

The Economist

OCTOBER 7TH-13TH 2017

The bull market in everything



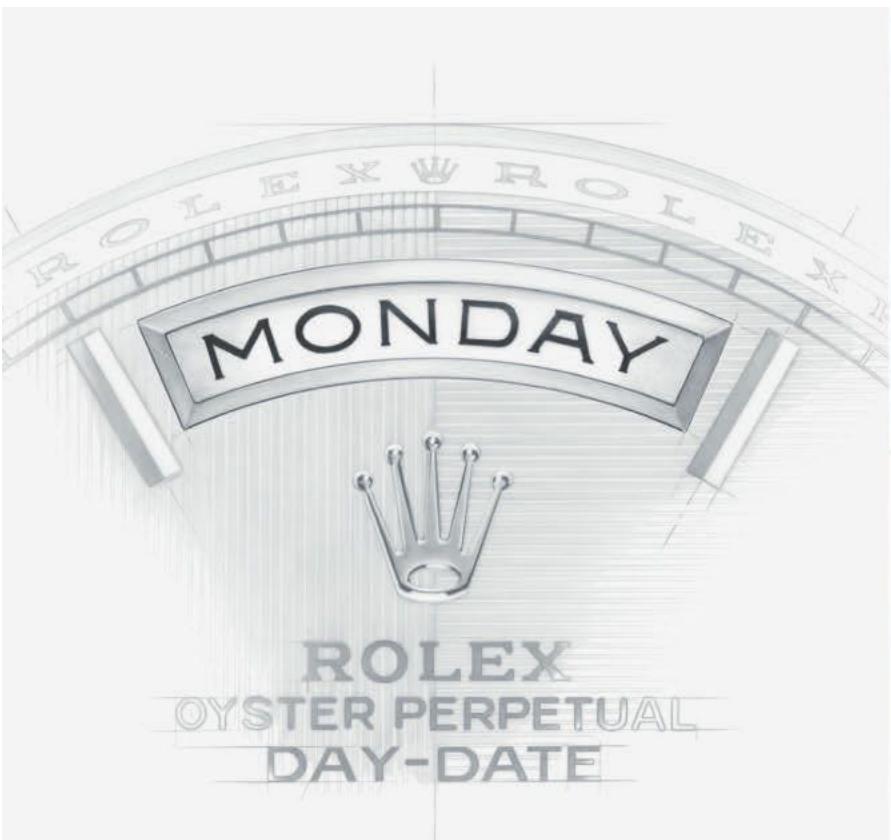
Gun laws after Las Vegas

Stand-off in Catalonia

Goldman: vampire squid to damp squib

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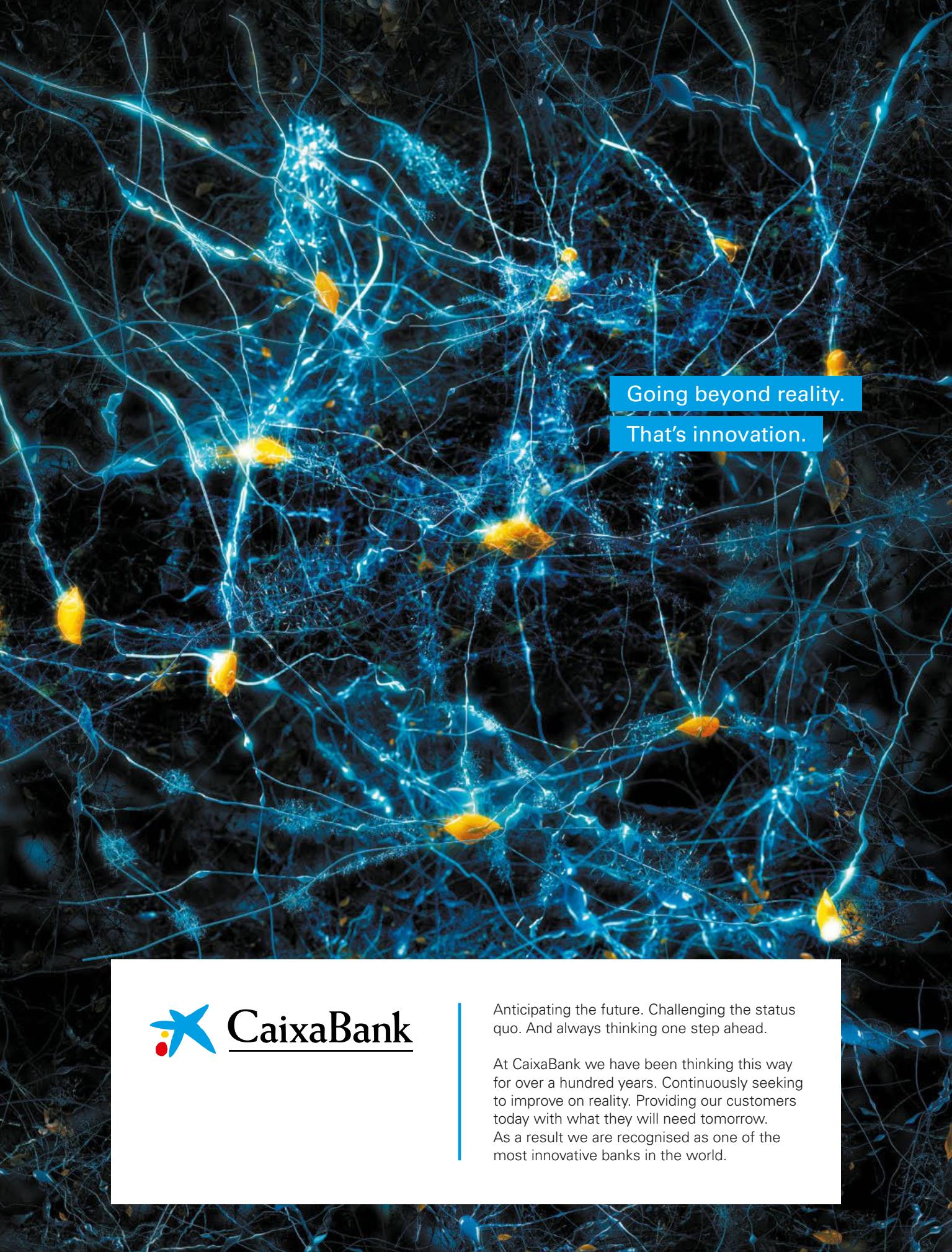
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**On the cover**

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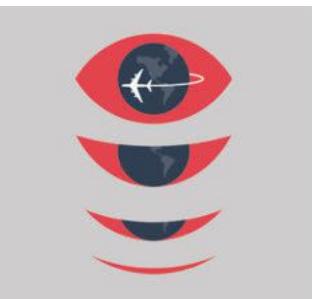
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Politics



Catalonia voted overwhelmingly to secede from Spain. But the turnout for what the Spanish government called an illegal referendum was only 43%, since those opposed to the poll mostly stayed away. Hundreds of people were injured by riot police attempting to disrupt voting, causing outrage and further protests. Catalonia's parliament may well now declare independence; Madrid could decide to impose direct rule on the region.

The lower house of parliament in **France** approved tough new anti-terrorism laws, making searches easier, among other measures, in the hope of ending a state of emergency that has lasted since the attack on Paris almost two years ago. The laws were passed two days after an Islamist stabbed two women to death in Marseille.

Theresa May's big speech to the Conservative Party didn't go according to plan. It was the first big gathering of the party since a disastrous election in June. The **British** prime minister wanted to use the occasion to reassert her authority and focus on policy issues. But the headlines were dominated by her persistent coughing throughout the speech, a stunt by a prankster who handed her a formal dismissal of employment notice, and a malfunctioning backdrop.

Ailing diplomacy

America expelled 15 Cuban diplomats and withdrew many of its own diplomats from **Cuba**. The actions are a response to reports of sonic attacks in Havana on Ameri-

can diplomats and their families that seem to have caused tinnitus and other afflictions. Just what device and group are responsible is unexplained. The Cuban government says it has nothing to do with the attacks, which also affected some Canadian diplomats. The US State Department warned Americans not to travel to Cuba and its embassy stopped processing visa applications for Cuban travellers.

Canada's New Democratic Party, a left-leaning opposition party, chose Jagmeet Singh, a Sikh, to be its leader. He is the first member of a "visible minority" group to lead a Canadian party at the federal level.

The ELN, the largest guerrilla group still active in **Colombia**, started a truce with the government that will last until mid-January. President Juan Manuel Santos said he hoped the ceasefire would be a first step towards reaching a peace deal. Colombia ended its 52-year-long war with the FARC, a larger guerrilla group, last year.

Sun no longer shines

Sun Zhengcai, once widely regarded as a possible successor to Xi Jinping as **China's** leader, was expelled from the ruling Politburo and stripped of his membership of the Communist Party. Investigators found that he had "abandoned the party's aims". His case was referred to the judicial authorities, meaning he will probably be put on trial.

In line with sanctions imposed by the UN in response to **North Korea's** nuclear programme, the Chinese government ordered North Korean firms, as well as joint Chinese and North Korean ventures, to close their operations in China within 120 days. Most of North Korea's trade is with China.

Two women accused of murdering the half-brother of Kim Jong Un, North Korea's dictator, were put on trial in **Malaysia**. Prosecutors say they were acting on behalf of North Korean agents.

Regulators gave TEPCO, a **Japanese** power company, approval to restart two nuclear reactors. All TEPCO's reactors were shut down following the meltdown at its nuclear plant in Fukushima in 2011.



Bangladeshi officials said that **Myanmar** had offered to readmit the 500,000 Rohingya refugees who have fled over the border with Bangladesh after the Burmese army attacked their villages in August.

Mu Sochua, a deputy head of **Cambodia's** main opposition party, fled the country for fear that she would be arrested, as the leader of the party was last month. She called for foreign governments to impose sanctions on the regime for its assault on democracy.

The English revolution

At least 17 protesters calling for independence for the Anglophone region of **Cameroon** were killed by government soldiers, according to Amnesty International. Internet services were subsequently closed and the region's biggest city, Bamenda, was locked down.

Rami Hamdallah, the **Palestinian** prime minister, chaired the first cabinet meeting in Gaza for three years. The move was aimed at ending the schism between Hamas, the militant Islamist group, and Fatah, its nationalist secular rival, which has paralysed Palestinian politics.

Iraqi forces captured the town of Hawija, the last stronghold of Islamic State in northern **Iraq**. The only part of the country that remains under jihadist control is a stretch of land along the western border with Syria.

Three American special-forces troops were killed and two injured in **Niger** when they came under fire. The men were taking part in training operations with the Nigerien army near the border with Mali, where jihadis have launched raids across the border.

America's defence secretary, Jim Mattis, said Donald Trump should stay in the nuclear deal signed with **Iran** in 2015. Mr Trump must soon decide whether to stick with the pact. Meanwhile, **Rex Tillerson**, America's secretary of state, contradicted a report that he had considered resigning. He refused to answer questions about whether he had called Mr Trump a moron.

Death rained down



A gunman killed at least 58 people and injured nearly 500 in **Las Vegas** when he fired from a hotel room into the crowd at a country-music festival. In a methodical attack, Stephen Paddock, a 64-year-old local retiree, had more than 20 weapons in the room. It was America's worst mass shooting in modern times.

Two weeks after Hurricane Maria hit the island, Donald Trump visited **Puerto Rico** to assess the damage from the storm. Residents in the American territory have criticised the slow response of the federal government, prompting a spat between Mr Trump and the mayor of San Juan.

Tom Price resigned as health secretary after running up hundreds of thousands of dollars in charter flights at taxpayers' expense. One ticket for the 140-mile trip between Washington, DC, and Philadelphia reportedly cost \$25,000. ►

Business

The European Commission ordered **Luxembourg** to collect €250m (\$300m), plus interest, in back taxes from **Amazon**, the latest broadside from the regulator that penalises sweetheart tax deals between EU countries and multinationals. Amazon's main European hub is in Luxembourg. The commission claims that a tax-reducing deal struck in 2003 between the online retailer and the government in Luxembourg, led at the time by Jean-Claude Juncker, who is now the commission's president, amounted to illegal aid.

Showing that it means business in its clampdown on illegal tax benefits, the commission referred **Ireland** to the European Court of Justice for failing to recover €13bn (\$15.3bn) in back taxes from **Apple**, a requirement imposed by the regulator on Ireland.

In a move that could muddle America's **electricity markets**, Rick Perry, the energy secretary, proposed a system to reward power plants for stockpiling 90 days supply of fuel in order to cope with "the threat of energy outages". The scheme would provide what is in effect a giant subsidy to coal and nuclear plants, which are the only type to hoard their fuel, at the expense of natural gas and renewables.

Regulators decided that **American International Group** is no longer a systemically important financial institution. The insurance group received a \$182bn bailout during the financial crisis, and has since pruned its sprawling jungle of assets. Removing AIG's designation as "too big to fail" eases the restrictions it was subject to under post-crisis rules, such as tighter capital buffers.

Britain's GDP growth rate was revised down to 1.5% year-on-year in the second quarter, the weakest pace in four years. And consumer debt is higher than previously thought. The

growth in personal loans from credit cards and car finance are running five times above the growth in earnings. There is £200bn (\$265bn) outstanding in such debt, the most since the financial crisis in 2008.

Thawing out



Iceland's central bank reduced its benchmark interest rate again, from 4.5% to 4.25%. The country has fallen into recession, in part because tourism, which contributes about 9% to GDP, has cooled off. The bank insists that the economy is robust, and is more worried by falling inflation, which dropped to 1.4% in September, from 1.7% in August. Inflation has not hit the bank's target of 2.5% since early 2014.

The bankruptcy of **Monarch Airlines** brought calls from MPs for the British government to lift a ban on flights to Sharm el-Sheikh, an Egyptian resort

by the Red Sea that has been hit by terrorism. Britain's fifth-biggest airline failed to secure a deal with creditors to keep it airborne. Its chief executive laid blame for the collapse on terror attacks that have driven passengers away from popular destinations.

Jeff Immelt stepped down as chairman of General Electric. He had planned to retire at the end of the year, having already handed over the reins as chief executive to John Flannery in August. But the transition process has reportedly gone so smoothly that Mr Flannery is now able to take on the dual role of chairman.

South Korea agreed in principle to amend its free-trade agreement with America. Donald Trump had threatened to withdraw from the deal unless changes were made to curb America's growing trade deficit with the country.

These are not friends Facebook handed Congress 3,000 ads produced by Russian provocateurs that it had unwittingly hosted. The ads were designed to stir political divisions; some were reportedly targeted on the battleground states of Michigan and Wisconsin, which were crucial to

Donald Trump's victory. Facebook promised to do more to identify the source of advertising and is employing another 1,000 people to remove ads, though it gave scant detail about how it will do this.

The number of user accounts breached at **Yahoo** in 2013 is now thought to be 3bn, three times the original estimate of 1bn, which was already the biggest data hack on record.

The *Wall Street Journal* stopped publishing its European and Asian print editions after a steep decline in sales precipitated by a big take up of digital subscriptions. The American print issue will be available in some cities instead.

Time to accelerate

Tesla Motors produced just 260 of its new Model 3 in the third quarter, well below its target of 1,500. The company blamed "production bottlenecks", which is not unusual for the launch of new vehicles and which pleased investors, driving up its share price. Still, Tesla is aiming for 5,000 Model 3 cars to roll off the production line each week by the end of the year.

Other economic data and news can be found on pages 84-85





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Saturday 14 October at 10:00am HKT

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Sunday 22 October at 12:30pm HKT

Monday 23 October at 11:00am HKT

*Air times are subject to change without prior notice

 /cnntalkasia



The bull market in everything

Prices are high across a range of assets. Is it time to worry?



IN HIS classic, "The Intelligent Investor", first published in 1949, Benjamin Graham, a Wall Street sage, distilled what he called his secret of sound investment into three words: "margin of safety". The price paid for a stock or a bond should allow for human error, bad luck or, indeed, many things going wrong at once. In a troubled world of trade tiffs and nuclear braggadocio, such advice should be especially worth heeding. Yet rarely have so many asset classes—from stocks to bonds to property to bitcoins—exhibited such a sense of invulnerability.

Dear assets are hardly the product of euphoria. No one would mistake the bloodless run-up in global stockmarkets, credit and property over the past eight years for a reprise of the "roaring 20s", or even an echo of the dotcom mania of the late 1990s. Yet only at the peak of those two bubbles has America's S&P 500 been higher as a multiple of earnings measured over a ten-year cycle. Rarely have creditors demanded so little insurance against default, even on the riskiest "junk" bonds. And rarely have property prices around the world towered so high. American house prices have bounced back since the financial crisis and are above their long-term average relative to rents. Those in Britain are well above it. And in Canada and Australia, they are in the stratosphere. Add to this the craze for exotica, such as cryptocurrencies (see *Free exchange*), and the world is in the throes of a bull market in everything.

Where's the beef?

Asset-price booms are a source of cheer, but also anxiety. There are two immediate reasons to worry. First, markets have been steadily rising against a backdrop of extraordinarily loose monetary policy. Central banks have kept short-term interest rates close to zero since the financial crisis of 2007-08 and have helped depress long-term rates by purchasing \$11trn-worth of government bonds through quantitative easing. Only now are they starting to unwind these policies. The Federal Reserve has raised rates twice this year and will soon start to sell its bondholdings. Other central banks will eventually follow. If today's asset prices have been propped up by central-bank largesse, its end could prompt a big correction. Second, signs are appearing that fund managers, desperate for higher yields, are becoming increasingly incautious. Consider, for instance, investors' recent willingness to buy Eurobonds issued by Iraq, Ukraine and Egypt at yields of around 7%.

But look carefully at the broader picture, and there is some logic to the ongoing rise in asset prices. In part it is a response to an improving world economy. In the second quarter of this year global GDP grew at its fastest pace since 2010, as a recovery in emerging markets added impetus to longer-standing upswings in Europe and America. As our special report this week argues, emerging-market economies have come out of testing times in far more resilient shape.

More significant still is the behaviour of long-term interest rates. They have fallen steadily since the 1980s and remain

close to historic lows. And that underpins all sorts of other asset prices (see page 21). A widespread concern is that the Fed and its peers have grossly distorted bond markets and, by extension, the price of all assets. Warren Buffett, the most famous disciple of Ben Graham, said this week that stocks would look cheap in three years' time if interest rates were one percentage-point higher, but not if they were three percentage points higher. But if interest rates and bond yields were unjustifiably low, inflation would take off—and puzzlingly it hasn't. This suggests that factors beyond the realm of monetary policy have been a bigger cause of low long-term rates. The most important is an increase in the desire to save, as ageing populations set aside a larger share of income for retirement. Just as the supply of saving has risen, demand for it has fallen. Stagnant wages and the lower price of investment goods mean companies are flush with cash. All this suggests that interest rates will stay low by historical standards.

Beware of the bull

Still the most dangerous, anti-Graham motto of investing is "this time is different". It would be daft to assume that asset prices must remain high come what may. Many hazards could derail the economy and financial markets, from a debt crisis in China to an American-led trade war or an outbreak of fighting on the Korean peninsula. And when the next recession comes, policymakers have less fiscal and monetary ammunition to fight it than they had in previous downturns. Prudence therefore suggests caution.

One option is for central bankers to raise rates more enthusiastically and less predictably, to jolt financial markets and remind investors that the world is volatile. Yet there are obvious perils with this course. The tightening might prove excessive, tipping economies into recession. And with inflation in most big economies below central bankers' target, sharply higher rates are hard to square with their mandate.

Instead, caution calls for gradualism. To minimise disruption, the reversal of quantitative easing should be stretched out. The Federal Reserve has set a good precedent by proposing to reduce its bondholdings at a leisurely pace and flagging the change well in advance. When the time comes, its peers should follow suit. Of these, the European Central Bank faces the trickiest challenge, because it has acted as, in effect, the backstop to euro-zone bond markets, a mechanism that otherwise the currency bloc still lacks.

But the main safety valve lies elsewhere, with banks and investors. Bitter experience has shown that debt-funded assets can magnify losses, causing financial crises. For this reason banks must be able to withstand any reversal of today's high asset prices and low defaults. That means raising bank capital in places where it is too low, especially the euro zone, and not backsiding on strenuous "stress tests" as America's Treasury proposes. In the end, however, there may be no escape for investors from the low future returns and even losses that high asset prices imply. They and regulators should take a leaf out of "The intelligent Investor", and make sure that they have a margin of safety. ■

Guns in America

Deathly silence

Do not despair: change is possible



of reticence is called a tell. Had Stephen Paddock used a new technology—an armed drone, say—to kill from the 32nd floor of the Mandalay Bay hotel, or had he been an immigrant from the Middle East, lawmakers would be rushing to legislate or tighten borders. But he was a retired white man who used some of the 49 guns he owned, so it is the price of freedom.

There is a weariness to America's gun debate and the familiar ritual after mass shootings, which are more frequent than in any other rich country. One study counted 166 of them in 14 countries in 2000-14; 133 were in America. Yet, nothing happens, partly because the National Rifle Association (NRA), which has evolved from an armed version of the Boy Scout movement into the foremost mouthpiece for a view of America in which everyone must be armed for their own protection, has a veto in Washington—including over banning “bump stocks” which make semi-automatic guns more lethal.

If America could not overhaul its gun laws after Sandy Hook, when 20 children aged six and seven were shot at school, then what chance is there now? And even if tighter laws on new guns were introduced tomorrow, there would still be a stock of 300m firearms to reckon with.

Such despair is unworthy of this week's victims. There are plenty of down-is-up arguments about guns, but the Las Vegas shooting, in addition to being the most deadly, has shown up the old NRA line that the only thing that stops a bad guy with a gun is a good guy with a gun as the most deceitful of the lot.

Granted, America has chosen permissive gun laws for itself. But the body count does not have to be as high as it is today. Research into murder and suicide suggests that making it just slightly harder to get hold of a weapon can reduce the number of killings, many of which are spontaneous and unplanned.

It ought to be possible to write laws that respect the right to bear arms while banning weapons and modifications that make it astonishingly easy to kill a lot of people quickly. Most Americans favour such laws and would like universal background checks on gun purchases, too (though support for gun control is less fervent than for gun rights). Such a regime would still leave America with an unusually high number of murders, suicides and fatal accidents involving guns, but the disparity with other countries would be less glaring.

The road from Mandalay

Tired of waiting for Congress, some cities have introduced their own laws. In upstate New York, where plenty of people hunt, gun laws are permissive. In New York City those laws do not apply. Anyone who wants to carry a gun down Fifth Avenue must first obtain the permission of the NYPD. New York state tightened its laws after Sandy Hook, in effect banning assault weapons. Four other states did the same, though a further 16 responded by making guns easier to buy or carry.

Las Vegas, which sits in a state with some of the loosest rules in the country, should rewrite its own gun laws, too. Real conservatives, who champion local fixes for local problems, ought to cheer that. Of course it would not completely solve the problem. Cities like Chicago, near states with permissive laws, would still be flooded with guns. But in a country with 30,000 gun deaths a year, even small improvements would save a lot of lives. A rough calculation suggests that in the time between the Las Vegas shooting and the publication of this article, a further 320 Americans lost their life to a bullet. ■

Liberia

The legacy of Ma Ellen

Praise for the woman who put Liberia back on its feet



BY THE time its stop-start civil war ended in 2003, Liberia had all but collapsed. Fourteen years of barbaric fighting had killed some 250,000 people, or roughly 8% of the population. Many more Liberians were displaced by the violence. The economy had shrunk by 90%. Schools, hospitals and government buildings lay in ruins. Children ate tree bark to survive. This was the catastrophe that Ellen Johnson Sirleaf inherited when she was elected president in 2005.

Liberia will hold an election on October 10th (see page 45),

presaging its first transfer of power from one elected president to another since 1944. Ms Sirleaf will step down next year. Her tenure has been imperfect, as Liberians will complain. Her successor will have his hands full. Even so Ma Ellen, as she is called, deserves praise for putting Liberia back on its feet.

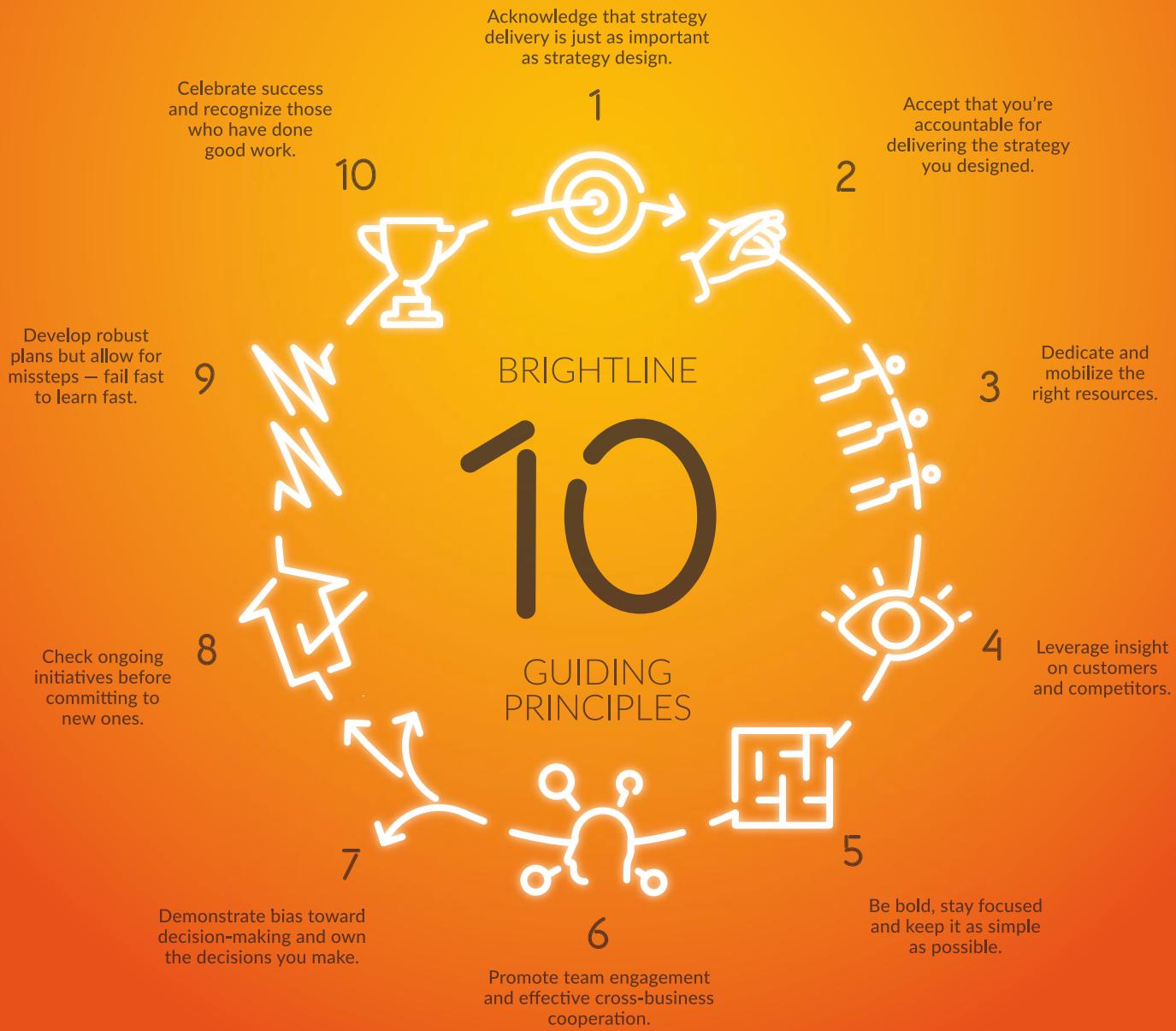
She has achieved this, for the most part, by being unlike her peers. Start with the obvious. In 2005 she became the first woman elected president of an African country. Merely by stepping down on time, she is bucking the trend of African presidents for life. She has spoken up for human rights and tolerated dissent. Most important, she has been a champion of improved governance. The top layer of the state is stocked with first-rate technocrats, brought in by the president, who ➤

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► has used her fluency in aid jargon (from time spent at the UN and World Bank) to make Liberia a darling of Western donors.

The upshot has been new infrastructure and schools. The government has undertaken bold experiments, for instance in piloting charter schools. In 2010 Ms Sirleaf won a massive write-down of Liberia's debts. A year later she was awarded a Nobel prize for securing the peace. The calm allowed the economy to grow at an average annual rate of 7% between 2006 and 2014, when it was hit by Ebola and a fall in commodity prices. Any fair assessment of Liberia's economic and political progress under Ms Sirleaf would have to conclude that the country has made great strides, albeit from a low base.

Displeasure as a sign of progress

Even so, Liberians are no longer satisfied. The country remains among the world's ten poorest. Voters complain that services are lacking and corruption rampant. Ma Ellen herself is hardly blameless. She appointed three of her sons to important posts, and dispensed patronage in return for support. Beneath the

upper layer, ministries are teeming with unqualified workers (often former fighters). Her renegotiation of contracts with international companies that mine the country's iron and harvest its rubber won her some plaudits. But too few Liberians have benefited, and some rural dwellers have lost their land.

Liberia's next leader will have to work out how to wean the country off foreign aid, which accounts for over half of gross national income, and to spread the benefits of development. To start with, the next president should make it easier for foreigners to invest in the country. That means cutting red tape and corruption. He or she should encourage ministers to follow the lead of George Werner, the outgoing education minister, who pared nearly 1,900 dead or retired teachers from the government's payroll. So far, though, the main contenders have shunned substance and played regional politics.

The fact that Liberians now complain of failing students instead of child soldiers, and of massive corruption instead of mass rape, is progress. But more will be expected of the next president. Liberia still has a long way to go. ■

Families and work

Having it all

The gender gap that still needs to be closed



by equal-pay suffragettes to female teachers in New York's public schools in 1905. At the time, teachers' starting annual salaries were set at \$900 for men and \$600 for women.

In most rich countries such outright discrimination is history. A woman doing the same job for the same employer earns 98 cents to the dollar paid to a man. Yet the gender pay gap persists. In the OECD, a club of mostly rich countries, the median full-time wage for women is 85% of that for men.

Women earn less than men because their careers differ in two ways (see page 58). The occupations that many opt for, such as teaching and nursing, are less lucrative than those chosen by men, perhaps because of the long history of putting less value on women's work. And women pay a high price for motherhood. They often miss a first promotion because they are on maternity leave. Later they take less demanding jobs with poor prospects. Often they are overqualified for their new role, but somebody has to pick the kids up from school.

It is not the place of governments to tell young people what careers to pursue, nor to tell parents how to divide their responsibilities. But the underuse of women's skills is a waste for individual women and society alike. The consequences are particularly painful if a couple later breaks up.

The careers men and women want are more similar than the careers they end up in. Women are as ambitious as men. They are more likely than men to go to university, and equally likely to ask for promotion. Young men are much less likely than their fathers to see themselves solely as breadwinners.

Many want to play a big part in their children's upbringing.

Helping both sexes fulfil their aspirations is more complicated than passing an equal-pay law. Fortunately, it does not require social engineering or the sort of costly special treatment for working mothers that put some employers off hiring or promoting young women in the first place.

The first step is well-designed parental leave. In America, the only rich country with no such entitlement for new mothers, many of them drop out of the labour force. Unless some leave is reserved for fathers, as in Norway and Sweden, couples tend to opt for the mother, who has stayed home after the birth, to take all of it—especially if the father is older, and thus more senior and highly paid. That seemingly small, common-sense decision sets a pattern that can last a lifetime.

Next comes high-quality pre-school care. Then the school day and the timing of school holidays should be adapted to suit working parents and extended with after-school and holiday activities (no silly rules such as sending children home for lunch, as in Switzerland).

Many of these policies cost money. But they offer high returns. Paternity leave has been shown to make a father more engaged throughout his children's upbringing, helping them to thrive. Early-years education sets toddlers up to do well at school. And women whose careers have not been derailed by motherhood will pay higher taxes later. They will also be less likely to need state support in old age, or if they divorce.

Balancing act

For their own sakes, employers should stop writing off mothers who have spent time out of the workforce, on the outdated assumption that a career break signals a lack of ambition. Above all, they would benefit from offering more flexibility to all their employees. Where staff have the right to ask for this, men are rejected more often than women. But only if men can combine family and work will women be able to do so, too. ■



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Separatism in Catalonia

How to save Spain

Catalonia is on the brink of declaring independence, but it is not too late to step back from calamity



WHEN a democracy sends riot police to beat old ladies over the head with batons and stop them voting, something has gone badly wrong. Catalans say that almost 900 people were hurt by police in the referendum for independence on October 1st. Whatever the provocation from Catalan leaders in staging an unconstitutional poll, the reaction of Mariano Rajoy, the prime minister, has thrown Spain into its worst constitutional crisis since an attempted coup in 1981.

If Mr Rajoy thought that cracking heads would put a stop to secessionism, he could not have been more wrong. He has only created a stand-off that has energised his enemies and shocked his friends (see page 49). On October 3rd Catalonia, one of Spain's richest regions, was paralysed by a protest strike. Hundreds of thousands of demonstrators have marched to express their outrage.

Secession would be a disaster for Spain. The country would lose its second city and risk the further loss of the Basque region. Secession would also hurt Catalans, which is why a majority of them probably oppose it. And Catalan independence might stir up separatism elsewhere in Europe—in Scotland again, no doubt, but also in northern Italy, in Corsica, perhaps even in Bavaria. To prevent the crisis deepening, both sides need to seek a new constitutional settlement. Instead, they are digging in and Catalonia is on the brink of unilaterally—and illegally—declaring independence.

After Franco

Spain has a historical fear of dismemberment. Catalan secessionism was one of the factors that brought about the Spanish civil war of the 1930s. Many Spaniards no doubt share the anger of King Felipe who, in a rare televised speech, denounced Catalonia's leaders for irresponsibly and disloyally tearing up the constitution of 1978. After all, Catalans overwhelmingly endorsed that settlement, which entrenched democracy, brought prosperity and granted a large dose of autonomy to Spanish regions, including Catalonia.

A well-run democracy must abide by the rule of law. That is what protects democratic liberties, not least the freedom of minorities to express discontent. Until referendum day, nobody who experienced the vibrancy of Barcelona could seriously claim that Catalonia was oppressed. With few exceptions, notably when empires collapse, the world generally favours national unity over self-determination by subnational groups. Many of the states liberated by the break-up of the Soviet empire joined the European Union, but these days the EU is wary, warning would-be secessionists that new states have no automatic right to join. Without Spain's support, Catalonia would find itself on the wrong side of a new customs wall.

For all these reasons the Catalan leader, Carles Puigdemont, does not have a strong case for independence. Nor can he claim a real mandate. He rammed the laws authorising the referendum through the Catalan parliament with a narrow ma-

jority and without proper debate. Those laws have no formal legal standing. Before his referendum, opinion polls suggested that only 40-45% of Catalans wanted to break away. The 90% vote to leave was 90% of an unregistered turnout of well under half, because Catalonia's Remainers mostly declined to take part. As with populists elsewhere, Mr Puigdemont has offered a simplistic vision, without explaining the costs of independence or how it might come about.

But that is not the end of the story. Democracy rests on the consent of the governed. Even some who disagree with Mr Puigdemont's methods believe Catalonia has a case for nationhood. It could survive economically. A lot of its people think it constitutes a nation. Under autonomy, Catalan leaders have promoted their language and their nationalist creed.

The pain in Spain

Whatever the legality of separation, once the desire for independence reaches a critical point, governments must deal with it in three ways: crush it, bow to it, or negotiate in good faith, knowing that separation may still be the outcome.

Mr Rajoy has failed to grasp the nature of this choice. First he blocked the nationalists in the courts and, last weekend, he resorted to force. His deployment of policemen to suppress the Catalan vote was not only a propaganda gift to them but, more important, crossed a line. Aggression against crowds of peaceful citizens may work in Tibet but cannot be sustained in a Western democracy. In the contest between formal justice and natural justice, natural justice wins eventually every time. Constitutions exist to serve citizens, not the other way around. Rather than uphold the rule of law as he intended, Mr Rajoy ended up tarnishing the legitimacy of the Spanish state.

Will Mr Puigdemont declare independence? That would be reckless and irresponsible but, if he does, Mr Rajoy should resist the temptation to arrest Catalan leaders and, for the time being, avoid using his power to suspend regional rule. Just now, either measure would only compound his mistakes.

Only a negotiation can restore calm and it should start immediately. Even now most Catalans can probably still be won over with the offer of greater autonomy, including the power to raise and keep more of their own taxes, more protection for the Catalan language and some kind of recognition of the Catalans as a "nation". Mr Rajoy might even take up the opposition Socialists' idea of turning Spain into a federal state.

Any settlement, though, must include the option of a referendum on independence. Separation would be a wrenching change for Catalonia and the rest of Spain, so should not be done lightly. A majority of Catalans eligible to vote should be the minimum threshold for independence. A follow-up vote on the terms of a separation might be wise, too.

For all his deficiencies, David Cameron, the former British prime minister, was right about allowing a referendum on Scottish independence in 2014. He made the case for Scotland to stay, and won the vote convincingly. Mr Rajoy should do the same. The case for the unity of Spain is strong. But it must be won by force of argument. By using force alone, Mr Rajoy is not preventing the break-up of Spain, but hastening it. ■

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Fighting cancer

The oncology drug pipeline is full of promising immuno-therapies and targeted treatments (*Technology Quarterly on cancer*, September 16th). Unfortunately, no one knows the optimal way to use them. Doctors and patients alike struggle with conflicting expert opinions and the information overload. Moreover, a cure will probably involve intelligent combinations of remedies, and there are far more plausible regimens than there are patients available to test them in clinical trials. Treatments, outcomes and quality of life vary widely across institutions, falling off sharply from elite cancer centres to rural, disadvantaged and third-world communities.

In the absence of definitive clinical studies, the fastest way to improve outcomes is by aggregating the insights, experiences and intuitions of our best clinicians, and continuously validating and refining them based on real-world data.

Every day, patients who have exhausted the standard of care are treated with off-label drugs and rational cocktails. Unfortunately, these individualised ("n-of-1") experiments are not co-ordinated, and their results seldom reported, so little is learned. If we can capture these results and rapidly share them with community oncologists on the front line, I am confident many lives can be saved—or at least meaningfully extended—with no new drugs required.

MARTY TENENBAUM
Founder
Cancer Commons
Palo Alto, California

Iran in Syria

"Endgame angst" (September 16th) overstated the significance of a supposed land route for Iran running from Tehran through Syria to the Mediterranean. It has always been easier and less dangerous for Iran to supply weapons to Hizbullah by air. A land route is much longer and vulnerable to insurgent attacks. Iranian convoys transporting militaria

men and weapons by land would present ideal targets for Islamic State, for example.

In reality, the main driver of the eastern campaign in Syria is the Syrian regime itself, which wants to reopen trade routes with Iraq and regain control of the country's most valuable oilfields in order to secure reconstruction prospects and thus a more viable economic and political future. For instance, the regime would have a much weaker hand if the Kurdish-dominated Syrian Democratic Forces had control of those fields.

In this light, the Iranians are merely helping a vital ally. One can justifiably criticise the Iranians' methods, but this explanation is far more convincing than the narrative of securing a land route from Tehran to the Mediterranean.

AYMENN JAWAD AL-TAMIMI
Cardiff

China's new diplomacy

I am afraid *The Economist's* latest interpretation of China's diplomacy is based on the old-fashioned rule in international relations that a strong country is bound to seek hegemony and bully the weak ("God's gift", September 16th). According to that theory, relations among countries are zero-sum games. But this is outdated and does not work in the 21st century.

China is committed to avoiding the Thucydides Trap, in which an established power feels under threat by the emergence of a rising power. We want international relations to be based on win-win co-operation; a new concept of building a shared future for mankind that improves global governance and shared benefits. To understand China's foreign policy and peaceful development, one needs to look beyond the old concepts in order to come to a more objective analysis.

China's steady growth continues to bring opportunities to the world. China has played an irreplaceable role in maintaining world peace and security as well as addressing global challenges. These

efforts may not be hailed by some in the Western media, but China certainly does not deserve the unfair blame for international or regional tensions that have heightened under the watch of the West.

ZENG RONG
Spokesperson of the Chinese embassy
London

more and cheaper sugar during an obesity epidemic is the most unhealthy agricultural policy you could possibly devise.

JACK WINKLER
Emeritus professor of nutrition policy
London Metropolitan University

Espionage act



Your review of John le Carré's latest book described the mission that was the subject of "The Spy Who Came in from the Cold" as "botched" ("George Smiley returns. Really?", September 9th). To the contrary, it was a huge success in that it saved Britain's "mole" in the Stasi from exposure and destroyed his rival. The death of the two British operatives was unfortunate but irrelevant to the outcome of the mission.

PATRICK MACRORY
Washington, DC

Abstract thought

The left-wing student enforcers of speech at Reed College ("Blue on blue", September 9th) bring to mind the red guards of the Cultural Revolution, who humiliated and intimidated faculty and administration with impunity. One Chinese official, struggling to stay up with ever finer distinctions of what was politically acceptable, despaired, "My God, it's all metaphysics."

MYRL MANLEY

New York ■

Letters are welcome and should be addressed to the Editor at *The Economist*, The Adelphi Building, 1-11 John Adam Street, London WC2N 6HT. E-mail: letters@economist.com More letters are available at: Economist.com/letters

Executive Focus



Six Chaired Professorships

Under the leadership of President Julio Frenk, the University of Miami is a global research university for the 21st century. The Miami Business School's mission is to educate principled leaders who transform global business and society.

Accordingly, Miami Business School announces global searches for six chaired, tenured professorships at the full or associate levels. Applications and nominations are welcome in the following areas:

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Candidates and nominees must have an extensive and recent publications record in the top tier scholarly journals in their fields. They must have an international perspective plus strong teaching and course development skills. Spanish proficiency and some exposure to Latin America are preferred but not required.

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Please submit letters of application or nomination in confidence together with a current curriculum vitae to profsearch@bus.miami.edu. Search Committees will start reviewing applications and nominations in November 2017 and searches will continue until chairs are filled.

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Executive Focus



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Investing in rural people

Associate Vice-President, External Relations & Governance and Associate Vice-President, Programme Management Department

The International Fund for Agricultural Development (IFAD) is an international financial institution and a specialized United Nations agency dedicated to eradicating rural poverty and hunger. It does so by financing programmes and projects that increase agricultural productivity and raise rural incomes, and by advocating at the local, national and international level for policies that enable poor rural people to overcome poverty.

IFAD are recruiting for two roles, **Associate Vice-President (AVP), External Relations & Governance** and **AVP, Programme Management Department**.

The newly created position of **AVP, External Relations & Governance** has been set up to oversee and lead three critical parts of IFAD, namely communications, governance, and partnership and resource mobilization. The AVP, External Relations and Governance will be responsible for planning, organizing, coordinating and leading the activities of the department. Candidates for this position should have substantial expertise in areas such as communications, public relations, corporate sustainability, resource mobilization and governance.

The **AVP, Programme Management Department** is responsible for developing and managing IFAD's programme portfolio, which is currently valued at over \$13 billion including cofinancing. The AVP provides leadership to more than 250 staff of the department, including staff in 40 IFAD country offices. S/he oversees project identification, design, financing and supervision. Candidates for this position should be seasoned leaders of programme delivery in the agriculture and development domain.

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Please send your application through the IFAD online system by **6th November 2017**.



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The OPEC Fund for International Development (OFID), based in Vienna – Austria, is the development finance institution established by the Member States of OPEC in 1976 as a collective channel of aid to the developing countries. OFID works in cooperation with developing country partners and the international donor community to stimulate economic growth and alleviate poverty in all disadvantaged regions of the world. To date, OFID has made financial commitments of more than US\$ 21.2 billion to over 3,720 operations across 134 countries worldwide.

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Interested applicants are invited to visit OFID's website at www.ofid.org for detailed descriptions of duties and required qualifications, as well as procedure for applications for the above mentioned positions and other vacant positions listed on OFID's website.

The deadline for receipt of applications is **October 16, 2017**.

Due to the expected volume of applications, OFID would only enter into further correspondence with short-listed candidates.



The bubble without any fizz

Low interest rates have made more or less all investments expensive

USUALLY, when asset prices boom, people get excited. As America's stockmarkets scaled wild peaks in 1929 and 1999 they did so amid feverish enthusiasm. Search for such euphoria on Wall Street today and you will come back empty-handed. Look at underlying numbers, though, and it is at first hard to see why. Over the past 136 years the cyclically adjusted price-earnings ratio (CAPE), a useful measure of how expensive stocks have become, has reached its current heights only twice before: during the dotcom bubble; and just before the Crash of '29.

Why does this remarkable surge not spur frantic enthusiasm—or for that matter deep trepidation? One reason is that in most market bubbles you can point to a particular type of asset which is seeing its price rise inexorably: tech stocks in the 1990s; houses in the mid-2000s. Today, though, America and much of the rest of the world are amid a bull market in almost everything: stocks, bonds and property are all strikingly expensive compared to long-term averages, and getting more so. When everything is going up, things are less exciting, and perhaps less worrying.

But it is still a time to take care. The hunger for assets that is driving up prices is also leading investors to take more risks—risks which may not be fully priced into their in-

vestments and which they may not fully understand, any more than they understood the risks of mortgage-backed securities and other instruments in the run up to the financial crisis ten years ago. And the underlying driver of this oddly broad bull market, low long-term real interest rates, has conflicting explanations—some comparatively benign, others less so.

Start with the evidence that stocks are dear. Investors find CAPE a useful measure because the price of stocks reflects the value investors assign to profits. Since 1881 the average CAPE for the S&P index of the 500 biggest stocks listed in America has been 17. Today it has risen to 30; buying a stream of

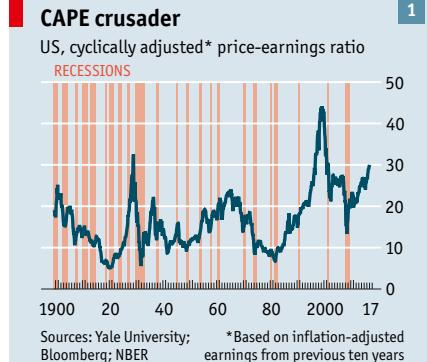
profits is currently uncommonly expensive (see chart 1).

This year's rise in American equities—the S&P 500 is 13% higher than it was on January 1st—has been almost matched by stockmarkets in Europe and Japan, and outpaced by those in emerging markets. When measured against a benchmark similar to CAPE, European and emerging-market stockmarkets are not as strikingly priced as American ones. But they are handily above their long-run average. They can no longer be regarded as cheap, even if they are not as expensive-looking as American stocks.

Or take property. In countries that were unscathed by the global financial crisis, such as Canada and Australia, house prices are far above their long-run average, relative to the cost of renting. In America, where house prices plunged in the crisis, they have now surpassed their peak of 2008 in nominal terms, and they are back above their long-run average relative to rents. In Britain, property prices are close to their peak against both average earnings and rents (see chart 2 on next page).

In bond markets credit spreads have narrowed dramatically. These spreads, which are the gaps between the interest rate offered by safe bonds, such as US Treasuries, and by riskier ones, such as those issued by companies or other countries, are a measure of how much compensation investors require to bear the extra risk. When the price of a risky bond rises relative to the price of a safe benchmark, the credit spread narrows.

In the early weeks of 2016, when fears for China's economy surged and the oil price sank below \$30, the credit spread for ►



investment-grade bonds was 2.2 percentage points. It has since narrowed to around one percentage point, only a little higher than it was during the credit boom of 2004-06. For high-yield or junk bonds, those rated below investment grade, the story is more or less the same (see chart 3).

Raised on promises

Venturesome investors looking for higher yields can buy bonds denominated in dollars but issued by countries other than America. The spread between dollar bonds in the emerging-market bond index collated by J.P. Morgan and Treasuries has narrowed sharply this year to 3.1 percentage points. Investors have been willing to buy bonds that look remarkably risky. In June, Argentina received a flood of bids for a bond maturing in 2117. In the past century, Argentina has defaulted six times. It did so most recently in 2014.

Put off by the high prices of bonds and stocks (particularly those of tech giants, whose prices explain a lot of the S&P's stratospheric CAPE), investors are showing ever more interest in private markets—thus pushing prices up there, too. The borrowing costs for private-equity firms have reached an all-time low. There is a keen appetite for investment funds with a technology bent. SoftBank, a Japanese telecoms company with a sideline in venture capital (it was an early investor in Alibaba, now one of China's e-commerce giants), has raised \$93bn from asset managers, including sovereign-wealth funds, to put to work in young technology firms.

The key asset price, the one that sets the tone in other markets, is the long-term interest rate. Long-term real interest rates have been falling steadily since the early 1980s, and are now at historic lows (see chart 4). The yield on a ten-year Treasury bond fell close to 2% in the summer, though it has risen to 2.3% since. Allow for the effects of future inflation, even if it is modest, and the real return will be lower still. The interest rate on ten-year inflation-protected bonds in America is 0.5%. In Europe real bond yields are negative.

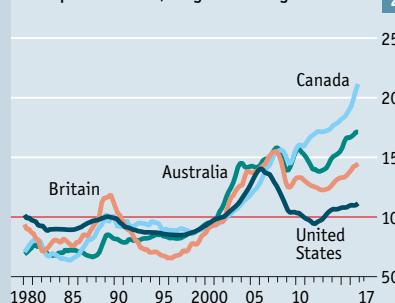
An interest rate is the reward for forgoing spending today, to consume tomorrow. When the desire to spend today's income tomorrow increases, interest rates fall. That makes people keen to find other ways of storing their spending power—and thus more willing to pay more for other assets.

The reasons for the decades of decline in real interest rates are not fully understood, and certainly not agreed on. Different people give more or less weight to three different factors: an increased appetite for saving; a structural change in the economy; and the actions of central banks. What, if anything, needs to be done depends in large part on which factor you choose to give most weight to.

The more people want to save, the low-

From backyard to junkyard

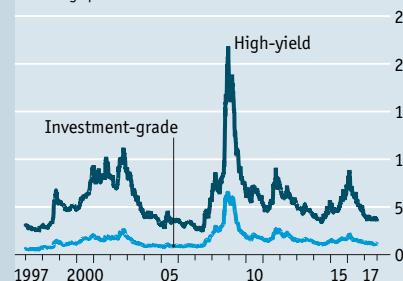
House price to rents, long-run average=100



Sources: Federal Reserve Bank of St Louis; national statistics offices; OECD; S&P; The Economist

United States, corporate-bond spreads

Percentage points



Sources: Federal Reserve Bank of St Louis; national statistics offices; OECD; S&P; The Economist

er the interest rate required to get them to do so. And in past decades various factors have been driving up the propensity to save. Ageing rich-world populations came into their prime earning years, and set aside more of their income for retirement. Bank of England economists reckon that this effect has lowered the real interest rate worldwide by 1.4 percentage points since 1990. China's integration into the world economy added a lot of thrifty people to the world's pool of savers. In 2005, Ben Bernanke, then a governor of America's Federal Reserve and later its chairman, attributed much of the worldwide "savings glut" driving down interest rates to China. The influence of asset prices is still evident in the frothiness of property markets in cities like London and Vancouver, where the eagerness of Chinese buyers drives a wedge between house prices and local fundamentals, such as rents and income.

At the same time as the supply of savings has risen, the demand for investment has fallen. The trend growth rate of rich-world economies has been dropping. The real cost of plant and machinery has fallen and the value of firms, particularly in the technology industry, has shifted increasingly to intangible assets rather than physical assets; both those things mean the amount of investment needed for a given output has fallen. So the corporate sector ends up swimming in cash, adding yet

more to the swollen supply of savings.

