th, aged 91

THE two men were about the same size, sturdy and short. Both had fought in the Great Patriotic War, worked in foundries; they could knock each other out. One was broad-faced, gap-toothed and almost bald; the other was swarthy, with bushy black brows and hair. The bald man, Nikita Khrushchev, leader of the Soviet Union, was shouting “Filth! Dog shit! Disgrace!” at the paintings on display, that day in 1962, on the walls of the Manege Gallery beside the Kremlin. The swarthy one, Ernst Neizvestny, had his answer ready: “You may be premier and chairman, but not here in front of my works. I am the premier here.”

He was manhandled and expelled from the Artists’ Union, but he was not arrested, and government psychiatrists pronounced him sane. Khrushchev even half-joked that there was an angel and a devil in him, and as long as the angel had the upper hand, they could get along. Mr Neizvestny liked that remark, for that was exactly what his paintings, and especially his sculptures, were about: struggle, contradiction, multiplicity, flesh against spirit, all within one unity, the human body. His works turned humans into robots, centaurs, giants or machines, with hard and soft, metallic and organic flowing into and transforming each other. Khrushchev bitterly condemned his public “disfiguring” of So-

viet people, but that was not what he was doing; he was showing how Protean and enduring a human being was.

Even as a child, he had imagined infinity as bigger and bigger versions of himself stretching into space—or smaller and smaller versions, until he had whole worlds on the tip of his finger. As a sculptor he could recreate that cosmos, a god exerting his will on clay or on fiery rivers of bronze. In the Soviet Union of the 1950s and 1960s it was all much harder, with his studio squeezed into the back of a shop and bronze unavailable to headstrong sculptors like himself. He foraged and fought. In the foundry, he stole what scraps of metal he could.

Commissions came, for war memorials and friezes at Pioneer camps. But because he rejected the sterile socialist realism approved by the state—seeing himself instead as the successor of Kandinsky, Malevich and the brief avant-garde of the early decades of the century—official work often vanished again. As a monumental sculptor he longed to be exposed, potentially defying the state on a grand scale. Instead his boldest dreams remained maquettes, unless they could be sold abroad. In 1975, weary of it all, he applied to go into exile, settling in New York and lecturing about art, in Russian, on America’s west coast.

He easily mixed philosophy with art; in

Russian culture, he explained, they were inseparable. Art contained all of life, and the greatest artists not only fixed on beauty; they took risks, outraged good taste, shocked people with the messy process of existence. The figures he admired unflinchingly portrayed man’s necessary struggle to become himself: Dostoevsky, with his mastery of a polyphony of contesting, God-questioning voices, and Dante, with his writhing bodies caught in good and evil, fire and whirlwinds.

In a way, he felt he had been fighting all his life. He came from Sverdlovsk in the Urals, at the frontier of Europe and Asia, from a family whose Jewishness had been mocked years before with the name Neizvestny, “unknown”—though his father was an eminent and prosperous surgeon and the house full of intellectuals, out to change the world. He determined early not to be unknown, but loud, rough and unmannerly in proclaiming the truth about art: that to have any value it had to be an act of faith, a spiritual thing.

It all came down to his favourite poem, Pushkin’s “The Prophet”, in which an exhausted pilgrim was suddenly attacked by an angel, “the finest sculptor I know”:

And he cleft my chest with a sword
and withdrew my fluttering heart
and a coal aglow with fire
pushed into my open breast.

This had happened to him in the war. He was just 19, commanding a unit in Austria, when a bullet entered his chest and exploded in his back. It made a hole so big that he was left for dead. But he survived, and so did the burning coal. The result was a continual flow of sculptures in which bodies, assaulted and mutilated from both inside and out, were nonetheless finding the energy to change into something new.

Angel and devil

His most abiding dream was of a huge open sculpture, 150 metres high, of seven spirals rotating round the form of a human heart that appeared to grow like a tree, and within which people could wander through galleries of art. It was to be a synthesis of all human nature and creation, called “Tree of Life”. Smaller versions were installed in Paris and New York; no one would fund the swarming, pulsing cosmos he really hoped for. He found some comfort in a warmer welcome in Russia after 1989, and commissions for several brooding monuments to Stalin’s victims.

He had the last word, too, in his showdown with Khrushchev. In 1974, after the leader’s death, the family asked him to design the tomb. He produced two jagged towers, one of white blocks, one of black, angel and devil in their continual confrontation, contending on either side of Khrushchev’s pugnacious, unseeing face. ■

INNOVATION

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