The third factor is the role of central banks. The reason long-term interest rates are low, the argument goes, is because short-term interest rates have been kept low for a long time. Central banks have held them close to zero for almost a decade (longer, in Japan). They have also pushed down long-term interest rates more directly by buying \$11trn-worth of government bonds and other assets since 2009—in part as an attempt to push investors into riskier assets, thus ginning up the economy. Little wonder long-term interest rates are low.

It is not quite as simple as that, comes the response. Central banks are as much shaped by economic trends as shapers of them. The increased desire to save has changed the terms of monetary policy-making. Just as the real rate of interest that balances the demand for long-term saving with supply has fallen, so has the "neutral" rate of interest which keeps inflation stable when the economy is at full capacity. If the central banks were really keeping interest rates and bond yields too low, the economy would overheat and inflation would take off. There is not much evidence of this.

In the absence of inflation it is reasonable to expect low interest rates to persist, and thus unsurprising that the prices of stocks, corporate bonds and property go up. If the yields on risk-free bonds stay depressed, then the expected returns on all other assets—the earnings yields on equities, say, or the rental yield on houses—must fall into line.

In some ways this makes high asset prices less worrying. Take stock prices. To value the future earnings you can expect from owning a piece of a company, they must be discounted using an interest rate. If the real interest rate is lower and looks likely to stay that way, discount rates will fall, too. That makes future earnings more valuable, and goes some way to justifying paying a high price for them. Thus in a low-interest-rate world those high CAPE numbers make a lot more sense.

As logical as all this seems, though, there is nevertheless a nagging sense that

Lack of interest

"World" real interest rate

Average ten-year inflation-indexed bond yield, %
G7 countries, excluding Italy



Source: "Measuring the 'world' real interest rate", by M. King and D. Low, NBER working paper, February 2014

*The Economist estimates

► something is amiss with such high-priced assets. What if, for instance, inflation is sending a false signal about where real interest rates should be? If that were the case, central banks might indeed be keeping rates lower than they ought to. This is the case made recently by Claudio Borio, who works at the Bank for International Settlements (BIS), a clearing house for central banks and a font of contrarian thinking.

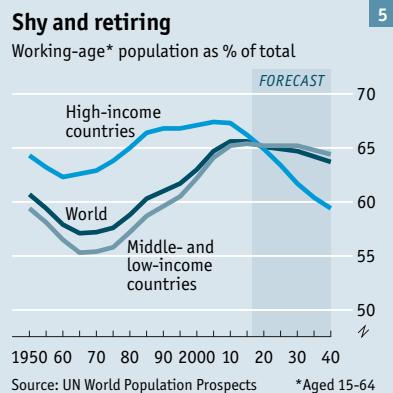
Central banks steer by the inflation rate as mariners steer by their compasses. If it rises, the economy is overheating and the ship must adjust its trim. If it falls, the economy needs a dose of monetary stimulus; the sails must be unfurled. The problem, Mr Borio says, is that the compass no longer reads true.

Globalisation, the decline of union power and technological change mean that inflation does not perk up when the jobless rate falls in quite the way it used to; the short-term trade-off between inflation and the unemployment rate, known as the Phillips Curve, has weakened to the point of breakdown. Inflation has been depressed by real factors, says Mr Borio. By keeping interest rates low in a vain attempt to fine-tune it, central banks are instead amplifying a cycle of boom and bust.

If central banks' influence on inflation has been overstated, it may also be the case that their influence on the long-term real rate of interest, and thus on asset markets in general, has been underestimated. Consider again the decades-long drop in interest rates since the 1980s; but this time, instead of asking why they fell, ask why they started off so high. One explanation is the savage tightening of monetary policy under Paul Volcker, chairman of the Fed, who pushed short-term interest rates as high as 19% to crush America's double-digit inflation. The high real interest rate of the 1980s and 1990s carried the imprint of the aggressive monetary policy that went before.

This episode suggests that central banks can indeed have a lasting influence on real interest rates. If so, a decade of aggressively loose monetary policy may well have weighed down bond-market rates—and thus, for a while at least, people's idea of the neutral real rate. Indeed higher bond prices may have induced some investors, such as insurance funds, to themselves buy more bonds, driving down interest rates in a self-reinforcing spiral.

What does this mean for the future? One possibility is that the spiral may go into reverse as central banks, led by the Fed, start to unwind the bond holdings they have built up. In the past five years the bonds issued by governments in America, the euro zone, Japan and Britain to finance budget deficits have been broadly matched by the big-four central banks' bond purchases. Believing that the world economy now has sufficient momentum to slough off the legacy of its past debts, the



Fed is starting to unwind its share in this. Though the European Central Bank and the Bank of Japan are, for now, still buying, they will in time follow suit.

The Fed's economists estimate that its asset purchases have reduced the interest rates on ten-year bonds by one percentage point, and that getting its bond holdings back to a normal level might have a similar effect in the opposite direction. The Fed will sell bonds much more slowly than it bought them to try and ensure a smooth adjustment to the market. But that cannot be guaranteed. Hyun Song Shin of the BIS recently warned of the perils of a possible "snapback" in global bond yields if, for instance, some investors start dumping bonds as yields rise, just as they snapped them up as yields fell. The prices of other assets, such as stocks, might also lose support. Indeed, the prices of other assets might be more destabilised than those in the bond markets themselves.

Into the great wide open

And what of central-bank interest-rate policies? The banks' choice of what to aim for as they cautiously start to tighten will be made more vexed by indications that the increased propensity for saving, is itself in the process of turning round. China's current-account surplus (a measure of its excess saving) narrowed from 10% of GDP in 2007 to under 2% of GDP in 2016. In a recent paper, Charles Goodhart of the London School of Economics and Manoj Pradhan of Talking Heads Macro, a research firm, argue that the rich world's demography is at a turning point, too, with the share of working-age people in the population about to fall (see chart 5). That implies less saving for retirement and more spending in retirement. In a recent lecture at the IMF, Mark Carney, the governor of the Bank of England, said that the neutral interest rate may be rising worldwide, "meaning that monetary policy has to move in order to stand still".

Who should worry about this? One view is that, because stockmarket booms tend to end badly, policymakers should take deliberate action now to deflate prices

before it is too late. It is often said that central banks, notably the Fed, mollycoddle markets by delaying interest-rate rises while they are unsettled. If the Fed were less considerate, asset prices would be jumprier, making investors more attuned to the inherent riskiness of their portfolios.

For some tastes, this comes close to arguing that the Fed has to destroy the recovery in order to save it; the steep rise in the federal funds rate required to bring American share prices to earth might tip the economy into recession. And central banks still have some purchase on inflation: if they raise rates too much, they might entrench today's low inflation, or risk deflation.

There is a better case for a less astringent form of intervention. It says, broadly, that the stockmarket is a sideshow. Hardly any capital is allocated with reference to stock values, since IPOs are so scarce. What matters to the economy are banks and (in America, at least) credit markets. Research by Jeremy Stein of Harvard University and two co-authors at the Fed (where Mr Stein was once a governor) has found that when the mood in credit markets is bullish (ie, corporate-bond spreads are unusually narrow and the share of junk-bond issuance high), the economy will soon suffer, with an abrupt tightening of credit and slower growth. Given this finding, says Mr Stein, "I'm wary of targeting inflation so aggressively that you are not mindful of the risks from bullish sentiment."

It is the nature of investment that some risky bets will not pay off. If portfolio managers wake up in two years regretting the high price they paid for shares in one tech giant or another, or wishing they didn't own a 98-year dollar bond issued by Argentina, so be it. The least—and perhaps the best—that can be done is to ensure that the real economy is protected should prices suddenly fall. That means guarding against purchases made with too much borrowed money of illiquid assets, especially property. It also means ensuring banks have enough capital to withstand a correction in asset prices. The policy tools already exist to do this. Now is a good time to put them to work. ■





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Indonesia

Jokowi at bay

JAKARTA

A weak economy and rising religiosity make politics unpredictable

WITH an eager smile and only a few tufts of hair on his chin, Ibrahim, a 30-year-old protester in Jakarta, does not seem like much of a Muslim firebrand. Yet on September 29th he and his four-year-old son, Alid, who clutched a flag emblazoned with the opening lines of the Koran, joined thousands of hard-line Islamists marching in protest against the government. Their concern? Communism and the “criminalisation” of Islam in the world’s most populous Muslim country, he says. In a feat of doublethink, he rails against capitalism, too: “There’s no distribution of wealth, so the rich become richer and the poor become poorer.” Ibrahim may have a fuzzy idea of what exactly he is protesting against. But his muddled ideology could still present a threat to President Joko Widodo, commonly known as Jokowi, who is likely to seek a second five-year term in 2019.

Jokowi’s election in 2014 was hailed by enthusiastic observers as a turning-point in Indonesian politics. When campaigning he emphasised his probity and humility. He promised to improve crumbling roads, ports and airports, remove graft from politics and boost foreign investment. Comparisons were made to Barack Obama, on the basis that the two men both had a certain gawky charm and both appeared to inspire an enormous amount of hope. An avid user of social media, Jokowi regularly

uploads short clips on YouTube, making him seem far more accessible than most politicians. A hand-held video of a lunch he hosted for King Salman of Saudi Arabia, which shows the monarch slurping soup (from a golden spoon) has been watched 2m times.

In his first year Jokowi appeared to be the reformer that liberals had dreamed of. He scrapped a wasteful fuel subsidy and introduced a popular health-insurance scheme, which soon enrolled 130m members, or half the population. State spending on infrastructure shot up by 51% in 2014-15, to 209trn rupiah (\$15.5bn). He has let the corruption commission do its job, unlike parliament, which has repeatedly attempted to neuter it. All of this means he has a huge personal appeal, with approval ratings of around 68% in both urban and rural areas, and among people with different levels of education.

Ratings and slatings

Nonetheless, Jokowi’s chances of being re-elected have started to look shaky. A survey conducted in September by the Centre for Strategic and International Studies, an Indonesian think-tank, found that only 50% of those polled would vote for him. That suggests that the race in 2019 might be as tight as the one in 2014, which Jokowi won with 53% of the vote. An upset in the election in April for the governor of Jakar-

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ta, in which Jokowi’s ally, Basuki Tjahaja Purnama (or Ahok), lost despite high approval ratings and the advantage of incumbency, has made Indonesian politics look far more unpredictable.

Part of the problem for Jokowi, who is Muslim but broadly secular in his outlook, is rising religiosity. During his presidential campaign, rumours circulated that he was actually Christian. When he ran for governor of Jakarta in 2012, Ahok, who is Christian, was his running-mate and then deputy. During Ahok’s campaign for governor, Islamist activists pilloried him for his religion. And they claimed, misleadingly, that he had criticised the Koran. As a result, he is now serving a two-year sentence for blasphemy. A group called the Islamic Defenders Front, which was behind the rally on September 29th, organised huge protests against him. They are not the only religious agitators. In August in East Java a 30-metre statue of Guan Yu, a Chinese deity, was partially covered with a white sheet after local Muslims threatened to tear it down.

According to the Institute of South-East Asian Studies in Singapore, most Muslim Indonesians take a relaxed approach to certain aspects of their religion, such as going on the *hajj* (only 11% say that is extremely important). In other areas, however, they appear to be more doctrinaire: the majority think that women should wear a *hijab* and 67% think that instituting sharia would “strengthen moral values”. Religious violence surged after the overthrow of Suharto, Indonesia’s long-serving strongman, in 1998, but then appeared to dissipate; it is again becoming more common. “It is quite clear that there is a rise of tribalism across the world and we are not immune from it,” says Tom Lembong, the head of the investment-promotion agency.

Yet religion would not be such a handy ➤

► tool for Jokowi's opponents if the economy were faring better. Since 2014 annual GDP growth has hovered around 5%, slightly below the levels achieved under Jokowi's predecessor and well below the rates Indonesia registered in the 1970s and 1980s. The fall in commodity prices, coupled with dauntingly complex regulations, has caused foreign investment to slump. The proportion of a company's shares that can be in foreign hands varies from industry to industry, with different rules for everything from carmaking to berry cultivation. Infrastructure spending has also slowed down since 2014. Structural reforms, including an overhaul of the tax system, are sorely needed. Yet Mr Lembong says no big reforms are in the works.

The result can be glimpsed in Tanah Abang, a wholesale clothes market in central Jakarta. On a weekday morning few customers explore its labyrinthine aisles of fabrics, jeans and patterned dresses. Instead most shopkeepers chat among them-

selves. Manual labourers sprawl on bags full of merchandise, looking at their smartphones or sleeping. The workers complain that sales have slumped over the past two years and that there are not enough jobs for young people.

Rehmad Yogi, a 22-year-old who works in a shop where the female mannequins sport headscarves, thinks the economy is the "most important thing". He says he supports Prabowo Subianto, a former general who was Jokowi's adversary in 2014 and probably will be again in 2019. Nanto, who is 19, travels 60km from his home town of Bogor on a motorbike each day for work. He, too, prefers Mr Prabowo, though he worries that he is "too violent". Sang Phim, who works at a stall selling knock-off sportswear, is an enthusiastic supporter of Jokowi, who is the "best president of Indonesia". Yet even he seems cautious. Every time Indonesians go to the polls they appear to be more and more influenced by religion, he says anxiously. ■

He wants voters' support for a plan to spend some of the revenue from a scheduled rise in the consumption tax to reduce the cost of nurseries and universities, instead of paying down the national debt. But the debt, now at 250% of GDP, is itself a burden that will weigh on young people.

"The harm may be almost invisible now, but there are enormous accumulative effects for the future generations," says Isao Kubota, the chairman of Nishi-Nippon Financial Holdings. He says the government needs to look more closely at expenditure. Even some pensioners agree. "It's so hard to survive on our pension that sometimes we think the idea is for us not to survive," says Shigenobu Mori, who says he receives around ¥100,000 (\$888) a month, which is less than a third of the median household income. "But we have to or it will be even more of a struggle for our children."

Around Kyushu, an LDP stronghold, voters have little faith that the party will tackle the costs of Japan's changing demography. Many suspect the government will put off the tax rise for fear of derailing the economy's tentative recovery, as happened in 2014. But voters do not have much trust in the newly configured opposition parties, which are still in flux and have yet to come up with clear manifestos. The most formidable opposition force, the Party of Hope, claims to be more concerned than the LDP about fiscal discipline, yet wants to postpone the tax rise.

Some reckon the solution does not lie in national policy. Soichiro Takashima, the mayor of Fukuoka, says cities need to create their own opportunities "from the grassroots up" by fostering small businesses. Whoever wins the election could draw at least one lesson from Fukuoka: the city, which is closer to Shanghai and Seoul than to Tokyo (see map), is more open to immigrants than the rest of Japan. ■

Japan's election campaign

Mannequins do not cast ballots

FUKUOKA

Voters want a plan to handle a declining and ageing population

THE city of Fukuoka, the biggest on the island of Kyushu, is buzzing. Hip young things at Fukuoka Growth Next, a city-run corporate incubator, bash away on their laptops. As the sun sets they gather to sup in the chi-chi bars beside the river. Fukuoka is Japan's fastest-growing metropolis, including for 15-29-year-olds. It would be idyllic, but for the fact that these are the people who wonder how they will bear the burden of Japan's declining and greying population. The current election campaign, alas, is doing little to reassure them.

Demographers reckon Kyushu, the southernmost of Japan's four main islands, will lose 19% of its people by 2040. Over the same period the share of Japan's population over the age of 65 will rise to

35%, compared with 28% today. The median age will rise by almost seven years, to 54. Although Fukuoka is still growing, thanks to immigration from smaller towns and villages, Kitakyushu, the island's second city, saw its population shrink by 1.5% (15,000 people) in the five years to 2015. Some villages are so depopulated that locals have decorated them with mannequins to provide a semblance of activity.

Supporting the old already puts a huge burden on the young. Spending on medical care, pensions and nursing accounts for a third of the national budget. The days when graduates could expect a job for life are over. That may make the economy more flexible, but worries younger voters. "I don't know if I will be able to afford children," says a woman in her 30s.

The outgoing government of Shinzo Abe, from the long-ruling Liberal Democratic Party (LDP), has made some moves to spread the burden more equitably. It is encouraging elderly people to keep working and is debating raising the retirement age for civil servants by five years, to 65. This year it increased the amount those over 70 must pay for their medical care before the government will chip in. It has opened more public nurseries to clear long waiting lists for child care.

Mr Abe's ostensible reason for calling the election was another sop to the young.



Village life

TRANSFORMATION OF A BANKING GIANT TO SERVE BOTH THE TRADITIONAL AND DIGITAL ECONOMIES

RIGOROUS RISK CONTROL ALLOWS CHINA CONSTRUCTION BANK TO PROSPER

There are signs of optimism around the global economy, which is enjoying its strongest period of sustained growth since 2010.

China Construction Bank (CCB), which over sixty years has diversified rapidly across sectors and countries, is well positioned to capitalise on this. It continues to serve the real economy while progressing with long-term plans to transform digitally and expand its global footprint.

Over the past year CCB, one of China's "Big Four" banks, has also beefed up its overall risk prevention and control, which allowed it to improve performance. In the first half of 2017, net profit rose by 3.81% year-on-year to RMB139.01bn (US\$21.31bn). Meanwhile, total assets grew by 3.47% from the end of 2016 to RMB21.69trn (US\$3.32trn).

FUELING THE REAL ECONOMY, NEAR AND FAR, BIG AND SMALL

CCB has been an important financial pillar for major national and international initiatives, including the "Belt and Road Initiative", as well as the development of the Beijing-Tianjin-Hebei region, the Yangtze River Economic Belt and the Xiong'an New Area.

By the end of June infrastructure loans amounted to RMB3.22trn (US\$493.69bn) or 50.78% of corporate loans and advances. Agricultural loans totalled RMB1.72trn (US\$263.77bn). Meanwhile, residential mortgage loans increased by 9.50% since the end of 2016 to RMB3.93trn (US\$601.24bn).

Yet even as CCB extended loans to productive sectors of the economy, it continued to act as a responsible financial steward, by actively controlling loans to five industries plagued by overcapacity: iron and steel, cement, electrolytic aluminium, plate glass and shipbuilding.

CCB has always believed that it is not just major corporations, but small businesses that drive economic development. By the end of June, loans to 397,400

different small and micro enterprises reached RMB1.49trn (US\$228.18bn).

CONSTANT INNOVATION AND PROCESS IMPROVEMENT

CCB has introduced a number of measures to identify, assess and mitigate risks more scientifically, detect risks upfront, improve the cooperative risk-prevention and -management system, and manage liquidity more precisely. At the end of June, the non-performing loan (NPL) ratio stood at 1.51%, a slight decrease from 2016.

CCB has also harnessed information technology and product innovation to support its ongoing transformation to an international, digital organisation. CCB successfully developed its new generation core banking system, improved its mobile financial products, and promoted the "Long Card" payment system, which integrates cross-border accounts in China and Hong Kong.

CCB has accelerated its channel transformation. The number of personal online banking users, mobile banking users and WeChat banking users surpassed 250m, 240m and 62m, respectively.

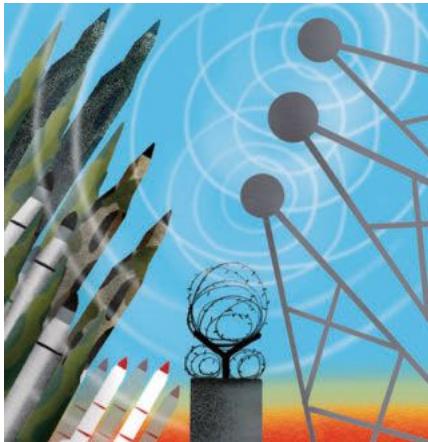
A RESPONSIBLE CORPORATE CITIZEN RENOWNED THE WORLD OVER

CCB plays an active role in sponsoring social initiatives in education, healthcare and environmental protection. It has made great strides in its poverty alleviation projects, partly by issuing poverty alleviation bonds and creating targeted poverty alleviation platforms.

CCB has continued to expand across the globe. CCB Indonesia was inaugurated in February 2017, followed by CCB Malaysia. New branches opened in Perth, Australia and Warsaw, Poland. At the end of June, CCB had a total of 251 overseas branches in 29 countries and regions. In the first half of 2017, the net profit of these overseas commercial banks grew 86.70% year-on-year to RMB5.43 billion (US\$0.83bn).

With such stellar growth, it is no surprise that clients around the world consider CCB as their first port of call for all their banking and financial needs.





Radio in North Korea

Making waves

SEOUL

Kim Jong Un's propagandists have a new rival. They're not happy about it

“DO YOU want to be pretty?” asks a teasing male voice. “Do you want to lose weight?” Such is the enticing introduction to a recent radio show aimed at North Koreans, “Let’s Learn Market Economics”. After a jaunty jingle and a skit about how falling in love will make the listener healthier and leaner, the remaining half-hour is devoted to a worthy, but rather less gripping, profile of a successful South Korean businessman.

Competition for North Koreans’ attention is increasing. The country’s approved media are crammed with fawning reports about the latest “field guidance” from its dictator, Kim Jong Un—indispensable tips on topics such as growing juicy apples or perfecting a nuclear weapon. But those who buy illicit short-wave radios can pick up at least ten foreign stations targeting North Koreans. The latest, BBC News Korean, went on air on September 25th.

The broadcasters’ motives vary, as does their quality. Some are staffed by defectors who hope to encourage others to flee. Voice of America sometimes plays k-pop, the cheesy tunes that are ubiquitous in the South but sound fresh to northern ears. Free North Korea Radio hardly bothers to mask its agenda. One show, “The Dictator’s Doom”, recounts the messy fates of totalitarian rulers. (The regime counters with its own station, Voice of Korea, which is beamed to the South.)

The BBC says it will provide neutral coverage, not foment revolution. Its half-hour broadcasts, which are also available in the South, include a news bulletin, a weather forecast and an English lesson. Sokeel Park of Liberty in North Korea, a group that works with defectors, reckons it is more

India's economy

Fifth columnists

DELHI

The prime minister is attacked from an unexpected quarter

SINCE leading his party to a landslide victory in 2014 Narendra Modi, India’s prime minister, has romped from strength to strength. His Bharatiya Janata Party (BJP) has captured one state capital after another, building daunting momentum ahead of the next national elections in 2019. So it is all the more remarkable that a recent squall of criticism has come not from India’s lingering left-liberal elite, nor from poor Indians hurt by erratic policies, but from within the BJP’s own Hindu-nationalist fold.

Two BJP grandees, Yashwant Sinha, a former finance minister, and Arun Shourie, a former World Bank economist and cabinet minister, have led the charge. In an op-ed article titled “I Need To Speak Up Now”, Mr Sinha lambasted Mr Modi’s government for botching the chance offered by low oil prices. GDP growth has fallen for five quarters in a row. In the three months to June it fell to 5.7% year on year, down from a heady 9% 18 months ago. Investment has also slowed (see chart). “The prime minister claims that he has seen poverty from close quarters,” Mr Sinha’s broadside concluded. “His finance minister is working overtime to make sure that all Indians also see it from equally close quarters.”

Mr Shourie has been even more acerbic. Last year’s voiding of high-denomination notes was “idiotic”, he told a television interviewer. The core competence of Mr Modi’s government is “event management”, he sniffed. It claims its policies have been bold, but “suicide too is a bold step.”

Mr Modi’s supporters dismiss the two former ministers as disgruntled retirees. Both are in fact associated with an earlier generation of BJP leaders whom Mr Modi’s team has increasingly sidelined. But even Subramanian Swamy, a maver-

ick hard-right economist who serves as a BJP MP in the Rajya Sabha, the upper house of parliament, has lately described India’s economy as being in a tailspin. Perhaps even more cuttingly, Swami-nathan Gurumurthy, a prominent Hindu-nationalist thinker whose unorthodox economic convictions are said to influence Mr Modi, recently decried the government’s policies as “too many disruptions, too soon”.

Replying to his critics, Mr Modi thundered on October 4th that, whereas his was not the first government to suffer falling growth rates, it is the first to make serious efforts at tidying up and reforming India’s economy. While economists continue to debate, political analysts are in agreement. Unless India’s opposition pulls itself together, it still is no threat to Mr Modi’s rule. “In 2014 they underestimated the man they derisively called a mere *chaiwallah*, or tea-boy,” says Milan Vaishnav of the Carnegie Endowment for International Peace, a think-tank. “It would be perilous for them to do so again, given that Modi has outfoxed them at each and every juncture.”

Slouching tiger

India, % change on a year earlier



Source: Haver Analytics

*Excluding construction

likely to be seen as impartial than American or South Korean stations. “The UK is not really framed as an enemy,” he says.

Measuring the audience is impossible. “We’re not going to send anyone with a clipboard there,” says one station boss. Yet a survey of defectors and other North Koreans abroad by the Broadcasting Board of Governors, which oversees Voice of America, found 29% had listened to foreign broadcasts before leaving. Their true reach is probably greater, since news picked up on the radio soon spreads by word of mouth. North Koreans can watch foreign dramas on smuggled flash drives and over

3m of them have mobile-phone subscriptions. But radio remains a rare source of up-to-the-minute news from outside.

Mr Kim’s propagandists do not welcome rivals. Most stations broadcast late at night so that listeners can tune in at home in secret. Those who are caught risk being sent to a prison camp if they cannot bribe their way out of trouble. The regime tries to jam foreign networks by playing loud music on the same frequencies. But the external broadcasters do not believe it can block every foreign station all the time. The BBC, for one, is confident that some of its broadcasts are audible. Stay tuned. ■

Immigration to Australia

Almost one in three

PERTH

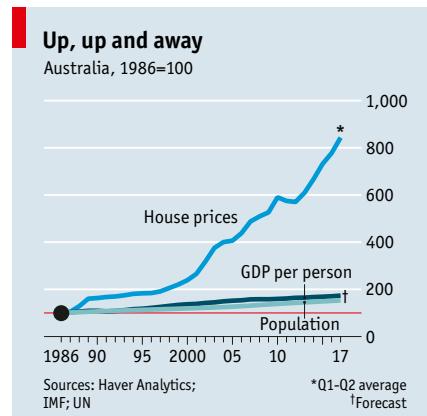
A surge in migrants causes bigger strains to infrastructure than to politics

THE prime reason for the decline in living standards for many Australian workers is our staggering population growth," thunders Dick Smith, a campaigning millionaire, in an apocalyptic manifesto. He is right about the staggering growth. The number of children the average Australian woman has fell below two in the 1970s and has stayed there. Yet since then Australia's population has grown by 70%, thanks almost entirely to immigration. Over 28% of today's residents were born overseas—a higher share than in Canada or New Zealand, let alone Britain or America. The number of newcomers continues to grow. Net overseas migration (a measure of immigrants minus departing Aussies) has nearly doubled since 2000.

Mr Smith is also right about the decline in living standards, albeit only recently. Wage growth has been dragging along at its lowest rate in almost 20 years, and dipped below inflation earlier this year, meaning that the typical worker is losing purchasing power. Although the unemployment rate, at 5.6%, is low by the standards of recent decades, underemployment is close to a record. Philip Lowe, the governor of the Reserve Bank of Australia, the central bank, concedes that employees "feel like there is more competition" and are worried about "foreigners and robots".

Yet, to the frustration of alarmists like Mr Smith, relatively few Australians seem to think the way to boost their incomes is to stem the influx of immigrants. In 2015 Gallup, a pollster, found that Australia was the only big Western country where more people thought immigration should rise (30%) than thought it should fall (25%). Regular surveys conducted by the Scanlon Foundation, which works to integrate immigrants, show that the sense that immigration is too high has fallen substantially since the 1990s. Pauline Hanson, a populist senator who made her name then, warning that Australia would be "swamped" by Asians, has started fulminating about Muslims instead, to little avail. When she recently tried to stir up public opinion by wearing a burqa in parliament, she attracted more ridicule than adulation.

In part, that is because Australia has a long history of immigration, from Chinese joining the gold rushes of the 1850s and 1860s to Afghan camel drivers helping to explore the outback in the late nineteenth century. It helps, too, that the economy has been growing for 26 years without a recession



sion, and that incomes have been growing faster than the population. In fact, immigrants have had a hand in that: a growing population consumes more goods and services. Recent immigrants have provided labour for a mining boom and, when that pattered out, demand for housing and manpower to build it, helping to keep the economy ticking over. Some 600,000 foreigners spent A\$20bn (\$14.6bn) to attend Australian schools and universities last year, making education the country's third-biggest export. Many take local jobs and pay taxes after they graduate.

It is true that immigration appears to have raised unemployment and lowered



Crowded but welcoming

wages in certain industries. Bob Birrell of the Australian Population Research Institute notes that Australia's points-based system, which is designed to attract workers with skills that are in short supply, has brought a deluge of accountants and IT professionals. Over half of foreign students study business and commerce because they believe that will give them access to high-paying jobs, he says, but they are often left on "the fringes of the labour market because it's difficult to compete with locals". Overall, however, Australia's Productivity Commission finds no evidence that migrants suppress wages or displace locals from jobs. They help raise GDP per person, not lower it, in part by making Australia's population more youthful, thus offsetting the ageing of its baby boomers.

But the surge in immigration has caused problems, most obviously in terms of planning. Theoretically, there ought to be plenty of space for the 230,000-odd yearly arrivals, since Australia is one of world's least densely populated countries. But the vast majority of its people, and an even greater share of its immigrants, cluster in a few cities near the coast. Despite substantial investment, urban infrastructure is struggling to keep pace. Melbourne and Sydney, in particular, are pulling at the seams. Commuters are subjected to snarling traffic, the costs of which are predicted to double by 2030. The number of passengers on Sydney's commuter trains, meanwhile, grew by 11% in the year to July.

Immigration has also stoked house prices (see chart). In Sydney the average home costs A\$1.2m, up almost 20% in a year. By one count, the city is the world's second-most expensive relative to incomes. The once-standard house on a quarter-acre lot is beyond the means of most. Those who do buy a home are heavily indebted: at 134%, the ratio of household debt to GDP is also one of the highest in the world. A recent analysis found that buyers in Sydney would need to make A\$190,000 a year—more than triple the average salary—to repay their mortgages comfortably.

The conservative government led by Malcolm Turnbull has promised to free more land for development and penalise investors who leave properties empty. But it has also pandered a bit to the likes of Mr Smith by changing immigration rules. The prime minister said he was "putting Australians first" by requiring temporary migrants to have more work experience and better language skills. He wants would-be citizens to pass tougher language tests and prove that they share Australian "values". Previously, new arrivals had to be able to identify Don Bradman, a celebrated cricketer (contrary to popular belief, they did not need to know his batting average). Mr Turnbull wants to be sure they frown on domestic violence and sexism. He might have added xenophobia to the list. ■

Banyan | Homage to Formosa

Despite its admirable democratic evolution, Taiwan receives precious little recognition



FOR a small island-nation, bobbing about on the opposite side of the globe, Taiwan has been paying close attention to the recent referendums that have taken place, amid much controversy, in Catalonia and Kurdistan. Interest in the Catalonian stand-off is perhaps to be expected. After all, the disputed vote on independence on October 1st, which the Spanish authorities did their damnedest to stop, has shaken Europe. More striking is that, in a media landscape more given to trivia and sensationalism, Formosa Television, whose viewers favour formal independence for Taiwan, sent a film crew to provide in-depth coverage of Kurdistan's vote last month on seceding from Iraq.

Small, plucky peoples seeking independence: Taiwan falls into the category. It is a model of self-determination, peace and the promotion of human rights—the core principles of the UN. Formerly a thuggish one-party dictatorship under martial law, over three decades Taiwan has transformed itself into a vibrant democracy that is notable for being decent, prosperous and civil, albeit with wildly rumbustious politics. What is more, by almost any measure, Taiwan is already, in effect, a sovereign country. It elects its own president, raises its own army and pursues its own foreign policy—dream on Catalonia. Yet, like Catalonia and Kurdistan, it feels short-changed, denied international recognition and a sense of its rightful status in the world.

The reason, of course, is China. Communist dogma views Taiwan as the home of a regime that was toppled in 1949 and that it still sees as illegitimate. Taiwan's return to the fold, by force if necessary, is an integral part of the party's cherished goal of making China whole again, as it sees it. But the dogma is misleading. For one thing, Taiwan did not break away from China. Arguably, it is the reverse: the Communists rebelled against Kuomintang (KMT) led by Chiang Kai-shek, leaving him in charge only of the island, the one part of China they have never ruled.

Yet since 1971, when the People's Republic of China (ie, the Communists in Beijing) took over China's seat at the UN from the Republic of China (ie, the KMT in Taipei), China has done its utmost to shrink the international space in which Taiwan may operate. It does this on the basis of the “one China principle”—that since there is only one China, countries seeking relations with China must break off relations with Taiwan. This is an anachro-

nism, harking back to the days when Chiang still sought unification on the KMT's terms. That fantasy now exists only among a few diehards. These days governments in Taiwan, including KMT ones, claim to rule only for Taiwan, not for all of China.

Regardless, China's hounding of Taiwan is relentless. The island is down to 20 diplomatic allies, the most significant of which is probably the Vatican. The most recent country to be peeled away by Chinese promises of juicy infrastructure projects and soft loans is Panama, which switched allegiance in June. An unspoken diplomatic “truce” had prevailed while the KMT's Ma Ying-jeou was president in 2008-16. He was viewed in Beijing as sympathetic to eventual reunification. But since the landslide presidential victory last year of Tsai Ing-wen, whose Democratic Progressive Party (DPP) has strong pro-independence elements, Taiwan is back in the doghouse—despite Ms Tsai's moderation and declining popularity—and the truce appears to be off.

Chinese pressure ensures that Taiwan is increasingly excluded even from international forums where it has something to offer. The WHO, for instance, did not invite Taiwan to attend this year's World Health Assembly, where it had been an observer since 2009. At a multilateral conference hosted by Australia on conflict diamonds in May, Chinese diplomats boorishly interrupted an Aboriginal welcome ceremony to protest against the presence of a Taiwanese delegation, which had to leave.

Earlier attempts to join the UN not as the Republic of China but simply as “Taiwan”, made by a previous DPP president, Chen Shui-bian, an independence firebrand, have been quietly dropped by Ms Tsai. She has also fended off calls to make it easier to hold a referendum on independence—despite a recent hunger strike by some pro-independence types. After all, just as any attempt at a referendum in Tibet or Xinjiang would be met with wholesale repression, so China hints it may counter any referendum in Taiwan with force.

Suffer what you must

And so, as Brian Christopher Jones of the University of Dundee puts it, despite 30 years of democracy, Taiwan remains as vulnerable as ever, protected militarily by America but left undefended diplomatically by most of the world. Regrettably, that will not change soon. It is not just because of China's growing clout in shaping its environment to its liking. America, too, under Donald Trump has turned away from promoting the human rights and democratic values of which Taiwan is a beacon. Just this week, Mr Trump welcomed to the White House Thailand's prime minister, Prayuth Chan-ocha, a former general who leads a junta that seized power from a democratically elected government in 2014. It has suppressed political activity and free speech, and arrested hundreds for the most muted expressions of dissent.

Superpower politics would be exerting pressure on the relationship between America and Taiwan whoever was in the White House. But before his inauguration Mr Trump took a congratulatory telephone call from Ms Tsai, the first time in nearly four decades that a president or president-elect had been in direct contact with a Taiwanese leader. It was a great symbolic show of support. Nearly a year on, Mr Trump appears to dwell little on Taiwan. Instead, he will soon travel to Beijing to carry on a love-in with China's strongman, Xi Jinping, that began at Mar-a-Lago in April. As the conquering Athenians said to the cornered Melians in Thucydides's account of the Peloponnesian war, “The strong do what they will and the weak suffer what they must.” ■

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Ageing in Hong Kong

Pension pains

HONG KONG

Rapid ageing threatens to strain Hong Kong's public coffers, and its social contract

THE chief executive of Hong Kong, Carrie Lam, says she wants to heal the territory's "serious" divisions. On October 11th, in her most important policy-related speech since she took office in July, she is expected to announce her plans for achieving that. One of the most bitter divides is evident in the membership of the Legislative Council, or Legco, to which she will deliver her proposals. There is a rift between advocates of democracy and those who support Mrs Lam's government and its backers in Beijing. But on political issues Mrs Lam's hands are tied. The Communist Party opposes any concessions to democrats. Instead she will focus on other problems—including, many Hong Kongers hope, the suffering of the elderly in a city that is rapidly ageing. Views on how to deal with this are nearly as divided as they are over demands for universal suffrage.

Life expectancy in Hong Kong pips that of Japan. On average, male Hong Kongers live for 81.3 years and women for 87.3, helped by the city's affluence and low incidence of smoking. That is welcome, but a huge problem when coupled with a dwindling fertility rate which has resulted in ever fewer working-age people to support the elderly, and implacable public opposition to looser controls on immigration which would allow more workers to enter. The number of people aged 65 or older will

double to 2.4m in 2036, or just over 30% of the population, the government reckons (see chart). Last year the proportion was less than 17%.

As their numbers swell, so do demands that the government do more to help the elderly. But Hong Kong has always prided itself on its low taxes and fiscal conservatism (see page 81). It has consistently enjoyed budget surpluses. Giving pensioners more money could break those principles. As often in Hong Kong politics, the debate over what to do pitches democrats, who generally support the idea of more handouts, against pro-establishment politicians, who worry that Hong Kong may be-

Also in this section

34 Rehabilitating Chiang Kai-shek

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come less business-friendly if it turns into a welfare state with high taxes.

Public funds for the elderly are currently aimed at those living in poverty. For such a rich society, the poor are surprisingly numerous. The most visible are the "cardboard grannies", old women who collect boxes in poor neighbourhoods to sell for recycling in order to make ends meet. Yet many more elderly poor are hidden from view, say charity workers. Official figures show that in 2015, more than 300,000 people aged 65 and over, or 30% of the total, languished below the official poverty line, which is set at a monthly income of HK\$3,800 (\$490).

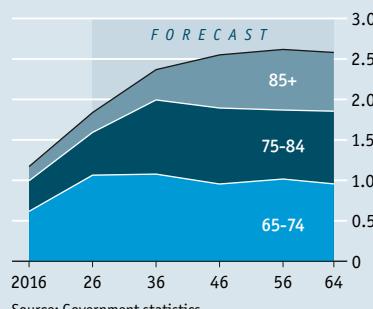
Anyone aged 70 or over can get an allowance of at least HK\$1,325 a month. In 2015 144,000 of the very poorest among the over-65s received higher monthly payments of at least HK\$3,240 (as well as health-care discounts and, in many cases, subsidised public housing). Others under the poverty line as well as 244,000 above it also qualified for higher payments, at a slightly lower rate than the amount to which the poorest are entitled.

The system involves means-testing, which some Hong Kongers find degrading. Past studies have concluded that over 10% of those who could claim social security do not do so—some of them for fear of losing face. But the handouts are a pittance. At a vast public-housing complex in Kwun Tong district, elderly residents tell of just scraping by. One says she eats the cheapest of noodles to economise on food. With the power-hungry air-conditioning turned off, the heat in her flat is stifling.

Critics call for a "universal" state pension paid out to all, regardless of their income. Radically, some even call for tax increases to pay for this (the majority of ▶

Greying growth

Hong Kong, population by selected age group, m



► people in Hong Kong pay very little income tax). They also want changes to the Mandatory Provident Fund (MPF), a compulsory pension scheme that is privately managed. It covers about 2.8m people, or nearly three-quarters of those in work, but the jobless fall beyond its reach. For many who are covered, payouts are low. In a recent study, PwC, a consultancy, noted that since the MPF was set up in 2000, its annual returns had been 2.8% on average. That is above the inflation rate, but still poor compared with similar schemes in other rich economies.

Opponents of change express horror at Western countries' ballooning welfare bills. Some even say that families should shoulder the burden of caring for the old, as is traditional in Chinese societies. The government is in a quandary. It believes that the anger of the poor has exacerbated conflict between democrats and the establishment. To show its concern, it held a public consultation last year on how to ensure "retirement protection". But its response to the suggestions made by participants was clear: universal pensions would be too expensive. Boosting the means-tested system would be a better choice.

Damned if you don't

The ageing of Hong Kong means the government is having to fork out more on the elderly anyway. Spending rose by around half to HK\$65.8 billion between the fiscal years of 2012-13 and 2016-17. A new annuity scheme will allow pensioners to invest a lump sum and receive a guaranteed return. Eventually, argue some supporters of state pensions, the government will have to raise taxes to pay for all this anyway. Better, they say, to introduce a pension now that is paid for jointly by employers, employees and the government.

Polls suggest the public supports the idea. One conducted last year by the Open University of Hong Kong found that 72% of 1,800 people interviewed would be willing to pay at least a little extra in income tax if it would secure a state pension. But Mrs Lam is digging in her heels. To the government and to Hong Kong's tycoons, democracy is scary for two reasons. It might produce a leader who is inimical to the party in Beijing, and it would probably produce one who is more sympathetic to the public's demands than to those of businesses. Universal suffrage might pave the way for universal pensions. That is one more reason why Mrs Lam does not want to tinker with the political system. ■

Journalist wanted: The Economist is looking for a journalist with a good knowledge of China and of standard Chinese, who is keen to be posted in Beijing or elsewhere outside the UK, to help with our coverage of foreign affairs. Applicants should send a CV and an original 600-word article on any subject, written in the style of The Economist, to chinajob@economist.com by October 31st.

China and Taiwan

Mansion makeovers

NANJING AND TAIPEI

Chiang Kai-shek's residences in China have become unlikely attractions

NESTLED in a wood outside the eastern Chinese city of Nanjing is a mansion used as an official residence in the 1930s and 1940s by Generalissimo Chiang Kai-shek, the Chinese leader who fled to Taiwan to escape Mao Zedong's Communist army. After the civil war, Chiang's name became synonymous with evil in China. No longer. The building (pictured) in what was then China's capital has become a tourist hotspot. There is no hint that this was the home of Mao's mortal enemy.

Over the past two decades the Gissimo—as his American allies once irreverently called the dictator, who died in 1975—has morphed in the minds of Communist officials from arch-villain to patriot. His glamorous wife, Soong Mei-ling ("Missimo"), has become something of an idol. The Communist Party is signalling that, for all its misgivings about Chiang, at least he resolutely believed that Taiwan was an integral part of China, even if not of a Communist-ruled one. It wants Taiwan's current government, which bridles at such a notion, to take note (see Banyan).

When the Communists took over in 1949 they turned the three-storey edifice, with its roof of glazed green tiles and tilted eaves, into a state guesthouse. Its eventual restoration was helped by the chance discovery in an old closet of an architectural plan of the original building. After months of repairs the villa was reopened on October 1st 2013, China's na-

tional day, complete with replicas of the Chiangs' furniture and a living room restored to Western-style elegance in Soong's refined taste. Within a year, it had received half a million visitors. Several of Chiang's former mansions in China have also become tourist sites after similar makeovers.

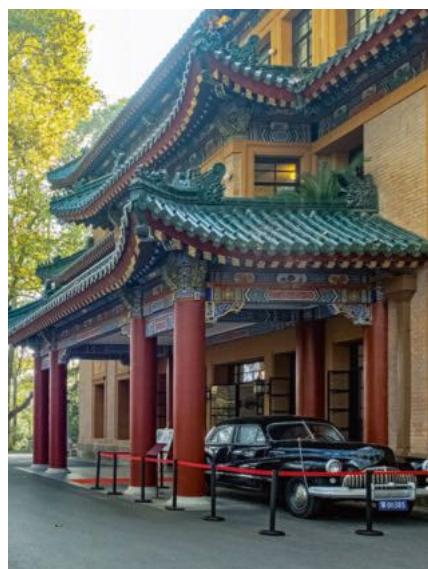
The residence in Nanjing is usually called Mei-ling's Palace—a sign that the name of Chiang's wife (who died in 2003) is fine to use for such purposes but his own is still somewhat sensitive. In the gift shop, however, a cartoon of the beaming couple holding ice lollies is cheerily captioned "The taste of old Nanjing." On sale is a biography of Chiang which notes that he was one of the four main leaders of the Allied powers during the second world war. The book acknowledges that Chiang helped China become a founding member of the UN. "Until the time of his death, he cherished the sacred ideal that China could be reunified," it says.

The Communists hope that by playing up this aspect of Chiang they can woo members of his party, the Kuomintang (KMT), who form Taiwan's main opposition. Some of them, at least, still regard Chiang as a hero. But the ruling Democratic Progressive Party (DPP) does not. It blames Chiang for the deaths of thousands of people during the crushing of an anti-KMT uprising in Taiwan in 1947 and for his dictatorial rule thereafter.

When Taiwan began opening its own Chiang villas in the 1990s, the KMT had been ruling the island continuously since the civil war. Chiang remained in favour—the country's main international airport was still named after him—but even the KMT was beginning to question his brutality. Tourists could tell from the villas' underground tunnels and menacing sentry posts how worried Chiang had been about uprisings and attempts to assassinate him.

After the DPP came to power in 2000 it began dismantling the Chiang cult. Many statues of the generalissimo were removed; about 100 of them are now dotted round a park next to one of Chiang's villas in Cihu district in northern Taiwan, where his body lies in a black marble sarcophagus. Several of the mansions have been turned into hotels and art galleries. The airport was renamed in 2006 as Taiwan Taoyuan International Airport.

De-Chiangification was suspended during the KMT's return to power between 2008 and 2016. Now Taiwan's government is at it again. It says it wants to redesign the majestic Chiang Kai-shek Memorial in the centre of Taipei, the capital. It has not said what this will entail, nor whether it will agree to the demands of many DPP activists that its large bronze statue of a seated Chiang be removed. China would probably be upset were it to be hauled away. In his tomb, the Gissimo would not know which way to turn. ■



With the Missimo's car in front



Guns

What happened in Vegas

LAS VEGAS

The shooting has reinvigorated calls for gun control and highlighted its limitations

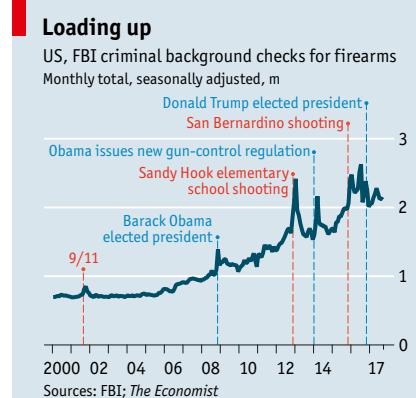
IN THE parking lot below the Mandalay Bay hotel in Las Vegas, a man with an American-flag baseball cap slumps on a bench next to his wife, whose dark sunglasses cover puffy eyes, as they wait for a taxi to the airport. Two cowboy hats lie between them, a reminder of what happened a few nights before. It was Sunday and the three-day Route 91 country-music festival was wrapping up. Jason Aldean, a famous crooner from Georgia, had just begun strumming the guitar chords for his number "When She Says Baby", when bullets started to rain down from the sky. Along with about 22,000 other people, the couple looked for cover anywhere they could find it, eventually crawling under a stand. "We're afraid to gamble; we're the luckiest people alive," the husband said as he reflected on what had happened.

Fifty-eight people were killed and 489 injured in the attack. Although police have yet to determine his motive, they have identified the perpetrator as Stephen Paddock, a reclusive 64-year-old Nevada resident with a penchant for betting. Mr Paddock smuggled a trove of guns to a luxury suite on the 32nd floor of the Mandalay Bay with unobstructed views of the uncovered fairground where the Route 91 festival was held. He smashed through two of the gold-glazed windows and shot at the crowd continuously for about ten minutes. Before a SWAT team was able to break into

his room, he had turned a gun on himself.

Since December 2012, when a gunman killed 20 children and six adults at Sandy Hook elementary school in Connecticut, there have been over 1,500 shootings where four or more people were shot dead or wounded in the same place at the same time, one definition of a mass shooting. Using a different definition of mass shootings, with a higher threshold, Jaclyn Schildkraut of the State University of New York and H. Jaymi Elsass of Texas State University counted 166 mass shootings in 14 countries between 2000 and 2014. Of these, 133 were in America.

Police recovered 23 firearms in the shooter's suite at the Mandalay Bay.



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Twelve were semi-automatic rifles that had been modified with bump stocks, small pieces of equipment that allow semi-automatic guns to fire nearly as rapidly as automatic weapons—or roughly nine rounds a second. In addition to the arsenal found at the hotel, they found 19 guns at Mr Paddock's home in Mesquite, a dusty retirement community 85 miles from the Las Vegas Strip, and seven at his residence in Reno. Nothing about the massive collection of weaponry—the types of guns found, the quantity or the modifications—was immediately deemed illegal. Short-barrelled shotguns, short-barrelled rifles and fully automatic weapons manufactured after 1986 are among the only categories that are prohibited outright. Bump stocks are legal and largely unregulated. Some Republican senators are now calling for the law covering them to be changed, setting up a trial of strength with the National Rifle Association.

I won't back down

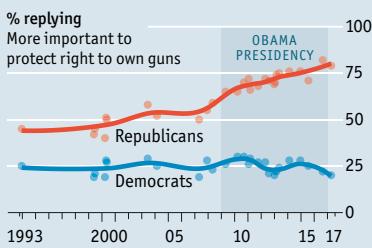
Mass shootings account for far fewer casualties than incidents of everyday gun violence in America. An average of 93 people are killed by guns each day, mostly in suicides and homicides. But because of their scale and the way they inject terror into activities as mundane as sending children to school, attending church, dancing at a club or singing along at a concert, mass shootings tend to provoke more strident calls to overhaul gun policy.

Following the Las Vegas attack, some of these appeals have come from people who previously opposed limits on gun ownership. The morning after the massacre, Caleb Keeter, a guitarist for the Josh Abbott Band, a country group that performed at the Route 91 festival, tweeted a diatribe that began: "I've been a proponent of the Sec- ➤

Glock Owning Party

United States

What do you think is more important: protect the right of Americans to own guns, or control gun ownership?



Sources: Pew Research Centre; *The Economist*

▶ond Amendment my entire life. Until the events of last night... A small group (or one man) laid waste to a city with dedicated, fearless police officers desperately trying to help, because of access to an insane amount of firepower... We need gun control right now." Other gun enthusiasts are not convinced. Nephi Oliva, who owns a hookah lounge and gunfight-simulation centre a few miles from the Mandalay Bay, admits that even an armed crowd would not have been able to fight back against Mr Paddock. But he insists guns are necessary for self-defence in other situations. Pulling up his black, skull-embazoned t-shirt to reveal a loaded handgun, he explains: "Say a guy starts smashing your head in. You can call the police and tell on him after the fact, but you still got your head smashed in. That's not going to happen if you can defend yourself to begin with."

A growing body of evidence suggests certain restrictions can in fact reduce gun violence. Federal law mandates that only retail gun stores have to conduct criminal background checks when selling firearms. Transactions between two individuals are not regulated, allowing those without rap sheets to pass guns on easily to those with less savoury backgrounds. Certain states have introduced their own laws to close that loophole. Everytown For Gun Safety, an advocacy group, found that in the 19 states (and Washington, DC) that mandate background checks for every handgun sale, 47% fewer women are shot to death by their romantic partners, 53% fewer law enforcement officers are killed while working, and there are 47% fewer suicides by firearm. Laura Cutilletta of the Law Centre to Prevent Gun Violence, another advocacy group, also stresses the benefits of waiting-period laws, which require a certain number of days to elapse between when a gun is purchased and when a buyer can take it into his possession. Research published in the *American Journal of Public Health* suggested that, adjusted for population, states with such laws had 51% fewer firearm suicides than states without them.

Such policies, while still advisable, might not do much to forestall future mass

Mainland Puerto Ricans

Nuyorican souls

NEW YORK

How many refugees from Hurricane Maria will make their way west?

MANY Americans are hazy about the legal status of the 3.5m Puerto Ricans who live on the island. A survey in late September by Morning Consult, a pollster, found that just 54% of Americans know that people born there are fellow citizens. There is greater awareness of islanders as one of America's largest immigrant groups, above all in New York, home to a million Puerto Ricans, sometimes dubbed "Nuyoricans". That image of migrant workers in gritty urban barrios—think "West Side Story"—is itself out of date. Since 1990 legions of Puerto Ricans living in northern states have migrated or retired to Florida, drawn by sunshine, cheap homes and jobs. In the past decade they have been joined by islanders fleeing economic stagnation and high crime, who have dispersed widely, creating communities as far afield as Texas and Ohio. There are about 5m Puerto Ricans on the mainland now, a fifth of them in Florida—more than remain on the island. They will cheer President Donald Trump's promise of debt relief. If it actually happens.

The eve of Mr Trump's visit to the island found volunteers taping up cartons of baby supplies, soap, toothpaste

and other necessities at El Maestro, a boxing gym and community centre in the Bronx. Founded by a reformed gang boss, Fernando "Ponce" Laspina, to keep local kids off the streets, the gym borrowed the nickname of a pro-independence leader. A large mural portrays the Puerto Rican nationalists who mounted an armed attack on the House of Representatives in 1954, and a cockerel attacking an American eagle. Iris Dipini, an engineer who has lived on the mainland for 19 years, calls Hurricane Maria a politically revealing disaster. "If we were a state, I believe the US would be more worried because we'd have representatives in Congress and could vote. If we were a sovereign republic we'd own our own ports and airspace. So it's a political disaster as well as a natural disaster," Ms Dipini says, drawing on a thin cigar as an uptown train passing overhead shakes the gym.

Though New York's Puerto Rican population has been shrinking for years, the city is still braced for an influx after the hurricane. Rubén Díaz junior, the elected Bronx borough-president, notes predictions that hundreds of thousands of islanders might leave, and hopes they are wrong. Even a tenth of that number would put a "real strain" on schools and housing, he says. Mr Díaz, a Democrat, expresses fears of an indebted, depopulated island falling prey to "vultures" from Wall Street and the world of high finance, bent on privatising its assets.

Among Puerto Rican politicians in states like New York, such hard-left arguments are both common currency and largely without consequence for national politics. Puerto Ricans on the mainland have traditionally voted in low numbers, and those who were politically active lacked clout as long as they lived in safely Democratic states. Any big Puerto Rican migration to Florida, the country's largest swing state, could matter much more, however—especially if newcomers arrive with a grudge against Mr Trump.



Living like a refugee

shootings. Mr Paddock and Omar Mateen, who killed 49 people at a gay nightclub in Orlando, passed background checks allowing them to buy their weapons. Mr Mateen had to wait three days for one of the two guns he purchased. Mr Paddock carefully selected a room with a perfect view of the country festival; ostensibly to alert him to police approaching, he had set up cameras in his suite and in the hall outside. Waiting a few days to receive a weapon

would not have deterred someone with such a coldly calculated plan.

Mr Paddock's gun collection illustrates another intractable difficulty: the quantity of guns already in circulation. According to the Congressional Research Service, in 2009 there were approximately 310m guns available to civilians in America—twice as many guns per person as there were in 1968, and nearly enough for every man, woman and child to have their own. ■



After Maria

A real catastrophe

SAN JUAN

A ride with a truck driver around Puerto Rico explains why disaster relief is so hard

THE day after Hurricane Maria clobbered Puerto Rico, Governor Ricardo Rosselló put out a call for truck drivers to deliver emergency supplies. Aníbal Chárriez was one of several hundred who drove through knee-high water and dodged fallen power lines only to be told he was not needed. Ten days later, after thousands of containers had accumulated in the port, he tried again. This time, he filled out a form and was told to wait for a phone call. That presented a problem. In addition to stripping the island of vegetation and flooding hundreds of thousands of homes, the hurricane wiped out Puerto Rico's electrical grid and many of its mobile-phone towers, leaving 3.5m already isolated American citizens even more in the dark.

"The power lines fell like dominoes," said Robert Kadlec of the US Department of Health and Human Services. Like dominoes, the lack of electricity and communication set off a chain reaction that hindered the entire disaster-response effort, complicating everything from delivering food to burying bodies. The federal government's sluggishness made things worse. Eight days after the storm, after a weekend at his golf club, President Donald Trump appointed a three-star general to oversee the military response. There are now 9,000 people from the Department of Defence on the island, along with 57 helicopters and a hospital boat.

Their presence in recent days has helped prevent epidemics and widespread

looting. But aid delivery and the restoration of the island's infrastructure have been slow. Less than half of the water system has been restored, along with 20% of phone towers and 5% of the power grid. Only ten out of 69 hospitals are fully operational. Various government and charity organisations have delivered hundreds of thousands of meals and water bottles, but not to all areas of the island. An overall lack of preparedness on the part of the Puerto Rican government, which is deep in debt, has exacerbated logistical issues. "It's not that there wasn't a Plan B," Mr Chárriez says. "There's wasn't even a Plan A."

Breakdown

To get a sense of the scope of Maria's damage requires leaving San Juan, which has benefited from proximity to the port and an influx of aid workers and journalists with cash in their pockets. Head west on the Kennedy Highway, where traffic slows, the landscape thins and queues for fuel, cash and supermarkets stretch for blocks. Dozens of cars—some with windscreens still smashed by flying debris—are parked on the shoulder near phone towers, their drivers trying to catch a signal before heading home to more remote areas.

Toa Alta, where Mr Chárriez, the truck driver, lives, is tucked into steep hills beside the La Plata river around 20 miles south-west of San Juan. Truckers favour it because it is central and has cheap housing. Mr Chárriez hauls packaged food for

supermarket chains. His brother Jesús drives a truck for a corn mill. They live next door to one another. Hurricane Maria ripped off their sheet-metal roofs and shattered their windows. Forty-six people staying in an elementary school down the hill are worse affected. (Some 8,000 Puerto Ricans are currently sleeping in shelters.) Landslides washed away their homes and they have spent much of the past two weeks lugging water from the river to wash the few pieces of clothing they saved.

The mayor of Toa Alta, Clemente Agosto, says government supply shipments have been few and far between: four pallets of bottled water and one of meals consisting of sausage, a granola bar and Skittles. "We need food and water," he tells a chaplain, who is driving town-to-town writing requests on a sheet of paper to bring back to San Juan. ("This is the easy part," the chaplain says. "Then I have to take on the bureaucracy.") A small pile of donations from NGOs sits at the local post office waiting to be distributed by municipal employees. Toa Alta's services to its 75,000 inhabitants were limited even before the storm. In February, the mayor cut his staff in half and reduced their working week to 20 hours to address his dwindling budget and mounting debt.

After making funeral arrangements for his uncle, who died of a heart attack while listening to radio news a week after the storm, Mr Chárriez drives out on one of his routes, past the coastal town of Arecibo—known for an astronomical observatory once used to search for extra-terrestrial life but now empty, mud-caked and resembling another planet itself—and on into the interior of the island, where tree trunks and branches are strewn along the side of the road. In Utuado, an agricultural town in the middle of Puerto Rico, hundreds of soldiers from local army and National Guard bases are clearing debris and delivering food, water and medical supplies to houses cut off by floods and broken bridges. (Three sisters from Utuado were killed by a landslide during the storm.)

As the sun begins to set above Utuado, a US Border Patrol helicopter whirrs to a stop on a soccer field and 13 National Guardsmen form a chain to unload water and a pallet of boxed meals. "We spent three days looking for these supplies at the San Juan airport, but we kept getting turned around and told they didn't have them," says an agent stationed at Aguadilla, in the north-west of the island. Mr Chárriez frowns at the pallet. "I can fit 12 of those in my truck," he tells the agent.

Bureaucratic wrinkles have made providing relief more difficult. Mr Chárriez has to have five separate licences to work as a truck driver. The island's economic woes—unemployment is more than twice the American average and 45% live below the federal poverty line—have led to poor

► planning and short-term thinking. "The hurricane isn't named Maria, it's named Prepa," says Rodrigo Masses of the Puerto Rico Manufacturers Association, referring to the Puerto Rico Electric Power Authority, which oversees the country's dilapidated, and now defunct, electrical grid and owes roughly \$9bn of Puerto Rico's \$73bn debt. He hopes the hurricane will spur the fiscal control board, which governs the territory's finances, to push forward a decade-old proposal to privatise the power industry.

In the meantime, the downed grid is the root of much of the suffering of the past two weeks. "We never prepared to operate 100% of the country on electric generators," says Manuel Reyes of MIDA, the island's food-industry association. Most large generators operate on diesel. Its distribution is an almost wild industry of 100-150 independent diesel-truck owners who suddenly found themselves in high demand. Though the government ordered drivers to serve hospitals and supermarkets first, a black market developed. Supermarkets refrained from stocking their shelves without a guarantee that they would have power to keep the food cold and the lights on. Hospitals struggled in the first few days after the storm to treat patients and keep bodies—500 people die on average each week in Puerto Rico—cold in the morgue. The problem has eased somewhat with the arrival of more diesel trucks on boats sent by the Federal Emergency Management Agency. Carlos Gómez, the emergency-room director of the Caribbean Medical Centre, says he expects the death toll from the hurricane to be much higher than the 34 reported. His hospital is seeing twice as many patients as usual, mostly with fractures, lacerations and head trauma from cleaning up after the storm. He is encouraged that he has not come across widespread water- or food-borne illnesses.

Back in San Juan, Miguel Pérez, a carpenter from Barrio Obrero ("Workers' Neighbourhood") is standing with around 200 people in a queue outside an ice plant, hoping to buy a dollar's worth to keep his food cold. They have been there for hours. Fetid water has pooled in the intersections and mounds of garbage line the streets. A tree tangled up in power lines blocks a nearby road. Residents say firemen and police refused to move it because of a beehive in one of the branches. This was the Department of Natural Resources's responsibility, reply the police. Then, at 11:45am, a plane roars overhead. Children waiting in the queue with their parents point up at the sky, where Air Force One is descending to the nearby airfield. Mr Pérez remembers when Mr Trump came to Puerto Rico to judge beauty contests. "He should use those businessman skills of his to help the economy of this island," he says, inching ahead in the ice-line. ■

More on diplomacy

The tormenting of Tillerson

The president rejects talks with North Korea, making a bad situation worse

IT IS not unheard of for secretaries of state to chafe over their relations with their boss. Colin Powell never had the ear of George W. Bush, and often felt bruised and frustrated as a consequence. John Kerry, to his dismay, was often left out of the loop by Barack Obama's micromanaging White House. But there is nothing normal about the way Donald Trump has publicly scorned his secretary of state, Rex Tillerson, for holding out the possibility of talks with North Korea over its missile and nuclear programmes. Writing on Twitter, Mr Trump declared that he had told Mr Tillerson that he was "wasting his time trying to negotiate with Little Rocket Man [North Korea's leader, Kim Jong Un]...Save your energy Rex, we'll do what has to be done."

What prompted this outburst was a conversation between Mr Tillerson and reporters who were travelling with him to Beijing for meetings with the Chinese leadership. Mr Tillerson had said he was "probing" the possibility of starting up talks with North Korea about its programmes. "We have a couple, three channels open to Pyongyang," he added. "We can talk to them, we do talk to them."

There was nothing surprising about this. While America lacks formal diplomatic relations with North Korea, mes-

sages are conveyed through the Swedish embassy in Pyongyang, which provides a consular service for US citizens. Another channel is the North Korean mission to the UN in New York. There are also so-called Track II meetings (involving academic experts and former officials), which can be used to gauge whether there is any basis for more formal diplomatic approaches.

Nor was Mr Tillerson saying anything new when suggesting that he would be interested in starting a dialogue with Pyongyang: he made similar remarks a few weeks ago. Ignoring the president's tweets, James Mattis, the defence secretary, reiterated his support for Mr Tillerson's "efforts to find a diplomatic solution" in a statement to the Senate Armed Services Committee on October 3rd.

Given that North Korea itself shows no inclination to begin denuclearisation talks with America and will probably consider a testing freeze only once it has a demonstrable capability to threaten mainland America with thermonuclear attack, it might seem reasonable to concede that Mr Trump had a point. Some, perhaps including Mr Trump, may even believe that the president was skilfully pursuing Richard Nixon's "madman theory": the idea that if you convince your adversaries that you are sufficiently unhinged to do almost anything, including starting a nuclear war, they are more likely to bend to your will.

Unfortunately, history suggests that Mr Nixon's application of the theory in relation to Vietnam exposed the world to the risk of a nuclear catastrophe without achieving much in return. As far as North Korea is concerned, Mr Trump is sending a message to Mr Kim, to the Chinese, whose help Mr Tillerson is trying to enlist, and to America's regional allies that investing any hope in attempting to de-escalate the crisis is pointless. If Mr Kim believes that he will be attacked come what may, effective deterrence is undermined, while nothing Mr Tillerson says or does need be taken seriously by anybody, friend or foe.

Crawling back to you

Mr Tillerson deserves only slight sympathy. He has shown little interest in representing American ideals, such as the promotion of human rights, while carrying out a botched reorganisation of the State Department that has left it hollowed out and dysfunctional. Many important posts remain unfilled—including those of assistant secretary of state for East Asia and ambassador to Seoul. He would not be much missed if he decided to quit. But on October 4th, Mr Tillerson declared that he would soldier on in his thankless job. That may not be a bad thing. Such is the damage being done to the effectiveness of American diplomacy at Mr Trump's hands, it is doubtful whether anyone of stature would be willing to take his place. ■



You don't know how it feels

Electoral mapmaking

When politicians choose their voters

WASHINGTON, DC

The Supreme Court ponders whether partisan gerrymandering has gone too far

THE 2010 elections gave Republicans unified control over Wisconsin for the first time in 12 years. Voters chose them resoundingly; when they took office in early 2011, they set out to return the favour. Armed with census data, Republican lawmakers drew districts to maximise their political advantage. In the 2012 elections, Republicans won 48.6% of the vote but took 60 of the state assembly's 99 seats. In 2014 and 2016, their 52% of the vote got them 63 and 64 seats.

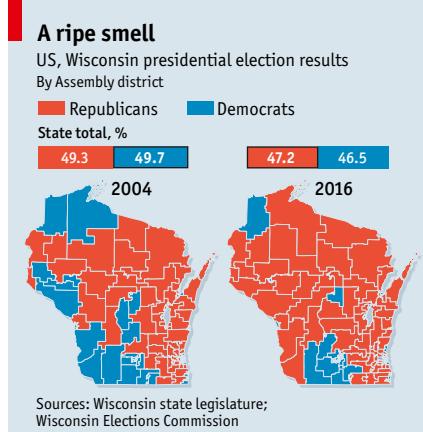
Some Wisconsinites decided this crossed the line from routine partisan activity to something more sinister. They sued the state, arguing that its partisan gerrymander was so extreme that it violated their First Amendment rights to association and free speech and the "one person, one vote" principle enshrined in the Fourteenth Amendment's equal-protection clause. A federal district court upheld their case in a divided ruling; the state appealed to the United States Supreme Court, which heard arguments on October 3rd.

Gerrymandering is hardly new: the name dates back to an unwieldy district created in 1812 by Elbridge Gerry, then governor of Massachusetts. In most states, the legislature controls redistricting. Six states use independent commissions, and limit or bar elected officials, legislative staff or lobbyists from serving on them. Unsurprisingly, these states seem to draw more competitive districts. Elsewhere, new software and reams of voter data now allow politicians to draw surgically precise maps, while increasing polarisation has upped the stakes. As the plaintiff's lawyer quipped, "Gerrymanders now are not your father's gerrymander."

Contemporary gerrymanders can compound Democrats' geography-driven disadvantages. Democrats tend to live clustered in cities, while Republicans sprawl across more heterogeneous districts. This probably contributes more to polarisation than gerrymandering does. Jowei Chen, a political scientist at the University of Michigan, has found that in many states, even without intentional gerrymandering, Democrats would still win fewer than 50% of seats with 50% of the vote. But he also found that Wisconsin's map gerrymandered far beyond expectations.

Nor is Wisconsin the only state where Republicans drew grossly contorted maps. In Pennsylvania five years ago, Republicans won 13 of 18 House seats with just 49%

of the statewide vote. North Carolina's map gives Republicans ten seats and Democrats three, despite close statewide votes. When asked why, a Republican lawmaker who headed the redistricting process said, "Because I do not believe it's possible to draw a map with 11 Republicans and two Democrats." And in Maryland, Republicans claim the state's Democratic legislature gerrymandered their rights away in the rural sixth congressional district. Voters in all three states have challenged the maps in court.



Wisconsin's case is unusual because it could result in a ruling that applies nationwide. At the Supreme Court, both sides aimed their arguments—as so often happens these days—at Anthony Kennedy, the perpetual swing vote, poised between a quartet of liberals, who are probably more eager to invalidate Wisconsin's map than the court's four conservative justices are. In *Vieth v Jubelirer*, a gerrymandering case from 2004, four justices rejected the notion that courts were equipped to monitor partisan gerrymandering at all. Four others floated a quartet of standards to do just that. Mr Kennedy, as usual, split the difference. None of the standards offered avoided "substantial intrusion into the nation's political life", he wrote in a concurrence. But curbs on gerrymandering may be imposed "if some limited and precise rationale" one day emerges.

The plaintiffs claim that day has arrived. "Social-science tools now allow courts to diagnose partisan gerrymanders with accuracy and precision," according to a brief from two political scientists who have helped draw district maps. At issue is

"partisan symmetry"—the intuitive notion that political parties should derive roughly the same legislative representation from equivalent popular support.

One way to measure symmetry, or its absence, is through the "efficiency gap", a measure developed by Eric McGhee, a political scientist, and Nicholas Stephanopoulos, a law professor. This deems every vote cast for a losing candidate, as well as votes cast for a winner in excess of what he needs to win, to be wasted. A partisan gerrymander tries to maximise the opponent's wasted votes by "packing" and "cracking"—creating a few safe districts that they win overwhelmingly, while spreading the rest of their voters as thinly as possible. Adding up all a party's wasted votes, and dividing that sum by the total number of votes cast, yields an efficiency gap. An efficiency gap larger than 7% may show that one party holds an unconstitutional "systemic advantage" over the other.

Between the 1970s and 1990s, Wisconsin's state-assembly maps averaged an efficiency gap of 1.5% in Republicans' favour. In the three elections since 2010, that figure rose to 12.3%—meaning that winning half the popular vote would have given Republicans more than 60% of the seats in Wisconsin's state assembly.

The conservative judges seemed unimpressed. John Roberts, the chief justice, hoarily dismissed this maths as "sociological gobbledegook". Samuel Alito also sneered, suggesting that a single paper by a "young researcher" hardly provides an adequate basis for the justices to meddle in elections across the country. And Neil Gorsuch, the newest justice, used a hokey riff on his steak seasoning to deride the plaintiffs' approach as "a pinch of this, a pinch of that", with too little guidance for how to apply the test in practice. Mr Kennedy did not join his colleagues' attack on the social sciences. Earlier in the hearing he asked Wisconsin's lawyers a series of critical questions, which might indicate that he favours the plaintiffs.

Runnin' down a dream

The court now faces an unavoidable decision. Letting the map stand could, as the plaintiff's lawyer warned, give states "a free pass" to create maps that, in effect, "nullify democracy". But intervening could, as Mr Roberts fears, push the court directly into the political fray, risking what he described as "serious harm to the status and integrity" of his court.

Of course, the court could always rule on narrower grounds, as it often prefers to do. It could find that the appellants lack standing to sue, or rule that Wisconsin's map was uniquely awful, but abstain from deciding a universal standard. Usually it prefers leaving political questions to voters. If only elected officials showed such concern for the popular will. ■

Lexington | The power of magical thinking

Superstition helps explain why many Republicans think loose gun laws keep them safe



THE Onion put it best: "No Way To Prevent This," Says Only Nation Where This Regularly Happens." An accurate summary of gun-control opponents' response to America's periodic gun massacres, the headline was also familiar. The satirical website has run it, with few alterations to an accompanying spoof article, five times: after six people were murdered in California in 2014; after nine were murdered in South Carolina, nine in Oregon and 14 in California in 2015; and after the killing of 58 and maiming of 489 people by a lone gunman in Las Vegas on October 1st.

Satire thrives where the usual checks on human folly fail. In this case it points to the fact that America, despite having a gun-murder rate 25 times higher than that of other developed countries, has no serious debate on how to reduce the killing, because Republican lawmakers refuse to countenance the only thing that easily would. By making it even a bit harder for killers to get guns—as action taken in Australia, Britain and Canada shows—America would have fewer gun deaths. Yet only a quarter of Republican voters accept that demonstrable truth. Most say America would have less crime if only more Americans were armed.

The usual explanation for this delusion is brilliantly effective lobbying by gun clubs. Since the 1970s the National Rifle Association, supported by gun makers, has recast what was once a public-safety issue into an argument about liberty: if you believe gun ownership is a thin red line against government tyranny, as the NRA claims, it scarcely matters whether it also leads to more killing. At the same time, the lobbyists have bullied Republican lawmakers so thoroughly that none dares speak against them. Asked for his position on gun control this week, Paul Ryan said he'd rather talk about cutting taxes. The Onion could not improve on that.

Yet though Republican voters have moved markedly against gun control over the course of the NRA's lobbying, it alone cannot explain that shift. Many Republican voters are more selective in their support for guns than the ideologues; they tend to be momentarily keener on gun controls after a massacre, for example. It also seems notable that the same people who believe guns make America safer are also likely to hold a number of other irrational views. Around half of Republicans do not believe in evolution or anthropogenic climate change. They have also just elected as president a man who has suggested vaccines cause autism. Do-

nald Trump's insurgency in itself suggests that any explanation of Republican attitudes rooted in conservative ideology should be treated with caution.

A forthcoming book by the political scientists Eric Oliver and Thomas Wood, "Enchanted America", offers an alternative explanation. It argues that people who believe guns make America safer, among other fallacies, display a strain of superstition that has always existed in American politics, on the right and the left, but which in recent decades has concentrated on the right, and now threatens to subsume it. Its proponents, who the authors call "intuitionists", understand the world on the basis of feelings and gut instinct, not doctrine or empirical facts, even when confronted with them. "Much of what looks like an ideological gap in this country", the authors write, "is due more to the power of these innate intuitions than abstract principles or values."

Understand that, they argue, and it becomes easier to comprehend that the judgments such voters reach in times of economic and cultural change, like the present, will be governed by fear. This is both an instinctive response to uncertainty and a self-validating one, as Mr Oliver illustrates by quoting his five-year-old son: "If there's no monster in the closet, then why am I scared?" The refusal of millions of people to accept some limits on gun ownership, even though this would make their families safer, reflects the same white-knuckled logic.

How has such a rich, well-governed place come to this? Richard Hofstadter's classic essay, "The Paranoid Style in American Politics", offers another clue. Written in 1964, it locates the anger and paranoia that had characterised the Goldwater insurgency—in effect, an extreme case of intuitionism—in a long history of populist resentment and apocalyptic rhetoric. For Hofstadter, the paranoid style was a persistent but marginal "psychic phenomenon", with a potential to take off in certain circumstances. The most propitious, he mused, would be "a confrontation of opposed interests which are (or are felt to be) totally irreconcilable". It is possible to read America's subsequent political history, dominated by the civil-rights struggle, the culture wars and the intractable partisanship they spawned, as proof of that conjecture.

Freefalling

There has since been plenty of irrational behaviour on the left, too, including hostility to genetically modified food and the current tendency of left-wing bloggers to see a Russian under every rock. Yet the fact that the losers in America's cultural struggles—including fundamentalist Christians, rural whites and other traditional folk—were on the right has made it the domain of unreason. The election of Mr Trump sealed that. As an irreligious sometime pro-choice proponent of gun control, he was an implausible Republican champion. Still, his supporters backed him because, in their guts, where intuitive choices are made, they felt he was on their side, so none of that mattered.

On guns and much else, this suggests, Republican leaders have been directing the views of their supporters much less than they thought. They, and their NRA auxiliaries, could not have turned Republican voters on to gun ownership so dramatically had the issue not spoken to their pre-existing fears and fantasies. And much good has such pandering done the leaders. It has given them Mr Trump for a boss and a civil war, between populists and true conservatives, upon which their party could founder. It has also left them, in the wake of America's worst civilian massacre in a century, with nothing to say. ■



Crime in Brazil

Rio's post-Olympic blues

RIO DE JANEIRO

Feuding gangs and empty coffers are pushing up the murder rate

IN THE warren of alleyways that make up Rocinha, Brazil's largest favela, the air is heavy with foreboding. A feud between factions of the Amigos dos Amigos (Friends of Friends, or ADA), a drug gang that has controlled the slum since 2004, erupts in daily violence. Police in patrol cars creep through the lanes, their rifles poking out of the windows. Residents share news of shoot-outs on WhatsApp. "We are scared to walk around," says Raquel, who sells colourful prints to a few brave tourists. At a command post a squad of policemen prepares for yet another operation. "It's a never-ending war," sighs José (not his real name), an officer drafted in from a nearby neighbourhood.

The city of Rio de Janeiro, which hosted the Olympic games in 2016, is having a grim year. Shoot-outs in favelas, or shanty-towns, have killed dozens of people. A third of adults aged 18 to 24 are out of work. Many Olympic venues are abandoned; a fire in July damaged the velodrome. "Rio is in a real hole," says Robert Muggah of the Igarapé Institute, a Rio-based think-tank.

Before the games began, Rio's then-mayor, Eduardo Paes, boasted that the city would be the "safest place in the world". Thanks to the deployment of 85,000 soldiers and police officers during the games, the claim did not seem ridiculous. Construction work temporarily protected cariocas, as Rio's residents are called, from Bra-

zil's deep economic recession. Despite embarrassments like green diving-pool water the games were a success.

Not so the aftermath. The state government recorded 2,976 homicides in the first half of 2017, a rise of 14% on the previous year. Fifteen gun battles a day take place in Rio's metropolitan region. More than 100 policemen have been killed so far this year in the state. Some experts fear that the murder rate could go back to levels of a decade ago (see chart). In July the federal government sent 8,500 troops back to Rio.

Rocinha, whose 100,000 people are crammed into one square km (250 acres), was thought to be relatively safe until recently. McDonald's and Caixa Econômica,

a bank, opened branches in the 1990s. The feud within the ADA, which began on September 17th, makes life a misery. The police make it a three-way battle. "It can be difficult to work out who is firing at whom," says Eduardo Carvalho, a local journalist. The Dr Albert Sabin health centre shut down briefly for the first time in 35 years.

On September 22nd, after violence had spilled over into the prosperous areas of Gávea and Leblon, Brazil's defence minister sent 950 troops into Rocinha. They restored calm, but withdrew seven days later. The mayhem has since risen. "Rogério 157", the leader of an ADA faction, has defected to Comando Vermelho, a rival gang, splitting the favela into two territories. That could worsen the violence. "We will be here for a while," says José, tapping the barrel of his carbine nervously.

Rocinha is suffering from a failure of policing, compounded by financial mismanagement and economic misfortune. The government of the state of Rio is nearly bankrupt. In September Brazil's president, Michel Temer, approved the second federal bail-out in two years.

In 2008 the state started sending "pacifying police units" (UPPs) to 38 favelas. They were made up of 9,500 officers, many trained in non-violent policing and human rights. In Rocinha the UPPs reduced the circulation of heavy weaponry, says Misha Glenny, author of a book about the favela. The state gave bonuses to officers in areas where crime dropped most. Although the UPPs did not dismantle the gangs, violence fell. By 2015 the homicide rate had dropped to its lowest level in 25 years.

Optimism did not last. Despite their training, some policemen committed abuses. In 2013 Amarildo de Souza, a bricklayer from Rocinha who had gone out to buy seasoning for his dinner, went missing ➤

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► after questioning by UPP officers. This provoked violent protests; 25 officers were accused of torturing him and causing his disappearance. "The credibility that the UPPS had built up suddenly disappeared," remembers Mr Carvalho.

The second phase of the community-policing programme—investment in health, education and social projects—was a failure. That is because the state and municipal governments paid too little attention and were weakened by economic crisis. From 2002 to 2016 Rio had the lowest growth rate among Brazil's 27 states, points out Mauro Osório of UFRJ, a university.

The state government depends heavily on income from the oil industry, which fell by two-thirds from 2013 to 2016. Corruption makes things worse. On September 20th this year Sérgio Cabral, the former governor of Rio state, was sentenced to 45 years in prison for embezzlement.

In return for financial aid, the federal government has demanded deep cuts to spending. The state slashed its security budget by 30% last year and stopped paying the salaries of many public workers, including police officers. Ballerinas at the municipal theatre became Uber drivers. Around 2,000 policemen lost their jobs in

the past three years and 40% of patrol cars are out of service. The federal government gave extra money until the Olympics for UPPS. Now the units are in danger of disappearing, says Mr Muggah.

Favelados say that the UPPS, despite their failures, offer the best hope of reducing violence. A poll conducted in August in 37 favelas found that 44% of residents want UPPS to be improved, for example with better training, but not dissolved. A further 16% want them to continue as they are. The city and state governments need to increase non-security spending, too.

The region's leaders do not inspire con-

Bello | Deciphering Trump

The United States has many Latin American policies, and none

IT IS a mystery that has baffled American and Cuban officials for months. Who and what was behind what the State Department calls the "attacks of an unknown nature" that inflicted hearing loss and headaches on 18 staff and four spouses from the United States' embassy in Havana? With no sign of an answer, on September 29th the State Department announced that it was withdrawing all but emergency personnel from Havana. Noting that some of the "attacks" took place in hotels, it also advised Americans not to visit Cuba. This week it expelled 15 Cuban diplomats from Washington.

Despite this, the administration of Donald Trump does not contradict Cuba's claim that it had nothing to do with the incidents. Cuba has allowed the FBI to investigate. Even so, the strange episode is helping to reverse the opening to Cuba that was a central element in the Latin American policy of Barack Obama, Mr Trump's predecessor.

This adds to the difficulty of deciphering Mr Trump's approach to the region. Instead of a Latin American policy, the emerging picture is of an administration that, more than most, takes different approaches to different countries at the behest of different players in Washington. Under Mr Obama, especially in his second term, relations between the United States and Latin America were warmer than they had been since the mid-1990s. Now the outlook is more uncertain.

Take Cuba first. In June Mr Trump went to Miami to promote what was, in fact, only a modest rollback of Mr Obama's policy. He said that Americans could travel to the island only in groups and barred transactions with army-controlled companies. The American reaction to the mysterious attacks could have bigger consequences. The administration



has a duty to protect its diplomats. But the generalised travel warning looks like an overreaction. If insurers withdraw travel cover, the blow to Cuba's tourism industry and its nascent private sector could be great. Latin American leaders are watching developments warily. Any move to sunder diplomatic relations again would recreate a long-standing irritant for the region.

Marco Rubio, a Republican senator from Florida who was Mr Trump's bitter rival for the presidency, was at his side in Miami. Mr Rubio has been influential, too, on policy towards Venezuela. The administration has imposed sanctions on a score of Venezuelan officials, barred its dictatorial government from raising funds in the United States and banned some government employees from travelling there. It has consulted Latin American leaders on these measures. But they were horrified when Mr Trump said in August that he was considering a "military option".

Then there is Mexico. Mr Trump continues to be aggressively unfriendly towards the United States' southern neighbour. Yes, he sent rescue teams after last month's earthquake in Mexico City. But his first re-

action to Mexico's offer of help after Hurricane Harvey was gracelessly to ignore it. His insistence, to please his political base, on building a wall between the two countries and his talk of tearing up the North American Free-Trade Agreement are insults to a proud country. Optimists say that the wall will never happen, and that NAFTA could get a useful updating. Neither of those outcomes is certain.

As for other parts of Latin America, relations will feature "somewhat bumpy continuity", says Juan Gabriel Valdés, Chile's ambassador in Washington. White House officials still talk of an important relationship based on shared values of democracy and freedom. The administration is continuing an Obama-era programme aimed at preventing violence in, and emigration from, Central America, which John Kelly, Mr Trump's chief of staff, helped to draw up in a previous job. Aid to help Colombia fight drugs and implement a peace deal with former guerrillas will continue, but at a reduced level. Mr Trump has revived disagreements over drugs, dropping the mantra of his three immediate predecessors that producing and consuming countries should share responsibility for the problem.

Missing, say several Latin American leaders, is a sense of ambition in Washington. Marta Lucia Ramírez, a conservative presidential candidate in Colombia, sees a "return to a past agenda", instead of plans to advance in "prosperity, education, and science and technology". For Mexico it is worse. Elsewhere, the story of the Trump administration may be one of opportunity forgone. There is also a more insidious risk. It is that Mr Trump re-legitimises the populist nationalism that is in remission in much of Latin America. Talk of shared values could be drowned out by a chorus of "My country first".

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One-Stop

The Korean Free Economic Zones (KFEZs) are specially designated areas created to improve the business and living environment for foreign firms investing in Korea. Since the 2003 inauguration of a KFEZ in Incheon, the number of zones in operation has grown to eight: Incheon, Busan-Jiniae, Gwangyang Bay Area, Daegu-Gyeongbuk, Saemangeum-Gunsan, Yellow Sea, East Coast and Chungbuk.

The amount of foreign direct investment in the KFEZs during 2016 increased by 53% to \$2.3 billion, compared to \$1.48 billion in the previous year. This accounted for 10% of the total foreign direct investment in Korea. By the end of 2016, 126,000 people were employed in these zones.

Development of two-thirds of the 320km² initially allocated to the KFEZs is now complete or in progress. Investment conditions are continuing to improve as regulations are relaxed and more effective policies introduced; foreign investors operating in the zones receive a range of benefits, including tax exemptions.

As a trade hub in north-east Asia, Korea is internationally recognised for the

excellence of its infrastructure, along with its strategic geographical position, highly skilled workforce and integration into global logistics systems. Having a base in one of the KFEZs increases the advantages of doing business in Korea by opening access to a deregulated environment and financial support. The perks include reductions in or exemptions from corporate tax, income tax, acquisition tax and property tax. Foreign investors can directly exchange currency of up to \$20,000 to clear business transactions, and there are also cash grants and more liberal labour regulations.

Each KFEZ designates individual project managers who support investors through all necessary procedures, providing consulting on new investment opportunities and prospective investment partners, as well as administrative support in the areas of legal affairs, accounting and tax management. This service eases and speeds the investment process, making it even clearer that investing in one of the Korean Free Economic Zones is an exceptionally smart decision.

For more information, visit www.fez.go.kr

"Although we are a multinational company, we manufacture here in Korea to offer our products at a reasonable price for our customers. Thanks to this, we are seeing 25% sales growth every year."

Martin Rotermund,
managing director, Rittal Korea

"We found that the labour is second to none, as far as the level of skill and the incredible dedication and hard work. From our management standpoint, it's been actually very easy to have a co-operative relationship because of the strength of their skills matching what our requirements are."

Brett Kimber, president, Linde Korea

"Korea has signed free-trade agreements (FTAs) with South-East Asian countries, EU nations and the United States. We've decided to invest in Korea to sell products globally through its FTA network. Above all, Chinese and Korean people look similar and our lifestyles are very similar, so we easily warmed to Korea while making an investment."

Lu Xianyu,
chairman of the board of directors, HAM

"Our location is just 25 minutes from Incheon International Airport, in the middle of a burgeoning air, sea, land and education hub in north-east Asia."

James Larson, vice-president,
State University of New York Korea



fidence. Marcelo Crivella, the city's mayor since last year, is a Pentecostal bishop and enthusiastic crooner. His favourite ditty is "My Rio", which asks God to "take over" the city. He consults the Bible more readily than security experts, say critics. Luiz Fernando Pezão, the state's governor, has more practical plans, including a scheme to divert oil royalties from an environmental programme to one that combats violence. But he is suffering from cancer.

The problems of the region's politicians encourage the federal government to play a bigger role. In addition to extra aid, it plans to send a multi-agency task force, modelled on initiatives in Colombia, Northern Ireland and South Africa, to prosecute police and politicians involved in organised crime. Everyone in Rio hopes for a recovery in the oil price, which would provide more money for public services. But oil prices are uncertain. Peace in neighbourhoods like Rocinha should not be. ■

Canada

Meet Jagmeet

OTTAWA

The third-largest party is the first to be led by a member of a "visible" minority

JAGMEET SINGH could have done many things when a heckler accused him at a rally last month of plotting to subject Canada to sharia law. The turbaned politician could have pointed out that he is a Sikh, not a Muslim. He could have skewered her with lawyerly wit (he is a criminal lawyer) or asked security guards to remove her. Instead he told the heckler that everyone loved her and led a chant of "Love and courage". She eventually walked out.

A video of the encounter went viral and helped Mr Singh, a member of the Ontario legislature, win the leadership of Canada's left-leaning New Democratic Party (NDP) on October 1st. He is the first member of a "visible minority" to lead a party at federal level. Canada's Liberal prime minister, Justin Trudeau, congratulated his new rival on his "barrier-breaking win".

Mr Singh faces a difficult task. The NDP lost the election in 2015 in humiliating fashion after throwing away an early lead in the opinion polls. Although it was the main opposition party before that vote, it has fallen to third in the House of Commons, with just 44 of the 338 seats. The Conservatives, now the official opposition, have more than twice as many. Mr Singh must pull his party back from the brink of irrelevance.

His background could help. A "hipster Sikh", with a penchant for striking turbans, Mr Singh embodies the diversity that Mr

Trudeau constantly celebrates. Like the prime minister, he is adept at social media and single-combat sports. (He practises Brazilian ju-jitsu; Mr Trudeau is a boxer.)

Sikhs have made more headway in politics than most minority groups. Mr Trudeau's cabinet includes four. Erin Tolley, a scholar at the University of Toronto, offers several explanations for that. Sikhism emphasises the value of public service. Sikhs have a tradition, born in India, of mobilising to defend their rights. Most Sikhs come from well-educated immigrant families. There are currently 17 Sikh MPs.

Yet Mr Singh's biography could also hurt him. A poll published in April showed that only 38% of Canadians have a favourable impression of Sikhism (33% view Islam favourably). Small but troubling anti-immigrant rallies have taken place over the past year, the latest in Ottawa on September 30th. Mr Singh's religion may prove a disadvantage for the NDP in Quebec, which elected 16 of the party's MPs. The French-speaking province is hostile to overt religious symbols like the turban and the kirpan, a dagger worn by Sikh men.

Mr Singh hopes to win over Canadians with a political programme that includes reducing inequality, improving pay and working conditions for people in insecure jobs and reforming the first-past-the-post electoral system (a promise that Mr Trudeau made but then forgot about). He will begin his quest for power by giving up his provincial seat and trying to win one in the House of Commons. The odds that he will one day become prime minister are slim. The NDP has governed provinces (it holds power in Alberta and British Columbia) but never the country. To wrest Mr Trudeau's job from him at the next election in 2019, Mr Singh will have to break more than one barrier. ■



Very visible Singh

Tropical ice

Humboldt's death

Turmoil is keeping scientists away from Venezuela's last glacier

VENEZUELA is a tropical country, with rainforest in the south and east, and baking savannah stretching towards its northern Caribbean coast. The Sierra Nevada de Mérida mountain range in the north-west offers relief from the heat. In 1991 five glaciers occupied nooks near their peaks. Now, just one remains, lodged into a cwm west of Pico Humboldt. Reduced to an area of ten football pitches, a tenth of its size 30 years ago, it will be gone within a decade or two. Venezuela will then be the first country in the satellite age to have lost all its glaciers.

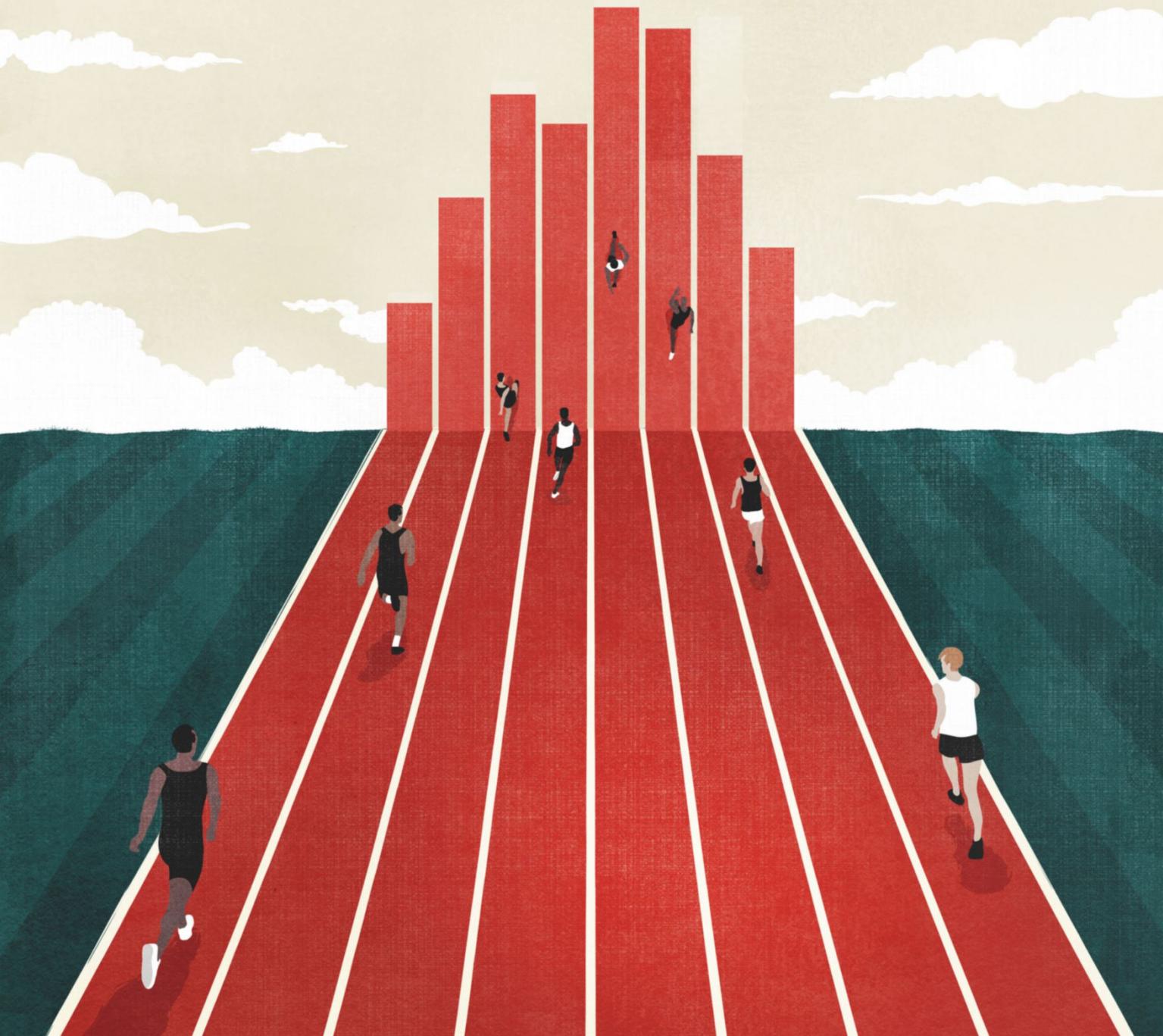
The retreat of the Humboldt glacier, named for Alexander von Humboldt, a German explorer of the 19th century, is the final stage of a 20,000-year process, the recession of an ice sheet that covered 600 square km (about 230 square miles) of Venezuela in the most recent ice age. Climate change has sped it up.

Scientists want to study the glacier in its final years but Venezuela's tumultuous politics is making that difficult. Carsten Braun, a glaciologist at Westfield State University in Massachusetts, thinks his most recent visit in 2015 was the last by any scientific expedition. Even then, conditions were "a little dicey". Men in military uniform pulled him off a bus and interrogated him. Now, Venezuela's hyperinflation and rampant crime make it too dangerous to travel with the bundles of dollars needed by mountaineering scientists.

It is no longer worth hauling heavy machinery to the glacier to extract samples from it; Humboldt is too small and dirt-caked for that. But Mr Braun would like to dot it with sensors to measure water runoff, and erect weather stations to capture data on wind, temperature and barometric pressure. That would help him understand how weather influences the melting of tropical glaciers. Until Venezuela calms down, Mr Braun will be restricted to monitoring the Humboldt glacier's decline remotely, using satellite imagery, which just reveals how fast it is melting.

That is a loss not just for science but for people in other Andean countries who rely on meltwater from tropical glaciers. In springtime that runoff is an important source of water for residents of Bogotá, Colombia's capital, for example. Closer study of Humboldt's decline might provide knowledge that could help them. Venezuela's ever-deepening crisis makes it impossible for now. ■

Out of the traps



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Out of the traps

After a rocky few years, emerging markets have become more mature and resilient, says Simon Cox. But along with the drama, some of their dynamism has gone

IN 1875 THE Ottoman Empire defaulted on half its foreign debt, a victim of the “first major debt crisis of the developing world”, according to one account of the mess. Its creditors, led by the Imperial Ottoman Bank, forced the empire’s grand vizier to accept a humiliating solution. Rather than wait to be repaid out of tax revenues, they won the right to collect half a dozen taxes themselves, including stamp duty and duties on alcohol. After 15 years of tax farming, the Imperial Ottoman Bank was comfortable enough to build impressive new headquarters in Istanbul, neorientalist in style on one side and neoclassical on the other.

Since long before the term was invented, emerging markets have provided a rich source of both peril and profit. That financial crisis in 1875 was followed by many others, including a hatful in Turkey. And like the Imperial Ottoman Bank, investors with strong stomachs have often profited the most from emerging markets at their worst. Hedge funds that bought impaired Argentine debt for roughly 20 cents on the dollar after its default in 2001 extracted a handsome settlement from its new government last year, worth perhaps ten times what they paid, according to some estimates.

The more recent history of emerging markets has also tested plenty of stomachs. Within days of Donald Trump’s election victory his populist promises raised American bond yields, sending the price of emerging-market assets the other way. Trading partners winced at his tweets threatening American companies planning to shift their production abroad. This “Trump tantrum” appeared to be the latest in a grim sequence of setbacks for emerging markets. It followed China’s botched devaluation of the yuan in 2015, the collapse in oil and iron-ore prices in 2014 and the “taper tantrum” in 2013, when mere talk of a slowdown in asset purchases by America’s Federal Reserve threw emerging markets into turmoil. The Trump tantrum came on top of political risks arising in emerging markets themselves, including Russia’s invasion of Ukraine, the Philippines’ war on drugs, a successful coup in Thailand in 2014 and a

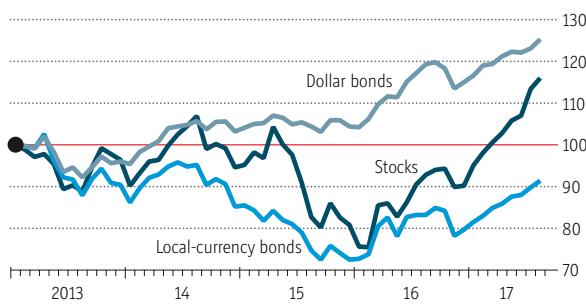
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A list of sources is at
Economist.com/specialreports

Pointing the right way

Emerging markets, total returns, \$ terms, Jan 2013=100



Source: Thomson Reuters

► failed one in Turkey in 2016, the removal of an unpopular president in Brazil for a fiscal misdemeanour, and the survival of embattled rulers in South Africa and Malaysia.

Strange as it may seem, though, the presidency of Mr Trump, an avowed opponent of globalism, has coincided with a recovery in globalisation. In the first half of this year the volume of emerging-market exports was 4.6% up on a year earlier, the fastest growth since 2011, according to the Netherlands Bureau for Economic Policy Analysis, a government agency. The growing demand for semiconductor chips and sensors lifted South Korea's and Malaysia's electronics exports; the recovery of the oil price bolstered Russia; and a favourable turn in the weather benefited Brazil's harvest of soybeans and corn.

Higher exports have helped lift GDP. In the first half of 2017 the four biggest emerging economies (Brazil, Russia, India and China, known as the BRICS) all grew simultaneously for the first time in three years. Emerging-market growth still cannot match that in the miracle years of 2003-06, but it has been equally broad. So far 21 of the 24 countries in the MSCI emerging-markets index, the most popular stockmarket benchmark, have reported GDP figures for the second quarter of this year, and all of them were up on the previous quarter. Not since 2009 has growth been positive in every member that publishes quarter-on-quarter numbers.

This improvement in emerging-market growth has been accompanied by renewed enthusiasm for their currencies, bonds and shares (see chart above). In August these countries recorded their ninth month in a row of capital inflows from portfolio investors, the longest streak since 2014, according to the Institute of International Finance. An index of emerging-market exchange rates compiled by MSCI has risen by 14% since its trough in January 2016. It has enjoyed its best 18 months since 2011. Even ill-favoured currencies such as the Russian rouble, Mexican peso and Chinese yuan have defied their doubters, strengthening against the dollar this year (see chart on right).

The price of emerging markets' "hard-currency" dollar bonds rose by over 6% in the first half of the year, according to J.P. Morgan. And bonds denominated in their own, hardening currencies did even better, rising by double digits. But nothing has been as eye-catching as their stockmarkets. The MSCI EM index rose above 1,000 in May from below 700 in January 2016, an annualised gain of about 33%.

The strength of the rally makes many old hands nervous. The history of emerging markets is full of imprudent investors as well as improvident borrowers. The delusion of those parting with their money often matches the myopia of those squandering it. In 1895, for example, a stockmarket boom prompted one

big international bank to nearly triple its loans in two years. The bank's own manager peddled South African mining shares such as the Transvaal Consolidated Land and Exploration Company. When the shares crashed, the bank suffered a run, turning to the government and its London owners for a bail-out. This reckless financial institution was none other than the Imperial Ottoman Bank that had grown rich from tax farming a few years earlier.

Pessimists can find a number of reasons to worry, some traditional, others more novel. Classic emerging-market crises often begin in Washington, DC, when the Fed raises interest rates or tightens monetary policy in other ways. So nerves will jangle if an uptick in American inflation pushes the Fed to increase rates faster than the market now expects. And for a new variation on this old theme, investors can fret about the Fed's recent decision to begin trimming the assets it bought after the global financial crisis.

The commodity cycle is another time-tested source of instability. The halving of oil prices in the second half of 2014 inflicted great pain on Russia and other crude exporters. Conversely, costly oil in the years before 2014 added to the chronic trade deficits and inflation suffered by countries such as India and Pakistan. The Latin American debt crisis in 1982 was caused by a combination of a commodity shock and a Fed shock. The petrodollars earned by Gulf exporters during the oil-price spikes of the 1970s were deposited in American banks, which lent them incautiously to Latin American governments. These loans then became impossible to repay when the Fed raised interest rates sharply in 1979-81.

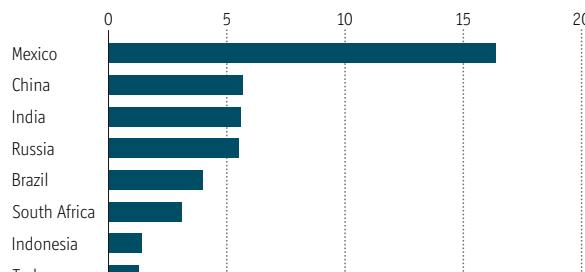
The have-nots

Countries not blessed with commodities have worries of their own. The only natural resource in many emerging markets is manpower, but a growth model based on labour-intensive manufacturing now faces two unaccustomed threats. One is automation. The growing versatility and user-friendliness of robotic technology may be eroding the advantages of cheap labour, resulting in what economists call "premature deindustrialisation". Post-industrial rustbelts are common in rich economies like America. The fear is that emerging-market industries will turn rusty before their people grow rich.

Another threat is protectionism. Emerging economies have always relied on access to the world's biggest markets for their exports. But the Trump administration is keen to reduce America's trade imbalances, and has become more active in imposing anti-dumping duties and other tariffs on goods it considers too cheap. It has so far opened investigations into 65 potential cases of dumped or subsidised products (from Chinese staples to Colombian citric acid), compared with 44 in the same period of 2016. ►

Strength in numbers

Currencies against the dollar, % increase Dec 31st 2016-Sep 20th 2017



Source: Thomson Reuters

As some countries worry about exporting to America's market, others worry about importing its politics. In both Brazil and Mexico, the candidates for the next presidential election include outspoken populists who draw strength from battling with Mr Trump or mirroring his provocations. Emerging markets have traditionally had a strong comparative advantage in populism. But that is another imbalance Mr Trump seems keen to correct.

This special report will examine each of these dangers in turn. It will argue that emerging economies in recent years have become more resilient, albeit less vigorous, losing some drama as well as some dynamism. That should allow their recovery to continue despite the threats they face.

A lot of emerging-market investors are "waiting for the good old-fashioned crisis", said Mark Dow, a money manager and former IMF economist, in a podcast interview late last year. In their experience, "it always ends with a blow-up...it's hap-

pened so many times for so many of the old wizened EM hands that they are conditioned to believe it has to be like that again."

It does not, but plenty of doubters remain. In particular, the failure of emerging markets to deal effectively with earlier shocks (such as higher oil prices in the 1970s, tighter Fed policy in 1979-81 and mightier Chinese manufacturing in the 2000s) has contributed to a lingering concern that middle-income countries are more likely to become "trapped" as they develop, marooned somewhere between poverty and prosperity.

If the "middle-income trap" were found to be real, it would pose a more serious problem than ever before. Countries at that intermediate level of development account for a growing share of the world's GDP and its people. The global economy could not prosper if such an enormous part of its population and production were to become thus ensnared. Fortunately, as this report will argue, the trap is a myth. ■

What's in a name?

A self-fulfilling prophecy

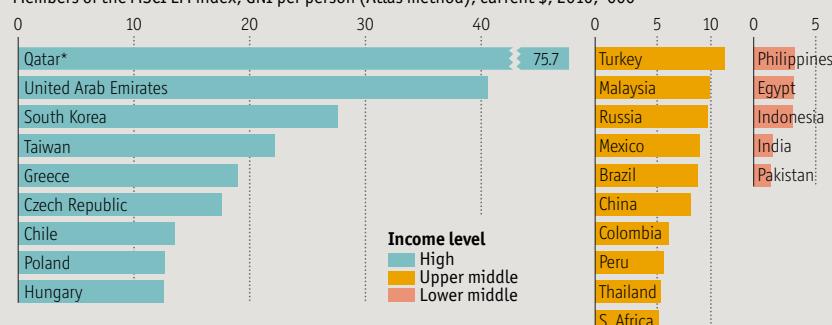
WHAT COUNTS AS an emerging market? Broadly speaking, an economy that is not too rich, not too poor and not too closed to foreign capital. The term was coined by Antoine van Agtmael in 1981 when he was working for the International Finance Corporation (IFC), a division of the World Bank. He hoped to create what he had named: a set of promising stockmarkets, lifted from obscurity, thereby attracting the investment they needed to thrive.

At the time, it was hard work even to compare the performance of stockmarkets in places like Brazil, India and South Korea. The IFC, having collected data on ten such markets, felt that foreign investors might take to these boondock bourses, but would be put off by the risk of investing in a single company or the trouble of diversifying across many firms and places. The answer, the IFC concluded, was to provide them with a one-stop, broadly representative "Third-World Equity Fund". When Mr Agtmael pitched the idea to a group of fund managers at an event hosted by Salomon Brothers, some were sceptical, other intrigued. One liked the idea but hated the name. So Mr Agtmael spent the weekend dreaming up the term "emerging markets", with which he hoped to evoke "progress, uplift and dynamism". That label proved wildly successful.

The first such fund, pioneered by Capital Group in 1986, included only four countries. The most popular equity benchmark, the MSCI EM index, started in 1988 with ten and now spans 24. Many people complain that the category has become an indiscriminate grab-bag, throwing together economies at utterly different stages of development, such as Taiwan and Pakistan. But the group

Emerging and emerged

Members of the MSCI EM index, GNI per person (Atlas method), current \$, 2016, '000



Sources: World Bank; national statistics

*2015

was never all that homogeneous. The ten markets in the original MSCI index included the Philippines but also Portugal, a country seven times as rich (at market exchange rates). Indeed, the markets are now more tightly correlated than they were in the early years, according to MSCI (though less so than in the crisis years from 2008 to 2013).

The emerging-markets group has also become more prosperous and more Asian. The World Bank now classifies nine of MSCI's 24 benchmark economies as high-income. (These economies, which include Taiwan, South Korea, Qatar, the United Arab Emirates and several members of the European Union, will not feature prominently in this special report.) Asia accounts for almost 70% of the group's combined GDP and commands a similar weight in the equity index. From Hong Kong "I can cover 60% of the market cap within four hours' flight," says Sean Taylor of Deutsche Bank Asset Management.

Some countries are much more impor-

tant to investors than their economic weight would suggest, thanks to their unusually deep and open stock- or debt markets. The best example is South Africa: the combined value of shares on its stockmarket is more than three times its GDP. The biggest company listed on its stockmarket is Naspers, mainly because it has a 33% stake in Tencent, a Chinese internet giant.

As well as progress, uplift and dynamism, emerging markets have traditionally featured crises, defaults and slumps. Many have been laid low by profligate governments, overstretched companies, mismatched balance-sheets, fickle foreign capital or volatile commodity prices. Such setbacks can take a toll on their long-term prospects, preventing them from graduating to the ranks of mature markets. Poor economies typically become "emerging markets" because they have grown quickly. They remain "emerging" because they have not managed to grow steadily.

The middle-income trap

Mixed-income myths

Countries that are neither rich nor poor can hold their own against rivals at both extremes

EVERY FEW YEARS *Foreign Affairs*, a magazine about international relations, provokes a fracas in a neighbouring discipline, international economics. In 1994 it published an essay by Paul Krugman, "The Myth of Asia's Miracle", which re-examined the source of the tigers' success. Then, after the Asian financial crisis, it came up with "The Capital Myth" by Jagdish Bhagwati, which re-examined the case for free capital flows, the source of the tigers' humiliation. In 2004 it offered "Globalisation's Missing Middle" by Geoffrey Garrett, then at the University of California, Los Angeles. This essay is cited much less often than the other two, but in a roundabout way it has been equally influential. It argued that middle-ranked countries were in a bind, unable to compete either with the cutting-edge technology of rich nations or the cut-throat prices of poor ones. "Middle-income countries", it said, "have not done nearly as well under globalised markets as either richer or poorer countries."

To prove his point, Mr Garrett ranked the world's economies by GDP per person in 1980, dividing them into three groups: top, middle and bottom. He then compared their growth by that measure over the subsequent two decades, finding that the middle-ranked economies grew more slowly than either the top or bottom ones. Three years later Homi Kharas and Indermit Gill of the World Bank cited Mr Garrett's essay in a book about East Asia's growth prospects. They invented the term "middle-income trap", which subsequently took on a life of its own.

The trap can be interpreted in a variety of ways, which may be one reason why so many people believe in it. Some confuse the trap with the simple logic of catch-up growth. According to that logic, poorer countries can grow faster than richer ones because imitation is easier than innovation and because capital

earns higher returns when it is scarce. By the same logic, a country's growth will naturally slow down as the gap with the leading economies narrows and the scope for catch-up growth diminishes. All else equal, then, middle-income countries should grow more slowly than poorer ones. But Mr Garrett was making a bolder argument: that middle-income countries tend to grow more slowly than both poorer and richer economies.

The notion of a trap resonated widely with policymakers, note Messrs Kharas and Gill, especially in countries where growth had lost its lustre. Najib Razak, Malaysia's prime minister, began talking about it in 2009. Trap-talk also spread to Vietnam's leaders in 2009 and appeared in South Africa's National Development Plan in 2012.

By far the most prominent trap-watcher is China, one of the few middle-income economies that is more than middle-sized. In 2015 Lou Jiwei, then China's finance minister, said that his country had a 50% chance of falling into the trap in the next five to ten years. The same fear haunts Liu He, an influential economic adviser to Xi Jinping, China's president. Mr Liu was one of the driving forces behind a report entitled "China 2030", published in 2012 by his Development Research Centre (DRC) and the World Bank. The report featured a chart that has perhaps done more than any other to spread the idea of a middle-income trap (see chart). It showed that of 101 countries which counted as middle-income in 1960, only 13 had achieved high-income status by 2008. The rest spent the intervening 50 years trapped in mediocrity or worse.

Slow and queasy

The evidence in the chart and Mr Garrett's essay was suggestive but hardly systematic. However, it was buttressed by a more rigorous pair of studies by Barry Eichengreen of the University of California, Berkeley, Donghyun Park of the Asian Development Bank and Kwanho Shin of Korea University, which reached similar conclusions. They looked for fast-growing economies that subsequently suffered sustained slowdowns (defining fast growth as at least 3.5% per person, and a slowdown as a two-percentage-point drop in growth, both averaged over seven years). Their research indicated that these slowdowns seemed to cluster at GDP levels of \$11,000 and \$15,000 per person (converted into dollars at purchasing-power parity).

Perhaps the most sophisticated analysis was published by Shekhar Aiyar and his colleagues at the IMF in 2013. They sought to distinguish between growth traps and the natural slowdown that any country can expect as it converges with leading economies. To do this, they first calculated an expected growth path for each country, based on its income per person as well as its human and physical capital. Second, they looked for countries that were growing faster or slower than expected, resulting in positive or negative growth gaps. Third, they looked for unusually severe and sustained slowdowns, when these growth gaps widened sharply. They found that middle-income countries were more likely to suffer such setbacks, no matter how middle income was defined.

The combined weight of this economic evidence and policymakers' intuition is hard to ignore, and seems to justify scepticism about the growth prospects of China, Malaysia, Thailand and many other emerging economies. But neither the intuition nor the number-crunching is as convincing as it looks.

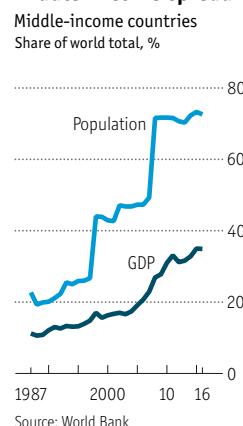
Intuitively, it seems to make sense that middle-income countries will be squeezed between higher-tech and lower-wage rivals on either side. But those rivals rely on high technology or low wages for a reason. Rich economies need advanced technologies and skills to offset high wages. Poor countries, for their part, need low wages to offset low levels of technology and skill. The ➤

The trappists' proof

Income per person relative to United States, 1960 v 2008, %



Source: World Bank

Middle-income spread

► obvious conclusion is that middle-income countries can and do compete with both, combining middling wages with middling levels of skill, technology and productivity.

To be sure, those average levels mask huge variations. Most economies have a mix of impressive leading firms and unsophisticated stragglers. The productivity of the top quarter of American firms is at least 4.86 times that of the bottom quarter, according to a study by Eric Bartelsman, Jonathan Haskel and Ralf Martin published by the Centre for Economic Policy Research. In developing countries the gaps are even bigger. Indeed, middle-income countries are often more accurately described as mixed-income economies.

Shaping the mix are at least four possible sources of growth in GDP per person. The first is moving workers from overmanned fields to more productive factories (structural transformation). The second is adding more capital such as machinery per worker (capital-deepening). The third is augmenting capital or labour by making it more sophisticated, perhaps by adopting techniques that a firm, industry or country has not previously embraced (technological diffusion). The final source of growth derives from advances in technology that introduce something new to the world at large (technological innovation).

Economists find it helpful to keep these sources of growth separate in their minds. The mistake is to think they remain separate between countries. In reality, in most countries several of these forces are at work simultaneously, at different paces and in varying proportions. Countries do not wait until the last surplus farm worker has left the fields to begin capital-deepening. Nor do they wait until the returns to brute capital accumulation have been exhausted before they start to increase the sophistication of their production techniques. So development does not proceed in discrete stages that require a nationwide leap from one stage to the next. It is more like a long-distance race, with a leading pack and many stragglers, in which the result is an average of everyone's finishing times. The more stragglers in the race, the more room for improvement.

Positive splits

The statistical work by Messrs Eichengreen, Park and Shin shows that middle-income countries do suffer slowdowns. But since it looks only at countries with an income per person of over \$10,000, it cannot say whether they are more vulnerable to such setbacks than poor countries. That was not a question the authors ever intended to answer. When their method is extended to countries further down the income scale, it turns out that slowdowns among poorer economies are at least as prevalent as among middle-income ones.

Countries in the middle do slow more often than rich countries, but that is partly because rich economies rarely grow fast enough (3.5% per person over seven years) to be eligible for a slowdown as the paper defines it. Nor is such a slowdown sufficient to trap an economy. Hong Kong, Singapore, South Korea and Taiwan have all endured at least one, and none of them is trapped in middle income. Growth in China's GDP per person has also slowed, to about 7.6% over the past seven years, against

more than 10% over the previous seven. That qualifies as a sharp slowdown by the authors' definition. But China is not trapped; it is still growing faster than most countries, rich or poor.

A similar problem bedevils the paper by Mr Aiyar and his IMF colleagues. To see why, suppose a miracle economy were to grow much faster than an economist would expect, given its level of income, schooling and capital. Imagine its growth were then to moderate to a more normal pace. That might count as a severe slowdown by the authors' definition (since the country's highly positive growth gap has dropped to zero), even though the economy was still converging on high income at a normal pace.

Or suppose a country were rapidly to increase its investment in schooling and physical capital to avoid the middle-income trap. If the strategy were successful, it might result in steady growth. But with the method used by the IMF paper, that constant growth could nonetheless count as a severe slowdown because, other things being equal, their model expects improved education and deeper capital to raise the pace of growth, not merely shore it up.

Neither of these papers, then, proves the existence of a middle-income trap as commonly understood. Indeed, Mr Eichengreen has said that his line of research was intended to explore different questions. But what about the DRC's and World Bank's "killer" China 2030 chart?

Its criteria for middle income are idiosyncratic. They include any country with a GDP per person between 5.2% and 42.75% of America's, measured at purchasing-power parity. The good news is that eight countries on the chart (including Turkey, ►



► Malaysia, Oman and Poland) have since escaped the middle-income bracket thanks to better data or further growth. Ten others, the Slovak Republic among them, have also crossed that threshold but were not included on the chart because either the data or the countries themselves did not exist in 1960.

But the chart contains a more fundamental flaw. Its criteria for middle-income are too broad to be useful. By its definition, a country with a GDP of just \$590 per person (at 1990 prices) counted as middle income in 1960. That includes countries like China in the middle of its Great Famine. At the other extreme, a country with a GDP per person of \$13,300 in 2008 also counted as middle income. This upper threshold for 2008 is more than 2,000% higher than the lower one for 1960. No wonder so many countries remained stuck in between them.

One of them was China. Its GDP per person increased ten-fold between 1960 and 2008, despite the famine and the Cultural Revolution. But because it started that period above \$590 and ended it below \$13,300, it remained confined to the middle square of the China 2030 grid.

One of the World Bank staff involved in the China 2030 report has subsequently co-written a paper investigating the middle-income trap more closely. It found no “evidence for [unusual] stagnation at any particular middle-income level”. More recently, research by Xuehui Han of the Asian Development Bank and Shang-Jin Wei of Columbia, and separately by Lant Pritchett and Larry Summers of Harvard, has also cast doubt on the trap. Another Harvard economist, Robert Barro, the doyen of empirical growth studies, thinks that “this idea is a myth.” The transition from middle to upper income is certainly “challenging”, he writes. But it is no more challenging than the transition from low to middle.

Messrs Kharas and Gill are themselves agnostic about the precise definition and empirical salience of the term they invented. They introduced it “with modesty, because we had not rigorously established its prevalence”, they wrote ten years later. Since some middle-income countries have undeniably stagnated, barriers to their growth clearly exist. As Messrs Kharas and Gill see it, what matters is whether these threats take a distinctive “middle-income” form, not whether they are more common or severe than the dangers facing other economies.

Trappist agnosticism

The duo came up with the term chiefly because the economics profession seemed to offer no clear or convincing growth recipe for middle-income countries. Partly as a result, policy-makers often felt caught between two stools: either they clung on to old growth strategies (such as low-end manufacturing) for too long, or they embraced sophisticated models (such as the “knowledge economy”) too soon. The middle-income trap is really a middle-income dilemma.

What about Mr Garrett's original finding in *Foreign Affairs*, which helped inform the thinking of Messrs Kharas and Gill? An effort to replicate that exercise, with newer data covering the same 20 years, shows a much narrower gap between middle- and high-income growth for the period from 1980 to 2000. And that gap all but disappears if the countries are divided into three groups of equal size, rather than Mr Garrett's somewhat arbitrary 25-45-30% split.

More importantly, middle-income countries, even by his definition, grew faster than their high-income counterparts over the two decades from 1990 to 2010, as well as from 1995 to 2015. It seems that in the 1990s and 2000s middle-income countries were quite capable of competing with cutting-edge economies. So what tripped them up in the 1980s? Part of the answer may lie with America's Federal Reserve. ■



Macroeconomic resilience

Freedom from financial fear

Emerging markets have acquired more room for manoeuvre

IN WALKING A middle path, between self-indulgence and self-mortification, Buddhists face great temptations. This struggle for self-control animates many of their paintings, including “Star’s Seed” by the Thai artist Thawan Duchanee. The painting depicts a muscular man with the mandibles of a rhinoceros beetle—beastly appendages that symbolise man’s base cravings. Only by shedding these cravings, Buddhists believe, can man be free from fear.

The painting hangs on a wall in the Bank of Thailand, which faces its own temptations and fears. Like any central bank, it must resist the lure of inflation. And like many of its peers in emerging markets, it lives with a fear of global financial forces beyond its control. When America’s Federal Reserve raises interest rates, when global investors lose their appetite for risk, or when multinational banks shrink their lending, emerging markets worry about the impact on their own currencies, balance-sheets and economies.

The temptations and the fears are connected. Emerging markets have traditionally struggled to keep inflation under control. For that reason, they have often tethered their exchange rates to the dollar and borrowed in hard currencies at the insistence of foreign creditors. This institutional anchoring helped them attract inflows of foreign capital, which often financed large current-account deficits. But their anchors also acted as shackles. They forced the central banks slavishly to follow the Fed’s monetary policy so as to preserve their currency’s standing against the dollar. And they left their economies vulnerable to any interruption in foreign lending and investment.

Whenever foreign capital inflows dried up, emerging markets wrestled with a painful dilemma. To appease foreign investors and defend their currencies, they could raise interest rates to punishingly high levels; but that would bankrupt many domestic companies. Or they could ease monetary policy and let their currencies drop; but that would also bankrupt any companies with dollar debts. Either way promised ruin.

Ruin duly arrived in a succession of financial crises. When the Fed raised interest rates to 20% to fight inflation in 1979-81, Lat-

► in American governments could no longer afford to service the vast dollar loans extended to them by American banks. The debt crisis that followed condemned the region to a “lost decade” which may have helped inspire the notion of a middle-income trap. Something similar happened in Mexico in 1994, when the Fed again raised rates faster than expected. And a broader wave of crises struck emerging markets from July 1997, when the Thai baht broke its peg to the dollar, to January 2002, when Argentina formally abandoned the peso’s parity with the greenback. These blows rid them of both their shackles and their anchor. Without the external discipline provided by the dollar, they had to build their own institutional defences against inflation.

Control yourself

Happily, in the subsequent struggle for macroeconomic self-control, emerging markets have proved themselves more man than beetle. Inflation, averaged across the world’s emerging and developing countries, fell from 13% in 1999 to less than 4.4% last year, according to the IMF. In the members of the MSCI emerging-markets index it is even lower. The latest average, weighted by each country’s size in the index, is only 2.6%, says Bhanu Baweja of UBS, a bank (see chart).

This self-control has brought a number of benefits. First, it has allowed emerging-market governments to sell bonds denominated in their own currencies, which has given them more fiscal room for manoeuvre. For most of the past half-century, their tax and spending policies have been stuck in a “procyclicality trap”, according to Carlos Végh, Daniel Lederman and Federico Bennett of the World Bank. Governments have raised discretionary spending during booms, to placate clamorous constituents, then cut it during busts, to appease jittery creditors.

But in more recent years the pattern has shifted. Of the big emerging economies, Chile, South Korea, Turkey, India, China, Mexico, South Africa and Malaysia have all been able to pursue countercyclical policies, on average, since the turn of the century; and since the global financial crisis that began in 2007, Peru and Colombia have joined their ranks. “The region appears to have begun to finally break the shackles of the procyclicality trap,” note Mr Végh and his team.

In addition to this fiscal flexibility, the increased macroeconomic credibility of emerging markets has won them an unaccustomed degree of monetary freedom. When the Fed tightens monetary policy, they no longer have to follow in lockstep. They can keep interest rates steady, letting their currency fall against the dollar, without worrying as much about the increased threat of inflation or the heavier weight of dollar debt. Indeed, since the Fed began to raise interest rates in December 2015, many emerging-market central banks have shifted their own rates down, not up. In 17 out of the 24 members of the MSCI emerging-markets index, the central bank’s policy rate is now the same or lower than it was before the Fed’s first hike.

But some sources of vulnerability remain. The central bank’s policy rate is not the only determinant of a country’s financial conditions. Some economists, such as Hélène Rey of the London Business School, have argued that broader financial conditions, including longer-term interest rates, credit growth and capital flows, are driven by a forceful and synchronised global financial cycle that is beyond the control of local central banks. Even when they are not constrained by a peg to the dollar, emerging markets cannot free themselves from these global forces, Ms Rey argues. Policymakers must either submit to them or repel them by erecting capital controls.

The “taper tantrum” of 2013 lent support to this fear. Governments and especially companies in emerging markets had taken advantage of worldwide monetary easing to issue large

amounts of cheap debt. These lax financial conditions were, however, rudely interrupted in May 2013, when Ben Bernanke, then the Fed’s chairman, mused on an eventual slowdown in the bank’s asset purchases. That was enough to unsettle big emerging markets like Brazil, India, Indonesia, South Africa and Turkey, despite their flexible currencies. They became known as the “fragile five”.

The tantrum demonstrated that floating currencies could not insulate emerging economies entirely from global financial forces, as Ms Rey has argued. But recent research by Maurice Obstfeld, Jonathan Ostry and Mahvash Qureshi of the IMF confirms that flexible exchange rates still offer more autonomy than dollar pegs. And that autonomy is greater still in countries with narrower trade deficits, lower inflation and lower levels of debt.

The fragile five seem less delicate today than they did in 2013. In the intervening years, all of them have narrowed or eliminated their current-account deficits; all except India have benefited from an improvement in the competitiveness of their currencies; and all except Turkey have reduced inflation and credit growth. In both India and Brazil, the combined debt of households and non-financial corporations has declined as a proportion of GDP since the taper tantrum. In South Africa it began falling in 2016, and in Indonesia it has increased only slowly.

The credit growth causing most concern among emerging economies is not in the formerly fragile five but in China. Its stock of outstanding credit as a proportion of its GDP is a massive 213%. This figure, known as “total social financing” (TSF), is supposed to capture all sources of finance for households and enterprises. Economists often subtract some items from this total (such as equity financing) and add others (such as the local-government bonds that have replaced some bank loans to infrastructure ventures). But these adjustments do not greatly change the underlying story.

What is scary about the number is how quickly it has risen. Five years ago it was below 169%. The IMF has identified 43 previous cases in which a country’s ratio of credit to GDP has risen by more than 30 percentage points in five years. In 38 of them the boom ended in a financial crisis or “major” slowdown. And in two of the remaining five the crisis arrived a few years later.

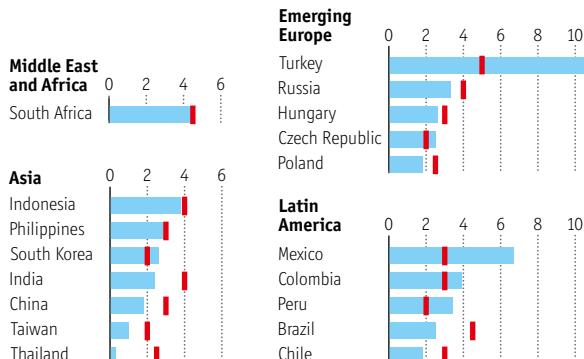
Many economists worry that a similar fate awaits China. Some bearish investors are counting on it. They have bet heavily against the yuan in the belief that a financial bust in China will oblige its authorities to ease monetary policy and cheapen its



Mostly moderating

Consumer prices, August 2017 or latest, % increase on a year earlier

Central-bank inflation target, %



Sources: Haver Analytics; central banks

► currency. Such exchange-rate fluctuations are now commonplace in other emerging economies. But China is still an outlier. It allows the yuan to move each day by just 2% either side of a benchmark dollar rate it sets each morning. In August 2015 it tried both to devalue the currency modestly and to introduce more two-way flexibility in its movements, but succeeded only in creating self-fulfilling expectations of further depreciation.

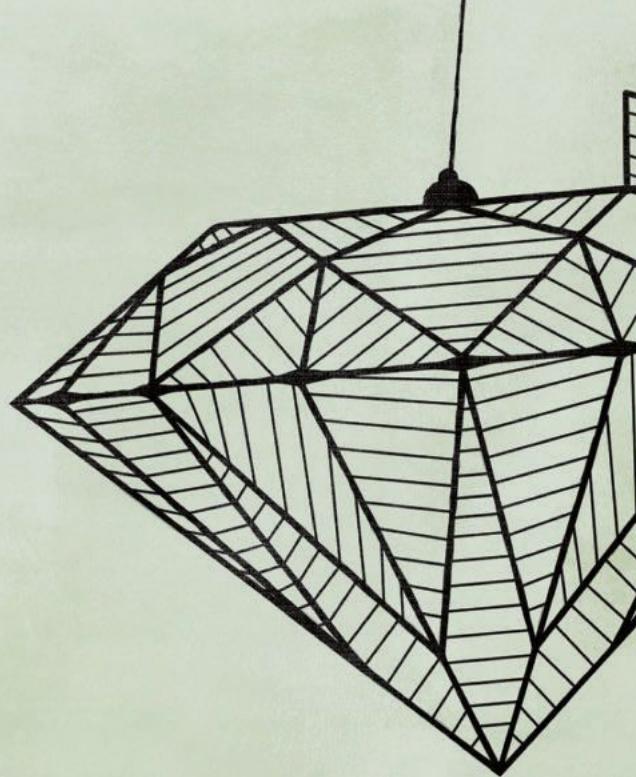
For a few months China seemed caught in the same trap that ensnared other Asian emerging markets in the late 1990s. It appeared to face an invidious choice between vigorously tightening monetary policy to defend the yuan, or letting the currency fall. But China had four defences that other economies lacked. Its dollar debts were modest relative to the size of its economy; it still had a large current-account surplus, which brought in a steady stream of dollar earnings; it was sitting on a bigger stockpile of foreign-exchange reserves; and it had retained closer controls on capital outflows.

Between August 2015 and January of this year it lost over \$500bn of reserves as it tried to cushion the yuan's decline. It cracked down on what it deemed to be wasteful overseas acquisitions by Chinese firms. And it subjected requests for dollars by companies and individuals to heightened regulatory scrutiny, including a daunting increase in paperwork. Eventually it was able to quash the downward pressure on the currency. Over the first eight months of this year the yuan strengthened by over 5% against a dollar that had lost much of its upward momentum. In August, the dollar value of China's foreign-exchange reserves increased for the seventh month in a row.

Whatever its impact on the yuan, will China's credit boom nonetheless result in a sharp slowdown in growth? To answer this question, it helps to scrutinise why its credit-to-GDP ratio rose so quickly in the first place. During the crisis year of 2009, the ratio jumped because credit grew dramatically, thanks to China's stimulus efforts; but since then credit growth has been slowing steadily (see chart). The ratio has nonetheless continued to rise because nominal GDP has expanded unusually slowly.

Many economists point out that the credit-intensity of China's economy deteriorated between 2011 and 2016. It took more credit to generate a yuan of growth. The reason may be that much of this credit was spent not on newly produced assets such as buildings or machinery, but on existing assets such as land and previously constructed buildings. This kind of spending adds nothing to GDP, which measures only new production, not transfers of ownership of existing wealth.

If that credit mix could be reversed, it would help China to reduce leverage without reducing growth. The relationship between new credit and new production would improve. Fortunately, that improvement has already got under way: credit growth has slowed in recent quarters even as nominal GDP growth has picked up. In response, China's credit-to-GDP ratio in the second quarter fell by a fraction of a percentage point. If it continues to stabilise, it will lift a big macroeconomic cloud still hanging over emerging markets—especially those that provide the raw materials for China's growth. ■



Commodities

A drag, not a curse

Raw materials need not undermine the countries that export them

THE LAMP POSTS in Kliptown, South Africa, do not all stand up straight. One lists awkwardly, laden with cables carrying stolen electricity to a squatters' settlement nearby. Many families in this suburb of Soweto, a formerly black township in greater Johannesburg, are still crammed into makeshift housing. When it is hot outside, the temperature inside is "times two", says one resident, who shares six rooms with 20 others. And when it turns cold, the chill inside is also "times two".

On the other side of the railway tracks the government is investing heavily in Walter Sisulu Square, where in 1955 the African National Congress (ANC) and its allies adopted the Freedom Charter, a statement of principles for a post-apartheid nation. The charter's commitments, written in stone on a monument in the square, include demolishing slums and building well-lit suburbs. They also include transferring ownership of the mineral wealth beneath the soil to the people. The contrast between what the charter says and what the slum itself reveals tells you how broken the system is, says one squatter.

The resources beneath South Africa's soil, including iron ore, precious metals and coal, ought to be an unmitigated blessing. Johannesburg, the city of gold, owes its existence to these riches. Its landscape is still dotted with piles of sandy residue, or "tailings", from mining and quarrying. The industry accounts for over 20% of South Africa's exports and employs over 450,000 people. But it also adds to the volatility of South Africa's economy and the pugnacity of its politics.

Mining and quarrying shrank by 4.7% in 2016, then rebounded, growing by 4.3% year-on-year in the first half of 2017. This improvement partly reflects stronger growth in China, which consumes almost half of the world's coal, 30% of its gold ►



► jewellery and over 40% of its steel. But the industry's economic prospects remain hostage to its political fortunes.

Like any industry, mining must offer sufficiently rewarding pay and profits to attract the capital and labour it requires. Unlike other industries, however, mining tends to generate excess returns or "rents" on top of that. Bosses, workers and politicians are then tempted to squabble over the division of those rents, sometimes to the detriment of the sector as a whole. This kind of economic volatility and political bitterness are two of the more troublesome "tailings" from resource wealth, not only in South Africa but in many emerging markets. In 11 of the 24 countries in MSCI's benchmark equity index, resource rents exceeded 5% of GDP between 2011 and 2015. That qualified them as "resource-rich", according to the World Bank. The rents of all 24 members taken together also amounted to about 5% of their combined GDP.

Many of these resource-rich economies have gone through a twin-peaked or "M-shaped" cycle since the mid-2000s. Their commodities sector (as a proportion of GDP) peaked on the eve of the financial crisis in 2007, plunged, then rebounded between 2008 and 2011 and faltered again after 2014. The first drop reflected a collapse in demand following the global financial crisis. The second one was more complicated. A slowdown in Chinese commodity purchases played a part, especially in the case of coal and construction-related resources such as iron ore. But in the case of oil, a rise in supply (and projected supply) was more important. The boom in tight oil and shale production in America prompted OPEC, the oil exporters' cartel, to pump more crude to defend its market share. Cheap energy, in turn, cut the cost of agricultural production and dampened demand for biofuels, leading to lower prices for grains and soyabeans.

It is not easy to cope with a commodity cycle of this magnitude, driven by a boom in demand in the world's second-biggest economy, then a supply boom in the biggest. In the face of these global forces, emerging economies can resemble the squatter's house in Kliptown: their economies run twice as hot when commodity markets warm up, and twice as cold when the temperature drops. But although resource-rich economies cannot entirely

escape the ups and downs of global commodity cycles, they can do a lot to moderate them. By containing the upturns, they can cushion the downturns. The key to this lies not in the mining industry itself, but in a country's central bank and finance ministry. Resource-rich economies need equally resourceful macroeconomic policies.

One of the best examples is Chile. Its fiscal rule curbs government spending when the copper price exceeds its long-term trend, as judged by an independent committee of experts. During good times, fiscal restraint makes room for mining to boom without unduly squeezing the rest of the economy. During bad times, it leaves scope for fiscal easing to offset the damage.

Chile's fiscal benchmarks were better calibrated than the rule Russia introduced in 2008 (and overhauled in 2013). Rather than allow an independent committee to estimate the long-term oil price, Russia used a backward-looking average. According to the IMF, that resulted in a benchmark oil price of \$85 a barrel in 2016 when prices had already fallen to \$42.

Russia was forced to abandon its fiscal rule in 2015. By then the country's central bank had also given up trying to defend the rouble, allowing it to fall in line with the price of crude. At the time Russia's devaluation was humiliating. But a cheaper exchange rate can be a godsend for an oil exporter when the price of crude drops. Russia's diminished currency kept the rouble value of oil revenues steady. And by boosting Russia's competitiveness, it helped to offset the damage that lower oil prices inflicted on the country's trade balance. Unemployment is now lower than it was in 2013, when oil prices were around \$100 a barrel.

Having survived the M-shaped commodity cycle, resource-rich emerging markets can hope for an easier script in the years ahead. China's growth has stopped slowing and OPEC production has stopped rising. The cartel decided in November 2016 to cut production by over 3% to 32.5m barrels per day (a decision matched by restraint from 11 other oil producers, including Russia). America, meanwhile, has become an "unwitting swing producer" of oil, in the words of the Economist Intelligence Unit, a sister company of *The Economist*. When crude prices drop below \$45 a barrel, shale producers withdraw, pushing the price back up. When prices rise above \$56, America's nimble operators in-

Economists have questioned whether the "resource curse" is real. Rather than resource dependence leading to slow growth, it could be the other way around

vest in new rigs, pushing the price back down. So another bout of commodity-price volatility should not scupper the emerging-market recovery.

The economic instability and political division sometimes associated with natural resources have caused some economists to think of them as a curse, not a blessing. In a seminal paper published in 1995, Jeffrey Sachs and Andrew Warner, two economists then both at Harvard, found that economies dependent on resource exports grew more slowly than others not so blessed.

But economic thinking on this issue is also prone to division and swings in sentiment. Several researchers have questioned whether the resource curse is real or just a statistical illusion. The seminal Sachs-Warner study, they say, may be marred by reverse causality: rather than resource dependence leading to slow growth, it could be the other way around. This is because the two authors calculate resource exports as a proportion of GDP, so anything that lowers GDP will mechanically increase resource dependence by their measure, creating the illusion of a ►

► causal link from resources to growth.

Economists may have missed the blessings of natural resources because they were looking in the wrong place. Oil, gold, copper and other endowments may add to the level of GDP but not its growth rate. Imagine, for example, a \$100bn economy growing at 1% a year. Suppose it suddenly discovers a big platinum deposit, which yields a steady additional income of \$100bn, year in, year out. That would double the country's GDP to about \$200bn, much to the benefit of its people. But it would also halve the country's growth rate, because now half of this \$200bn economy is growing at 1% and the other half not at all.

Graham Davis of the Colorado School of Mines calls this phenomenon "resource drag". In South Africa the mining and quarrying industry has been growing more slowly than the economy as a whole since 1980, dragging down South Africa's overall GDP growth by about 0.4 percentage points. But having both the resources and the drag is still better than having neither.

Patricio Meller of CIEPLAN, a Chilean think-tank, reckons that economists have been biased against natural resources ever since Adam Smith, who witnessed impressive advances in pin-making but comparative stasis in agriculture. Even in Smith's day that was a mistake, says Mr Meller. After all, Britain's industrial revolution owed a lot to coal-mining.

Mr Meller sees the natural resources in his country as a platform for technological innovation. Many of the lorries that serve Chile's mining industry, for example, are remotely controlled by people sitting in an office in Santiago, over 1,000km away. Indeed, the combination of technologies—big data, end-to-end sensors, analytics—now being applied to advanced manufacturing could also be applied to mining and agriculture.

The application of new technologies to commodities may alleviate whatever curses natural resources can bring. But their application to manufacturing industry is raising a different fear in labour-rich emerging markets. As industrial machines become more sophisticated, will they increasingly replace industrial workers? And if fewer jobs are on offer in metal-bashing and clothes-making, who will employ them? ■

Premature deindustrialisation

Sew what now?

Automation is less of a threat to workers in the emerging world than it is made out to be

BANGLADESH EXPORTS 60% more ready-made garments than India, a country with over eight times its population. On the busy roads of Dhaka, Bangladesh's capital, white vans nose through the traffic on "Emergency Export Duty", according to the ambulance-like letters painted on their sides. The success of this quintessentially labour-intensive industry helped make Bangladesh a lower-middle-income country in 2014, according to the World Bank's classifications.

But some think that Bangladesh's garment industry now faces a new problem almost as grave as the traffic: the threat of automation. Robots are already common in other kinds of manufacturing, but still rare in clothes-making. Of the 1.63m industrial robots in operation worldwide in 2015 (the latest year for which figures are available), only 1,580 were in textiles, apparel and leather, says the International Federation of Robotics (ifr).

Robots find garment-making so hard because its basic ma-



terials are so soft. When fabric is picked up or put down, it loses its form, creasing, crumpling, folding and draping in unpredictable formations. That can make it hard for a robot to keep track of what it is handling and where to apply itself. It might be "easier to automate the activities of a fashion designer than to automate the people who sew clothing", suggests Michael Chui of the McKinsey Global Institute.

Jian Dai, a robotics professor at King's College London, once described the formidable feats of robotic dexterity required even to iron a garment, something any teenager is quite able (if not always willing) to do. It requires miniaturised infra-red sensors to find the edge of the fabric, which must then be squeezed between robotic fingertips in an "impactive grip". The robot also has to maintain the tension and smoothness of the material and align its seams. To manage all this, Mr Dai writes, the robot needs several moving parts linked in a "multiple kinetic chain".

One firm that is tackling similar challenges is SoftWear Automation, based in Atlanta, Georgia, 8,000 miles from Dhaka. Its Sewbot uses high-speed cameras to keep track of the fabric, vacuum nozzles to pick up and rotate pieces, and rotating balls embedded in a worktop to move the fabric along. "Our technologies enable the micro-manipulation and macro-manipulation of the fabric to mimic what a seamstress could do," says Palani-swamy Rajan, the company's CEO. His machines can already make simple items like pillows and bath mats on a commercial scale. Next year the company hopes to offer a t-shirt production line. It says that a single Sewbot operator will be able to produce 1,142 t-shirts in an eight-hour shift, 17 times the number a traditional garment worker could make in that time.

These intriguing advances in Atlanta reflect broader progress in robotic technology. The machines are becoming cheaper, safer, more versatile and easier to instruct, notes Mr Chui. Unlike many existing industrial robots, which are kept in cages, the latest generation are safe enough to be used in crowded work-spaces. They can also be easily "programmed", a word Mr Chui puts in quotation marks, since no coding is required.

These pieces of kit are no longer the preserve of high-income countries like Japan or Germany. Of all the industrial robots shipped in 2015, a third ended up in middle-income countries, where they were mostly used in carmaking and electronics, ►

according to IFR. China was the world's biggest single buyer.

The rising efficiency of robots has made economists question some of their traditional prescriptions for success in development. Work by Simon Kuznets in the 1960s and 1970s suggested that modern economic growth requires moving resources out of agriculture into industry, then out of industry into services. This arc of industrialisation is supposed to carry poor countries into prosperity before eventually turning down as sophisticated services take over.

But what if robots, not people, fill the factories? The McKinsey Global Institute calculates that it would be technically possible (if not necessarily economically sensible) to automate 67% of India's manufacturing employment. It came up with similar figures for Indonesia and Thailand. If poor countries cannot move enough workers into industry, the benefits of productivity gains in manufacturing cannot spread widely through their economies. Their opportunities for development will be squeezed by automation's impactive grip.

Indeed, the arc of industrialisation has already changed, according to Dani Rodrik of Harvard University. In today's emerging economies, industry's share of employment is peaking at a lower level than it used to do, and at an earlier point in their development. This trend towards premature deindustrialisation is "not good news for developing nations", he notes.

But Mr Rodrik's results are not as depressing as they seem. Asia, as he points out, has so far defied premature deindustrialisation. The same, in aggregate, is true of Sub-Saharan Africa. It is chiefly in Latin America that the arc of industrialisation has lost height and reach. This Latin deindustrialisation may reflect the gradual abandonment of "import substitution" after the 1960s, when governments lowered the tariffs protecting local alternatives to foreign industrial goods. It may also reflect the arrival of China as a manufacturing superpower in recent decades. But it probably has little to do with robots, which are no more prevalent in Latin America than elsewhere.

Some researchers have questioned whether the developing world as a whole has deindustrialised. They argue that manufacturing employment became geographically more concentrated after 1990, but no less important. Nobuya Haraguchi of the United Nations Industrial Development Organisation (UNIDO), Charles Fang Chin Cheng of the University of New South Wales and Eveline Smeets, a consultant, have painstakingly pieced together employment data on over 100 developing countries, going back to 1970. They find that the average of each country's manufacturing-employment ratio has indeed declined since the early 1990s, as Mr Rodrik showed. But when they look at developing countries in aggregate, the share of manufacturing employment is higher than in earlier decades (see chart).

These results are not as contradictory as they seem. To see why, imagine that the world contained only two countries: Colombia and China. In Colombia, industry accounted for about 30% of employment in 1990, according to the International Labour Organisation. That fell to around 20% in 2015. For China, the opposite was true. On average, then, industry's share remained roughly the same in both years: around 25%. But in aggregate, industry's share increased enormously, because a tenth of China's workforce is a much bigger number than a tenth of Colombia's.

China's takeover of manufacturing employment may itself have peaked. The number of Chinese working in industry started falling in 2013, and China's share of world clothing exports has also stagnated since then. This represents a "historic opportunity" for countries like India, notes Arvind Subramanian, chief economic adviser to India's government. Countries such as Bangladesh, Indonesia and Vietnam are seizing it, but India itself is lagging. Its handicaps are largely self-imposed. The country's gar-

ment-makers pay high duties to import the man-made fibres that now dominate the industry. Exporters can get a refund, but the procedure is cumbersome. Perhaps it could be automated.

As things stand, regulatory barriers are far more damaging for South Asia's garment-makers than automation. Indeed, the practical people who orchestrate supply chains for clothing retailers are somewhat sceptical about the role of robots in the industry. "There are many people who have done semi-automation. But fully automated garment factories, we have not seen any...we're probably years away," says Spencer Fung, chief executive of Li & Fung in Hong Kong. The company's chairman, William Fung, agrees. E-commerce may have transformed retailing, but "the supply chain that supplies this highly digitised consumer market is actually analogue."

Automation can speed things up, but it also adds to costs. The operator of one of SoftWear's Sewbot lines may be 17 times as productive as a traditional garment-worker, but the typical cost of labour in the United States, even on the minimum wage, is more than 18 times as much as in Bangladesh. And that does not count the cost of the bot.

Bots for basics

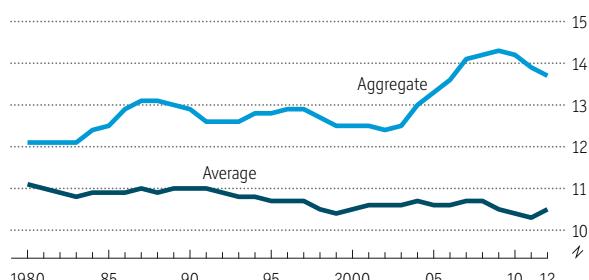
SoftWear Automation itself is surprisingly measured in its claims for its technology. "There's the perception that robots will take over and automate everything," says Mr Rajan, the firm's boss; but he believes the sewbots will remain in the minority even 20-30 years into the future. "I expect we'll probably automate about 20-25% of the apparel industry," he predicts. Robots will take care of "the high-volume basics". But "the higher fashion, lower batch sizes are always going to be done by people."

SoftWear Automation occasionally receives calls from Bangladeshi garment-makers, but the company serves only the American market. "If you are looking to deploy our technology because you think you can save labour costs, then it's the wrong reason to do it," says Mr Rajan. Instead, his company aims to minimise transport costs, reduce environmental strains and relieve acute American labour shortages. One of their principal customers supplies America's armed forces, whose uniforms are required by law to be made within the country. This anachronistic legislation is supposed to preserve America's industrial capacity to make the things its army needs, but "the average age of seamstresses in America is 56," Mr Rajan points out.

For the foreseeable future, then, the Sewbot is not a threat to the abundant labour in countries like Bangladesh. Its existence owes a lot to some cutting-edge innovation and more than a little to some long-standing American protectionism. Unfortunately, more examples of such protectionism are on the way. ■

Better than it looks

Manufacturing, % share of developing-country employment



Source: "The Importance of Manufacturing in Economic Development: Has This Changed?" by Nobuya Haraguchi et al, *World Development*, May 2017

Protectionism

Anti-trumping duties

Does the American president's protectionism pose a threat to emerging countries?

EVEN BEFORE THEY claim their baggage at the airport, visitors to the city of San Luis Potosí in central Mexico see an advertisement for the site where Ford Motors was planning to build a \$1.6bn factory. The Planta Ford is still marked on a map in the arrivals hall, albeit only on a Post-it note. Follow the map, and you will see the factory's white steel skeleton standing out against the brown hills of the Gogorron National Park.

Ford's facility, intended to build its small Focus cars, would have created 2,800 jobs directly, and many more indirectly. But in January the company announced it was pulling out and investing \$700m in Flat Rock, Michigan, instead. President Donald Trump, who had threatened to impose border taxes on carmakers that shifted production to foreign locations, was delighted. "Thank you to Ford for scrapping a new plant in Mexico and creating 700 new jobs in the US. This is just the beginning," he tweeted to his many followers. Everybody in San Luis Potosí, by contrast, was "a little bit upset", notes one resident.

Eight months into his presidency, Mr Trump's trade stance does not look quite as upsetting to emerging markets as many had feared. Despite his campaign threats, he has not imposed 35% tariffs on companies relocating to Mexico or 45% tariffs on goods from China. Nor has he yet withdrawn from the North American Free Trade Agreement (NAFTA).

So far the world has not embarked on a trade war, at least judging by the ballistic evidence. The members of the World Trade Organisation (WTO) between them imposed about 11 new trade restrictions per month in the seven months to mid-May 2017, the lowest rate since 2008. They also initiated 25 trade "remedies", such as anti-dumping duties or countervailing tariffs against subsidised imports, which claim to redress unfair trade (rather than restrict free trade). That was in line with the monthly average for the past five years.

But there is no room for complacency. Sometimes the damage Mr Trump has inflicted on the global trading system must be measured not against the status quo but against what might have been. In his first week in office, for example, he withdrew from the Trans-Pacific Partnership, a trade and investment agreement with 11 other countries, including Chile, Mexico and Peru. The agreement might have added 8% to the GDP of Vietnam by 2030, according to calculations by Peter Petri of the Peterson Institute for International Economics and Michael Plummer of Johns Hopkins University, and almost as much to the economy of Malaysia. White House officials have said that quitting America's trade agreement with South Korea is also a possibility, though no longer a priority. Such a cavalier attitude towards existing agreements will make future deals harder to strike.

Mr Trump has also quietly undermined the World Trade Organisation, and the multilateral principles it represents, by working around it. His government has launched an investigation into China's abuses of intellectual property, invoking old American legal provisions that the WTO was supposed to supplant. And he has refused to begin the process of appointing new judges to its trade tribunals.

Rather than impose sweeping tariffs against entire countries, Mr Trump's administration has turned to more targeted measures, such as anti-dumping duties, against individual products. These trade "remedies" can be deployed without getting bogged down in Congress. Indeed, the administration has chosen to initiate many of these investigations itself, rather than wait for aggrieved American industries to plead for them.

America the dutiful

How much difference will this new American trigger-happiness make? Duties against dumped or subsidised products covered 3.8% of American imports at the end of 2016, according to calculations by Chad Bown of the PIIE. The investigations now under way could almost double that figure to 7.4%.

Not all of the new duties will apply to emerging economies. The threat of steel restrictions poses a bigger danger to the European Union and Canada than to China. And many of the more obvious emerging-market targets have already been hit. China's exporters, for example, are already accustomed to such pinprick protectionism. At the end of last year the country was subject to 139 such measures, covering 9.2% of its American sales.

So the increased use of remedies will not be fatal to emerging-market exports, but it will be a growing irritant, especially if the countries concerned feel compelled to impose tit-for-tat tariffs. Retaliation would be easier to resist if the administration were to act quietly, but quietude has not been one of its virtues.

The emerging economy most at risk from Mr Trump's trade instincts remains Mexico, which is now locked in a difficult renegotiation of NAFTA. America wants to tighten the agreement's rules of origin, which determine what counts as a North American product. It wants to add provisions against currency manipulation. It also seeks a freer hand to impose duties on dumped, subsidised or surging imports, and it wants American courts, not NAFTA panels, to resolve investment disputes. These and other measures, it hopes, will eliminate the big trade deficits ►



► it now runs with both the other members, Mexico and Canada.

Yet it is not clear how a trade agreement like NAFTA can curb a trade deficit. Suppose a renegotiated agreement allowed America to impose higher tariffs in the name of narrowing its import-export gap. Those tariffs would limit the demand for foreign currencies. That would reduce their price, making them more competitive against the dollar. That, in turn, would tend to undo the effect of the tariff.

One NAFTA member already has experience of trying to engineer a better trade balance by fiat. Back in 1993, Mexico required manufacturers to export \$2-worth of cars for every \$1-worth of car imports. NAFTA phased out such practices, and Mexico's car industry has never looked back.

If Mexico has to concede anything to keep NAFTA alive, it might accept a ban on currency manipulation. Since both Canada and Mexico let their exchange rates float, any such prohibition would probably remain redundant. But it would allow America's president to claim an unprecedented breakthrough: incorporating currency safeguards into a trade agreement for the first time. That would make a good tweet. With luck, he and his team would then declare victory and go home.

San Luis Potosí, for its part, seems to have shrugged off the Ford setback. About 3km east of the abandoned site, BMW is building a new factory of its own that will eventually employ 1,500 people. "I think the city is [enjoying] one of our best times," says a local resident. "For sure, other companies will come at the end of the day." Formal employment in the state increased by 7.7% in the year to May. The governor has boasted about the pace of job creation on Twitter, where he has over 50,000 followers. In matters of populism, two-way trade remains strong. ■

Political risks

Movements in EM major

How populism can shape emerging markets

THE SOUND OF an orchestral horn fills the hall as musicians warm up for an evening performance of Rachmaninoff and Tchaikovsky. The venue is a dramatic Beaux-Arts building that started life as the central post office of Buenos Aires. It perfectly illustrates Argentina's pendulum swings between liberalism and populism. In 1946 it doubled as a headquarters for the charitable work of the president's wife, Eva Perón. In 1997 the postal service was privatised during one of Argentina's periodic experiments with free markets and hard money. As that came to a grisly end in the default of 2001, bankruptcy also ensnared the post office's new owner, a conglomerate led by Franco Macri.

The postal service was renationalised early in the presidency of Néstor Kirchner, who led a new wave of "post-neoliberal" populism. In 2005 Mr Kirchner decided to turn the defunct building into a cultural centre. His wife, Cristina Fernández de Kirchner, who succeeded him as president, eventually completed the project and named the building after him. Her chosen successor lost the 2015 presidential elections to none other than Mr Macri's son, Mauricio, whose government swiftly rescheduled the debts that his father's company still owed to the state.

The Macri government has been tidying up a lot else, too. Among other things, it consolidated Argentina's multiple exchange rates, stopped propping up the peso and steadily relaxed

currency controls. In 2016 it returned to the international capital markets, and earlier this year it sold a bond with a 100-year maturity, usually reserved for the most creditworthy borrowers.

The populism Argentina is escaping has a long history in the region. In its 1950s heyday, the movement successfully crossed class boundaries, scrambling left and right. It championed domestic industry, opposing a suspect international elite.

To keep these disparate coalitions together, populists tried to give something to everyone, notes Michael Conniff of San José State University. That usually meant favouring everyone today at the expense of everyone tomorrow. Populist governments presided over public spending financed by borrowing, prices frozen by fiat, local industry shielded from imports and wage hikes unmatched by productivity gains.

Ultimately, such policies proved unsustainable. But as Andrés Velasco, a former finance minister of Chile, has pointed out, "ultimately" can take a very long time. Before it exhausts its limits, populism typically moves through several distinct phases. It often begins in weakened, underheated economies, where initially it works well, providing a boost to spending. "Everyone will try to scare you with the spectre of an economic collapse," Juan Perón wrote in 1953. "But all of this is a lie. There is nothing more elastic than the economy."

However, an underemployed economy is far more elastic than one going at full tilt. Once spending is strong enough to restore employment, reactivate idle factories and revive imports, populism runs into capacity constraints. Budget and trade deficits widen and price pressure builds.

This inflationary pressure typically meets with one of two responses. It can be offset by high interest rates from the central bank, if the populist leader allows it, squeezing the private sector. Alternatively, the inflationary momentum can be left unchecked until the public clamour for price stability brings the government down or forces a retreat.

Where do today's emerging economies stand in this cycle of populism? Brazil, like Argentina, is in a post-populist phase. The previous government, led by Dilma Rousseff, was never as reckless as the Kirchners in Argentina, but it did overspend in advance of the 2014 presidential election. Having failed to predict the commodity downturn in the second half of that year, Brazil's government was shocked at how inelastic the economy proved to be. A zealous enforcement of the fiscal rules provided the pretext for Ms Rousseff's impeachment.

Other emerging economies are in earlier phases of the cycle. Rodrigo Duterte of the Philippines talks like a populist, but has so far left his economic policy in the hands of competent technocrats. South Africa's Jacob Zuma used to do the same, but has since removed two respected finance ministers in the past couple of years, turning the Treasury over to a loyalist instead. Turkey's central bank, for its part, is trying to keep a lid on inflation, but has received little public backing from the country's president, Recep Tayyip Erdogan.

Perhaps the most interesting case of a "pre-populist" emerging market is Mexico. It has largely embraced macroeconomic orthodoxy, demonstrating its commitment to open trade and investment policies by locking itself into NAFTA. But disappointing growth, widespread corruption and gang violence have left many Mexicans dissatisfied. The leading candidate for the next presidential election, due in July of 2018, is Andrés Manuel López Obrador, a former mayor of Mexico City, who attacks the crookedness of the establishment and seeks a revision of NAFTA. In some ways, he is like a mirror image of America's president, leaning heavily to the left just as Mr Trump leans to the right. In their politics, as in other ways, emerging economies are beginning to resemble their rich counterparts more closely. ■

Convergence

Merging markets

Emerging economies are becoming more like their rich counterparts

THESE ARE NOT your father's emerging markets, notes Mark Dow, a money manager who used to work for the IMF, on his blog. The phrase alludes to a 1980s car advertisement contrasting a range of flashy new models with the tried-and-trusted versions bought by a previous generation. Today's emerging markets are also different from earlier models. But unlike the cars, they are less exciting than their predecessors.

In the past, they suffered from a chronic lack of macroeconomic credibility. They could not persuade outsiders to hold their money or their debt through thick and thin, unless they anchored their exchange rates to the dollar and denominated their debt in harder currencies than their own. So they have often struggled to offset downturns by easing either monetary or fiscal policy. They could not cut interest rates for fear of sinking the currency and unleashing inflation, and they could not cut taxes or increase public spending without raising fears of default. They were locked into a "procyclicality trap".

This lack of macroeconomic leeway left them vulnerable to rising American interest rates and sudden outflows of foreign capital. It also made it harder for resource-rich economies to cope with the vagaries of the commodity cycle. But, as this special report has argued, emerging economies have begun to grow out of these handicaps. Their central banks have earned more inflation-fighting credibility of their own, making it easier for their governments to sell debt in their own currency. That, in turn, has helped to loosen the pro-cyclicality trap.

Cycling ban

This greater macroeconomic maturity should allow emerging economies to cope better with two global dynamics that have often scuppered them in the past: the commodity cycle and the Fed cycle. It is therefore unlikely that the Fed's efforts to raise interest rates and trim its balance-sheet will condemn emerging economies to another bout of turmoil like the taper tantrum of 2013, let alone the Volcker shock of 1979-81. That shock, which left many promising Latin American countries languishing for a de-

cade, lent credence to the idea of a middle-income trap. But this report has argued that this danger was never as grave as many people believed.

Believers in the trap often argue that once developing countries have exhausted the easy gains from cheap labour, they stagnate. Some worry that even the transient advantages of cheap labour have been eroded by automation, exposing poor countries to "premature deindustrialisation". But a closer look at the evidence suggests that industrial employment in emerging markets has not declined, it has merely migrated to the biggest of them, China. Moreover, this migration may now be reversing, as Chinese employment shifts to services, leaving gaps for other workshops of the world to emerge.

Nine of the 24 members of the benchmark MSCI stock-market index are already high-income countries, according to the World Bank, and others are on the cusp. Indeed, the average income per person of the index members, weighted by the size of their economies, is now much closer to the bank's high-income threshold (\$12,236) than it was when the index began in the late 1980s.

This new maturity is also reflected in these countries' financial-market performance. In the past, emerging-market equities offered investors the prospect of higher returns, subject to higher volatility. But over the past five years they have offered a combination of risk and return that sits well within developed-market norms, according to MSCI. In their market performance and their macroeconomic policies, the gap between emerging economies and the developed world has narrowed. It is therefore ironic that one of the biggest dangers emerging markets face is a downward convergence in their politics.

President Donald Trump professes to admire the strong-man politics of Russia, and he covets the trade surpluses of China. Steve Bannon, his former chief strategist, believes China has borrowed the "American system" of manufacturing protection proposed by Alexander Hamilton in the late 18th century. He wants Mr Trump to bring that system back home. Rising protectionism in America would limit the scope for emerging economies to grow rapidly through labour-intensive manufacturing. And the opportunity for these economies to anchor their trade and investment policies in multilateral agreements has also diminished, thanks to America's disenchantment with such deals.

Mr Agtmael hoped that his "emerging markets" label would distance these economies from a long list of third-world associations: "Flimsy polyester, cheap toys, rampant corruption, Soviet-style tractors and flooded rice paddies". By those standards emerging markets have been 80% successful, shedding all of these associations except the third. They bear little resemblance to the markets of the crisis-ridden 1990s, let alone the ones Mr Agtmael named a decade earlier. As it happens, he is now a grandfather, and these are not his emerging markets. ■



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Liberia's election

Into a vague future

MONROVIA

Many candidates want to run Liberia. Few have a plan

AS LIBERIA prepares for a general election on October 10th, people are making their preferences known. Some wear T-shirts with the faces of candidates on them. Crowds of exuberant supporters block roads. The country was devastated by civil war for the best part of 14 years until 2003. But aside from a few scuffles, the campaign has been peaceful. People feel excited, not adversarial. Liberia is set to have its first transfer of power from one elected president to another since 1944.

It is still not clear who among the 20 candidates will succeed Ellen Johnson Sirleaf, the president, who won a Nobel prize for securing Liberia's peace. "Continuity" is the message of her Unity Party (UP). Its candidate is Joseph Boakai, Ms Sirleaf's mild-mannered vice-president, who is seen by many as a safe (and uncorrupt) choice. But although Ms Sirleaf has said she backs Mr Boakai, she did not appear at his campaign launch. And in September she told the UN General Assembly that her stepping down "paves the way for the next generation of Liberians to lead the country". Mr Boakai is 72. "Perhaps she wants to be neutral," says Patrick Worrie, a senior official in the UP.

War-weary Liberians give the UP credit for maintaining peace and stability. But they also complain of rampant corruption and a shockingly bad education system. The economy has struggled to recover from the Ebola epidemic, which killed al-

most 5,000 Liberians between 2014 and 2016. The UP's incumbency, therefore, may not be an advantage for Mr Boakai. In 2014 only two of 12 senators seeking re-election kept their seats. "We are struggling," says Catherine Borbor, who sells drinks in central Monrovia, the capital, and voted to re-elect Ms Sirleaf in 2011. "So we decided to look for another person."

The person she found is George Weah, who is best known for having once been a great footballer. A national hero, he lost the election to Ms Sirleaf in 2005 and was also on the losing ticket (as the vice-presidential candidate) in 2011. But the former slum-dweller trounced Ms Sirleaf's son, Robert, in a senate election in 2014. He won 78% of the vote in Liberia's most populous county, Montserrado, which includes Monrovia.

Hope, change, whatever you want
Like most other candidates, Mr Weah is running on a vague platform of improving education, employment and health. "I have been very successful. I have done so well," he told Radio France Internationale when asked to defend his poor record in the Senate. His slogan is the clunky, Obama-esque "Change For Hope".

Mr Weah's star power means he probably will not need to say much in order to retain his base of devoted supporters. But his choice of Jewel Howard Taylor as his running-mate may prove a misstep. Ms Taylor is the ex-wife of Charles Taylor, the former

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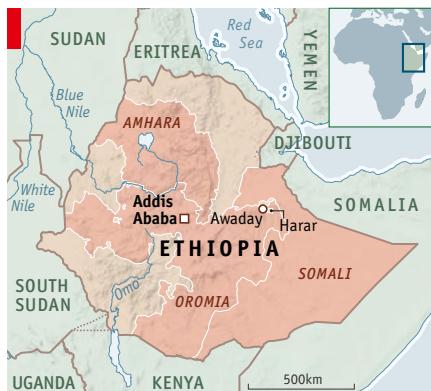
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president and war criminal. Mr Taylor is still popular in some places—and reviled in others. Ms Taylor says Mr Weah chose her because of her tribe, sex and the fact that she lives in Bong county, the third most populous, where she has been senator since 2005.

Ms Taylor's frankness highlights a truth of Liberian politics: ethnicity and geography matter. Tension between the descendants of Liberia's founders, who were former slaves from America, and its native population calmed as indigenous politicians rose to prominence (Ms Sirleaf, Mr Boakai and Mr Weah are all natives). But candidates still play regional politics. Even Ms Sirleaf, in 2011, won the support of Prince Johnson, a former warlord known for overseeing the torture and murder of the former dictator, Samuel Doe, in 1990. More important, from Ms Sirleaf's perspective, he was popular in Nimba county, Liberia's second most populous.

Other contenders in this year's race are following her lead. Charles Brumskine, who served as president of the Senate under Mr Taylor until he fled in 1999, is running with Harrison Karnwea, a former official from Nimba county. Benoni Urey, a wealthy businessman, had reportedly hoped to team up with Ms Taylor but settled for the son of a slain Nimba politician. More such manoeuvring will occur before the second round of voting, probably next month, when the field is narrowed to two candidates (assuming no one gets 50% of the vote this time around).

Whoever emerges as president will undoubtedly reward political backers with plum jobs and patronage. But Liberia's recent economic woes may lower the gains from corruption. As one international official puts it: "Even if you're the most corrupt leader going, you're not going to make vast amounts of money in Liberia." ■



Ethnic tension in Ethiopia

Unity v diversity

HARAR

Another outbreak of violence is testing Ethiopia's ethnic federalism

FOR centuries the city of Harar, on the eastern fringes of the Ethiopian highlands, was a sanctuary, its people protected by a great wall that surrounded the entire city. But in the late 19th century it was finally annexed by the Ethiopian empire. Harar regained a bit of independence in 1995, when the area around it became the smallest of Ethiopia's nine ethnically based, semi-autonomous regions. Today it is relatively peaceful and prosperous—and, since last month, a sanctuary once more.

In recent weeks thousands of Ethiopians have poured into areas around Harar, fleeing violence in neighbouring towns (see map). Nearly 70,000 people have sought shelter just east of the city. Several thousand more are huddling in a makeshift camp in the west. Most are Oromo, Ethiopia's largest ethnic group. Its members clashed with ethnic Somalis in February and March, resulting in the death of hundreds. The violence erupted again in September, when more than 30 people were killed in the town of Awaday. Revenge killings, often by local militias or police, have followed, pushing the death toll still higher. In response, the government has sent in the army.

Ethnic violence is common in Ethiopia, especially between Oromos and Somalis, whose vast regions share the country's longest internal border. Since the introduction of ethnic federalism in 1995, both groups have tried to grab land and resources from each other, often with the backing of local politicians. A referendum in 2004 that was meant to define the border failed to settle the matter. A peace agreement signed by the two regional presidents in April was no more successful.

When the ruling Ethiopian People's Revolutionary Democratic Front (EPRDF)

Chinese aid in Africa

No place like home

The birthplaces of African leaders receive an awful lot of aid from China

IN 2010 Yang Jiechi, then China's foreign minister, visited Yoni, a village in Sierra Leone. Mr Yang had a job to do: hand over a fancy new school, financed by Chinese aid, to the local authorities. Sierra Leone certainly needed more schools, but some wondered why the Chinese chose the middle of the bush for the project.

It just so happens that Yoni is the home village of Ernest Bai Koroma, Sierra Leone's president. Yoni's residents, note Daron Acemoglu and James Robinson, two economists, live in new houses that would pass for "palaces" by the standards of rural Africa.

Scholars have long had a hunch that Chinese aid could be more easily manipulated than the Western sort, which often comes with strings attached. A Chinese white paper in 2014 stated that the government would not impose any "political conditions" on countries asking for help. The commerce ministry, China's lead aid agency, says most projects are initiated by recipient states. This approach makes aid more vulnerable to misuse by local leaders, say critics.

But proving such corruption is difficult. China regularly blends aid with commercial loans, confusing researchers. Since 2013, however, AidData, a research lab based at the College of William and

Mary in America, has scanned through media reports to categorise Chinese giving, making it easier to compare apples with apples. It geolocated more than 2,000 projects in 50 African countries between 2000 and 2013. A team of economists recently used the database to see if these projects coincided with presidents' birthplaces.

In a working paper, the pundits show that China's official transfers to a leader's birth region nearly triple after he or she assumes power. Even when using a stricter definition of aid provided by the OECD, a club of mostly rich countries, an increase of 75% was found. They got similar results when looking at the birthplaces of presidential spouses. Crucially, they found no such effect with aid doled out by the World Bank, their benchmark for Western assistance. "We believe Chinese aid is special," says Andreas Fuchs, a co-author of the study.

Even before receiving aid, leaders' birth regions are often richer than average, notes Roland Hodler, another co-author. China gives them a further boost—the paper concludes that a 10% increase in Chinese aid lifts regional GDP by 0.24%. This suggests that China is widening geographic inequalities within recipient countries. The authors stop short of saying that it makes social unrest more likely, but they say it is a possibility.

China's approach to aid has other side-effects. In a paper released earlier this year, Diego Hernandez, an economist, showed that China's rise as a development financier has increased competition between donors. This, in turn, has strengthened recipients' bargaining power, says Mr Hernandez. Traditional donors have responded by lowering conditionality, or the number of strings attached to aid (see chart). Using data from 1980 to 2013, he finds that African countries have received 15% fewer conditions from the World Bank for every 1% increase in Chinese aid. Mr Koroma is no doubt pleased.

Strings detached

Africa, average number of World Bank conditions Per project



Source: World Bank Development Action Database

swept to power in 1991 after a bloody 15-year civil war, federalism was seen as a way to placate the ethnic liberation movements that helped it to power. The previous regime had been dominated by the Amhara, the second-largest ethnic group (the Eritreans broke away to form a new state). Eventually ethnic loyalties would wither as people grew richer, went the thinking of the Marxist-inspired EPRDF.

But the way federalism was implemented caused problems from the start. New identity cards forced people to choose an ethnicity, though many Ethiopians are of mixed heritage. Territories often made little sense. In the Harari region, a minority of Hararis rule over much bigger populations of Oromos and Amharas, a source of resentment. Boundaries that were once porous became fixed, leading to disputes. ►

For years the EPRDF sought to dampen the tension by tightly controlling regional politics. But its grip has loosened over time. Local governments have grown stronger. Regional politicians are increasingly pushing ethnic agendas. The leaders of Oromia, the largest region, have drafted a bill demanding changes to the name, administration and official language of Addis Ababa, the capital, which has a special status but sits within Oromia. They have stoked ethnic nationalism and accused other groups of conspiring to oppress the Oromo.

Politicians in the Somali region are no more constructive. They have turned a blind eye to abuses by local militias and a controversial paramilitary group known as the Liyu. The region's president "has a fairly consistent expansionist agenda", says a Western diplomat. "He may have spied an opportunity." The federal govern-

ment, now dominated by the Tigrayan ethnic group, was rocked by a wave of protests last year by the Oromo and other frustrated groups.

Many complain that the rulers in Addis Ababa are doing too little. They have been slow to respond to the recent violence, fuelling suspicions that they were complicit. "We are victims of the federal government," shouts Mustafa Muhammad Yusuf, an Oromo elder sheltering in Harar. "Why doesn't it solve this problem?"

Federalism may have seemed the only option when it was introduced in 1995. But some now suggest softening its ethnic aspect. "In the past the emphasis was too much on ethnic diversity at the expense of unity," says Christophe Van der Beken, a professor at the Ethiopian Civil Service University. "The challenge now is to bring the latter back." ■

charge of the misery.

So are regional powers. Qatar, the main sponsor of Hamas, is under embargo by Egypt and three of its Gulf neighbours, which want the emirate to cut ties with Islamists. It has not halted aid to Hamas, but it has quietly urged the group to reconcile with Fatah. The United Arab Emirates has dangled the prospect of massive investment in a post-Hamas Gaza. It is working closely with Muhammad Dahlan, an ex-Fatah security boss who was banished by Mr Abbas and now lives in Abu Dhabi.

The greatest pressure has come from Egypt, which controls Rafah, the sole border crossing accessible to most Palestinians. It has been largely closed since 2013. Egypt accuses Hamas of working with jihadists who are fighting a bloody insurgency in Sinai. Though the charges are exaggerated, Hamas has indeed allowed dozens of wanted Egyptian militants to seek refuge in Gaza. The generals in Cairo would be happy to see Mr Abbas's men back on the border.

Hamas has not agreed to that. It may let Mr Abbas run the schools and hospitals, but it will not give up a militia that boasts tens of thousands of fighters and a cache of rockets. "This will never be up for discussion," says Moussa Abu Marzouk, a top Hamas official. So this effort is likely to fail for the same sorts of reasons as the past six. Mr Abbas cannot accept a well-armed group operating under his nose. It would be a threat to the unpopular president's tenuous rule.

It could also bankrupt his government. Israel would probably withhold the tax revenue on which the PA depends, and some Western countries might suspend foreign aid. "If someone from Hamas has a weapon, I'll put him in prison," Mr Abbas told Egyptian television. He may not get the chance. ■

Palestinian politics

Hamas extends a hand

CAIRO

An effort to end the rift between Hamas and Fatah will probably fail

IT MUST have felt like *déjà vu* for Rami Hamdallah, the Palestinian prime minister, as he crossed the heavily-fortified border into Gaza on October 2nd. It was his first visit in two-and-a-half years. There were speeches, rallies and lofty promises to end the schism that has paralysed Palestinian politics for more than a decade. It was like a replay of a trip he made in 2014 to inaugurate a new unity government—which fell apart within weeks.

The Palestinian territories split in 2007, a year after Hamas, the militant Islamist group, won a majority in parliament. It seized control of Gaza after months of bloody fighting with its nationalist rival, Fatah. Since then Hamas has run the coastal strip as a separate fief, with its own civil servants and police. The two parties have signed six reconciliation deals meant to end the split, but none held. Hamas was loth to give up its enclave.

Now it seems more amenable. It has agreed to cede control of the civilian ministries in Gaza. Over the coming year it will add 3,000 police officers from the Palestinian Authority (PA), which runs the West Bank and is dominated by Fatah. Yahya Sinwar, Hamas's number two, said he would "break the neck" of anyone who opposes reconciliation. (That may not be an idle threat: in the 1980s his job was to kill Palestinians who collaborated with Israel.)

Hamas has few alternatives at this point. Life in Gaza has been grim for a decade, amid three wars and a blockade im-

posed by both Israel and Egypt. Conditions worsened further this spring when Mahmoud Abbas, the Palestinian president, slapped his own sanctions on the territory to press Hamas into a deal. Most of Gaza's 2m people receive just four hours of electricity a day. Tap water is equally scarce and when it is available it is brackish and polluted. Nearly two-thirds of young people cannot find work. In dingy, crowded hospitals, basic medicines are in short supply. Hamas is keen to put someone else in



Mr Hamdallah (right) tries to shake loose some concessions

Lebanon's railway

Back on track?

BEIRUT

Syria's destruction revives a dream of rebuilding Lebanon's railway

TRAVELLERS to Lebanon have long been moaned the state of the country's roads. Writing in the 1850s, an Irish banker, James Farley, called the route from Beirut to Damascus a "wretched mule path". The perilous journey over rough mountain passes took four days, as long as you dodged bandits and avoided the winter snow. The mules have gone but the sorry state of the country's roads persists. Years of political chaos, low investment and more recently the influx of 1.5m Syrian refugees, which has sapped resources, exacerbated the problem. Could a revival of railways save the day?

The fate of Lebanon's rail network tracks the rise and fall of the country's fortunes. Built by an enterprising French count when Beirut was still ruled by the Ottoman Turks, the first line opened in 1895, cutting the trip to Damascus to nine hours. Tourism, trade and a nascent wine industry set up by a French road engineer flourished. When T.E. Lawrence's band of saboteurs blew up parts of the Turks' Middle East rail network in the first world war, Lebanon's dynamic railway factory produced the spares needed to mend the damage. By the eve of next world war, you could travel from Beirut to London. At its peak, the country's railway was said to span 408km, roughly the same amount of track as today's London underground.

The skeletal remains of Lebanon's iron heyday are now scattered across the country. Rusting trains, dilapidated stations and tracks overgrown with wild flowers are all that is left. The civil war, which erupted in 1975 and ravaged the country for the next 15 years, gradually destroyed the network. Militias blew up the tracks. The Israeli army shelled them. Syria's security forces dug up parts of the line to sell as scrap metal in Pakistan. An open-air nightclub in Beirut's old central station is the closest most Lebanese will ever come to a train, provided they can afford the fancy cocktails.

Talk of restoring the tracks to their former glory is nothing new. Several government-commissioned studies since the 1990s have argued that a railway linking Lebanon's coastal cities with Syria makes economic sense. The latest, funded by the European Investment Bank, says a line connecting Beirut to the northern port city of Tripoli would generate enough revenue to cover operating costs and recoup some of the \$3bn it would take to build. A track shipping freight from Tripoli to the Syrian

border and on to the city of Homs—and thus with luck farther afield in the Middle East—would cost far less and boost trade. A consortium of Italian firms is also looking at tunnelling through the mountain to reopen the Beirut-Damascus route.

Despite the enthusiasm, Lebanon's trains will go nowhere until the war next-door stops. "No one wants to put money in when it's still unclear what's going to happen in Syria," says Raya Haffar, a former finance minister. Firms from the Gulf and China are eyeing investments that seek to capture some of the \$200bn needed to rebuild Syria. A railway from Lebanon's ports to Syria's cement-hungry cities might encourage them. But even if the war ends it will take years before work on a new rail network can begin. If Lebanon's track record is anything to go by, its railway dreams are more likely to hit the buffers. ■

**Jalal Talabani**

Kurdish and Iraqi

The mediating skills of the Kurds' Jalal Talabani will be missed

FUNERALS can bring estranged parties together. And if anyone's could heal the fissure between leaders in Baghdad and those in Iraq's Kurdish enclave, that of Jalal Talabani should be the one. Mr Talabani died on October 3rd in Germany, aged 83. For 60 years "Mam", or uncle, as Arabs and Kurds alike called him, made a career out of bridging differences.

After Saddam Hussein fell in 2003, he became Iraq's first non-Arab president. A Sunni preacher's son, he kept excellent relations with Shia politicians, particularly in Iran. He kissed both Iran's president, Mahmoud Ahmadinejad, and America's secretary of state, Condoleezza Rice. For

years he battled his Kurdish rival, Masoud Barzani, pitting his humble origins and leftist leanings against the Barzanis' tribal heft. (In 1996 Mr Barzani even summoned Saddam's tanks to invade Mr Talabani's eastern fief, Sulaymaniyah.) But in recent years Mr Talabani, ever the conciliator, endorsed Mr Barzani's extended presidency of the Kurdish enclave, healing that rift.

Claiming Mr Talabani as one of his own, Haider al-Abadi, Iraq's prime minister, declared three days of mourning, and is planning what is likely to be a state funeral when his body arrives back from Germany. Kurdish officials are heading to Baghdad, hoping to repair relations while marching beside his cortège. Mr Abadi is refusing to talk until the Kurds invalidate their recent referendum, which they claim resulted in a 93% vote for independence.

There are signs that both sides are trying to de-escalate the crisis. Mr Abadi has relaxed financial restrictions and an international flight embargo on the Kurdish enclave. Kurds (and Mr Talabani's body) still must fly via Baghdad, but airlines are expecting that requirement to be dropped soon, too.

Other threats still loom. Iranian tanks have deployed near Kurdistan's eastern border. Turkey is discussing the return of Iraqi immigration officials to its crossings with the enclave, which would subject Kurdistan to Iraqi border controls for the first time in 25 years. But the tank movements are seen as posturing, and Turkey has not yet carried out its most substantial threat: to plug the oil pipeline that provides the bulk of the Kurds' revenues.

Kurds are divided. Some say the reaction of the government in Baghdad proves its undying hostility. On October 3rd Arab Iraqi MPs prevented Kurdish ones from entering the parliament in Baghdad unless they renounced the referendum. Supporters of Nuri al-Maliki, a former prime minister, talk of a vote of no-confidence in Fuad Massoum, a Kurd who is Mr Talabani's successor as Iraq's president. If he goes, some predict Mr Maliki would bid for the largely titular post as a step towards regaining control of Iraq. "It's like the Arab chauvinism of the Baath," complains an ousted Kurdish official leaving Baghdad, referring to Saddam's old party.

Other Kurds say the problems are self-inflicted. Three Kurdish parties, including Mr Talabani's Patriotic Union of Kurdistan (PUK), have refused to join a new "political leadership" body set up by Mr Barzani to prepare for independence. Kurdish elections due next month might have shown where sympathies lay. But Mr Talabani's five-year absence because of sickness has left the PUK embroiled in a succession crisis and ill-placed to campaign. His one-time deputy, Barham Salih, has split to found a new party. If only Mr Talabani were around to offer advice. ■



Spain and Catalonia

Outrage in Catalonia

BARCELONA AND MADRID

The government mishandles Catalan defiance

WHEN Mariano Rajoy pledged that the referendum on independence organised by the Catalan government for October 1st would not take place, it always looked like a hostage to fortune. And so it has proved. As riot police used force to evict activists from polling stations, pictures of elderly citizens bloodied by truncheon blows caused dreadful damage to the image of Spanish democracy. And the vote mostly went ahead regardless.

For Mr Rajoy, Spain's conservative prime minister, it was the worst of both worlds. It leaves a question-mark over the future of his government, and even of his country. On the back of the vote, Carles Puigdemont, the Catalan president, said the region's parliament would issue a unilateral declaration of independence (UDI) in the coming days, in accordance with a law it rushed through last month. Spanish democracy faces "very grave times", declared King Felipe in a rare televised address on October 3rd. He was right.

The referendum took place peacefully in much of Catalonia, in a celebratory atmosphere. The trouble happened in Barcelona and other larger towns. Activists had occupied schools where polling was to take place. Riot squads of the Spanish national police and the Civil Guard waded in to evict them, causing almost 900 injuries,

four of them serious, according to the Generalitat, as Catalonia's regional government is known. The central government said 33 policemen were hurt. Although the police closed some 320 polling stations before being ordered to withdraw, thousands of others functioned. The Generalitat claimed that 2.3m people voted, or around 43% of an electorate of 5.4m. With opponents of independence staying away in droves, 90% of the votes were Yes. The numbers cannot be verified, but are in line with recent opinion polls, which have support for leaving at 40-45%.

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In the event of a UDI, few doubt that Mr Rajoy will feel obliged to suspend, at least in part, Catalonia's autonomy, as is possible under Article 155 of Spain's constitution (never before invoked). The king appeared to signal this when he criticised the Catalan authorities' "inadmissible disloyalty" to the democratic state and called for the upholding of constitutional order. But invoking Article 155 "will be another error in a long list of mistakes" by the Spanish government which have boosted support for independence, Mr Puigdemont told the BBC this week.

The events of October 1st have given the pro-independence coalition new allies. Ada Colau, the left-wing but non-secessionist mayor of Barcelona, backed a regional general strike on October 3rd called to protest against police violence and "in defence of democratic liberties". For the first time, Catalan secessionism has won some sympathy in Europe beyond far-left and far-right allies. The European Commis-



►sion ignored Mr Puigdemont's invitation to mediate, but did criticise violence and called on both sides to talk. It also reiterated its support for Mr Rajoy and his efforts to uphold the constitution.

Mr Puigdemont has repeatedly outwitted Mr Rajoy. The government underestimated the strength, staying power and unity of the independence movement. "We are convinced that time will defuse this problem," a senior official in Madrid said in March. That it did not show how out of touch with Catalan realities the government is. Mr Rajoy's government is stuffed with *abogados del estado*—state lawyers who form an elite bureaucratic corps—but is short of politicians and communicators. On the referendum, the prime minister "decided to act in the only way he knows how, which is to apply the law", says a source close to the ruling People's Party (PP). "He's disconcerted because applying the law didn't work. He doesn't know what to do."

What's there to talk about?

On the evening of the vote, Mr Rajoy blamed the violence on the Generalitat. "We did what we had to do," he said. But he also called on all political forces in the parliament to "reflect together on the future". Ministers insisted that after October 1st, talks could start. But can they? Neither side now trusts the other. The government has said it cannot negotiate with Mr Puigdemont, because of his defiance of the constitution; many in Catalonia abhor Mr Rajoy and the PP, which campaigned against an attempt to give the region greater powers in a new autonomy statute in 2006.

The bigger difficulty is what to discuss. Spain's constitution of 1978 granted sweeping powers of self-government to Catalonia. It gave Spain, including Catalonia, democracy, a welfare state and much greater prosperity (until a housing bubble burst in 2008). But the system was made unwieldy by a decision to grant regional autonomy across the country, rather than just to the Catalans, Basques and Galicians who had long demanded it. And it has not diminished Spanish conservatives' attachment to a centralising tradition, says José Álvarez Junco, a historian of nationalism at Madrid's Complutense University. "They'd like to think Spain is like France and Madrid like Paris." As a result, Barcelona does not have the status of a de facto joint capital that it deserves.

Mr Rajoy is thus constrained by pressure from his base. "The PP wins elections thanks to its [Spanish] nationalism and explicit anti-Catalanism," says Mr Álvarez. Over the past few days, Spanish flags have started to appear on balconies across much of the country.

Mr Rajoy's dogged determination, sangfroid and quiet ruthlessness helped Spain out of its banking crisis and eco-

nomic slump. But he shows little sign of the flexibility and imagination that resolving the Catalan problem demands. Letting it fester carries a cost. Mr Rajoy's minority government has had to postpone sending the 2018 budget to Congress, because the events in Catalonia mean it has lost, for now, the support of the Basque nationalists. The Catalan conflict could dent economic recovery. This week Spanish shares and bonds have been pummelled.

The Catalan government has quietly constructed the rudiments of an independent state. It has schooled two generations in its (questionable) narrative of oppression. The Catalan police chose not to use force to close polling stations. "Catalonia is already different, it's a new state in Europe," exclaimed Dolors Solà, a representative of the ruling pro-independence coalition at a polling station in Vic, a town north of Barcelona.

Not yet: secessionism has failed to achieve sufficient support in Catalonia to impose itself. A silent, divided and leaderless majority is against it, including some 30% of the population who want a better deal within Spain. Letting matters fester has costs for Catalonia, too. "If there's no negotiation we could go to an Ulsterisation...with two worlds living in the same space," fears Xavier Capelles, a tax lawyer in Vic, recalling the religious bitterness that disfigured Northern Ireland for years.

Until now, the independence movement has been impeccably non-violent, albeit constantly provocative. But the situation is volatile. If Mr Puigdemont and Mr Rajoy cannot between them swiftly take constructive steps towards an agreement or, worse, if Mr Rajoy attempts to arrest the Catalan leader, that could easily change. ■

Ukraine and Russia

Back to the table

KIEV AND RIGA

Vladimir Putin's dubious peacekeeping offer signals an important shift

THE proposal came out of nowhere. After years of swatting down Ukrainian calls for international peacekeeping forces, Vladimir Putin changed course ahead of the UN General Assembly last month, putting forward his own plan for so-called blue helmets in eastern Ukraine. Officials in Kiev and the West dismissed the Russian offer as a cynical ploy. The details, diplomats say, betray Russia's true intent: Mr Putin foresees peacekeeping forces stationed along the front line inside Ukraine, and not along the border with Russia—essentially formalising the internal division of the country.



Yet as unpalatable as the proposal is, its mere appearance hints at important shifts in Russian thinking. "Summoning the United Nations deep into Russia's historical space is a serious step," says Dmitri Trenin, head of the Moscow Carnegie Centre, a think-tank.

Until recently, the status quo in Ukraine largely satisfied Moscow. Heading into 2017, the Kremlin saw a rosy geopolitical picture: Donald Trump won the White House and spoke of lifting sanctions on Russia; a victory by Marine Le Pen seemed possible in France; Angela Merkel was preoccupied with her own re-election in Germany. Ukraine, for its part, was fretting about being abandoned by the West. As recently as last spring, Russian officials maintained that the Ukrainian government would soon collapse and that the Ukrainian elite, as one Kremlin adviser put it at the time, would "come to their senses" and return to Russia's embrace.

The situation in Ukraine now seems to be turning into "a stone around the neck", says Fyodor Lukyanov of the Council on Foreign and Defence Policy, a Russian government advisory body. The hopes that Ukraine would implode or that Moscow-friendly forces could take power in presidential elections due in 2019 have evaporated. The international backdrop has tilted too. German politics have moved to the right; Emmanuel Macron occupies the Elysée; Russian officials strain to decipher Mr Trump's shifting stances on Twitter.

If anything, Western pressure on Russia has increased. This summer, America named Kurt Volker, a hawkish former ambassador to NATO, as its new envoy dealing with Ukraine, and the White House revived discussions about providing the country with defensive weapons. Crucially, America's Congress strengthened sanctions on Russia.

For Mr Putin, the sanctions hamper his ambition to be respected as an equal among world leaders. Some Western officials have noted a recent change of tone in Moscow. In complaining about sanctions, some of the Kremlin's biggest hawks sounded almost "pathetic", according to ►

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► one former American official. Trying to strike a more conciliatory posture, Russia has this autumn started dispatching representatives to trans-Atlantic gatherings it long considered hostile. "Putin is ready to bargain," reckons Mr Trenin. The peace plan serves as an opening bid.

Whether he is willing to make real compromises remains to be seen. Mr Putin's chief goal—halting Ukraine's integration with the West—has not changed. The Kremlin does not trust Ukraine's president, Petro Poroshenko, to ensure the security of its separatist proxies, and Mr Putin cannot be seen to betray them. One observer compares the situation to having one's hand stuck in a door, and needing to pull it out without letting the door close.

Western officials, though deeply sceptical of Russia's intentions, see no harm in pursuing dialogue. Mr Volker is planning a second meeting with Vladislav Surkov, a high-level Kremlin operative responsible for Ukraine. They may soon find themselves at an impasse again. Rather than bringing the sides closer to resolution, the knotty details of peacekeeping merely underline how far apart they remain. ■

The EU's Eastern Partnership

Disappointed suitors

RIGA

Europe's easterners want to be part of the club

THE question of where Europe's eastern border lies has bedevilled statesmen for centuries. It has proved equally difficult for the European Union, which must decide how to deal with countries to its east that would like to join the club. In 2009 the EU launched the Eastern Partnership, meant to handle the European aspirations of Belarus, Ukraine, Moldova, Georgia, Armenia and Azerbaijan. The idea was to promote economic integration and European values, and to fend off Russian influence—but with no promise that the partner states could ever join. Now, with a summit between the EU and the partners coming up in November, they are growing dissatisfied with the arrangement.

"Without a light at the end of the tunnel, completing the process will be very hard," Tamar Khulordava, who chairs the Georgian parliament's committee on European integration, told a conference in Riga last week. The six Eastern Partnership states have promised to meet 20 new targets before 2020, including some that may be unpopular, such as promoting sexual equality and forcing farmers to meet EU safety standards. European officials note that these are good things to do in and of

Germany

Who owns the people's stage?

An escalating row over the future of Berlin's most avant-garde theatre

“DOCH KUNST”, or “Art after all”, read the blue banner tagged to the façade of the Volksbühne, a theatre in central Berlin. It was put up by a group of left-wing activists who occupied the building in late September. They want the theatre to be managed by a “collective”. The stunt was part of a wider protest against cultural policies which the occupiers believe favour “mass tourism” and gentrification at the expense of local artists and poorer residents.

The occupation (or “transmedia theatre performance”, as the activists call it) was the latest act in a drama over Berlin's cultural politics that has dragged on for over two years. At the centre of the row is Chris Dercon, a Belgian manager who ran London's Tate Modern museum before taking over as artistic director of the Volksbühne (“people's stage”) this season. The appointment, announced in the spring of 2015, ousted Frank Castorf, a famous East German director who had led the theatre to international renown with politically charged productions—and generous state subsidies.

Many in Berlin's cultural establishment worry that Mr Dercon, who has little experience of theatre, will ruin the Volksbühne's avant-garde credentials by putting on a bland, crowd-pleasing programme of international productions. Others regard his appointment as a breath of fresh air in a place that had become set in its ways. “When it comes to theatre, Berlin is a divided city these days,” wrote Hubert Spiegel, a culture editor at the *Frankfurter Allgemeine Zeitung*. For each theatre fan who wants to give Mr Dercon's globalist approach a



No crowd-pleasers here

chance, there are several who mourn the old ways. The Volksbühne has taken on a symbolic role in a wider debate over the relationship between art, globalisation and the future of the city.

There is no sign that things will get less dramatic. After talks failed—the activists were offered rooms for debates and performances—the occupiers were kicked out by the police. The actors have returned to rehearsals. The activists have moved to the square outside, named after Rosa Luxemburg, a socialist heroine. There they host talks and performances, and vow to continue their fight. Over 40,000 people have signed a petition asking Berlin's mayor to renegotiate the theatre's future. The next act has begun.

themselves. But Georgia, Ukraine and Moldova have already reached trade agreements and visa-free travel deals with the EU, and resent having to carry out difficult reforms that will not necessarily bring them any closer to membership.

Opposition groups, meanwhile, allege that their governments' Europhilia is partly a cover for continuing corruption and repression. Moldova's governing Democratic Party, backed by Vladimir Plahotniuc, an oligarch, loudly proclaims the country's pro-European orientation. But it has made only halting progress in investigating the use of Moldovan banks in multi-billion-dollar Russian money-laundering schemes.

In Georgia reformist momentum has slowed. The governing Georgian Dream

party is influenced by its founder, Bidzina Ivanishvili, a secretive billionaire. The bureaucracy, trimmed by the previous reformist government, has since been swelled by patronage, according to Giorgi Kandelaki, an opposition MP. The government has indulged in populism, banning foreign ownership of land and moving to write a prohibition on same-sex marriage into the constitution.

In Ukraine, which made its European choice in 2014 by staging a revolution, there has been little progress towards ending the oligarch-dominated political system. Recently the government has been suppressing anti-corruption organisations and has failed to reform its courts. As for Armenia, Azerbaijan and Belarus, they are to varying degrees autocratic and are closely knit ►

into Russia's security infrastructure. That sets them at odds with Georgia, Moldova and Ukraine, which have territory occupied by Russian troops and would like security guarantees from the EU.

All of this strengthens the EU's doubts about how far the Eastern Partnership should go. On September 16th Georgia, Moldova and Ukraine issued a joint call for the November summit to establish a road map to membership. Instead it may fall short of the last summit in 2015, which "acknowledged" the European aspirations of the partner countries. The Netherlands and Germany, whose voters are allergic to further EU expansion, are reluctant to repeat that pledge. The best the partner countries can hope for is probably that Europe's eastern border remains fuzzy enough that it might one day include them. ■

Poland

Saving the trees

HAJNOWKA

A row over logging in Europe's last great ancient forest

DAWN in Białowieża forest, and the bellowing of deer in rut competes with the buzz of chainsaws. The rival rackets sum up an increasingly ill-tempered argument over the Polish half of the ancient woods that straddle the frontier between Poland and Belarus. The row has reverberated beyond the forest's borders, and indeed beyond Poland's. It pits competing visions of environmental stewardship and economic development, and of Poland's path under the right-wing Law and Justice (PiS) party.

Last month the European Commission asked the European Court of Justice (ECJ) to fine Poland for ignoring an earlier order to halt logging in parts of the forest protected under EU law—in effect, nearly all of the 60,000 hectares of it that lie in Poland. In July UNESCO, the guardian of the planet's human and natural wonders, urged the government to end logging or risk Białowieża's demotion from a world heritage site to one "in danger", causing anger in Belarus, whose half of the forest would also be affected.

International alarm is understandable. The mixed forests that once blanketed central and western Europe have long since been turned to timber or fuel. Białowieża's towering oaks, hornbeams and spruces, plus the European bison and other endangered species that roam beneath their canopies, offer a unique glimpse of the continent's ecological past.

Gamekeepers began to safeguard Białowieża in the 15th century as hunting

grounds for Polish kings (and, after Russian annexation in 1772, for tsars). It suffered only two episodes of untrammelled exploitation—by German occupiers in the first world war and by a rapacious British company in the 1920s. These prompted Polish foresters to turn pristine areas into nature reserves and, in 1947, a 5,000-hectare (19 square miles) national park.

Today Poland's forestry service insists that it, too, is being a responsible steward. The felling being condemned by Brussels was necessary, it argues, to prevent dead trunks from collapsing onto cyclists and walkers (the EU court decision exempts cutting on safety grounds, but argues that the Poles have gone much further). It justifies the controversial use of heavy machinery by noting the scale of the task: in the past three years perhaps 1m spruces have succumbed to bark beetle. However, most scientists point to dry conditions, not insufficient pruning, for the bark-beetle outbreak. They also note that microbe-rich deadwood is vital to forest renewal. Studies have found that removing it reduces biodiversity. The older the tree, the more fertile its remains, says Rafal Kowalczyk, who runs the Polish Academy of Sciences' research station in Białowieża.

Many local residents shrug off such worries in any case. Those with ties to the long-declining lumber industry regard rotting wood as a wasted resource. The larger number engaged in tourism fret that rows of lifeless trunks put visitors off rather than lure them. "How many people will come to see dead trees?" huffs Jerzy Sirak, the mayor of Hajnowka, a town on the western edge of the forest.

Quite a few, reckons Włodzimierz Cimoszewicz, who as prime minister in 1995–99 doubled the national park's size to its current 10,500 hectares. Białowieża's value, he argues, lies in being a laboratory for natural processes, not a museum cabi-

net stacked with a preordained mix of species, much less a source of wood. Even with the recent uptick in revenues from logging, the forestry service spends a net 20m złotys (\$5.5m) a year on Białowieża. Given low lumber prices, closing that deficit would require logging on a scale no one is willing to contemplate. Tourists, meanwhile, spend around 72m złotys annually in the area, according to one study.

A plan Mr Cimoszewicz co-wrote a few years ago to turn the region, one of Poland's poorest, into an ecotourism hub, complete with an impressive science centre, has been shelved for lack of funds. NGOs' long-standing demand to place all of Białowieża under full protection, as Belarus did with most of its part in 2012, faces opposition from local authorities that suspect eco-absolutism will curb growth. "We used to look to Poland as an example; now they look to us," observes a Belarusian ecologist wryly.

PiS looks unmoved by environmental arguments. It dismisses protests by concerned scientists, NGOs and ordinary citizens—which range from signing open letters to chaining themselves to tree-harvesters—as political attacks by foreign and domestic opponents of its "Poland first" nationalism. As for EU finger-wagging, Jan Szyszko, the environment minister, once declared that Eurocrats "can't tell a bark beetle from a frog".

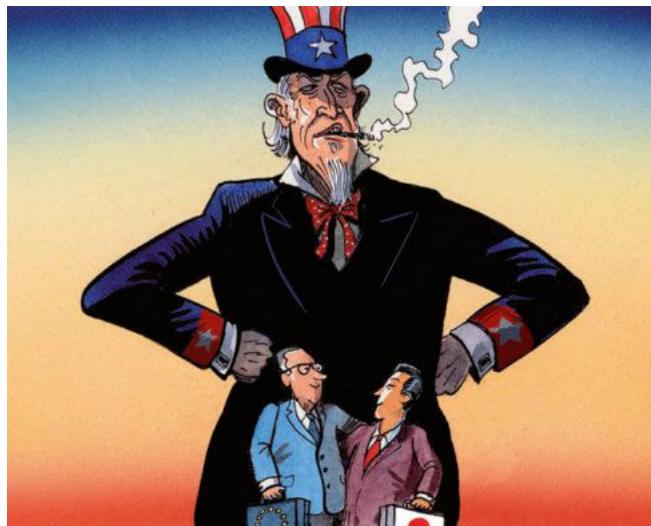
Perhaps Mr Szyszko, a forestry professor, agrees with one local forestry official who says that Białowieża, weakened by climate change, emptying aquifers and pestilence, "can't survive without man's help". Mr Cimoszewicz offers an alternative explanation for the government's heavy-handed treatment of it. Białowieża, with its royal connections, stately oaks and majestic roaming bison, remains a potent symbol of Polishness. "Whoever controls it, controls the country," he reckons. ■



Where the bison still roam

Charlemagne | Love triangle

The EU and Japan are getting closer. But America is still the partner that matters most



AKIRA SHIMIZU of Keidanren, Japan's main business lobby, has a theory about Brexit. The first one, he says, came in 1534 with Henry VIII's decision to break from the Catholic church. This rupture sparked a period of free-thinking innovation that culminated in James Watt's invention of the steam engine 250 years later and the advent of the Industrial Revolution. With luck, chuckles Mr Shimizu, Brexit the Sequel will spur a somewhat quicker reinvention of Britain's economic model.

But even Mr Shimizu thinks Britain may face "five to six" years of pain after it leaves the European Union, and more if it fails properly to adapt to the change. Britain accounts for nearly half of Japanese investment in the EU, so Japanese firms have more to lose than most from a messy divorce. Japan's car plants in Britain rely on complex supply chains that span Europe; its London-based banks use "passporting" rules to operate across the EU. If Britain leaves the single market, some of this business may move across the English Channel—or leave Europe entirely.

Unusually for a country where diplomacy tends to be oiled by discretion, government departments and business groups have issued a series of increasingly alarmed communiqués as they observe the Brexit talks stalling. Predictability is the watchword. Japan's officials express relief that Theresa May, the prime minister, has finally accepted that EU rules will continue to apply for a few years after Britain leaves the club in 2019, giving companies time to prepare. Recent meetings between Mrs May and Shinzo Abe, her Japanese counterpart, have helped soothe nerves in Tokyo. But Japan remains bemused at Mrs May's persistent refusal to accept that Britain faces a trade-off between its access to European markets, and its ability to write its own rules.

Yet Japan's concerns run deeper than fretting about an intra-European spat. In the 19th century American gunboats forced the Japanese shogunate to open its markets to foreigners. Today it is Japan, where exports have been driving growth, that fears the world is losing its taste for trade. To its dismay, Donald Trump's first big decision in office was to withdraw from the 12-country Trans-Pacific Partnership, a jumbo trade agreement (Mr Abe still hopes to lead the 11 remaining countries to conclude a somewhat shrunken deal). In Tokyo your columnist sat on a panel assessing the dangers of a protectionist-inspired global recession. To the

many traumas inflicted by Brexit, then, add this: a fear among Britain's friends that its withdrawal from the deepest trading bloc the world has ever known makes it harder to advance the case for open markets.

Enter Europe. Trade talks between the EU and Japan opened in 2013, soon got bogged down but reached a preliminary agreement in July; the two sides hope to conclude the deal by the end of the year. There are still a few wrinkles, especially on the eternally vexed question of legal redress for aggrieved investors. But the deal should bring quick advantage to both sides, opening European markets to Japanese car firms, which have been outstripped since South Korea signed a trade deal with the EU in 2010, and Japanese markets to European food exporters. Together the EU and Japan account for one-third of global GDP. The deal will be the largest each side has ever finalised. Mrs May hopes to copy and paste its provisions once Britain leaves the EU.

Impressive stuff. But both the EU and Japan make yet grander claims for their agreement, hoping it can shape the rules of globalisation by enshrining high product standards that will become global. Beyond cuts in tariffs, the agreement includes chapters on antitrust, corporate governance and sustainable development. And a deal suits the diplomatic priorities of both sides. For the EU it balances out the "protective" measures advanced by, among others, Emmanuel Macron, France's new president. This week the club agreed on new anti-dumping rules to cover subsidised Chinese steel and the like. For the Japanese, the partnership is a way of making the case for trade when walls are going up all over the world. "We weren't confident enough to do this on our own," says one former trade official.

No match for Rocket Man

Where might this friendship lead next? Mr Abe, who faces a re-election battle later this month, has long sought a more assertive global role for Japan, and the EU is an obvious partner. Yet this strategy has its limits. A Belgian minister once described Europe as an economic giant but a political dwarf and military worm; the description fits Japan all too neatly. The two sides' "Strategic Partnership Agreement", negotiated alongside the economic one, contains little to thrill the soul. True, the EU has begun a conversation on defence co-operation, and Mr Abe wants to remove the pacifist clause from Japan's constitution. But such moves are hardly equal to the threats posed by Kim Jong Un's nukes and rockets, or China's muscle-flexing in the South China Sea. It is no coincidence that the most high-profile joint security effort between the EU and Japan involves keeping shipping lanes free for trade, notably to counter pirates off the Somali coast. (Britain may prove a more interesting security partner for Japan; the two sides are stepping up defence and counter-terrorism co-operation.)

And that is why America remains the indispensable partner for European countries and Japan alike. When Russia annexed Crimea and invaded Ukraine, America and Europe co-ordinated sanctions in response. Mr Trump may not be doing much to support Japan, but its decades-old alliance with America is still its best hedge against the rise of China. European and Japanese interests do not always make a comfortable fit; Europe covets Chinese investment, for example, while Mr Abe has been courting Vladimir Putin, despite a long-standing territorial squabble between Japan and Russia. So, while Japan and Europe may bang the drum for trade, when the rhythms of war start to pound they must still look elsewhere. ■



The Conservatives

Spluttering

MANCHESTER

The party has lost faith in its leader's approach but not yet found an alternative

FOR A prime minister at the peak of her powers, it would have been unfortunate. For one barely clinging to her job, it amounted to almost cosmic levels of bad luck. First, Theresa May's speech to the Conservative Party conference in Manchester was interrupted by a prankster who was somehow allowed to hand her a P45, a form given to British workers when they get the sack. Then she suffered a coughing fit that not even a lozenge gallantly provided by the chancellor of the exchequer could halt. Finally, letters from the slogan on the wall behind Mrs May began dropping off one by one. Sitcom writers would have thought it a bit much.

After calling an election this spring that stripped the Tories of their majority and cost 30 of her MPs their job, Mrs May already faced a tough gig. Boris Johnson, the foreign secretary, had spent the previous fortnight trampling government policy with apparent impunity (see next story). Now her fluffed speech, which was supposed to reassert her authority, has revived speculation about how long she can last.

Even before the fiasco it was clear that the party was growing tired of its leader and beginning to plan for the future. There were frequently empty seats in the main hall, where ministers made mainly stale speeches. When she could get her words out, Mrs May confusingly combined a defence of the free market with promises of more intervention in higher education, en-

ergy and housing. By contrast, packed meetings on the fringes were alive with debate about the hole the party is in, and how it should dig its way out.

Members worried a lot about their party's make-up, which—as was plain to any visitor—is old and white. Young people were approached with near-anthropological fascination. Fewer than one in four under-30s backed the Tories in the June election. “If it is a cohort effect then the Conservatives are doomed,” Ben Page, a pollster at Ipsos MORI, cheerily reminded delegates. Nearly 30 fringe events on housing show that the party is onto the main cause of young people’s dissatisfaction.

The party has also lost support from ethnic minorities. Sam Gyimah, one of its few black MPs, urged Tories to concentrate on values, such as enterprise and freedom. “You reach out to the Sikh community the same way you reach out to Rotarians,” he said. Others blamed Mrs May’s harsh line on immigration. Yet some of the Tories’ few gains in England in June came in places such as Mansfield and Middlesbrough, with big chunks of white working-class voters. Some 45% of people who voted for the UK Independence Party in 2015 backed the Tories in 2017, according to YouGov. The party has yet to find a way to appeal to both groups.

It is alive to the growing anger about austerity. James Cleverly, a barrel-chested soldier turned MP, recalled meeting a con-

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stituent who felt unable to vote Conservative because she was a nurse. “That was all she felt she needed to say,” he reported. When it comes to public finances, Mr Cleverly argued that the Conservatives simply needed to remind voters that Britain’s financial mess was Labour’s fault: “That is their cosmic role in life: to screw things up, so we can come and fix them.” Mrs May doubled down on this theme. She was introduced by a video outlining the economic mess inherited by the Conservatives in 2010. But seven years have passed and such explanations are wearing thin.

Jeremy Corbyn haunted the event. The prime minister, chancellor and foreign secretary referred to Labour’s leader by name 20 times in their speeches, having barely mentioned him at last year’s conference. Yet the Tories still seem unsure how to attack him. Mr Corbyn was variously portrayed as a pantomime villain and a threat to the nation. Members mooed their assent as Mr Johnson laid into “that NATO-bashing, Trident-scrapping, would-be abolisher of the British army”. Philip Hammond, the chancellor, kicked off his speech with a history lesson on Britain in the 1970s and then a whistle-stop tour of countries where socialism has brought misery. Some ministers left the impression that their priority was simply to block Labour, rather than govern. “Keeping Corbyn out seems to me a duty of any sensible politician, particularly a Conservative politician,” said Damian Green, the de facto deputy prime minister, to a three-quarters empty fringe.

Brexit, skated over quickly by Mrs May, created the most excitement among attendees, especially when anyone suggested it would be hard, fast and easy. Yet on this subject more than on any other it is proving difficult to agree on a strategy. The cabinet is publicly split. And the mood of the conference, at which delegates cheered ►

► references to Agincourt and Waterloo, suggests that party members will be hostile to any leader who proposes to compromise.

The Tories still have some cause for optimism. Even after weeks of infighting under a powerless prime minister, the party is not far behind Labour in most polls. The next election need not come until 2022. "The popularity of snap elections may have gone down," noted Mr Green. Following her botched relaunch, Mrs May received public support from colleagues.

Yet few have much enthusiasm for her in private. Tory MPs' belief that the party is too weak to bear another leadership contest is being tested to the limit. The prime minister sits atop a party that knows it must change everything from its policies to, eventually, its leader. And bad luck has little to do with that. ■

The collapse of Monarch

Crash-landing

An ailing airline runs out of runway

SHORTLY before dawn on October 2nd, startled passengers booked to fly on Monarch Airlines began to get text messages informing them that their flights had been cancelled. It was the first news that Britain's fifth-biggest airline had ceased trading and was in administration.

The government had been warned that Monarch was in trouble only a month before, so a prepared rescue plan quickly took off. Over 30 aircraft were hired to bring back about 110,000 passengers from abroad in what was billed as the country's biggest peacetime repatriation. A further 860,000 people lost forward bookings, and with them weddings, birthday jollies and more.

It is the third business failure for Monarch's secretive private-equity owners, Greybull Capital. Greybull bought Monarch in 2014, when the airline was already struggling, from the Swiss-Italian Mantegazza family who had set it up in 1968. Greybull pumped money into Monarch, but the airline had still been expected to lose over £100m next year, said Monarch's boss, Andrew Swaffield.

Monarch had a good business flying to Egypt and Tunisia. But services were stopped to both destinations in 2015 after the bombing of a Russian airliner over the Sinai peninsula and the mass shooting of mostly British holidaymakers on a beach at Sousse. The number of passengers flying from Britain to north Africa fell from 177,000 in August 2016 to 95,000 in August 2017. The fall in the pound since June 2016

The cabinet

All about Boris

MANCHESTER

One of the great puzzles of politics is how the foreign secretary keeps his job

BORIS JOHNSON is a serial problem for the Conservative Party's high command. He is always plotting behind the scenes to get the top job. He has been flagrantly disloyal on the most divisive issue facing the government. Days before Theresa May delivered a speech in Florence laying out the government's considered position on Brexit, he published an article laying down "red lines" for Britain to keep within during its negotiation. He is also gaffe-prone. The day before Mrs May's big speech to the party conference he joked, to nervous laughter from his fellow Tories, that Sirte, in northern Libya, could become "the next Dubai" if they could "clear the dead bodies away".

So why doesn't the prime minister sack him? One reason, as with almost everything in British politics, lies in Brexit. Sacking a man whose allies call him the "godfather of Brexit" might upset the delicate balance of forces in the cabinet. Another reason is Mr Johnson's popularity in his party. A YouGov poll found that he is favourite among party members to be the next leader. The Daily Telegraph, a Tory-leaning newspaper, splashed his conference speech on its cover with the headline, "The roaring lion". Mr Johnson knows how to cheer up the Conservative troops at a time when it is all too easy to give in to despair.

Nevertheless, the party's patience is wearing thin. Several Tory MPs such as Sarah Wollaston and Heidi Allen called for Mr Johnson to be sacked after his Libya remarks. Off the record, Tories from

all sides of the party, including some Brexiteers, were happy to tell journalists that Mr Johnson's time was up. He also has the air of last year's man. Grassroots activists are now rallying behind an eccentric new hero in Jacob Rees-Mogg.

One theory is that Mr Johnson is constantly redrawing his "red lines" in order to force Mrs May to sack him. He is apparently finding it hard to get by on a cabinet minister's salary of £142,467 (\$189,000) a year and wants to get back to earning serious money as a writer. Why deal with the difficult work of negotiating with the European Union when you can recharge your bank account on the back-benches—and at the same time hone your Churchillian rhetoric before leading a rebellion against the betrayal of Brexit?



Angling for a P45?

compounded Monarch's woes, as many of its costs, such as fuel, were in dollars.

More important, the airline failed to adapt to the changing aviation market. It was created to service the boom in package holidays. Its first charter flight took off from Luton airport, where the company was headquartered, for Spain. That was the story for the next three decades: flying working-class Britons to Mediterranean resorts for all-in holidays, in some comfort. Passengers remember the free on-board drinks and classy grub.

That business model, like many others, was shattered by the internet. Punters now book their own holidays. The rise of low-cost airlines such as easyJet, founded in 1995, gave passengers cheap alternatives to charter flights. Numbers on charter flights operated by British airlines fell by two-thirds from 2001 to 2016, even as the overall number of passengers increased.

As profits declined, Monarch got out of charters and concentrated on short-haul, budget flights. But, says Robin Byde of Cantor Fitzgerald, a financial services company, in Europe this is the most fiercely competitive market of all, dominated by four big firms: Ryanair, easyJet, IAG (which includes British Airways, Aer Lingus and Iberia) and the Lufthansa group. Despite cutting costs, Monarch could not achieve the economies of scale to compete with its rivals. Air Berlin and Alitalia went bust earlier this year for similar reasons.

Monarch made a desperate bid to move from short-haul into long-haul, ordering 15 new planes (on top of a previous 30) in June. But it was too late. The company could not find a buyer for its short-haul operation. The share prices of Monarch's rivals leapt on its demise; they will now feast on the carcass, grabbing pilots and airport slots. Unsentimental business, aviation. ■

Bagehot | The new torchbearers

The Conservative Party needs to promote the next generation of leaders—and fast



THE party that met in Manchester this week was in a dismal mood: divided over Brexit, depressed by the recent election debacle and disillusioned with its leadership. The only energy in the conference was energy tinged with derangement. The biggest crowds gravitated to hardline Brexiteers who argued that Britain should leave the European Union “tomorrow” and that Brussels should be paying us rather than us paying them. A great party is in danger of becoming a fanatical sect.

By any reasonable measure the Conservatives are lagging behind Jeremy Corbyn’s Labour Party. Tory party membership is probably a fifth that of Labour and may well be lower than that of the Liberal Democrats. Almost half the Conservative Party’s members are over 65 and only 5% are 18-24. In June’s election the party lost every age group under 45.

But the party does have one big thing on its side: an impressive cohort of young MPs who for the most part got their parliamentary seats in the 2010 and 2015 intakes, as part of David Cameron’s modernisation drive. This generation contains a remarkable range of talents. Were it not for his catastrophic decision to call the EU referendum, Mr Cameron would have gone down in history as one of the Tories’ best party managers. Rory Stewart has succeeded in the demanding professions of the armed forces, the intelligence service and academia; Tom Tugendhat served in the army in Iraq and Afghanistan; Rishi Sunak is a successful entrepreneur with remarkable contacts in both America and India. And outside Parliament but waiting in the wings, Ruth Davidson has demonstrated her ability to take apart a politician, Nicola Sturgeon, who supposedly had history on her side.

In her darkest days after her election debacle Theresa May told the 1922 Committee of senior MPs that, “I got us into this mess and I’m going to get us out.” So far she has done little to make good on her promise. Mrs May’s biggest mistake has been to use her powers of patronage for purely defensive purposes, balancing the party’s established factions against each other in order to shore up her position. That has given her a cabinet that lacks either direction or discipline. Boris Johnson, her foreign secretary, is forever challenging her authority in public and other ministers are doing the same in private. She should instead have used her powers of patronage to remake the upper echelons of her party by pro-

moting talented younger Tories.

The current cabinet is ripe for a makeover, if not a complete gutting. Benjamin Disraeli once mocked the opposing front bench as a row of exhausted volcanoes (“Not a flame flickers on a single pallid crest”). The current Tory front bench is a row of exhausted molehills. Philip Hammond is doing a decent job of steering the economy through Brexit, and delivered a good speech in Manchester. Amber Rudd is a competent if not scintillating home secretary. But what on Earth is the point of Chris Grayling, the transport secretary? Or indeed of a foreign secretary who is as despised abroad as he is divisive at home?

Fast-tracking the younger generation would help the party to tackle its problem with younger voters. The party’s top jobs are now held by a gerontocracy. Mrs May and Mr Hammond are a generation older than their predecessors, Mr Cameron and George Osborne, and Mrs May’s closest confidant is her Oxford contemporary, Damian Green. As well as hampering the party’s attempt to appeal to younger voters, gerontification is causing internal management problems. Mr Tugendhat’s success in depositing Crispin Blunt from his position as chair of the House of Commons foreign-affairs committee shows just how much pressure there is for change from the younger generation.

Fast-tracking young stars might provide more diverse faces as well as youthful ones. The party saw its share of the ethnic minority vote fall from 24% in 2015 to 19% in 2017, a drop that may have cost it 40 seats in the election and certainly sounds an alarm bell in a fast-diversifying society. The younger generation includes several leading lights who challenge the idea that the Tory party is a white one. Mr Sunak and Kwasi Kwarteng, both the children of immigrants, have stellar academic credentials. Sam Gyimah was brought up partly in Ghana before going to a British state school then Oxford. Nusrat Ghani is the party’s highly regarded first female Muslim MP. Having done so much to retoxify the Tory brand with her (largely vain) pursuit of Brexit-supporting working-class voters, Mrs May has a duty to detoxify it again by producing a more diverse cabinet.

Out with the old

Perhaps most important, fast-tracking young stars will provide some new intellectual energy. The cabinet is entirely devoid of big, or even small, thinkers. Even a relatively intelligent figure such as Mr Hammond is a technocrat rather than a philosopher. By contrast the next generation contains a number of intellectuals. Mr Kwarteng has written excellent books on British imperialism. Mr Stewart has held a chair at Harvard. George Freeman is a particularly impressive policy entrepreneur. He recently organised a festival of ideas, billed as the Conservative Glastonbury, and possesses an ability to relate broad conservative principles to specific proposals.

In his conference speech Mr Johnson reminded the Tories of Winston Churchill’s great line about giving the lion its roar. A more apposite line for the Tory party’s current predicament is John F. Kennedy’s one about passing the torch to a new generation. The generation at the top of the Conservative Party has been given its chance and, in too many cases, has been found wanting. It is time to give a chance to a new generation—one that knows what it is to live in a world of student debt and out-of-reach houses and that has the energy and ideas to renew a fading party. Mrs May’s job in the time remaining to her is to make sure that the torch is passed as smoothly and quickly as possible. ■



Men, women and work

The gender gap

Women still earn a lot less than men, despite decades of equal-pay laws. Why?

I ALWAYS wanted to be a mum,” says Meghan, a British woman with two children. She wanted a career, too, and worked hard for it, earning a degree in economics and accounting, and taking professional exams. At a big accounting firm in London, she managed junior employees. When her daughter was born she faced a choice between her career and being the mother she wanted to be. After her boss refused her a flexible work schedule, she quit. Six years later she is a childminder, earning a fraction of her former salary. Now divorced, she says that a professional role in accountancy would have been financially better for her family. But finding one with hours that worked for a single parent seemed impossible.

Stories like this sum up the “motherhood penalty” to women’s careers. It is the main reason why the pay gap between men and women in rich countries is no longer narrowing. Employers view long hours as a sign of commitment and leadership potential. But from scarce, pricey child care to short school days, the world is organised for families with a parent at home—and that is usually the mother.

In the rich and middle-income countries that make up the OECD, the median wage of a woman working full-time is 85%

that of a man. This is not, as many assume, because employers pay a woman less than they would have paid a man in her place. Data from 25 countries collected by Korn Ferry, a consultancy, show that women earn 98% as much as men who do the same job for the same employer. The real reason is twofold. Women outnumber men in positions with lower salaries and little chance of promotion. And men and women are segregated between occupations and industries; those where women predominate pay less.

Just a fifth of senior executives in G7 countries are female. Across the European Union supervisors are more likely to be male, even when most of their underlings are female. Nearly 70% of working women in the EU are in occupations where at least 60% of workers are female. The top four jobs done by American women—teacher, nurse, secretary and health aide—are all at least 80% female.

Occupations dominated by women have lower status and pay. Primary teachers in the OECD earn 81% of the average for graduate jobs. Nurses earn less than police officers; cleaners less than caretakers. Women’s lower earnings mean that after divorcing or being widowed, they often end up poor. And skewed workforces can

be a problem for firms—and for society. BHP Billiton, a mining company, has found that sites with more women are run more safely. Heavily male police forces and female nursing corps are unlikely to have the best mix of skills, experience and priorities to deal with crime victims and patients of the opposite sex. One theory for why boys do worse than girls in school is the shortage of male academic role models.

The gender pay gap would shrink if men moved into female-dominated jobs and vice versa. But in America such workplace gender integration stalled about a decade ago after steadily increasing for more than two decades. A study of 12 European countries concluded that between 1995 and 2010 the share of female workers in most occupations changed little. A similar pattern has been found in Australia.

Two roads diverge

Men and women are free to study what they want, and discrimination at work has been banned for decades. But there is plenty of evidence that workplace segregation, and men’s and women’s differing career paths, cannot be explained away as a matter of differing preferences.

Research in Canada has compared reactions to ads for the same jobs that used stereotypically masculine words (leader, competitive and so on) or feminine ones (such as support, interpersonal and understand). Women found the “masculine” jobs less appealing, but not because they felt they would be unable to do them. They read the words as a signal of a male-dominated workplace, where they would not belong.

Stereotypes that discourage men from ➤

► female-dominated jobs are at least as ingrained. Florence Nightingale, who established the principles of modern nursing in the 1890s, believed that men's "hard and horny" hands made them unsuitable for the job, "however gentle their hearts". Some American nursing schools started admitting men only in 1981, after a Supreme Court ruling.

A plethora of programmes and campaigns encourage girls into science and engineering. And they now have role models aplenty. But campaigns to get boys into teaching and nursing are few and far between. Men who become nurses often stumble into the job. Marius Malmo at the Stavanger University Hospital in Norway explains that, after he failed to get into the police academy, a policeman offered friendly advice: nursing, he said, used the same "people skills". He decided to try it for a year before reapplying to the police, but loved nursing and stayed. He says he likes intensive care and operating theatres, because they are "where the action is".

Neither choice of field nor lack of ambition can explain why the share of women shrinks higher up the career ladder, even in industries that women dominate. The proportion of business and management degrees earned by women has grown steadily, but that of women in managerial and senior jobs has not kept pace. In America about half of college degrees in business awarded since 2000 have gone to women, but the share of senior executives who are female has remained stuck at one in five.

Women used to be less likely to ask for promotion. No longer: a survey by McKinsey in 2016 found that women in corporate America asked at the same rate as men. It also found that women and men were promoted at similar rates, except at the lowest rungs of the career ladder, where women lagged behind. A possible reason is that managers are reluctant to promote women who are starting families, or are likely to do so soon.

It so happens that the opportunity for the critical first promotion often coincides with wanting to start a family. Data from Britain show that the age at which women's pay starts to fall behind men's tracks the age at which they typically have their first child (see chart on next page). Claudia Goldin of Harvard University has found a similar pattern for college-educated American women.

A survey earlier this year of America, Australia, Britain, France, Germany and Scandinavian countries by *The Economist* and YouGov, a pollster, gauged how children affected working hours. Of women with children at home, 44-75% had scaled back after becoming mothers, by working fewer hours or switching to a less demanding job, such as one requiring less travel or overtime. Only 13-37% of fathers said they had done so, of whom more than half said

their partner had also scaled back.

When women give priority to caring for toddlers they fall behind. A recent American study put the motherhood penalty—the average by which women's future wages fall—at 4% per child, and 10% for the highest-earning, most skilled white women. A British mother's wages fall by 2% for each year she is out of the workforce, and by 4% if she has good school-leaving qualifications. Jennifer Young, an American mother with a degree in mechanical engineering, had been out of the workforce for 13 years when Cummins, an engineering firm, offered her a re-entry internship in engineering last year. She had been sure that a part-time or administrative job was her only possible route back to work.

Some new mothers leave their jobs because they prefer to be their children's main carers. But they are also influenced by censorious attitudes. In many countries the common opinion is that having a working mother is harmful for pre-school children. Germans call a working mother of small children a *Rabenmutter* (raven-mother). When Anna, an academic in Berlin, returned to work full-time her nine-month-

old daughter was the youngest child the nursery had ever taken. "They had no idea what to do with her," she says. A German father says his mother-in-law lamented that putting their toddlers in child care would turn them into "drug-dealers".

Often, the high cost of child care makes the decision to leave work a forced one. In America full-time child care costs 85% of the median rent. And even where it is subsidised, mothers often go part-time because the school day ends long before the working one. But part-time jobs are usually a career dead-end.

Many women switch to jobs requiring less education or experience. Nearly a third of working women in Britain say they are overqualified for their jobs, compared with less than a quarter of men. In America only 15% of women with graduate degrees in science and engineering, which are in short supply, were employed in their specialism in 2011, compared with 31% of men. And nearly a fifth were out of the labour force, a share twice as high as among similarly qualified men.

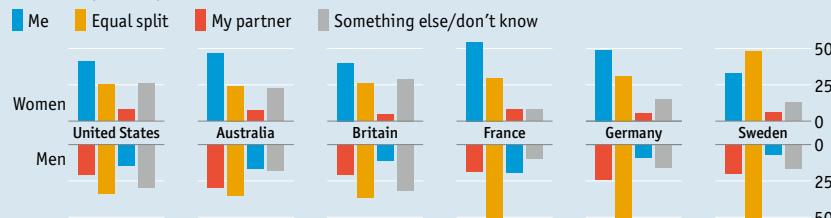
That men are typically paid more than women who are at a similar stage in their ►

Houses divided

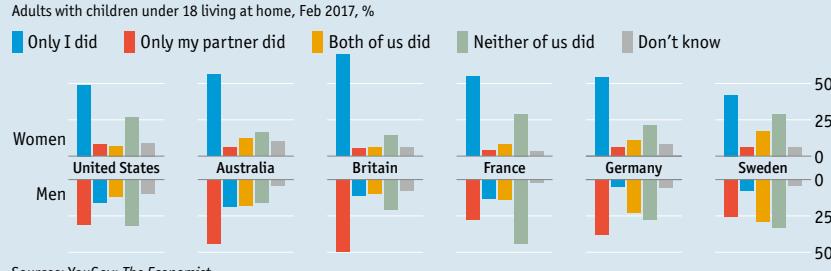
Earlier this year *The Economist* and YouGov, a pollster, asked people in eight countries how they balance career and family. Men were two to three times less likely than women to think that, in their family, the majority of household and child-care duties fell on the woman's shoulders. They were more likely to say that such tasks were split equally.

When we asked which partner had scaled back at work when their first child arrived, we found another perception gap. Both men and women were less likely to say that their partner had made adjustments than members of the opposite sex were to say they had made adjustments themselves. Perceptions in France differed most: 55% of women said that they, and only they, slowed down at work, twice as high as the share of men who said that only their partners did so. Though it is unclear who is more accurate, many people are clearly ignorant about the reality of their partners' lives. And even if men are open to doing more at home so their wives can do more at work, the necessity may not occur to them. Gender equality could be boosted by some frank kitchen-table conversations.

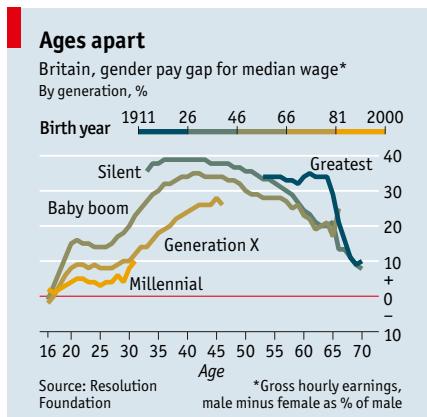
Between you and your partner, who is mostly responsible for household tasks and child care?
Adults with spouses or partners, Feb 2017, %



Did either you or your partner scale back your career after you had your first child?
For example, by reducing working hours or taking a less demanding job
Adults with children under 18 living at home, Feb 2017, %



Sources: YouGov; *The Economist*



► working lives helps explain why it is usually the mother who sacrifices her career for the sake of the children. But there are other reasons, too. New fathers are usually further along in their careers than new mothers are, for the simple reason that most men are older than their wives.

Skewed perceptions within households may also play a part. Although men are doing more child care than their fathers did, our survey suggests that they may overestimate how much (see box on previous page). And they seem not to realise how much motherhood harms their partner's career. Those men who go beyond changing nappies or dropping children off at school can feel painfully conspicuous. Tim Rutherford-Johnson, a British man who cared full-time for his children when they were small, says that in the playground he used to announce right away that he was a stay-at-home father. "I felt as if there was a big question-mark over my head," he says.

Government policies also play a role in men's and women's decisions about how to combine parenthood and jobs. They do more than raise or lower the cost of working for women. They shape men's and women's expectations for their own and each others' careers—and companies' decisions about whom to hire and promote.

Many countries have offered paid maternity leave for decades. When it lasts a year or less, it boosts women's employment. In America, the only rich country without legal entitlement to maternity leave, a quarter of women return to work within ten days of giving birth. But many never return because they cannot bear the thought of leaving a newborn in child care, or because paying for it would wipe out all or most of what they earn.

When maternity leave is longer than a year, it reduces women's overall participation in the workforce and widens the gender pay gap, says Olivier Thévenon of the OECD. Long periods away from work can make skills rusty. And too-generous arrangements can backfire. A German woman has the right to return to her job after three years' maternity leave. In many

countries mothers of young children are harder than other employees to fire. The difficulty of covering for such long absences, and the fear that the occasional unsackable mother will slack when she returns to work, may put firms off hiring or promoting young women, even though such discrimination is illegal.

In the 1970s the Scandinavian countries were the first to offer parental leave, to be shared as parents wish. But few men took it. Making the pay more generous and earmarking some of it for fathers helped. In Sweden and Norway, which replace 80–100% of earnings, about 90% of fathers now take parental leave. In Germany a two-month bonus for fathers who take some of the shared parental leave increased take-up by new fathers from 21% to 34% between 2008 and 2014.

If no parental leave is reserved for fathers, couples usually decide that the mother should take all of it, partly because she has stayed at home post-partum and therefore knows the ropes. That decision can shape a couple's future, says Jeremy Davies of the Fatherhood Institute, a charity, as it confirms the mother as the parenting expert. Then it is easier to relegate her career to second place. In Sweden, which increased the parental leave earmarked for fathers from two months to three in 2016, one study estimated that every month of leave a father took boosted his partner's salary four years later by 7%.

Although a growing number of countries are expanding paternity leave, few cover two-thirds of earnings, the level recommended by the OECD. In Britain, where some parental leave can be shared but paternity pay is low, many men give up the idea of taking a career break when they realise just how much it would cost, says Mr Davies. "So progressive couples end up like families in the 1950s."

Seemingly gender-neutral policies for parents may be used by fathers and mothers in different ways. After Britain expanded parental leave for fathers, for example, some male academics used their leave to write books rather than to do child care, thus enhancing their promotion prospects.

Children do not stop needing to be looked after when they start to walk. Among OECD countries, greater public provision of child care and education for children aged under five is strongly correlated with higher employment rates for mothers of young children. One ten-country study concluded that halving the price of child care increases the total number of hours worked by mothers by 7-10%.

In Germany a legal right to a place for children in kindergarten from the age of three, introduced in 1996, led a third of mothers who could not otherwise afford kindergarten to start working, though mostly part-time. The extra taxes they paid covered about 60% of the policy's cost—

and that is without taking account of the likelihood that they would earn more for the rest of their lives, too. In Britain, by contrast, the government's offer of up to 30 hours of free care for three- and four-year-olds had only a modest effect on how much mothers worked, possibly because the hours on offer are too few and cannot always be taken when suits parents best. Nurseries were paid too little for those hours, which probably reduced quality and put some parents off.

To help mothers, help fathers too

Even with wisely designed maternity policies, generous child care and Scandinavian rates of paternity leave, women will not catch up with men at work without a broader shift towards flexible working. That would also help men to be better fathers. Fewer now aspire to be just a breadwinner. Research by the Diversity Council of Australia found that more than a third of young fathers had seriously considered leaving their organisation because it would not let them work flexibly. Though Australian men ask for flexible working less often than women they are much more likely to be rejected. In Britain nearly half of young fathers say they would like to shift to a less stressful job, the better to balance work and family. But they are twice as likely as women to think that doing so would harm their careers.

"Even Google is against me," exclaims a Dutch father at a gathering about paternal leave, which is just two days in the Netherlands. When he searched for advice on combining fatherhood with work, the search engine asked if he had meant "motherhood and work". As men's and women's aspirations converge, the responses to the two queries will look increasingly similar. ■





Tech's toughest job

From Uber to kinder

Dara Khosrowshahi is off to a strong start but has miles to go

HERE'S the job spec. Unite a deeply divided board. Keep a strong-willed founder under control. Immediately recruit a new chief financial officer. Negotiate with angry local regulators intent on closing down the business in their city. Convince courts that the company does not have to provide its contract workers with the benefits due to full-time employees. Change a cut-throat culture without curbing employees' drive. On top of all this, deal not only with an intellectual-property (ip) lawsuit that could cost the firm nearly \$2bn, but also cope with a criminal investigation by the FBI that could see some managers end up in prison.

No one sane, you would think, would even apply for such misery. But after some hesitation Dara Khosrowshahi (pronounced cause-ro-SHAH-hee), until recently the chief executive of Expedia, an online travel agency, returned the headhunter's call. Now he is boss of Uber, which, at \$68bn, is the world's most highly valued privately-held company. Can he turn the firm, which in many ways has been a caricature of a disruptive Silicon Valley startup, into a more benign force—and take it public by late 2019?

Three weeks into the job, Mr Khosrowshahi has already made meaningful progress. On October 3rd he paid a hastily-arranged visit to Transport for London (TfL), the regulator that recently ruled that Uber was not "fit and proper" to hold an operat-

ing licence in the British capital. Both sides described the talks as "constructive" and announced further discussions. Later that day, Uber's new boss attended—via video link—a crucial board meeting that ended in a promising truce. It not only limits the power of Travis Kalanick, the firm's co-founder and former chief executive, but creates the conditions for a \$10bn investment by a consortium led by SoftBank, a

In the rearview mirror

Uber

Net revenues, \$bn



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Japanese tech firm run by Masayoshi Son.

One of Mr Son's main conditions was that power be shifted to more recent investors. Early Uber backers, including Mr Kalanick, will have to give up their "super-voting" rights. Mr Khosrowshahi's concession was that Mr Kalanick now has at least a theoretical chance to become chief executive again (rules proposed earlier would have made that all but impossible). Benchmark, a venture-capital firm and an early investor in Uber, agreed to drop a lawsuit against Mr Kalanick.

All could still unravel. The governance compromise is contingent on the SoftBank investment, which has two stages, going through. It may seem a done deal that SoftBank and its partners would invest a first round of \$1bn-1.25bn at Uber's present valuation of \$68bn. That way the new capital injection is not considered a "down-round", ie, one that produces a lower valuation. But much about the second round is still unknown. The stake could be anywhere between 14% and 17% of Uber, for example, at a valuation of as low as \$50bn.

Before Mr Khosrowshahi made it to London he had placed a full-page ad in the *Evening Standard*, a local newspaper, apologising "for the mistakes we've made" and acknowledging that "we must change". This was meant to signal to regulators all over the world that Uber's swashbuckling culture is a thing of the past. But he must show that this is not just a change in style, but substance.

He will not lack for opportunities to do so. A big question will be to what extent Uber will still insist on being a technology, rather than a transport, firm—a question which is on the agenda of the European Court of Justice. London, where Uber has appealed the regulator's decision, is likely to be the test case. TfL's complaints about the firm, for instance that it did not proper- ►

► ly yet its drivers, suggest that the regulator wants to treat it exactly like any other taxi operator. Yet Uber's willingness to make concessions may be limited. On September 26th it said it would pull out of the province of Quebec rather than accept new regulations.

Another unknown is the extent to which Uber will change how it deals with its drivers. It is still fighting efforts that would require it to treat many as full-time employees. On September 27th, for instance, it started an appeal against the ruling of a British court that would guarantee its drivers a minimum wage and holiday pay. But Uber seems to realise that it has to make life easier for them. It now allows tipping. And in some cities its algorithms take into account where a driver wants to end up after work.

And then there are Uber's cultural and legal troubles. Mr Khosrowshahi appears to think that he can soften, though not dull, the firm's edge by being more transparent than Mr Kalanick and his team. A bonus system that led to counter-productive levels of internal competition is under review. He can only hope that legal actions pending against the company do not cause too much damage, such as the one from Waymo, Alphabet's autonomous-car unit, over IP, or a criminal probe into its Greyball app, developed to outwit regulators.

Yet turning Uber into a kinder firm may make it harder to clear the highest hurdle: making it as profitable as a valuation of \$68bn requires it to be. The theory behind Uber is that by subsidising rides it sets an economic flywheel in motion that at some point powers itself. More riders attract more drivers, which will attract more riders and so on. In some big cities the flywheel is turning, generating profits, the firm has said, while acknowledging that these are still fragile. But with accumulated losses of about \$6bn (see chart on previous page), it seems to be more expensive than Uber expected to get up to speed. One reason is that other firms, such as Lyft in America, have piled in. And it is not clear whether the flywheel will keep spinning once the subsidies are cut. Sceptics argue that the model is unsustainable.

Mr Khosrowshahi has yet to say publicly whether he will continue pushing for growth or focus more on profits. But he could make Uber more efficient by leaving small markets and reining in its freewheeling organisation, in which regional managers operated like entrepreneurs, doing largely what they liked to generate growth. A deal with SoftBank would also help. If he cannot invest in Uber, Mr Son, who has already made several bets on ride-hailing, would certainly finance its rivals.

But if he wants Uber to have a successful share flotation soon, Mr Khosrowshahi must give it a new Gestalt, or personality, beyond that of a ruthless disrupter. The big

neighbour of his former firm near Seattle may be a good model. Amazon, the e-commerce giant, has built a well-oiled logistics and computing platform that allows it to test and introduce ever more offerings, from smart speakers to drone delivery. Similarly, a reformed Uber could become the platform for all kinds of logistics services and more (though it will need to focus more on profits than Amazon does). UberEats, its delivery arm, is growing fast. The firm is testing a similar service for medicines, called UberHealth.

The danger, if Uber's flywheel really gets going, is that it may attract even more regulatory attention. In other words, to justify its valuation, Uber would have to become really big. Yet that, in turn, risks triggering yet more of a backlash, as Facebook and Google, which have both got into political trouble recently, can attest. ■



Tax avoidance

Raining on Amazon

After taking a bite out of Apple, Brussels targets the world's top online retailer

MARGRETHE VESTAGER'S assault on technology firms she deems to have improperly massaged down their tax bills continued this week with a tilt at Amazon. The internet retailer faces a bill of €250m (\$293m) for back taxes over what the European Union's competition commissioner considers to have been an illegal sweetheart deal with Luxembourg.

The order requiring the Grand Duchy to recover the money follows a well-publicised three-year investigation. It is the latest in a series of tax-avoidance cases brought by the European Commission

against multinationals, most of them American. Last year, Ireland was ordered to recover €13bn from Apple—smashing all past records for EU corporate-tax cases.

As with Apple, the commission concluded that Amazon received illegal state aid—in the retailer's case between 2006 and 2014—through a tax-cutting arrangement unavailable to its rivals. It came in the form of a ruling from Luxembourg's tax authority, known as a "comfort letter". Amazon accordingly moved intellectual property of various types into a Luxembourg partnership that served as an intermediary between Amazon's European operations—whose headquarters were a separate Luxembourg entity—and its American parent. As a partnership, the go-between was not subject to tax under Luxembourg law (the statutory corporate rate is 29.22%). The European operating firm was.

The operating company was required to pay to the partnership substantial royalties for, among other things, the right to use the Amazon name, thereby shifting lots of profit to the untaxed entity. The commission argues that the level of royalty payments was inflated and did not reflect economic reality. It says the arrangement allowed Amazon to avoid tax on three-quarters of all profits on its sales in the EU (which the company does not disclose).

Both Luxembourg and Amazon deny wrongdoing. Luxembourg's authorities have said before that Amazon chose to put its main European operations in the tiny landlocked country for a variety of reasons, tax not being the main one. They have also pointed out that its operations in Luxembourg are hardly empty shell companies: the company employs over 1,500 people there (though the IP-holding partnership, which no longer exists, had no employees or offices). Amazon says it did not receive special treatment and is considering an appeal.

This week's order could stoke transatlantic tensions. After the Apple ruling last year, American politicians queued up to echo the sentiments of Tim Cook, the firm's boss, who derided Ms Vestager's action as "total political crap". Many of them saw Brussels' tax probes as being driven by tech-envy, not sound economics. Washington hinted at retaliation, though nothing specific has been suggested.

The commission's critics have a point. The details of the case are complex, and tax experts will disagree about the legality of the arrangements under the spotlight, just as they did with Apple. Few would deny that the frayed patchwork of international corporate-tax rules need reforming; one proposal, espoused by President Emmanuel Macron of France and supported by several other EU countries, would see multinationals taxed on revenues in particular territories instead of on profits. But punishing a firm for a 14-year-old ruling from a na-

tional government, happily accepted by both sides at the time, looks harsh. The uncertainty it stokes may also dampen foreign investors' interest in Europe. Ms Vestager's ruling will add to the discomfort felt by Jean-Claude Juncker, the commission's president, who was prime minister of Luxembourg when the tax arrangement in question was hammered out. American firms should brace for further scrutiny of past tax deals. The commission is also looking into McDonald's and Fiat Chrysler's arrangements in Luxembourg, and those of Starbucks in the Netherlands. The only other non-American firm known to be in its sights on tax is Engie, a French utility. The Apple case is likely to produce plenty more drama, too. The company and Ireland are both appealing. The commission, meanwhile, is taking Ireland to the European Court of Justice over its failure to collect the €13bn which it has been told it is owed but clearly does not want. ■

Fixing Ford

Waiting for parts

The new boss has a plan for the present, less so for the future

LIKE any mechanic with a misfiring car, Ford's new boss has had his head under the bonnet working out what needs attention. Jim Hackett emerged on October 3rd with a checklist of repairs to present to investors, who have been awaiting his diagnosis since he took over in May. The list is short but the engineering is complicated: restore Ford's competitiveness while preparing for a future of electric vehicles (EVs), self-driving cars and transport services. But those expecting a radical overhaul were probably disappointed.

Mr Hackett's predecessor, Mark Fields, was shown the door by Bill Ford, the firm's chairman, for failing to make a persuasive case that he was reinventing Ford as a mobility firm at the forefront of automotive technology. Despite acknowledging to investors that he and Mr Ford agreed that his new job was "about the future not the past", Mr Hackett was clearest about how to make Ford fit for the present.

Ford has struggled in recent years. It has underperformed even amid the lowly stockmarket valuations of carmakers challenged by tech firms with bolder ideas about transport in the future. Mr Hackett admitted to investors that, despite record profits of late, Ford had fallen short on margins, depriving them of billions of dollars. He hopes to put that right chiefly by using old-fashioned means—cutting costs.

Reducing complexity by pruning the

Internet infrastructure

Pipe dreams

Technology companies are building their own undersea fibre-optic networks

WHEN Cyrus Field, an American businessman, laid the first trans-Atlantic cable in 1858, it was hailed as one of the great technological achievements of its time and celebrated with bonfires, fireworks and 100-gun salutes. Alas, the reason for the festivities soon went away. Within weeks the cable failed.

On September 21st the completion of another trans-Atlantic cable was welcomed with much less ado. But it is remarkable nevertheless: dubbed *Marea*, Spanish for "tide", the 6,600km bundle of eight fibre-optic threads, roughly the size of a garden hose, is the highest-capacity connection across the ocean. Stretching from Virginia Beach, Virginia, to Bilbao, Spain, it is capable of transferring 160 terabits of data every second, the equivalent of more than 5,000 high-resolution movies. It is jointly owned by Facebook and Microsoft.

Such ultra-fast fibre networks are needed to keep up with the torrent of data flowing around the world. In 2016 traffic reached 3,544 terabits per second, roughly double the figure in 2014, according to TeleGeography, a market-research firm. And demand for international bandwidth is growing by 45% annually. Much traffic still comes from internet users, but a large and growing share is generated by big internet and cloud-computing companies syncing data across their networks of data centres around the world.

These firms used to lease all of their bandwidth from carriers such as BT and Level 3. But now they need so much network capacity that it makes more sense to lay their own dedicated pipes, particularly on long routes between their data centres. The Submarine Telecoms Forum, an industry body, reckons that 100,000km of submarine cable was laid in 2016, up from just 16,000km in 2015. TeleGeography predicts that a total of \$9.2bn will be spent on such cable projects between 2016 and 2018, five times as much as in the previous three years.

huge variety of different specifications available for each vehicle (in the case of the Focus, from 35,000 to 96) and sharing parts across more cars will help to lower costs, which have risen almost as fast as revenues since 2010. Bringing better technology to the industrial process should also cut the time it takes to develop new vehicles, by up to a fifth. This will all bring savings of \$14bn over the next five years, ac-



Only 6,599km to go

Owning a private subsea fibre-optic network has several advantages, including more bandwidth, lower costs, and reduced delay, or "latency". Having access to multiple cables on different routes also provides redundancy. If a cable is severed—by fishing nets, sharks, or an earthquake, among other things—traffic can be rerouted to another line. Most important, however, owning cables gives companies greater say over how their data traffic is managed and how equipment is upgraded. "The motivation is not so much saving money. It's more about control," says Julian Rawle, a submarine cable-industry expert.

Some people worry that owning the pipes that carry their customers' data will give big tech firms even more power than they already have, likening the situation to Amazon's owning the roads on which its packages are delivered and the lorries that carry them. Others fret that conventional network operators may struggle to adapt their business models, as companies such as Facebook are moving onto their turf. "Within the next 20 years," predicts Mr Rawle, "the whole concept of the telecom carrier as the provider of the network is going to disappear."

cording to Mr Hackett. Plans are also afoot to make more of the sort of cars that people want to buy. Buyers are turning against saloon cars and are demanding SUVs and trucks, so Ford will make more of them. But altering the line-up of products is hardly a step-change.

These are sensible fixes. But it is unlikely that Mr Hackett's measured tone will reassure investors that Ford is taking a lead in ►



Hackett plays it safe

► the new technologies that will determine success in the longer term. Neither does it help that its rival in Detroit, General Motors (GM), is doing a much better job. It launched a long-range EV, the Chevrolet Bolt, last year, and on October 2nd said that it planned 20 electric models by 2023. Despite announcing that it would reduce spending on internal combustion engines by a third by 2022 and divert that cash to electric powertrains, Ford will not launch a similar vehicle until 2020. Ford insists that it is only interested in profitable EVs. But notwithstanding losses while learning how to make and market battery-powered cars may give GM and other carmakers a long-term advantage.

Ford also aims to become the world's most trusted mobility company. Much like all bosses of carmakers faced with the puzzle of finding business models around ride-hailing and autonomous cars, Mr Hackett was vague about how Ford might provide services profitably. He did at least signal that it would find partners for self-driving technology, abandoning Mr Fields's riskier strategy of doing everything internally.

Striking the right balance between "thinking and doing" is important, according to Mr Hackett, who wants to "bend the arc towards doing". That is certainly what catching up with GM will require. Deutsche Bank recently suggested that Ford's rival may have commercial driverless cars on the road within the next couple of years, well ahead of any competitors.

Ford has plenty of ground to regain. As Barclays, a bank, points out, it went from being the "darling" of the industry a few years ago to a firm that investors now treat with "indifference, disinterest [and] apathy". Mr Hackett has announced more than mild tinkering. Investors will doubtless welcome the attack on costs but he has no revolutionary scheme that might make them love Ford again. ■

Indian telecoms

Jioseismic

MUMBAI

Dirt-cheap mobile data is a thrill for most, a headache for others

THE security guards at the foot of Antilia, a 27-floor private residence in Mumbai, while away the days just as all bored Indians have been doing in recent months—watching movies on their phone. Using a mobile network to stream endless Bollywood epics would until recently have been an unthinkable luxury, even in the rich world. In India it now costs less than a cup of street-side chai.

Thank the tycoon lording it in the skyscraper's upper reaches. As boss of Reliance Industries, Mukesh Ambani, India's richest man, has spent more than \$25bn on building Jio, a state-of-the-art mobile-telecoms network. The delight of the guards at Antilia, and of the roughly 130m Indians who have signed up to the service since it launched in September 2016, is matched only by the misery of Mr Ambani's rivals.

Jio's rise is nothing short of spectacular. It took less than a year for it to be delivering more data than any other mobile network in the world—one billion billion bytes a month, it claims, or over half the data delivered by all American carriers put together. Less so when it comes to revenue: after giving away its services for seven months, it went on to charge customers a third of what other Indian operators do.

Nobody thinks Mr Ambani is about to relent after winning a mere 11% or so of the market, a figure that is creeping up by around half a percentage point each month. Perhaps to terrify the competition further, he has spoken of wanting half the market to himself by 2021. To that end, the general public this week got their hands on the JioPhone, the latest plank in the company's growth push.

A crossover between an antique Nokia-style feature phone (these still make up most new handsets sold in India) and a smartphone, the device is bound to appeal to Antilia's security guards. It is free: you only pay a 1,500 rupee (\$23) deposit, refundable after three years. Then, for a mere 153 rupees a month, customers can consume unlimited calls and data. Though the screen is small and popular apps such as Facebook are not (yet) available, analysts at CLSA, a brokerage, expect around 100m Jio-Phones to be sold in the next 18 months.

Jio's gatecrashing of what was an orderly market has plunged its rivals into crisis. Some moan that regulators have bent over backwards to help Reliance, known for its ability to run rings around officials. Many operators are in precarious financial posi-

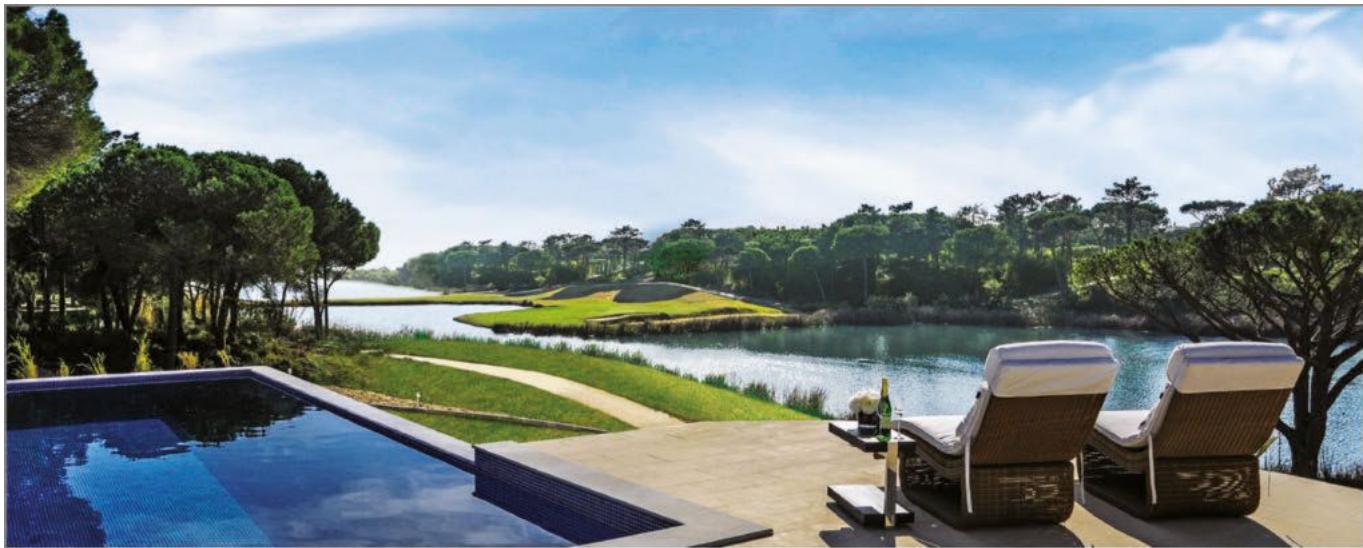
tions, having bet that rapid user growth would offset the high fixed costs of acquiring spectrum and building networks. Now that Jio has snagged 84% of the 153m net mobile-phone additions in the year to July (see chart on next page), others must fight for the scraps. A key metric, average revenue per user, has cratered across the industry. What profits remain are insufficient to service large debt piles. Analysts at Credit Suisse, a bank, calculate that over half of around \$40bn in loans to the industry sits with operators whose earnings before interest, tax, depreciation and amortisation cannot meet interest payments.

The government might get hit, too. Most lending to struggling telecom firms was by state-owned banks, whose long-overdue recapitalisation from public coffers will have to be bigger as a result. And the government itself is a creditor to telecoms companies, having agreed to spectrum bills being paid slowly over time. Against that, Mr Ambani's bet is uniquely in sync with the current government's ambitions. Jio launched its service with newspaper ads featuring a full-page portrait of the prime minister, Narendra Modi, dedicating its investment to his digital vision. And other services that need widespread internet adoption are clearly benefiting, from media-streaming to e-commerce.

Consolidation seems the order of the day for the rest of the industry. Having written €6.3bn (\$6.9bn) off the value of its local subsidiary and shelved a likely share listing, Vodafone, the British-owned second-biggest player, is merging with Idea Cellular, the third-biggest. Reliance Communications, a smaller outfit once run by Mr Ambani (it ended up with his brother Anil after the family empire was split up in 2005) had been in talks with Aircel to com- ►



A swami gets the religion



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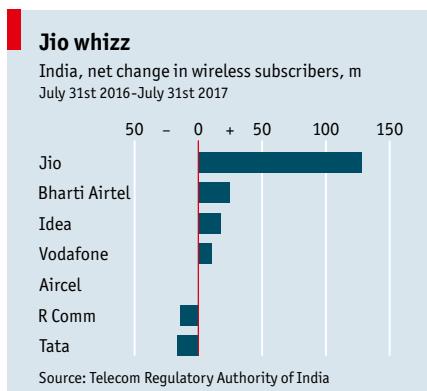
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►bine, but the deal now seems to have fallen through. The smaller Reliance is flogging anything it can—from phone masts to its head office—in a bid to stay afloat.

Jio's own financial position is hard to gauge. Its accounts are not separated from those of Reliance, whose profits generated in petrochemicals and oil exploration and drilling are funding the telecoms push. But even the most bullish analysts are struggling to figure out how Jio can provide a meaningful return to shareholders. Assuming it can double its existing customer base, it will still have sunk around \$100 to acquire each new subscriber.

Investors are clearly impressed. They trust that Reliance's increasing control over the fast-growing market for data will eventually allow it to raise prices. The firm's shares are up by over 50% so far this year, having been flat for most of the past decade. At 60, Mr Ambani is staking his legacy on his new venture, the only major part of the Reliance empire he has created himself rather than inherited. Whatever he has in mind with Jio, he is not done yet. ■

Pernod Ricard and Danone

Be a sinner, be a saint

PARIS

The bosses of two famous French firms struggle to keep their customers loyal

ALEXANDRE RICARD wants to talk boxing. He runs Pernod Ricard, a firm that sells Chivas whisky and Absolut vodka, among other drinks. Formed by his grandfather in 1975, with roots in a Pernod distiller set up in 1805, it is the world's second-largest seller of wine and spirits, with a market capitalisation of €32bn (\$37bn). He brags that Floyd Mayweather, an American pugilist with 19m Instagram followers, recently endorsed one of the company's tequila brands. Such a "key influencer" on a digital channel "gives us speed and scale", says Mr Ricard.

Celebrity endorsements are an old

ploy: French singers, actors and racing drivers used to push Pernod Ricard's liquor. But with 90% of sales in markets outside of France, punchier efforts are needed. Two years ago the firm commissioned a global study of boozing habits, which totted up all "moments of consumption" for drinkers, identifying 20 important ones in America, the biggest market. Teams of marketers are now told to push a brand for each such experience: the firm's tequila when American friends gather to watch sport; its cognac at Chinese weddings; gin for Spaniards sharing an aperitif.

The firm must respond somehow, because drinkers, especially millennials (the generation which roughly includes those born between 1980 and 1996), are no longer loyal, says Mr Ricard. "Back in the day, you had a one-brand consumer," who took a favoured tipple on almost any occasion. "Now it depends who you are with, where you are, the time of day. A consumer might have six brands," he says.

Across Paris, Emmanuel Faber, the head of another large French consumer-goods firm, Danone, is facing a similar challenge as consumers of yogurt and bottled water prove fickle too. His style—ascetic and almost monkish, as an acquaintance puts it—differs sharply from that of his compatriot. But the two bosses are responding to the same phenomenon: a lack of growth in food-and-drinks sales at big firms. "People are walking out of brands that they've been consuming for decades," says Mr Faber. To stop feeling disconnected from the origin of food, he says, they are switching to small, local firms that might produce organic foods, for example.

Of the two firms, Danone faces the biggest and most immediate shift in consumer tastes. Although he heads a global food firm with a market value of €46bn, Mr Faber warns that time may be up for standardisation in food-making. The food industry "is going nowhere", he adds, because short-sighted companies see only a "transactional relationship", not a deeper one based on values, with their customers.

These days people have little faith in the makers of their food and drink. Mr Faber talks at length about disenchantment shown by voters and consumers alike towards elites. Surveys show the public barely trusts CEOs such as himself when they speak about their companies, he says. Consumers "care about the sovereignty of their food, taking control back".

Danone's response, like that of Pernod Ricard, is partly about niftier marketing—it runs an ad campaign called "One Planet. One Health". But the company is also changing some basics. Two decades ago Danone sold "beer, wine, chocolates and candies", he points out. It has switched entirely to healthier products, betting that long-term growth lies there. The firm aims to be entirely carbon-neutral. Most striking,

Danone wants to get certified as a B-Corp—a for-profit firm that shows high social and environmental standards. It would be the largest company globally to do so. In America that requires registration as a "public benefit" firm, letting board directors legally promote the interests of staff, customers and others, along with those of shareholders.

Markets are not entirely convinced by Danone's strategy, however. An American activist investor, Corvex, has taken a small stake, worth \$400m, in the company, and is agitating for its operations to be improved and growth lifted.

Yet investors have drunk in the simpler story at Pernod Ricard—of a mix of resilient Western markets and growth from developing ones. Its share price has risen by roughly 50% in the past decade, whereas Danone's has been flat (though it has climbed since Mr Faber took over in 2014).

Still, there is a risk for Pernod Ricard, too: that younger, health-conscious consumers, who increasingly shun tobacco and sugary drinks, will also turn against liquor. Sales of spirits have been robust in recent years, even as consumption of wine and beer has fallen in many countries, but millennial shoppers sound increasingly puritan. Goldman Sachs notes in a recent report on millennials that 72% of such young consumers in America disapprove of others who drink "nearly every day".

Mr Faber's bet is on the trend towards healthy behaviour. "To survive and regain leadership as a big brand, we must do big things," he says. If he is right about a "revolution" among consumers, then the firm must fight to keep their trust. Mr Ricard's view is more old-school: consumers are less loyal, but he still believes many will long be happy to enjoy a drink. ■





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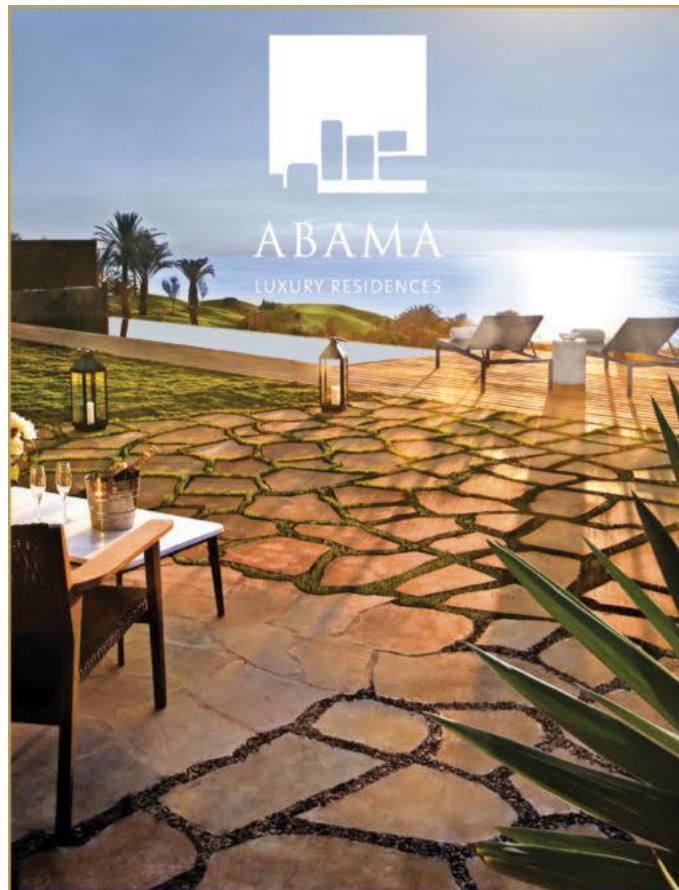


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Schumpeter | Goldman Sags

Unusually, the famous investment bank has more of a business than an image problem



BY TRADITION, Goldman Sachs makes risky financial wagers and stays icy cool under pressure. A bad trade on Treasury bonds in 1986 almost killed it, but was eventually cauterised. The firm's "big short" in early 2007, when it bet that subprime securities would tumble, helped it to book profits of \$14bn in 2008-09 and to perform relatively well during the worst financial crisis for 80 years. Goldman also values candour, at least inside the firm. In this spirit it is time to acknowledge that the bank's strategic direction is beginning to feel like a bum trade. Its defence is that it is no worse than its group of peers, but being average on Wall Street is a mug's game and the antithesis of the Goldman way.

While outsiders think that Goldman's alumni run the world, on Wall Street the firm's aura has dimmed. Rival banks view it with indifference, not awe. After shining in the years after the crisis, since 2012 its total return (share price gain plus dividends) has lagged behind the average of its four big American rivals by 36%. Other banks have caught up and Goldman's trading arm, which executes deals for clients, is misfiring, with its market share dropping. It has struggled to adapt to placid markets and a clampdown on proprietary trading (trading for your own profit).

Inevitably that gives rise to doubts about the firm's strategy, which is to slash costs and sit tight, hoping the industry's nuclear winter ends. So while lower bonuses mean the pay bill is down by 42% since 2007, there has been no wholesale retreat from the main businesses—advising and lending to companies, trading securities and asset management. Meanwhile, the bank is grappling with three problems: mediocre profitability, unconvincing capital allocation and a tricky management succession.

Back when it was a partnership, Goldman was more profitable than Facebook is now. Its return on equity was 38% in 1998, before it went public. In 2007 its ROE was 29%, but it fell to 9% in the most recent quarter. Two-thirds of this drop reflects tougher capital rules. Its level of ROE matches the average of JPMorgan, Morgan Stanley, Citigroup and Bank of America. Investors expect a mild recovery, but do not expect Goldman to be exceptional, so its shares do not trade on a notably superior multiple of book value, as they usually did in the glory years between 2006 and 2013.

Another gauge is profits relative to risk-weighted assets, a measure that regulators use to calibrate banks' risk and size. For every

\$100 of such assets Goldman made \$1.9 of pre-tax profits in 2016, less than the peer group's average of \$2.0. Each bank has a different mix of businesses, but you can compare Goldman to a best-in-class "clone" made up of JPMorgan's investment banking and asset-management divisions. The clone made \$2.2. (Goldman says that this comparison is too crude.)

Mediocre profitability reflects unwieldy asset allocation. Goldman has toiled to cut its balance-sheet, particularly in bond-trading. But it has been hit especially hard by new "Basel 3" rules which determine how its risk-weighted-assets are calculated. As a result Goldman's have risen by 35% since 2012. The trading arm ties up two-thirds of this, especially its derivatives book. Its lending operation has grown, with exposures to higher-risk firms—those with a credit rating of BBB or less—rising 15% to \$129bn.

Goldman does not reveal the ROEs of these operating segments but they can be imputed. In 2016 the trading unit appears to have had an ROE of 7% and its lending unit 5%. Most firms would have wielded the knife deeper. The bank has new projects, such as its small online consumer bank. It has returned cash to shareholders. But its core strategy is to wait for trading to recover. This may happen. Volatility may pick up, European competitors might quit the game, or emerging economies could boom.

It is less clear how any of these events would lift the trading division's returns to a punchy level. There have been highs and lows since the crisis, but its average ROE has been only 10%, based on current capital rules. If the terrible trio of Barclays, Deutsche Bank and Credit Suisse quit the trading game altogether and Goldman won a quarter of their business, its trading division's ROE would be a lukewarm 9%. China's markets are booming but local firms dominate, and Goldman is weak in India.

Goldman's "hang-in-there" strategy feeds into the discussion over succession. Lloyd Blankfein has been the boss since 2006, and—it must be said—over the entire period has the best record of any banker other than Jamie Dimon at JPMorgan. But more recently Mr Blankfein may have been too tolerant of the trading division, where he and several lieutenants made their names.

The problem is that even if he goes, there is no quick fix. The firm's other businesses—advising companies and asset management—are excellent but mature. A few romantics imagine Goldman could return to being a partnership, but that is silly. In 1998 the partners had \$6bn of capital tied up in it; now they would need \$97bn to buy it. Might Goldman combine with a commercial bank, a model it flirted with in the 1990s and which JPMorgan has perfected? The only major lender without a big investment bank is Wells Fargo, and the combined firm would have \$3tn of assets, enough to make regulators ululate.

The wonder years

Goldman says that it has a "record of adapting to changing environments" and notes that its average ROE over the past ten years was eight percentage points above the average of its peers. This legacy means that the board will probably stick with the plan and the man for at least a year. After that, mediocre performance would corrode morale and upset external shareholders, who own 90% of the bank. If no trading upsurge comes, Goldman may have to shrink more. Its reign has been short. In the 1980s it was not yet top dog on Wall Street and was a nonentity abroad. People may look back with puzzlement at the two decades when Goldman Sachs was the undisputed king of the investment-banking industry and investment banking seemed to rule the world. ■



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Pensions

The big squeeze

Pension costs in American states are crowding out other spending

SCHOOLS in Pennsylvania ought to be celebrating. The state gave them a \$125m budget increase for 2017-18—enough for plenty of extra books and equipment. But John Callahan of the Pennsylvania School Boards Association says all the increase and more will be eaten up by pension costs, which will rise by \$164m this year. The same happened in each of the previous five years; cumulatively the shortfall adds up to \$586m. The pupil-teacher ratio is higher than in 2010. Nearly 85% of the state's school boards said pensions were their biggest source of budget pressure.

A similar squeeze is happening all over America. Sarah Anzia, at the University of California, Berkeley, examined 219 cities between 2005 and 2014 and found that the mean increase in their real pension costs was 69%; higher pension costs in those cities were associated with falls in public-sector employment and capital spending.

The problem is likely to get worse. Moody's, a rating agency, puts the total shortfall of American public-sector pension plans at around \$4trn. That gap does not have to be closed at once, but it does mean that contributions by employers (and hence taxpayers) will increase even more than they already have (see chart).

In a sense, this is a meeting of irresistible force and immovable object. The force is the rising cost of providing a pension linked to a worker's final salary (known as

a defined-benefit or DB scheme). Higher costs are the result of improved longevity, poor investment returns and inadequate past contributions. Because of these factors, many private-sector companies no longer offer employees DB pensions. The immovable object is the need, both legal and ethical, to meet past pension promises to workers who may be relying on them as their main source of income.

Take teachers in California. Jennifer Baker of the California Teachers Association points out that, when they retire, they get neither income from Social Security nor employee health benefits. Moreover, 72% of the state's teachers are women, many of whom will have had interrupted

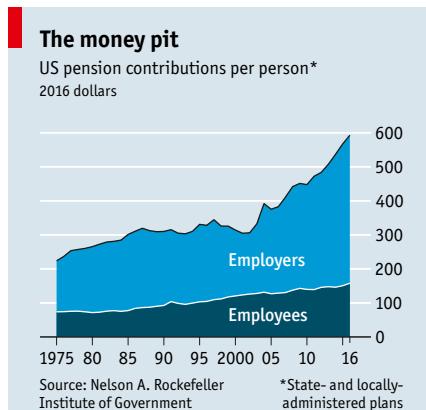
career records, and thus may not benefit from a full pension.

Squaring this circle is not easy. States and local governments have tried to cut the cost to taxpayers of pension benefits in various ways. First, they have offered less generous pensions to new employees. But that leaves the bulk of the liabilities intact. Second, they have reduced the extent to which pensions will increase with inflation via a cost-of-living adjustment; this will save money in the long term but, with inflation so low, does not save much in the short term. Third, they have asked employees to contribute more from their current wages—ie, take a pay cut.

These changes have made only a small dent in the problem. Bigger savings would have to come in two areas. One seems out of the question—cutting payments to those who have already retired or the benefits that workers have already accrued. The trickier issue is whether it is possible to cut the future benefits of existing workers. A 45-year-old, for example, could keep the DB pension based on his past earnings, but his future pension would be based on a defined-contribution (DC) system in which the final income was not guaranteed.

Making such a change is difficult; it is unpopular with workers, and in some states, possibly illegal. Arkansas, Illinois and New York have deemed it unconstitutional to cut the rights of existing employees. In other states, the courts have ruled that rights, once promised, can never be withdrawn. California's Supreme Court may get the chance to overturn this ruling this year or early in 2018 because of two cases currently in the system.

The issue cannot be tackled overnight. As Rob Dubow, the director of finance of the City of Philadelphia, points out, "The problem took decades to create so it will



► take a while to solve." His city recently agreed on reforms with unions involving higher contributions from some employees (with the highest earners stumping up most), extra revenue from sales taxes, and new employees being offered a mixed DB/DC plan. The aim is to get the plan, just 39.5% funded using current asset values, to 80% funding by 2031.

Taking 14 years to close the funding gap may seem like slow progress. But Philadelphia's plan may be optimistic; it assumes an investment return of 7.75% a year. The scheme has around 22% of its portfolio in bonds. If those return, say, 3%, the rest of

the portfolio would need to earn 9% a year after costs—not easy when annual inflation is expected to be only 2% or so.

Mr Dubow says that the 7.75% target has come down in recent years, and is deemed achievable by investment professionals. Over in California, Jack Ehnes of CalSTRS (which oversees teachers' pensions) says that, after talking with his advisers, he now expects its scheme to return only 7%.

Experts can differ, it seems. But small changes in assumptions can make a huge difference to the amount employers need to contribute. According to the National Association of State Retirement Adminis-

trators, cutting the return assumption by a quarter of a percentage point increases the required contribution rate (as a proportion of payroll) by two to three points.

In consequence, it is in no one's interest to make more realistic assumptions about future returns. Workers (and their unions) fear it might generate calls for their benefits to be cut; states worry it would require them to raise taxes. Don Boyd, the director of fiscal studies at the Rockefeller Institute of Government, a think-tank, reckons that with a 5% assumed rate of return, states would have to stump up an extra \$120bn a year just to tread water—ie, to fund their ►

Buttonwood | A deal too far

Mergers and acquisitions often prove to be disappointments

WHEN you are the chief executive of a public company, the temptation to opt for a merger or acquisition is great indeed. Many such bosses may get a call every week or so from an investment banker eager to offer the kind of deal that is sure to boost profits.

Plenty of those calls are proving fruitful. In the first three quarters of 2017, just over \$2.5trn-worth of transactions were agreed globally, according to Dealogic, a data provider. The total was virtually unchanged from the same period in 2016, but the number in Europe, the Middle East and Africa was up by 21%.

It is easy to understand why an executive opts for a deal. Buying another business looks like decisive action, and is a lot easier than coming up with a new, best-selling product. Furthermore, being the acquirer is far more appealing than being the prey; better to be the butcher than the cattle. A takeover may keep activist hedge funds off the management's back for a while longer. And being in charge of a much bigger company is a more demanding task that will surely justify (ahem) a larger salary for the executives in charge.

But these temptations, good and bad, should generally be resisted. S&P Global Market Intelligence, a research arm of the ratings agency, has updated a study on the impact of deals on the acquiring company's share price. The study looked at M&A deals done by listed companies in America's Russell 3000 index between January 2001 and August 2017; deals were only included if they cost more than 5% of the total enterprise value of the acquirer (5% of the equity value, for financial companies). The acquirers' shares underperformed the market (see chart) and those of rival firms in the same industry.

That share-price performance was understandable, in the light of what tended



to happen to the fundamentals of the acquiring company's business. The study finds that, relative to the company's peer group, net profit margins fall, as do the returns on capital and on equity; earnings per share grow less quickly; and both debt and interest expenses increase.

As the deal is done, however, the executives always sound bullish. Costs will be cut, the companies will benefit from selling a wide range of products and so on; a whole range of "synergies" will be achieved. Instead, the combined companies tend to suffer from clashes of culture and teething problems as systems prove hard to integrate. The AOL-Time Warner merger of 2000 is perhaps the most famous example of a dysfunctional deal; at the time, it was one of the biggest mergers in corporate history. Not every deal is that bad. But instead of two plus two equalling the promised five, all too often they add up to three-and-a-half.

Investors should look for a few useful warning signs ahead of a takeover. The faster the company was growing before the acquisition, the worse it tends to perform afterwards. Large deals perform less well

than small ones. All-share deals tend to perform less well than cash offers. Yet, despite this, companies with a lot of cash on their balance-sheets tend to be bad at making acquisitions, perhaps because the money is too tempting for executives not to use. Like a Wall Street trader with his first bonus, they are tempted to spend the money on something flash.

Of course, not all deals underperform. So it is understandable that executives will tend to imagine themselves in that blessed minority that manages to make their acquisition a success. After all, without a degree of self-confidence, they would not have become chief executives in the first place. Fund managers who believe they can defy the odds and pick stocks that beat the market may also believe that they can distinguish the value-adding takeover deals from the rest.

The tough questions ought to be asked of, and by, the non-executive directors on acquiring-company boards. They should realise that executives like to build empires, and to be seen to be "doing something"; they should be the resident sceptics. Why should they believe this executive's latest idea for a deal will be an exception to the rule?

Perhaps fewer deals will take place in any case. A report by Willis Towers Watson, an actuary, together with the Cass Business School, is more sanguine about the returns from mergers than S&P is, but suggests that political pressures will make it harder for deals to win approval from regulators. Rising populism means that governments may be less willing to let national champions be bought by foreign firms. Protectionism aside, this is one additional level of regulation that shareholders need not be too distressed about.

pensions without making any progress on closing the deficit. So the game of "extend and pretend" continues.

But the danger of optimistic projections is that, if missed, they simply create a bigger long-term hole. David Crane is a campaigner for pension reform and a former adviser to Arnold Schwarzenegger, California's governor from 2003 to 2011. In a speech as long ago as 2010, he pointed out that in 1999, CalPERS (the fund that covers most state employees) had assumed an 8.25% long-term return, and an annual pension cost to the state of \$450m. Over the following ten years, that average was actually \$2.3bn. One reason why costs rose so fast is that the state granted generous benefit increases to its workers in 1999, based on those optimistic return assumptions.

The danger of the current optimism is that the American stockmarket is at a re-

cord high, and, even using their sanguine return assumptions, state and local pension plans are only 72% funded. A market downturn could have a disastrous impact.

The problem is most acute in areas facing other financial problems; most starkly in Puerto Rico, which has just defaulted on its debt and has a \$50bn pensions deficit. In Detroit, which declared bankruptcy in 2013, pensions were cut by 4.5%. Moody's has downgraded the bonds of Illinois to a level very close to "junk" status. Proportionate to its size, it has the biggest pension deficits of any state.

As years go by, voters and legislators across the country will have to make a trade-off. They can pay more taxes and cut services; or they can reduce the benefits they pay people who teach their children, police their streets and rescue them from fires. There will be no easy answers. ■

nounced in the west than in the east, where more women work, partly a hang-over of the communist past. Then women worked almost as much as men and pensions were tied to years worked, not income. That helps explain the small pension gaps among the retired in former Soviet countries. Such historical legacies must be kept in mind when projecting what the gaps might be in the future, says Ole Beier, from the OECD, a think-tank.

A few recent developments, however, may aggravate the problem, notably a steady shift from public to private pensions. This is vital if state pensions are to be affordable as societies age. But unless women earn and save more, the gap will widen. And after years of progress in many countries, the pay differential between men and women has stopped narrowing.

Add to this the growing divorce rates among the over-60s (in America they have doubled since 1990), and it is clear a storm is brewing, most urgently for women entering retirement. Some women can count on spousal pensions, others may not be so lucky. Women starting their careers have most cause for concern. Their pensions will depend more than previous generations' on what they put in.

Prescriptions for narrowing the gap in workforce pay are well-known. Access to affordable child care, paid parental leave and flexible working all help. Abolishing lower retirement ages for women, as is happening in most OECD countries, will also help. But even so, for the immediate future women are likely to continue to have different career trajectories from men's, with more breaks—for raising children and caring for the elderly—and fewer promotions. Diane Garnick, from TIAA, a financial-services firm, says that many women think that so long as they put the (default) recommended share of their pay into a savings pot they are on track, even if in absolute terms the number is too low.

She suggests that part of the solution could be for employers to nudge women to contribute a larger share of their pay towards their pension than men do. She estimates that an American woman graduate starting on the same salary as a man will need to save 18% of her salary compared with a man's 10% to achieve the same retirement outcome over a lifetime. Mr Beier adds that it also makes a big difference if pension savings continue during maternity leave, thanks to (near) full maternity pay.

Merely focusing on equality, however, is not enough. The chart might suggest that female pensioners in Estonia are sitting pretty. Yet among the 75-plussers in the EU, none is poorer than an Estonian; and almost nowhere is the gap between male and female life-expectancy greater, meaning older women often live alone in poverty or close to it. That men are not much better off is little consolation. ■

Women's pensions

Silver and gold

Inequality between men and women is starker in old age

THE retirement-savings crisis is a women's crisis," says Sallie Krawcheck, co-founder of Ellevest, a financial-advice firm for women in America. When it comes to retirement income, women are far worse-off than men. The gender pension-gap may be less well-known than the gender pay-gap, but it is in fact far larger.

Among those retired in the EU, women on average receive 39% less in pension income—from state and workplace pensions—than men do (see chart). This puts women at greater risk of old-age poverty. The European Institute for Gender Equality, a think-tank, warned in a study in 2015 that it also makes them more likely to stay with abusive partners. Reforms to European pensions, tying benefits even closer to individual contributions and thus income, mean the gap may widen further.

The schism is primarily a reflection of the labour market. Women on average work fewer hours than men, in less well-paid jobs, for fewer years. So of course their workplace pensions are smaller. But retirement is more costly for women. In Europe they retire on average earlier than men and live five years longer. Longer lives are not a problem if the state or a company has promised to pay a fixed income until death. In the EU, annuities are not allowed to discriminate on gender grounds and so are a better deal for women than men. But women also have longer periods of illness and are twice as likely to live alone in old age. And they tend to be more cautious

than men, often preferring cash or fixed-income investments. Mercer, a consultancy, found that women are 67% more likely than men to invest in a defensive fund with a lower expected level of growth. So women without a fixed pension tend to be worse off.

The gap is greatest in countries where workplace pensions make up a big chunk of retirement savings, or where state benefits—such as social security in America—are linked to lifetime contributions. In the Netherlands, which has a long tradition of quasi-mandatory workplace pensions, men are not only more likely to have a work pension pot, but it will also be twice as large, because most women work part-time and retire earlier.

In Germany the gap is far more pro-

Dutch disease

Pension gender gap, % by which women's average pension is lower than men's, 2015



American shipping

All at sea

How protectionism sank a country's entire merchant fleet

IN APRIL 1956 the world's first container ship—the *Ideal X*—set sail from New Jersey. A year later in Seattle the world's first commercially successful airliner, Boeing's 707, made its maiden flight. Both developments slashed the cost of moving cargo and people. Boeing still makes half the world's airliners. But America's shipping fleet, 17% of the global total in 1960, accounts for just 0.4% today.

Blame a 1920 law known as the Jones Act, which decrees that trade between domestic ports be carried by American-flagged and -built ships, at least 75% owned and crewed by American citizens. After Hurricane Irma, a shortage of Jones-Act ships led President Donald Trump on September 28th to waive the rules for ten days to resupply Puerto Rico. This fuelled calls to repeal the law completely.

Like most forms of protectionism, the Jones Act hits consumers hard. A lack of foreign competition drives up the cost of coastal transport. Building a cargo ship in America can cost five times as much as in China or Korea, says Basil Karatzas, a shipping consultant. And the cost of operating an American-flagged and -crewed vessel is double that of foreign ones, reckons America's Department of Transportation.

Inflated sea-freight rates push most cargo onto lorries, trains and aircraft, even though these are pricier and produce up to 145 times as many carbon emissions. So whereas 40% of Europe's domestic freight goes by sea, just 2% does in America. Lacking overland routes, Alaska, Guam, Hawaii and Puerto Rico are hardest hit. Hawaiian cattle ranchers, for instance, regularly fly their animals to mainland America. A recent report by the Government Development Bank for Puerto Rico found that the Jones Act inflated transport costs for imports to twice the level of nearby islands.

Jones-Act shipowners retort that the rules are to help producers, not consumers. Rail firms lobbied for the 1920 law, out of fear that an excess of foreign ships from the first world war was flooding the market. National security was also cited. German submarine warfare, it was argued, showed the need for a merchant fleet built and crewed by Americans. But the law has virtually wiped out American shipping. Between 2000 and 2016 the fleet of private-sector Jones-Act ships fell from 193 to 91. Britain binned its Jones-Act equivalent in 1849. Its fleet today has over three times the tonnage of America's. Marc Levinson, an

Food and taxation

Fat is a fiscal-policy issue

A study suggests taxes and subsidies are bad at changing diets

IN RICH countries, people's diets are getting worse and they are getting fatter. Hence the increasing popularity of a "fat tax", to make unhealthy food cost more. Since Hungary led the charge in 2011 with a "chip tax" on fatty and sugary foods, other countries have followed. Britain is to join a long list next year.

Since the poor both spend a higher proportion of their income on food and tend to eat less healthily, they are the main targets of such taxes. In France, for instance, adult obesity is seen in over 20% of households with monthly incomes under €1,500 (\$1,765) compared with less than 10% of those who earn over €3,000.

Punishing consumers, however, is politically painful. So "thin subsidies" have been gaining ground. But data on the impact of such policies are scarce. A recent study on the distributional impacts of fat taxes and thin subsidies from researchers at the universities of Oklahoma and Grenoble suggests policymakers should be wary. It looked at the daily food purchases of women in France over three days. Each day the women were asked to shop from a list of 180 items, with prices adjusted daily as taxes and subsidies were applied.

The study found that the taxes and subsidies actually widened health and fiscal inequalities. Fat taxes meant the women on lower incomes paid disproportionately more for food—their habits changed less. They preferred to buy food they liked rather than what made nutritional sense. Taxing the food they eat most made the poor poorer.

Subsidies encouraged all income groups to buy more fruit and vegetables. But those on higher incomes proved more responsive and so benefited most. Interestingly, richer folk were also more likely to buy the subsidised healthy food and then spend the savings they had accrued on yet more healthy food. But poorer women, if they responded to lower prices, often used the money saved to buy unhealthy items or something else entirely. Once the nutritional price policies were applied, the average share of budget spent on healthy food actually increased for the better-off. The reverse was true for the poor. The long-term benefits of a healthier diet are harder to grasp than the immediate boost of a tasty treat. Taxes and subsidies do not change that. Other strategies are needed as well—notably education.



The proof is in the pudding

economic historian (and former journalist at *The Economist*) notes that the laws also made American container lines less able to compete on international routes. Drawn by profits at home they underinvested in their foreign operations, and fell behind their foreign rivals because they lacked the same scale.

Recognising the harm to their domestic fleets, countries from Australia to China

are loosening the rules protecting their fleets. Not America. In January, the Obama administration tried to get rid of all exemptions to the Jones Act. Mr Trump overruled that decision in May, but has said any further waivers will be hard because of the influence in Congress of lobbyists from the sailors' unions and shipowners. Yet deregulation is part of his platform. The Jones Act would be a good place to start. ■

Tax havens

Buried treasure

Vast wealth is salted away offshore. But whose? And where?

SWITZERLAND, which developed cross-border wealth-management in the 1920s, was once in a league of its own as a tax haven. Since the 1980s, however, tax-dodgers have been spoilt for choice: they can hide assets anywhere from the Bahamas to Hong Kong. The percentage of global wealth held offshore has increased dramatically. But it has been hard to say how much that is, and who owns it.

Few offshore centres used to disclose such data. But in 2016 many authorised the Bank for International Settlements (BIS) to make banking statistics publicly available. Using these data, a new study by Annette Alstadsaeter, Niels Johannesen and Gabriel Zucman, three economists, concludes that tax havens hoard wealth equivalent to about 10% of global GDP. This average masks big variations. Russian assets worth 50% of GDP are held offshore; countries such as Venezuela, Saudi Arabia and the United Arab Emirates climb into the 60-70% range. Britain and continental Europe come in at 15%, but Scandinavia at only a few per cent.

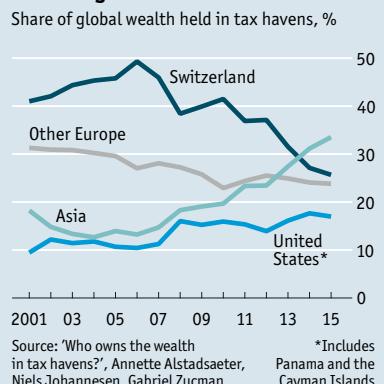
One conclusion is that high tax rates, like those in Denmark or Sweden, do not drive people offshore. Rather, higher offshore wealth is correlated with factors such as political and economic instability and an abundance of natural resources.

Proximity to Switzerland also remains a good indicator. But assets held there have declined since the financial crisis (see chart), whereas those in Hong Kong grew sixfold from 2007 to 2015. The territory now ranks second behind Switzerland. Mr Zucman attributes this to foreign pressure on Swiss banks following recent scandals, coupled with a surge of wealth in Asia.

Accounting for offshore holdings suggests wealth inequality is even greater than was thought. In Britain, France, and Spain the top 0.01% of households stash 30-40% of their wealth in tax havens. In Russia, most of it goes there. In America, the share of wealth held by the richest 0.01% is as high today as in early 20th-century Europe. Including offshore data increases the wealth share of the super-rich.

Yet plenty of data are still missing. A few big centres, including Panama and Singapore, still do not disclose these statistics. The BIS data also cover only bank deposits, not the securities in which most offshore wealth is held. Researchers made estimates to plug the gap, but their figures are likely to be conservative.

Out of sight



Mr Zucman thinks tax havens should be forced to be more transparent, and that institutions that facilitate tax evasion should face stiffer penalties. Fines are often seen as the cost of doing business and are small compared with profits. Threatening to withdraw banking licences would be a stronger deterrent. "There's a strong demand from all over the world for tax-evasion services," he says. "Without large enough sanctions, there will always be a supply to meet that demand." ■

Chinese acquisitions

Freezers to finance

A Chinese carmaker agrees to buy a Danish bank

A COMPANY that moves up the value chain from refrigerator parts to cars is impressive but not that surprising. A car company that buys an investment bank is audacious. But Zhejiang Geely Holding Group, a conglomerate based in Hangzhou, China, did not become big by paring its ambitions. Having successfully made the fridge-parts-to-cars transition at home, it went global in 2010. It acquired Volvo, a Swedish carmaker, from Ford of America. Now Geely is back in Scandinavia for another acquisition. This time it is buying one of Denmark's biggest banks.

Saxo Bank announced on October 2nd that Geely would acquire 51.5% of its shares. It will spend over \$800m on the deal, which still requires regulatory approval. Sampo Group, a Finnish insurance company, will acquire 19.9% of Saxo shares for €265m (\$311m), and Kim Fournais, Saxo's co-founder and chief executive, will retain 25.7%. The sellers are Sinar Mas, an Indonesian conglomerate, and TPG, an American private-equity firm.

Saxo was an early adopter of online securities trading and still invests heavily in

financial technology. It makes a substantial portion of its profits from selling trading platforms to other firms. Daniel Donghui Li, Geely's chief financial officer, says Geely hopes to expand Saxo's technologies into Asia. Besides facilitating this expansion, Geely does not intend to change how Saxo operates, let alone change its business model to finance car sales.

Geely is not the first Chinese firm to take control of a European bank. In September Legend, the largest shareholder of Lenovo Computers, announced that it would acquire 89.9% of Banque Internationale à Luxembourg, the oldest private bank in the Grand Duchy, from a Qatari company. Legend said it wanted to provide banking services to companies taking part in China's flagship "Belt and Road" project to build a latter-day Silk Road to Europe.

Other Chinese firms have bought smaller stakes in European banks. In May HNA Group, a part-owner of Hainan Airlines, increased its holding in Deutsche Bank to 9.9%, becoming its largest shareholder. Fosun, a big consumer group, owns 24% of Millennium BCP, Portugal's largest listed bank. Unlike Geely, however, Legend, HNA and Fosun have experience in the Chinese financial sector.

After 2014 Chinese companies had sharply increased their direct investment in foreign companies (see chart). Large firms made high-profile acquisitions of property, sports teams, film companies and other assets with tenuous connections to their core activities. Concerns over capital outflow and corporate debt led the Chinese government to introduce regulations limiting outward investment.

Geely's purchase of Saxo Bank suggests that Chinese companies are gradually regaining their appetites for foreign deals, even outside their core businesses. According to Edward Tse, chairman of Gao Feng, a firm that advises on the Chinese market, the Chinese regulations were primarily directed at a few companies that "splashed cash" on unwise deals. Geely, seen as having already successfully swallowed one prestigious foreign firm, may worry the authorities less. ■

Staying in

China, FDI outflows to the rest of the world, \$bn



Source: OECD

Free exchange | Manias, panics and ICOs

Crypto-coin mania illustrates the crazy and not-so-crazy sides of bubbles



EVERY market mania reaches a point when pitches to would-be investors enter the realm of the surreal. So it goes for “initial coin offerings”, or ICOs. A new one by a firm called POW invites Facebook users to claim tokens for nothing; when they later become convertible into other tokens, the first to take advantage of the offer could “become worth \$124bn...making them the richest person on Earth”, the blurb says. Not a bad return for no money invested and no risk borne. However bizarre, bubbles are hard to resist: no one wants to be the only one of their friends left out. They can also be financially ruinous. But gambling on a craze, even a highly dubious one, can be about more than blind greed.

The ICO boom is an outgrowth of the emerging, occasionally inscrutable world of cryptocurrencies. These are a form of money (bitcoin and ether are examples) used in transactions which are recorded on a distributed public ledger called a blockchain. An ICO is a scheme to raise funds for an enterprise written into a contract on a blockchain. To buy in, punters use cryptocurrency to pay for tokens. Those tokens become the working currency within the new enterprise. A new social network, for instance, might fund itself through an ICO, then allow users to spend their tokens on goods or services on the network once it is up and running. In successful projects, demand for tokens should rise and early investors should profit. ICOs resemble both a new form of crowdfunding, and a technological leapfrog over the regulations that hem in more orthodox funding strategies. They are also all the rage. Ether, the currency used on the ethereum blockchain, is up by more than 2,400% against the dollar over the past year and boasts a market capitalisation of nearly \$28bn. ICOs have so far raised nearly \$2bn in 2017.

This looks like irrationality in action, bound to end in tears. Why, then, should the party continue? Manias are as old as finance, and economists have devoted plenty of time to studying them. Though often blamed on easy credit, human nature alone can goad a raging bull. As Charles Kindleberger explained in his book “Manias, Panics and Crashes”, enthusiasm for new markets or technologies frequently results in excessive optimism, which ultimately collides with reality in a spectacular crash.

That seems at odds with the idea of an efficient market, in which asset prices reflect the discounted value of expected future

profits, and in which easy, risk-free money is a rarity. But economists have learned that efficiency is a somewhat loose constraint on markets. The discounted value of dividends, for instance, varies by much less over time than stockmarket indices, meaning that people’s views of the state of the world gyrate more than history suggests they should. Markets are better at setting prices for individual stocks than in aggregate—in Paul Samuelson’s words, they are “micro-efficient and macro-inefficient”. Yet that may be because individual stocks are more likely to provide well-informed investors with opportunities for a quick no-risk profit.

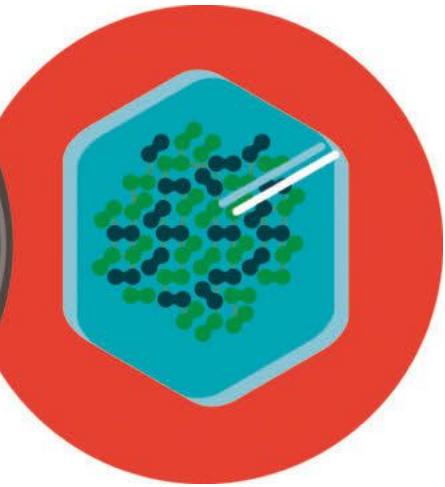
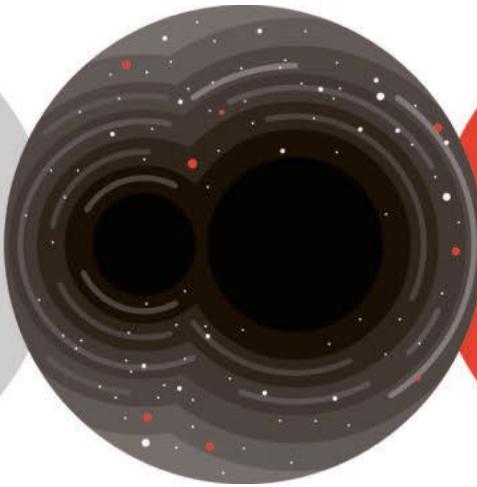
The ICO craze certainly appears to entail a departure from reasonable values. Such deviations can happen when taking the pessimistic side of a bet is difficult—shorting stocks, for instance (ie, selling securities the investor does not own in the hope the price will fall). In some accounts of the tech boom of the 1990s, the small float of many new tech stocks made shorting them nearly impossible; as issuance increased, however, bears could have their say, and markets tanked. Housing, too, is famously hard to short; in the global crisis those few financiers who found vehicles to bet against mortgage-backed securities eventually made a fortune. There are some opportunities to short cryptocurrencies, but essentially none for ICO tokens (something those intending to buy might reflect on, if reflection is their thing).

Human quirks also play a role. Robert Shiller, who helped create the subfield now known as behavioural finance (and won a Nobel prize), reckons that ideas about markets spread like an epidemic. At any point in time, multiple stories about the future are potentially true, and have evidence supporting or undermining them. Sometimes, particular stories become infectious. Investors under their sway hear good news and are deaf to the bad—and spread the bullish bug to others. This pushes up prices, bolstering the bulls. An ICO may be a consequential innovation, so early entrants will make a mint. But it may be that regulators will prevent them becoming more than a curiosity (both China and South Korea have banned them). Worsening news for ICOs could make pessimistic stories the next virus.

Cryptos through the tulips

Viral optimism may be especially common in the winner-takes-all contests so frequent within digital markets. Platform-based firms (which aim to provide a digital space within which other enterprises can do business) or social networks grow more valuable as they gain users. People want to be where everyone else is. In such cases, one of many contenders eventually dominates, and those with a stake in its success, whether shares or tokens, reap vast rewards. But because investors lack perfect foresight, the levels at which markets value nearly all contending firms will, in hindsight, appear to have been obviously bubbly. In the same way, the value of the winning firm, which looked laughably high during the bubble, will later look reasonable. One or two of the ICOs—and cryptocurrencies themselves—stand to follow such a path, if they come into wide use. Think a crypto version of Google (and pity those holding tokens for crypto-AltaVista).

Bursts of investor enthusiasm sometimes (if not always) spur experimentation and investment, laying a foundation for future growth. Caution is needed, however. Markets are not perfectly efficient. But they are usually efficient enough to punish those who mistake a bet on one version of the future for a sure thing. ■



The 2017 Nobel science prizes

Jet lagged in Stockholm

This year's awards are for body clocks, gravitational waves and a cool way to study protein structure

NOBEL week, a round of lectures and ceremonies held every December in Stockholm, which climaxes with the award of the prizes themselves and a subsequent banquet, is a leisurely affair. Since prizewinners come from all over the world, that is a good thing. It gives them time to recover from their jet lag before they meet the King of Sweden, and the medals and cheques are handed over. This year, three of the prizewinners may particularly appreciate that, for they are some of the scientists who have helped explain why jet lag exists in the first place.

Jeffrey Hall, Michael Rosbash and Michael Young are, between them, responsible for working out how the endogenous clocks of fruit flies—and, by extension, of other organisms—run what is known as the circadian rhythm. This is the internal cycle (*circa* is the Latin for “about” and *dies* the Latin for “day”) that matches the body’s physiology to the alternation of light and darkness caused by Earth’s rotation. It controls, among other things, sleep patterns. Hence the discovery, once jet engines made rapid travel across time zones possible, that someone flying from, say, London to New York, will take several days to adjust to New York solar time.

Dr Hall and Dr Rosbash worked at Brandeis University, in Massachusetts. Dr Young operated separately, at Rockefeller University, in New York. Their first step, in 1984, was to isolate a fruit-fly gene called *period*, which had previously been found to help control circadian rhythms. At a

time when gene sequencing was in its infancy, this was remarkable enough. Dr Hall and Dr Rosbash then went on to measure the concentration in fly brains of the protein this gene encodes. They discovered that the protein’s concentration cycles up and down over the course of 24 hours, peaking at night. They also measured levels of the messenger molecule produced by *period* genes, which carries the recipe for the protein to a cell’s protein-making machinery. That, too, cycles daily—peaking a few hours before the protein does.

The crucial part of the story is that the protein itself inhibits the action of *period* genes. The more of it there is, the less active the genes are. That reduces production of the messenger molecule, which reduces production of the protein, which permits the gene to reactivate. And so on.

Lots of other genes and proteins are involved as well—many of which were also discovered by Dr Hall, Dr Rosbash and Dr Young. Some of these serve to link the clock to information from the eyes, permitting it to stay in synchrony with the sun. But it is the underlying cycle of *period* gene activity, regulated by the messenger molecule and the protein, that is the actual pendulum of the biological clock.

A matter of great gravity

The physics prizewinners broke records about time in a different way. Despite the admonition in Alfred Nobel’s will, which set up the prizes, that they should be given for work done over the previous year, more

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than half of those awarded for physics since 1985 have been given for work done more than two decades beforehand. This year’s, though, was different. It went to Rainer Weiss of the Massachusetts Institute of Technology, and Barry Barish and Kip Thorne of the California Institute of Technology, all of whom were involved in the detection, just two years ago, of gravitational waves.

Such waves are one of the many predictions of Albert Einstein’s century-old theory of relativity. As Einstein realised, gravity is a result of mass distorting the space and time around itself. That distortion modifies the paths of objects moving nearby. Crunch the equations which describe this process, and they suggest that moving masses should create ripples which radiate out into the universe.

Spotting such surrations requires sensitive machines. All three laureates worked on an American gravitational-wave detector called LIGO, which was completed in 2002. LIGO works by splitting a laser beam in two and sending the daughter beams up and down a pair of tunnels, each 4km long, which are set at right angles to each other. Any passing gravitational wave should stretch and compress the two arms in different ways, causing infinitesimal changes in the time it takes the laser beams to traverse them. In order to confirm that it really is seeing a gravitational wave the machine has two such pairs of tunnels—one in Washington state and the other in Louisiana. A grava-

tional wave, as opposed to some transient local disturbance, will appear almost (but not quite) simultaneously in both.

Despite its sensitivity, LIGO's initial run came up empty-handed. It was only after a series of upgrades, starting in 2010, that it became sensitive enough to detect the waves finally and unambiguously. The first-prizewinning-spot, in 2015 is reckoned to have been the consequence of two black holes colliding 1.3bn light years from Earth. Since then, more discoveries have been made. A few days before the Nobel award, LIGO announced the detection of its fourth gravitational wave. And more detectors are coming online. The fourth detection was aided by a European instrument, VIRGO, based in Italy. Other devices are under construction in India and Japan. A space-based system called LISA, with "arms" millions of kilometres long (and, as a result, much higher sensitivity) is scheduled for launch in the 2030s.

But this year's physics prize honours more than just another confirmation of Einstein's cleverness. Up until now, astronomers have had to rely on the electromagnetic spectrum—from radio waves, through visible light, to gamma radiation—to gaze at the universe. The detector designed and built by Dr Weiss, Dr Barish, Dr Thorne and several hundred other scientists offers a new window on the world, and could help astronomers see things, like black-hole collisions or the state of the universe shortly after the Big Bang, that electromagnetism cannot.

Into the freezer

The chemistry prize went to Jacques Dubochet of Lausanne University, in Switzerland, Joachim Frank of Columbia University, in New York, and Richard Henderson of the Laboratory for Molecular Biology, in Cambridge, Britain. Each contributed to the development of cryoelectron microscopy, a technique that permits the shapes of biological molecules, such as proteins, to be seen without many of the difficulties involved in preparing them for older techniques, such as x-ray crystallography or conventional electron microscopy.

Dr Dubochet invented a way of freezing samples that has proved crucial to the technique. A sample—say, a protein of interest—is suspended in water and dripped onto a thin metal mesh. This mesh is then plunged into liquid ethane, at a temperature of around -180°C. The speed of plunging is crucial. Do it too slowly and the water in the sample will turn into ice crystals that destroy the protein molecules. If done fast enough, though, the water turns not to ice, but into a glassy state that preserves the proteins for study.

Dr Henderson turned to this technique when a protein he was trying to prepare for x-ray crystallography would not crystallise, and could not, therefore, be examined.

The virtue of uprightness

Atten-shun!

Standing up produces sharper minds

OFFICE desks at which you stand are all the rage. Abundant evidence suggests that sitting down for long periods is bad for health, and that working standing up is thus better for you. But is it better for the job? A piece of research just published in *Psychological Science* by Yaniv Mama of Ariel University, in Israel, and his colleagues, suggests it might be.

Standing takes more effort than sitting does, and might therefore be expected to require more mental attention. The muscles involved have to be monitored and fine-tuned constantly by the brain. Psychological experiments suggest that attention is a finite resource. Standing might thus be expected to reduce the amount of it available to be given elsewhere. A counter-hypothesis, though, is that standing creates mild stress—and experiments have also shown that, when people are under stress, their cognitive performance improves.

To distinguish between the two, Dr Mama put some volunteers through what is known as the Stroop test while they were standing or sitting. The Stroop

test requires participants (in this case 50 university students) to state the printed colour of words that are themselves the names of colours. In some cases, the meaning of the word and the colour in which it is printed are the same. In others, they are different (eg, the word "blue" printed in yellow ink). Decades of experience have shown that it takes a volunteer longer to state the colour of the ink when it is different from the meaning of the word than it does when they are identical, and that the gap can be increased still further by imposing other mental demands at the same time.

The upshot was that those who were standing when they took the test did significantly better at it than those who were sitting. The gap between the two scores of the standing volunteers was about 100 milliseconds. Between those sitting, it was about 120 milliseconds. The old army order of "stand to attention" thus seems literally, as well as figuratively, true. And office workers who choose to stand may be increasing their output as well as their well-being.



An upstanding British gentleman

In 1990, after more than 15 years of effort, he became the first to use it to produce a picture of a protein, bacteriorhodopsin, that was as detailed as x-ray crystallography can provide.

Dr Frank's contribution was mathematical. He developed a method for deducing the three-dimensional structures of proteins from the flat snapshots that a cryo-electron microscope produces. The upshot, after years of refinement, is a new and better way of examining biological molecules. Since it is often the shapes of

those molecules that determine their function, finding out exactly what the shapes are is crucial for researchers. For instance, it allows drugs to be designed deliberately to interact with molecules rather than simply guessing what chemicals might act as drugs and screening them by the million.

Whether cryoelectron microscopy really counts as chemistry might be debated. Physicists would have a case for claiming it for themselves. But wherever it truly fits within the taxonomy of science, it is, in more ways than one, a cool invention. ■

Scientific productivity

Open borders, better science

Migratory researchers produce more influential work than stick-in-the-muds

SCIENCE is an international affair. Researchers from different countries frequently collaborate with each other, a process made ever easier by the rise of electronic communications. Sometimes, they actually change country to do so. Marie Curie moved from Poland to France. Guglielmo Marconi moved from Italy to Britain. Nikola Tesla moved from Austria-Hungary to America.

Those are famous historical examples, but these days such migration is commonplace. Presumably, all the gadding about leads to better research. But scientists do not like to work on presumption, so two studies published in *Nature* this week have tested the idea. Both conclude that yes, it probably does.

Cassidy Sugimoto of Indiana University, in Bloomington, and her colleagues looked at papers listed in "Web of Science", a database that tracks how often an article is cited by another. They restricted their analysis to studies published between 2008 (the first year for which the database held complete listings of a paper's authors and their institutional affiliations) and 2015. That narrowed the field to around 14m papers, on one or more of which some 16m different researchers had been listed as an author. Dr Sugimoto classified researchers whose country of affiliation remained unchanged during the period studied as "non-mobile". This was true of 96% of them. The remaining 4%, who had changed country at least once, Dr Sugimoto classed as "mobile".

She then looked at the number of citations each scholar's published papers had received. More influential work would be expected to garner more citations. Thus researchers' citation records are commonly regarded as proxy measurements for the quality of the science they produce. She and her colleagues found that, whatever their country of origin, mobile researchers produced more highly cited works than did their non-mobile peers. The boost in citations ranged from 10.8% for North American scholars up to 172.8% for scientists from eastern Europe.

Dr Sugimoto's analysis does not, admittedly, show whether high citation is a result of moving country or merely a consequence of only the brightest and best making such moves. But the second paper, by Caroline Wagner of Ohio State University, in Columbus, and Koen Jonkers of the European Commission's Joint Research

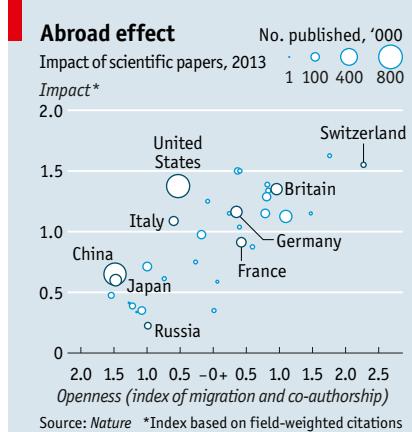
Centre, in Brussels, suggests that these peripatetic individuals certainly do benefit the countries that host them.

Dr Wagner and Dr Jonkers used regression analysis, a statistical technique, to look for correlations between a country's spending on research and development (R&D), the flow of scientists in and out of it, and the quality of the science produced by its researchers (as indicated by the number of citations they received). The pair discovered that places with large numbers of scientists coming and going did indeed produce papers that were more highly cited (see chart). They found no such relationship between a country's R&D spending and its scientific impact. High-spending countries produced more papers, but proportionately no more of the highly cited ones than countries which spent less.

One notable outlier, the United States, was ranked highly for scientific impact by the analysis, despite scoring poorly on openness. But, compared with the others on the list, the United States is both huge and has a large home-grown scientific workforce that is mobile between the member states of the union.

The best analogy to this that Dr Wagner and Dr Jonkers could come up with was the European Union. This has more people than the United States (510m compared with 320m), also permits unfettered travel between its members and, like the American federal government, has research programmes that provide cash for scientists from different institutions to collaborate. According to Dr Wagner and Dr Jonkers, EU scientists published around 40% of the top tenth of the world's most-cited papers in 2014, while America produced around 35%. Per head, that is a victory for the Yankees. But the EU's share of those highly cited papers has risen since 2000, while America's is in decline.

Many politicians have done a good deal of head-scratching over how to get the best scientific bang for their buck. Though it may be an unpopular message in some countries, these two studies suggest that an open door for eggheads will help. ■



Animal behaviour

J'y suis. J'y reste

Birds do not adjust to their habitats. They choose wisely in the first place

IN 2015 a paper published in the *Proceedings of the National Academy of Sciences* reported on the personality types of people living in various London boroughs. Extroverts, the researchers who wrote it had discovered, favoured Richmond, Wandsworth and Lambeth. Those who were most open to experience clustered in Hackney and Islington. People in Barnet and Lewisham scored lower than average on emotional stability.

What this study did not address was whether someone's home range reflects their personality traits or imposes them. In other words, is what is going on "nature" or "nurture"? However, in a piece of research just published in the *Proceedings of the Royal Society*, Benedikt Holtmann of Otago University, in New Zealand, and his colleagues have plugged that gap—at least, they have plugged it for dunnocks.

Personality is not a prerogative of people. Most vertebrates in which the matter has been studied show personality types of some sort. The presumption is that, in a diverse world, different personalities will best fit different social and environmental niches—exactly what seems to be happening in London.

The dunnock, known to some as the hedge sparrow, is a European bird. It has,

► though, been introduced to New Zealand and has thrived there. It is a well-studied species, and among the facts that have emerged about it is that individual birds do, indeed, have distinct personalities. In particular, some are measurably bolder and more tolerant of potential threats, such as nearby human beings, than others.

The team's research area was the Botanic Garden in Dunedin, the city where the university is based. This is open to the public, but some areas are more frequented by visitors than others. Dunnocks have small territories, so it was possible to measure the amount of human disturbance in a given territory with reasonable precision. And, by ringing each of the dunnocks in the garden with colour-coded bands it was possible to identify individuals by sight. Altogether, the researchers looked at 99 of them.

They worked out a bird's level of threat tolerance by the simple expedient of having one of their number (as far as possible the same person each time) walk towards it, and then measuring how close that individual could get before the bird flew away. They did this several times for each bird ev-

ery breeding season, and repeated the process over the course of three seasons.

A particular bird's flight distance (ie, how closely it could be approached before it departed) was, they found, constant within a breeding season. From season to season most birds got a little bolder—presumably as they learnt more about the world and what they could safely get away with. But this increase in boldness with age was small compared with the different starting points of bold and timid birds when they first arrived in a territory. It did not, therefore, much affect the fact that, on average, birds' flight distances were inversely correlated with the level of human disturbance in their territories. This was a consequence of disturbed territories being settled by bold birds, and undisturbed territories by shy ones.

In the case of dunnocks, then, nature wins over nurture. Dr Holtmann was able to show that personalities match circumstances, rather than being created by them. Dunnocks can recognise which places suit them best, and choose to settle in them shortly after they fledge. Most likely, that is happening in London boroughs, too. ■

ately outside those lanes. Nor does it seem plausible that the ships themselves (admittedly made of metal, and also the tallest structures on what is otherwise a flat surface) are responsible for attracting all the extra strikes involved. Though the area of the lanes is small compared with the whole ocean, it is vast compared with the area actually occupied by vessels. Most of the extra bolts are hitting the sea rather than craft sailing across it.

Particle accelerator

The most likely explanation is particulate pollution emitted by the ships using the shipping lanes. Marine diesel burned offshore is generally high in sulphur, and its combustion produces soluble oxides of that element which act as nuclei for the condensation of cloud-forming droplets. Typical marine clouds in unpolluted areas are composed of large droplets and do not rise to high altitude, but Dr Thornton and his team reckon that smaller droplets, of the sort that condense around oxides of sulphur, might more easily be carried upward by convection—forming, as they rose, into towering storm clouds that would act as nurseries of lightning bolts.

As to what can be done about this extra lightning, change may already be in hand. At the moment, standard "bunker" fuel has an average sulphur content of 2.7%. From 2020 that should fall to 0.5% if refiners and shipowners obey rules being introduced by the International Maritime Organisation, the body responsible for trying to impose order on the world's shipping.

Ships are also being sailed more efficiently, often by slowing them down, which reduces the amount of fuel consumed per nautical mile. That is how Maersk Line—one of the world's biggest container-ship operators—has cut its fleet's fuel consumption by 42% since 2007.

On top of this, ship propulsion is becoming more efficient, as heat-recycling systems and new types of engine are introduced. In a few decades, therefore, the storminess of shipping lanes may have returned to normal. In the meantime, for any who may doubt humanity's ability to affect the weather, Dr Thornton's work provides strong evidence that it can. ■

Meteorology

Brimstone and fire

Pollution from ships is changing maritime weather

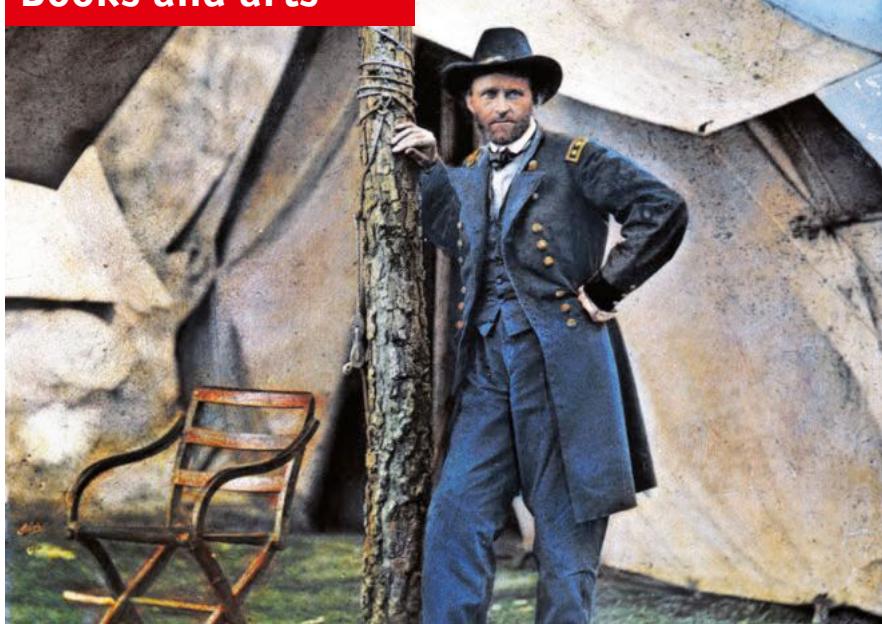
MODERN, broad-beamed merchant vessels are well able to withstand the rough and tumble of the waves, but sailors still prefer to avoid storms at sea if they can. Containers may come loose in heavy weather and there is always a chance of lightning knocking out communications. It is therefore ironic that some storms may be caused by ships themselves. That, at least, is the conclusion reached by Joel Thornton of the University of Washington, in Seattle, and his colleagues in a paper just published in *Geophysical Research Letters*. They demonstrate that lightning strikes the Indian Ocean and the South China Sea almost twice as often along shipping lanes as it does other areas of these waters.

Dr Thornton and his team considered 1.5bn strikes recorded in this part of the world by the World Wide Lightning Location Network (an international collaboration led by Dr Thornton's colleague, Robert Holzworth) between 2005 and 2016. As the map shows, those strikes that happened over the ocean were concentrated in places most plied by ships. In particular, the shipping lane that passes from the south of Sri Lanka to the northern entrance of the Straits of Malacca, and thence down the

straits to Singapore, positively glows with lightning. (Its westward extension to the Suez canal was outside the study area.) So do the lanes from Singapore and the western part of Malaysia that head north-east across the South China Sea.

Neither changes in vertical wind shear nor differences in horizontal air movements seem likely to be causing this concentration of thunderstorms, for other measurements suggest that these weather-modifying phenomena are the same inside shipping lanes as they are in neighbouring parts of the atmosphere immedi-





Ulysses S. Grant

History has its eyes on him

America's views of its 18th president are changing, thanks to his civil-rights record

IN 1948, a survey of historians ranked Ulysses S. Grant as the second-worst American president. Corruption had badly tarred his administration, just as it had that of the man at the bottom, Warren Harding. But recent surveys have been kinder. Grant now lands in the middle, thanks to his extraordinarily progressive work on race relations. "Treat the Negro as a citizen and a voter—as he is, and must remain," he told Congress in 1874, close to a century before the South would finally consent to doing so. The victorious general in the civil war, Grant tried to see that the principles his men had fought for endured.

Ron Chernow's 1,100-page biography may crown Grant's restoration. The author of defining books on George Washington and Alexander Hamilton—the latter formed the basis for a hit Broadway musical, after Lin-Manuel Miranda read it on holiday—Mr Chernow argues persuasively that Grant has been badly misunderstood. The corruption in his administration never touched him—the soul of integrity—personally. Sometimes portrayed as an ignorant drunk, he was in fact a profound thinker with a sensitivity to suffering that underlay his kindness to vanquished armies and people of other races. His bibulous reputation was exaggerated by his opponents, Mr Chernow believes, and indeed with discipline and the support of his beloved wife, he abstained from drinking almost fully during his presidency.

Grant. By Ron Chernow. Penguin Press; 1,104 pages; \$40. To be published in Britain by Head of Zeus in November; £30

Grant may have been America's most improbable president. His early military career showed flashes of brilliance before he resigned from a post in California amid accusations, almost certainly justified, of drunkenness. He then failed at various business ventures, a lifelong tendency that accompanied a penchant for trusting swindlers. Not long before the civil war he was virtually broke, walking the streets of St Louis in shabby clothing selling firewood.

War brought salvation. The Union army was afflicted with generals who hesitated to engage, or failed to follow up victories by chasing vulnerable opponents. Not Grant. "I can't spare this man; he fights," Lincoln supposedly said of him, a year before the general engineered a landmark victory at Vicksburg, Mississippi, in 1863. Robert E. Lee, his chief opponent, concurred: "He is not a retreating man."

Lee has been lionised by those nostalgic for the South's "Lost Cause". Mr Chernow argues that "however brilliant Lee was as a tactician, Grant surpassed him in grand strategy." Far from embracing blunt butchery, as critics maintain, Grant saw the political dimensions of the war and patiently crafted its endgame, even if it was painfully bloody. His legendary magna-

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nimity at Appomattox in 1865 was part of that political calculation: he allowed Lee and his men to return home with dignity, keeping some possessions like horses, and without fear of treason charges.

The defining issues of Grant's presidency, from 1869 to 1877, became the reintegration of the Union and the maintenance of civil rights for blacks. On these, he excelled. Intolerant of unreconstructed white terrorism, including the Colfax massacre of at least 73 (and perhaps many more) blacks in 1873, he ordered federal authorities in the South to take the strongest possible measures to stamp out violence. He helped push through the 15th Amendment, which gave male citizens of all colours the right to vote. "To Grant more than any other man the Negro owes his enfranchisement," wrote Frederick Douglass, a black leader and a frequent White House guest. It did not stop there. Grant named blacks, Jews and native Americans to federal positions. Small wonder, then, that he has risen in the presidential pantheon, while Woodrow Wilson, who segregated much of the civil service in the early 20th century, has sunk.

But Grant's record in the White House remains mixed. His appointments were "brilliant and disastrous". Corruption in the form of gold speculation and whiskey-tax evasion reached deep into his administration, a sign of the oncoming Gilded Age. In foreign policy, he showed a peculiar obsession with annexing the modern-day Dominican Republic. But he did notch up a major achievement: settling American claims over Confederate sympathies among the British, who had built the *css Alabama*, a ship that destroyed many Union commercial and naval vessels. The settlement, achieved through an international panel of arbitrators, may have averted a trans-Atlantic war and, says Mr Chernow, "launched a new fraternal relationship" ▶

► great consequence".

Grant's push for racial equality did not endure, of course. The North wearied of the expense of keeping federal troops in the South, and the disputed election to choose Grant's successor, in 1876, resulted in a deal to end Reconstruction. The Klan rose viciously again. Would things have been different had Lincoln lived, his full presidency followed directly by eight years of Grant, without an interruption for the retrograde Andrew Johnson? It is unknowable. In a remarkably pithy memoir, written while he was dying, Grant forecast this: "As time passes, people, even of the South, will begin to wonder how it was possible that their ancestors ever fought for or justified institutions which acknowledged the right of property in man." Imperfect the 18th president may have been, but he was certainly far-sighted. ■

19th-century Britain

A hard-won century

Victorious Century: The United Kingdom, 1800-1906. By David Cannadine. Allen Lane; 602 pages; £30. To be published in America by Viking in February 2018; \$40

IN THE 19th century, Britain's old enemy France was vanquished. Britain was industrialising faster than its European neighbours, while preserving its monarchy and parliamentary system. It slowly grew more democratic and added more patches to its imperial map. Iron, steel, cotton and steam enriched Britons at home as globalisation took off.

By mid-century two-fifths of traded manufactured goods were produced in the United Kingdom. A quarter of global trade flowed through the country's ports. In 1851 Britons had an average income 65% higher than the average German and 30% higher than the average American. In 1900 Britain governed around a quarter of the world's people, with military spending under 4% of GDP. Prime ministers of the era gave their names to Melbourne, Wellington, Palmerston North in New Zealand, Port Stanley in the Falklands and Salisbury, now Harare, Zimbabwe. Georgetown, Guyana and Victoria, Seychelles were named after the century's monarchs.

But to many subjects it did not feel so glorious. As David Cannadine shrewdly identifies in "Victorious Century", his volume in the Penguin History of Britain series, economic turmoil often fuelled political discontent. The 1820s, 1830s and 1840s were marked by severe slumps. Luddites rioted against technology, ordinary people protested for political rights under the ban-

Peak Britannia

Scratch beneath the surface

The Age of Decadence: Britain 1880 to 1914. By Simon Heffer. Random House Books; 897 pages; £30

IN the late Victorian and early Edwardian period of 1880-1914, at least (see previous article), Britain had a swagger in its step. You could see it in Queen Victoria's Diamond Jubilee of 1897 and Edward VII's coronation in 1902, or hear it in the music of Edward Elgar. You could detect it in the objects of everyday life: coins of gold and silver, books bound in leather embossed with gold, stamps doubling as works of art. The middle classes lived in solid contentment, with enough space to bring up a family and enough servants to lighten the domestic drudgery. No wonder the generation shattered by the first world war and buffeted by the Depression, then by the rise of communism and fascism, looked back on the Edwardian era as an enchanted long-ago, when civilised people were forever taking tea on the vicarage lawn.

And yet even these years hinted at Britain's mortality as the world's most powerful country. Those who only know Simon Heffer from his somewhat bilious writings in the *Daily Mail* might be tempted to ignore his book on this period. Resist the temptation. Mr Heffer combines a scholar's command of the primary literature with a journalist's eye for detail. He writes with admirable sensitivity about both music and literature: a better account of Elgar or Arnold Bennett would be hard to find. He does a brilliant job of exposing the rot beneath the glittering surface of late Victorian and Edwardian Britain.

The ruling class became hogishly self-indulgent: Mr Heffer lacerates Edward VII for his habit of sponging off his friends and debauching their wives. At the same time the intellectual elite—particularly the Bloomsbury set—took to

ner of Chartism, and more than 1m Irish starved in potato famines. Later, Britons worried about the newly united United States and Germany overtaking their economy. Politicians of the 1880s had to deal with Irish anger against landlords, fuelled by a new and sometimes violent nationalism, and mass strikes by trade unions, no longer banned.

The century's most successful prime ministers, both Tories, each won four elections: Lord Liverpool was in office from 1812 to 1827 and Lord Salisbury discontinuously



Can you see the end of Empire, dear?

ridiculing as prigs and bores the Victorian giants who had built up the economic and moral capital which they lived off.

Mr Heffer is himself a bit guilty of self-indulgence. He devotes too much space to subjects that catch his imagination, and says too little about an important part of Britain's decadence: the way its obsession with the fripperies of aristocratic life diverted its attention from industry and commerce. He is silent about the United States despite the fact that these years saw America replacing Britain as the world's biggest economy. There is surely no better illustration of Britain's decadence than the entrepreneurial vigour of the likes of John D. Rockefeller and Andrew Carnegie.

Yet Mr Heffer's faults are minor compared with his virtues: He writes with such exuberance—indeed with such Edwardian swagger—that he leaves the reader looking forward to his next volume, on the first world war and the breakdown of the liberal world order.

from 1885 to 1902. Each had to deal with unrest. Liverpool curbed civil freedoms, while Salisbury expanded the empire and tried to rally Britain for Queen Victoria's 1897 Diamond Jubilee. Rudyard Kipling saw only pessimism: "Lo, all our pomp of yesterday is one with Nineveh and Tyre!"

Imperial doubt lay just beneath the jingoism. Humiliations in Afghanistan, India, Jamaica, South Africa and Sudan came decade by decade, and the best known war poem marked another one, Tennyson's "Charge of the Light Brigade". He and other ►

► poets found inspiration from the decline of faith: in 1851 half the country still went to church. Arthur Clough and Matthew Arnold wrestled with their doubts in print, and by 1900 agnosticism and indifference were gaining sway.

Mr Cannadine seems right to argue that pessimism is the key to understanding the Victorians, with the 1880s and 1890s marking the high tide of both their arrogance and their fears (see box, previous page). Their moral panics make more sense in this light, explaining why laws against gross indecency (in effect, homosexuality) were passed in 1885. Mr Cannadine offers a comprehensive analysis, in particular, of high politics. Some of the big characters of the age are lost—Dickens and Brunel are somewhat absent—but he knits together the often diverging grand imperial, national and social histories with skill. ■

Hong Kong

The resistance

Architect of Prosperity: Sir John Cowperthwaite and the Making of Hong Kong. By Neil Monnery. London Publishing Partnership; 337 pages; £24.50

DURING the 1960s, governments were responding to political unrest and economic challenges with nationalisation, centralised planning and public spending (financed by heavy taxes and debt). There was intense pressure for Sir John Cowperthwaite, the financial secretary of Hong Kong, to join the crowd.

Civil servants in Whitehall had been urging their counterparts in Hong Kong to introduce high taxes for some time. Locals demanded spending to address a lack of housing for crowds of poor immigrants fleeing the horrors of post-revolutionary China, and a territory-wide shortage of drinkable water. Meanwhile, the territory's export-driven economy was threatened by rising global tariffs, prompting demands for public incentives to reorient production towards the domestic market.

A new biography of Cowperthwaite by Neil Monnery, a former management consultant, tells of a man who replied to these demands with a qualified "no", and in the process became that most unusual of things: a bureaucrat hero to libertarians. His approach would subsequently be labelled "positive non-interventionism", meaning governance stopping just short of laissez-faire. Public housing would be funded, but only for tiny flats; reservoirs would be built, but users would be charged. Much of the rest was left to individuals and businesses to sort out, unfet-

tered by government directives. "Money," Cowperthwaite said, should be left "to fructify in the pockets of taxpayers".

Cowperthwaite's ability to resist bigger government was born in a lost era. He was educated in classics and economics at a time when the insights of Adam Smith prevailed. That gave him the foundation to debate with free-spending colleagues influenced by John Maynard Keynes.

In 1945, he arrived in a Hong Kong in ruins from a brutal Japanese occupation. A combined military-colonial administration engaged heavily in economic management, and Cowperthwaite's early jobs included managing the trade in food and raw materials and administering price controls, roles that defined a heavy government hand. But he knew that the territory's lack of natural resources meant that post-crisis prosperity depended on its ability to attract entrepreneurs and capital.

That meant government's role was to provide freedom rather than help. Requests by industry for subsidies were routinely rejected. So too was deficit government financing, which could merely push costs to a future generation and make the territory vulnerable to financial upheaval. Some of his ideas were radical: to ensure that temporary fluctuations in business conditions were not used to justify government controls, he banned the collection of macroeconomic statistics.

"We suffer a great deal today from the bogus certainties and precisions of the pseudo-sciences which include all the social sciences including economics," was his blunt appraisal. "I myself tend to mistrust the judgment of anyone not involved in the actual process of risk-taking." This faith was rewarded. As industries such as cotton spinning, enamelware and wigs declined and Cowperthwaite declined to offer assistance, businesses shifted their attention to promising areas such as toy and



Not pictured: the invisible hand

electronics production, and then finance. Migrants found work in the expanding industries, becoming a cog in a productive engine rather than merely a cost.

When Cowperthwaite stood down in 1971 his tenure was reckoned a huge success, but that provided only limited protection for his policies. The embargo on data collection was reversed by his successor. Subsequent administrations, both British and Chinese, whittled away the restraints on government intervention.

One persistent objection to limited government particularly rankled Cowperthwaite—that it was callous. He was convinced that "the rapid growth of the economy...produces a rapid and substantial redistribution of income [and] makes it possible to assist more generously those who are not, from misfortune temporary or permanent, sharing in the general advance. The history [of Hong Kong] demonstrates this conclusively." As that history becomes increasingly remote, a biography of a key architect becomes ever more valuable. There are few other examples. ■

Architecture

Crooked timber

Four Walls and a Roof: The Complex Nature of a Simple Profession. By Reinier de Graaf. Harvard University Press; 528 pages; \$35 and £27.95

HIS name may not be familiar, but Reinier de Graaf's architecture practice, the Office of Metropolitan Architecture (OMA), designed the CCTV building in Beijing and the Prada Foundation in Milan. Its co-founder Rem Koolhaas is a classic "starchitect". Mr De Graaf is known in professional circles for his bleakly humorous lectures on architecture as a social act.

His first book—part essay-collection, part diary—is thus something of a revelation. It covers some familiar ground, such as the frictions between the utopian tendencies in 20th-century architecture and the realities of real estate and realpolitik. But he has produced an original and even occasionally hilarious book about losing ideals and finding them again.

In the early part of the 21st century architects were again given the opportunity to create master plans for whole districts rather than single buildings, in a way they had not been since the 1960s or 1970s. At the book's core are diary entries describing his travails in designing such plans for London, Dubai and, especially, Moscow.

In the Russian capital, Mr De Graaf and his team are drawn by the idea of revisiting the Naukograd—the special urban parks ►

► for research and development that sustained the scientific prowess of the Soviets. Invited to sit on the council that was ostensibly organising the design competition he was taking part in, he initially declined, saying it would be unethical. As he slowly realised the competition did not operate under normal rules, he accepted the position, to get closer to winning the project he and his team had worked so hard on. Mr De Graaf leads his team through bewildering negotiations, and the process gradually unravels into farce as building begins without an agreed master plan.

One of the underrated skills of the ar-

chitect is the ability to observe not only urban scenarios but individuals. In 2013 Mr De Graaf called the Russian client representative only to hear hurried apologies—and sirens in the background. The next day the news described another raid by agents investigating fraud on the project. Over the next months he looked on wryly as the grand vision was slowly trashed and key figures were indicted. Comparing democratic systems with authoritarian ones, he wonders “which is more time-consuming: our lengthy procedures to arrive at decisions or their lengthy procedures to undo them.” Meanwhile he notes that while Do-

nald Trump the president railed against inept governments, Donald Trump the property developer played them expertly to win permits and subsidies: “If indeed the public sector is dysfunctional then Trump is the monster it created.”

Mr De Graaf cannot give easy answers to the tough questions about architecture’s public purpose; there are none. He is better at skewering lazy ideas, like the fad for internet-connected buildings, and at highlighting the ideological struggles over the built environment. He deftly shows that architecture cannot be better or more pure than the flawed humans who make it. ■

Johnson | Give evolution enough time

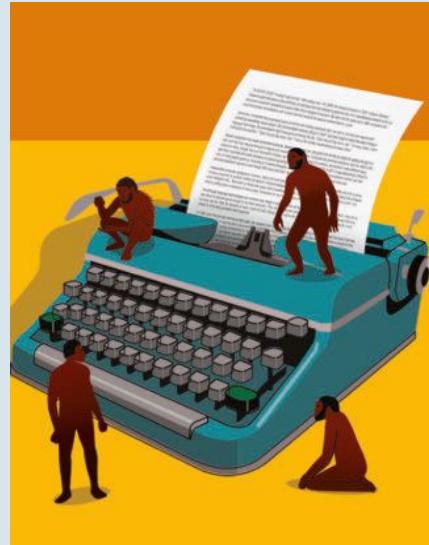
High stakes in a new book arguing that language is not 200,000 years old, but almost 2m

SPEECH leaves no fossils, so palaeoanthropologists have no direct evidence for the emergence of the quintessential human trait: language. Many scholars work on the topic nonetheless, but few of their findings have achieved consensus.

On one thing, at least, most agree: though animals communicate, only humans have true language, with the power to organise complex thoughts into a string of words, often about absent or abstract things. And most scholars also reckon that *Homo sapiens* is the only species ever to have had such language. They think it must have emerged somewhere between 200,000 and 50,000 years ago.

Now Daniel Everett, of Bentley University in Massachusetts, has, in “How Language Began”, published a broadside against that idea. He thinks that *Homo erectus*, *Homo sapiens*’s predecessor, had something that could be called language—and not just grunting proto-speech. This would make language not 200,000 years old, but something like 1.9m.

At issue is more than chronology. Noam Chomsky has proposed that one human developed, through one genetic mutation, an ability called “Merge”, about 50,000 years ago. “Merge” allows two linguistic units to be joined into a single one, such as a complex noun phrase (*the house and the hill* becoming *the house on the hill*) or a complex sentence (*Sally loves Lucy* becoming part of *Bill knows that Sally loves Lucy*). The mind can further merge and manipulate the new units to make even more complex ones. This, called recursion, is what Mr Chomsky calls the language faculty “narrowly defined”. Other elements, like advances in auditory processing, he thinks, are shared with animals, or are also used for non-linguistic purposes.



Mr Everett published, in 2005, an article claiming that an Amazonian tribe he had lived with for years, the Pirahã, had no recursion. This led the press to crown Mr Everett as the anti-Chomsky: Mr Chomsky has spent his career at MIT, focusing on theory. He is caustic and imperious with opponents. Mr Everett lived in the jungle with his family and several different tribes, learning their languages. He went as a missionary, only to renounce his Christianity, quite publicly, later on. Mr Chomsky is not known for conceding error.

Mr Everett claims that recursion is neither necessary nor sufficient for human language. *Homo erectus*, he thinks, probably really did talk something like “Me Tarzan, you Jane”—but with this he could do quite a lot. Mr Everett proposes that language required a series of “signs” of advancing complexity. The first is the “index”, a non-arbitrary and non-intentional sign, like a hoofprint that makes clear a horse

has been near. Next comes the “icon”, a non-arbitrary but intentional sign, such as a drawing of a hoofprint to represent a horse. *Homo erectus* seemed to value stones resembling things like a phallus and a fertile woman. This indicates abstraction and “displacement”, where an object is made to represent something not physically present.

Then, Mr Everett reckons, icons developed into “symbols”—some of them spoken, arbitrary sounds that, unlike icons, had lost any connection to their referent (as “cat” sounds nothing like a cat). Gesture and intonation would have been crucial to making these symbols understood and agreed upon. All the while, the brain and speech organs were evolving to handle more and more complex utterances.

When *Homo erectus* began using several symbols one after the other in a more predictable pattern (but not yet recursively), Mr Everett thinks he could be said to be using human language. The linguist points to circumstantial evidence: *Homo erectus* would have needed it to build rafts or boats and plan seaborne voyages to reach places like Flores, an Indonesian island 24km from the nearest land, where tools from that era have been found.

The intellectual and philosophical stakes in the debate are high. If language is a recent great leap forward in *Homo sapiens*, this implies that all human languages are fundamentally similar, while marking a sharp break between humans and other animals. But if language is an invention relying on general-purpose parts of humans’ brains, in interaction with local culture over a million-plus years, then human languages may be rather different from each other, and more continuous with the abilities of animals and distant ancestors. The argument isn’t just about language, but about human nature.

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Economic data

% change on year ago

	Gross domestic product			Industrial production		Consumer prices		Unemployment rate, %		Current-account balance			Budget balance	Interest rates, %		Currency units, per \$	
	latest	qtr*	2017†	latest	2017†	latest	2017†	latest	2017†	latest 12 months, \$bn	% of GDP 2017†	% of GDP 2017†	10-year gov't bonds, latest	Oct 4th	year ago	Oct 4th	year ago
United States	+2.2	Q2	+3.1	+2.2	+1.5	Aug	+1.9	Aug	+2.0	4.4	Aug	-460.9	Q2	-2.5	-3.4	2.33	-
China	+6.9	Q2	+7.0	+6.8	+6.0	Aug	+1.8	Aug	+1.7	4.0	Q2‡	+155.3	Q2	+1.4	-3.9	3.62§§	6.64
Japan	+1.4	Q2	+2.5	+1.5	+5.4	Aug	+0.6	Aug	+0.5	2.8	Aug	+189.8	Jul	+3.6	-4.5	0.08	113
Britain	+1.5	Q2	+1.2	+1.5	+0.4	Jul	+2.9	Aug	+2.7	4.3	Jun††	-128.9	Q2	-3.6	-3.6	1.35	0.75
Canada	+3.7	Q2	+4.5	+2.8	+7.4	Jul	+1.4	Aug	+1.7	6.2	Aug	-45.0	Q2	-2.6	-2.0	2.12	1.25
Euro area	+2.3	Q2	+2.6	+2.1	+3.2	Jul	+1.5	Sep	+1.5	9.1	Aug	+362.1	Jul	+3.1	-1.3	0.45	0.85
Austria	+2.6	Q2	+0.4	+2.3	+5.7	Jul	+2.1	Aug	+2.1	5.6	Aug	+6.1	Q2	+2.1	-1.2	0.61	0.85
Belgium	+1.5	Q2	+1.7	+1.6	+3.9	Jul	+2.0	Sep	+2.1	7.3	Aug	-4.2	Mar	+0.6	-2.0	0.73	0.85
France	+1.8	Q2	+2.2	+1.7	+3.7	Jul	+1.0	Sep	+1.1	9.8	Aug	-31.0	Jul	-1.3	-3.1	0.75	0.85
Germany	+2.1	Q2	+2.5	+2.1	+4.0	Jul	+1.8	Sep	+1.7	3.6	Aug‡	+274.1	Jul	+8.0	+0.7	0.45	0.85
Greece	+0.7	Q2	+2.2	+1.0	+1.7	Jul	+0.9	Aug	+1.3	21.2	Jun	-0.7	Jul	-1.3	-1.4	5.61	0.85
Italy	+1.5	Q2	+1.4	+1.4	+4.4	Jul	+1.1	Sep	+1.3	11.2	Aug	+51.2	Jul	+2.5	-2.3	2.26	0.85
Netherlands	+3.3	Q2	+6.3	+2.7	+3.0	Jul	+1.4	Aug	+1.3	5.9	Aug	+76.0	Q2	+10.0	+0.6	0.58	0.85
Spain	+3.1	Q2	+3.5	+3.1	+2.0	Jul	+1.8	Sep	+2.0	17.1	Aug	+23.1	Jul	+1.4	-3.3	1.71	0.85
Czech Republic	+3.4	Q2	+10.3	+4.5	+3.2	Jul	+2.5	Aug	+2.4	2.9	Aug‡	+1.7	Q2	+0.9	-0.1	1.34	22.1
Denmark	+1.9	Q2	+2.8	+2.2	-2.4	Jul	+1.5	Aug	+1.0	4.5	Jul	+26.0	Jul	+8.2	-0.4	0.56	6.33
Norway	+0.2	Q2	+4.7	+1.9	-1.6	Jul	+1.3	Aug	+2.0	4.2	Jul‡‡	+16.6	Q2	+5.4	+4.2	1.64	7.98
Poland	+4.6	Q2	+4.5	+4.3	+8.7	Aug	+2.2	Sep	+1.8	7.0	Aug§	-2.5	Jul	-0.6	-2.0	3.39	3.85
Russia	+2.5	Q2	na	+1.8	+1.5	Aug	+3.3	Sep	+4.0	4.9	Aug§	+36.1	Q2	+2.5	-2.1	8.13	57.9
Sweden	+3.0	Q2	+5.2	+3.1	+5.3	Jul	+2.1	Aug	+1.9	6.0	Aug§	+22.5	Q2	+4.4	+0.9	0.72	8.13
Switzerland	+0.3	Q2	+1.1	+0.9	+2.9	Q2	+0.5	Aug	+0.5	3.2	Aug	+68.9	Q2	+9.9	+0.7	0.02	0.98
Turkey	+5.1	Q2	na	+4.9	+25.6	Jul	+11.2	Sep	+10.7	10.2	Jun§	-37.1	Jul	-4.5	-2.0	11.02	3.58
Australia	+1.8	Q2	+3.3	+2.4	+0.8	Q2	+1.9	Q2	+2.1	5.6	Aug	-21.8	Q2	-1.5	-1.8	2.81	1.31
Hong Kong	+3.8	Q2	+4.1	+3.1	+0.4	Q2	+1.9	Aug	+1.6	3.1	Aug‡‡	+15.0	Q2	+4.2	+0.9	1.72	7.81
India	+5.7	Q2	+4.1	+6.7	+1.2	Jul	+3.4	Sep	+3.5	5.0	2015	-29.2	Q2	-1.4	-3.2	6.70	65.5
Indonesia	+5.0	Q2	na	+5.2	+1.4	Jul	+3.7	Sep	+3.9	5.3	Q3§	-14.2	Q2	-1.7	-2.4	6.44	13,541
Malaysia	+5.8	Q2	na	+5.4	+6.0	Jul	+3.7	Aug	+3.9	3.5	Jul§	+8.1	Q2	+2.3	-3.0	3.94	4.24
Pakistan	+5.7	2017**	na	+5.7	+13.0	Jul	+3.9	Sep	+3.9	5.9	2015	-12.1	Q2	-4.5	-5.9	8.20†††	105
Philippines	+6.5	Q2	+7.0	+6.6	-1.1	Jul	+3.4	Sep	+3.0	5.6	Q3§	-0.8	Jun	+0.1	-2.7	4.66	51.1
Singapore	+2.9	Q2	+2.2	+2.9	+19.1	Aug	+0.4	Sep	+0.7	2.2	Q2	+59.0	Q2	+19.7	-1.0	2.13	1.36
South Korea	+2.7	Q2	+2.4	+2.8	+2.7	Aug	+2.1	Sep	+2.0	3.6	Aug§	+83.1	Aug	+5.6	+0.9	2.37	1,145
Taiwan	+2.1	Q2	+0.5	+2.2	+3.2	Aug	+1.0	Aug	+0.6	3.8	Aug	+70.7	Q2	+13.2	-0.1	1.04	30.4
Thailand	+3.7	Q2	+5.4	+3.5	+3.7	Aug	+0.9	Sep	+0.7	1.1	Aug§	+44.9	Q2	+11.4	-2.5	2.23	33.5
Argentina	+2.7	Q2	+2.8	+2.7	-2.5	Oct	+23.1	Aug‡	+25.2	8.7	Q2§	-19.7	Q2	-3.4	-6.2	5.65	17.4
Brazil	+0.3	Q2	+1.0	+0.7	+4.0	Aug	+2.5	Aug	+3.5	12.6	Aug§	-13.5	Aug	-0.8	-8.0	8.76	3.15
Chile	+0.9	Q2	+3.0	+1.3	+5.1	Aug	+1.9	Aug	+2.2	6.6	Aug‡‡	-5.6	Q2	-1.7	-3.0	4.45	635
Colombia	+1.3	Q2	+3.0	+1.7	+6.2	Jul	+3.9	Sep	+4.0	9.1	Aug§	-12.4	Q2	-3.7	-3.3	6.49	2,954
Mexico	+1.8	Q2	+2.3	+2.2	-1.6	Jul	+6.7	Aug	+5.9	3.3	Aug	-17.6	Q2	-1.8	-1.9	6.93	19.2
Venezuela	-8.8	Q4~	-6.2	-9.3	+0.8	Sep	na	+720	7.3	Apr§	-17.8	Q3~	-1.2	-19.5	9.58	10.1	
Egypt	+4.9	Q2	na	+3.8	+40.0	Jul	+31.9	Aug	+26.9	12.0	Q2§	-15.6	Q2	-6.0	-10.8	na	17.7
Israel	+3.9	Q2	+2.4	+3.6	+2.6	Jul	-0.1	Aug	+0.4	4.1	Aug	+10.7	Q2	+3.5	-2.5	1.76	3.53
Saudi Arabia	+1.7	2016	na	-0.5	na	-0.1	Aug	+1.1	5.6	2016	+7.6	Q2	+0.5	-7.5	3.68	3.75	3.75
South Africa	+1.1	Q2	+2.5	+0.7	-0.5	Jul	+4.8	Aug	+5.3	27.7	Q2§	-7.9	Q2	-2.9	-3.2	8.62	13.7

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. †††Dollar-denominated bonds.



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Markets

	% change on			
	Index Oct 4th	Dec 30th 2016	one week	in local currency terms
United States (DJIA)	22,661.6	+1.4	+14.7	+14.7
China (SSEA)	3,506.7	+0.1	+7.9	+12.9
Japan (Nikkei 225)	20,626.7	+1.8	+7.9	+11.7
Britain (FTSE 100)	7,467.6	+2.1	+4.5	+12.4
Canada (S&P TSX)	15,721.0	+0.7	+2.8	+10.6
Euro area (FTSE Euro 100)	1,228.9	+1.0	+10.5	+23.2
Euro area (EURO STOXX 50)	3,594.9	+1.1	+9.3	+21.8
Austria (ATX)	3,309.6	+0.5	+26.4	+40.9
Belgium (Bel 20)	4,044.4	+1.4	+12.1	+25.1
France (CAC 40)	5,363.2	+1.5	+10.3	+23.0
Germany (DAX)*	12,970.5	+2.5	+13.0	+26.0
Greece (Athex Comp)	750.7	+1.9	+16.6	+30.1
Italy (FTSE/MIB)	22,456.4	-0.7	+16.8	+30.2
Netherlands (AEX)	541.7	+2.0	+12.1	+25.0
Spain (Madrid SE)	1,005.5	-4.0	+6.6	+18.8
Czech Republic (PX)	1,052.5	+0.8	+14.2	+33.1
Denmark (OMXCB)	941.9	+1.7	+18.0	+31.4
Hungary (BUX)	37,923.2	+1.8	+18.5	+30.8
Norway (OSEAX)	861.2	+0.5	+12.6	+22.0
Poland (WIG)	63,825.7	+0.4	+23.3	+40.7
Russia (RTS, \$ terms)	1,137.1	+0.9	-1.3	-1.3
Sweden (OMX30)	1,651.1	+1.7	+8.8	+22.0
Switzerland (SMI)	9,284.0	+2.0	+12.9	+17.8
Turkey (BIST)	104,547.8	+3.3	+33.8	+31.8
Australia (All Ord.)	5,719.6	-0.1	nil	+8.6
Hong Kong (Hang Seng)	28,379.2	+2.7	+29.0	+28.1
India (BSE)	31,671.1	+1.6	+18.9	+24.2
Indonesia (JSX)	5,951.5	+1.5	+12.4	+12.3
Malaysia (KLCSE)	1,761.8	-0.1	+7.3	+13.9
Pakistan (KSE)	40,461.0	-4.3	-15.4	-16.2
Singapore (STI)	3,236.7	nil	+12.4	+19.2
South Korea (KOSPI)	2,394.5	+0.9	+18.2	+24.6
Taiwan (TWI)	10,469.4	+1.4	+13.1	+19.8
Thailand (SET)	1,687.8	+1.0	+9.4	+17.4
Argentina (MERV)	26,474.2	+4.8	+56.5	+42.6
Brazil (BVSP)	76,762.9	+4.0	+27.5	+32.6
Chile (IGPA)	27,246.4	+2.9	+31.4	+39.8
Colombia (IGBC)	11,080.1	-0.1	+9.6	+11.7
Mexico (IPC)	50,565.3	+0.8	+10.8	+25.3
Venezuela (IBC)	539,055.1	+16.2	1,600	na
Egypt (EGX 30)	13,882.0	+1.0	+12.5	+15.3
Israel (TA-125)	1,305.5	+1.1	+2.2	+12.1
Saudi Arabia (Tadawul)	7,285.8	+0.7	+0.7	+0.7
South Africa (JSE AS)	56,750.0	+2.8	+12.0	+12.8

The Economist poll of forecasters, October averages (previous month's, if changed)

	Real GDP, % change		Consumer prices		Current account	
	Low/high range	average	2017	2018	2017	2018
Australia	2.2/2.9	2.4/3.2	2.4 (2.3)	2.8 (2.7)	2.1	2.3
Brazil	0.2/1.2	1.5/3.1	0.7 (0.6)	2.2 (2.1)	3.5 (3.7)	3.9 (4.2)
Britain	1.2/1.7	0.7/1.7	1.5	1.3	2.7	2.6
Canada	1.9/3.2	1.8/2.6	2.8 (2.6)	2.2 (2.0)	1.7	1.9 (1.8)
China	6.6/6.8	5.8/6.9	6.8	6.4 (6.5)	1.7 (1.8)	2.2
France	1.5/1.8	1.6/1.9	1.7 (1.6)	1.8 (1.7)	1.1 (1.2)	1.2
Germany	2.0/2.3	1.6/2.5	2.1	1.9	1.7 (1.6)	1.5
India	6.0/7.3	6.9/7.8	6.7 (7.0)	7.3 (7.5)	3.5 (3.6)	4.3 (4.4)
Italy	1.3/1.5	0.9/1.5	1.4 (1.3)	1.1	1.3	1.1
Japan	1.2/1.8	0.6/2.1	1.5 (1.6)	1.2 (1.3)	0.5	0.8
Russia	1.3/2.5	1.3/3.3	1.8 (1.7)	2.0 (1.9)	4.0 (4.2)	4.0 (4.2)
Spain	3.0/3.2	2.3/3.2	3.1	2.7	2.0 (1.9)	1.3
United States	2.0/2.4	1.9/2.9	2.2 (2.1)	2.3	2.0 (1.9)	2.0
Euro area	2.0/2.2	1.6/2.4	2.1 (2.0)	1.9 (1.8)	1.5	1.2 (1.3)

Sources: Bank of America, Barclays, BNP Paribas, Citigroup, Commerzbank, Credit Suisse, Decision Economics, Deutsche Bank, EIU, Goldman Sachs, HSBC Securities, ING, Itaú BBA, JPMorgan, Morgan Stanley, RBS, Royal Bank of Canada, Schroders, Scotiabank, Société Générale, Standard Chartered, UBS. For more countries, go to: Economist.com/markets

Other markets

	% change on			
	Index Oct 4th	one week	in local currency terms	Dec 30th 2016
United States (S&P 500)	2,537.7	+1.2	+13.4	+13.4
United States (NAScomp)	6,534.6	+1.3	+21.4	+21.4
China (SSEB, \$ terms)	361.6	+0.7	+5.8	+5.8
Japan (Topix)	1,684.6	+1.2	+10.9	+14.8
Europe (FTSEurofirst 300)	1,533.4	+1.2	+7.4	+19.7
World, dev'd (MSCI)	2,009.6	+1.1	+14.8	+14.8
Emerging markets (MSCI)	1,097.0	+1.7	+27.2	+27.2
World, all (MSCI)	489.6	+1.2	+16.1	+16.1
World bonds (Citigroup)	936.6	-0.1	+6.0	+6.0
EMBI+ (JPMorgan)	839.2	+0.4	+8.7	+8.7
Hedge funds (HFRX)	1,256.8 ^s	+0.2	+4.4	+4.4
Volatility, US (VIX)	9.7	+9.9	+14.0 (levels)	
CDSs, Eur (iTRAXX) ^t	54.3	-5.5	-24.7	-16.0
CDSs, N Am (CDX) ^t	55.5	-5.8	-18.1	-18.1
Carbon trading (EU ETS) €	6.9	-0.1	+5.0	+17.1

Sources: IHS Markit; Thomson Reuters. *Total return index.

^tCredit-default-swap spreads, basis points. ^sSep 29th.

Indicators for more countries and additional series, go to: Economist.com/indicators

The Economist commodity-price index

	2005=100			% change on	
	Sep 26th	Oct 3rd*	Oct 3rd*	one month	one year
Dollar Index					
All Items	146.3	145.5	145.5	-1.3	+6.6
Food	151.0	149.4	149.4	+0.5	-3.1
Industrials					
All	141.5	141.5	141.5	-3.2	+19.7
Nfa [†]	131.6	129.3	129.3	-4.9	+3.3
Metals	145.7	146.8	146.8	-2.5	+27.3
Sterling Index					
All items	198.3	199.8	199.8	-2.9	+2.6
Euro Index					
All items	154.6	154.0	154.0	+0.2	+1.2
Gold					
\$ per oz	1,301.3	1,274.2	1,274.2	-4.7	-0.7
West Texas Intermediate					
\$ per barrel	51.9	50.4	50.4	+3.6	+3.6

Sources: Bloomberg; CME Group; Cotlook; Darmenn & Curl; FT; ICCO; ICO; ISO; Live Rice Index; LME; NZ Wool Services; Thompson Lloyd & Ewart; Thomson Reuters; Urner Barry; WSJ. *Provisional

[†]Non-food agriculturals.

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Living the dream

Hugh Hefner, founder of the Playboy empire, died on September 27th, aged 91

WHENEVER Hugh Hefner mentioned that his strict Methodist mother had wanted him to be a missionary, he got a big laugh. He got a bigger one when he said he answered: "Mom, I was." His listeners were thinking of the missionary position, no doubt, and the hundreds of women he had conquered with that irresistible saturnine charm. But he was absolutely serious. As the man who brought sexual liberation to America in the form of clubs, casinos, Bunny Girls and naked centrefolds, he too was a preacher and a prophet. But instead of "Thou shalt not", the creed of Puritan killjoys down the centuries, his was "Freedom!"—and the loud tooting of a sports car, accessorised with beauties, driving at speed through America's drearly conformist suburbs and its herds of sacred cows. Blessed is the rebel, he cried; no progress without him.

(At this point Hef in his wolfish prime would pop another Dexedrine, take a couple of puffs on his ever-present pipe, spin round on his giant revolving bed and dictate the next para to his eager secretary. Hef in his dote would retire his silk dressing gown, shuffle into his velvet slippers and get one of his nubile assistants to adjust his hearing aid, since too much Viagra—"the fountain of youth!"—had made him deaf.)

Playboy magazine was the voice of his

rebellion. He started it in 1953, with borrowed money, as a pleasure primer for young urban males just like him. It was dedicated to the pursuit of happiness and the American dream: if you worked hard, you too could claim your prize of big hi-fi rigs, fine wines and bed-ready girls. He picked those himself in seigneurial fashion; sometimes, in the photos, his pipe would be perched in an ashtray beside them. He liked his Playmates to resemble a pretty girl next door, to show that nice girls liked sex too, in or out of marriage. If you doubted it, you only had to read the Kinsey report of 1948, which had let the sunshine in on the hyperactive sex lives of the citizenry. What was this hypocritical hangup America had, this bugaboo of "sin"?

Sex was fun. Whether it was morally good or bad wasn't the point. The morality depended on the situation. All that stuff aside, sex was also the beginning of civilisation, the life force. It should be celebrated. Yet America had swarmed since its foundation with censors, prigs, prudes and bluenoses intent on sexual repression. To keep down a natural drive led to deviancy and crime, even witch-burnings, even mass madness (at least as he understood Cotton Mather, or Catholic medieval Europe). And it was tyranny, pure and simple.

This was his philosophy. He called it

one, and laid it out in long editorials over months and years. This meant he had to defend it against lounging sneers like William F. Buckley, who flung words like "latitudinarianism" at him on tv. Well, he could be an intellectual too, showing in the more literary pages of *Playboy*—with offerings from Vladimir Nabokov, Ray Bradbury, John Updike and Jack Kerouac and interviews with Orson Welles and Martin Luther King, among many others—that he was on the very cutting edge of culture.

Black-satin corsets

What other philosophers really disliked was that he made money from it. A lot of money. The first-ever run of *Playboy*, with Marilyn Monroe clothed on the cover and inside naked, sold out overnight. It was the coup of a lifetime. By 1958, profits were \$4m a year. He branched out into Playboy Enterprises: clubs and casinos across the world, films, cable, digital. His bunny logo was on cufflinks and shirts. The 1970s were his best years, when he moved from Chicago to the Playboy Mansion in Los Angeles and flew in a black Playboy jet with attendants in ultra-brief black leather. The 1980s, when he lost gambling licences in London and Atlantic City and was dogged by scandals, were rocky, and in 1988 he gave up control of his empire. *Playboy*'s circulation fell to less than 1m. But by then he was so rich that he could go on living his big boy's dream, wearing his captain's hat in bed and parading with armfuls of giggling conquests clad, to his orders, in "lingerie or less".

He backed civil rights of most sorts. Feminists, though, were the enemy. They seemed to want women to be asexual, when the point of his crusade was to celebrate their wonderful differences: as displayed by those Bunny Girls who staffed his clubs and casinos, so cute in those black-satin corsets that made their breasts bigger, those big ears and fluffy tails. (All Hef's idea; he loved to have a menagerie at hand.) They were free, too, to turn any club member down, except for Number One keyholders. And he refused to run pornography, even in the 70s when, during the "Pubic Wars", *Penthouse* did. Short of real smut, why cover up such objects of desire?

To many he was a priapic horror, but to himself he was a romantic. *Playboy* was really a boy-girl romance magazine. The first pin-ups he fell for at 14 were tasteful drawings of nudes from *Esquire*. He was a virgin on his first marriage, and tried it twice more, but he liked variety. His career was a quest for beauty as well as freedom, he said, and Marilyn gloriously topped and tailed it. He never met her, or paid her for those photographs, but he forked out \$75,000 to get the crypt in Woodlawn right beside hers. To spend eternity together was the sweetest thought. And she, of course, would feel the same. ■



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More world leaders signed up in Paris in 2015 to an international agreement on climate change than had ever done so before. But since then progress in Asia has been slow, and America's president, Donald Trump, has announced his intention to withdraw his country from the accord.

What role can Asia-based companies and governments play in shaping new thinking and turning ambition into action? And who will fill the global-leadership vacuum?

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