

The Economist

JULY 8TH-14TH 2017

The German problem

Why its surplus is damaging the world economy



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The Economist**Volume 424 Number 9048**

Published since September 1843
to take part in "a severe contest between intelligence, which presses forward, and an unworthy, timid ignorance obstructing our progress."

Editorial offices in London and also:
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Politics



North Korea tested an intercontinental ballistic missile, despite Donald Trump's insistence this year that it would never be allowed to develop such technology. The missile appeared to have a range long enough to strike Alaska, but not Hawaii or California. There are doubts that it has the necessary warhead.

Japan's ruling Liberal Democratic Party suffered its worst ever defeat in Tokyo's local elections. It lost to a party set up by Yuriko Koike, a disaffected former LDP member, now the capital's governor.

Myanmar said it would not admit three experts whom the UN has appointed to investigate atrocities against the Rohingya minority.

A Chinese hospital that is treating **Liu Xiaobo**, a long-jailed dissident, for advanced liver cancer, said it would invite foreign medical experts to help. Officials have refused demands from his family that he be allowed to go abroad for treatment.

In a speech in **Hong Kong** marking the 20th anniversary of Chinese rule, President Xi Jinping said any attempt by people in the territory to challenge the power of the government in Beijing was "absolutely impermissible". Shortly after he left, thousands joined a pro-democracy march.

London's hurting

The British government sent a task-force to take over housing responsibilities from Kensington and Chelsea Council as the

fallout from the **Grenfell Tower** fire continued. The government had already relieved the council of its responsibility for supporting the survivors after its inadequate response. The chief executive and leader have resigned, but Grenfell's residents are still angry, with some refusing alternative accommodation. They also blasted the appointment, without their consultation, of a retired judge to lead a public inquiry.

A deadline passed without agreement between Sinn Fein and the Democratic Unionist Party to break the deadlock over power-sharing in **Northern Ireland**. Sinn Fein's leader, Michelle O'Neill, put the blame squarely at the feet of the British prime minister, Theresa May, for agreeing to a "confidence and supply" deal with the DUP, which gives Mrs May a slim majority in Parliament after a disastrous election for her Conservative Party.

Italy's new "code of conduct" limiting NGOs operating in the Mediterranean was endorsed by France and Germany after an emergency meeting in Paris. Facing pressure over a surge in refugees, Italy claims the presence of rescue boats creates a "pull factor" that encourages illegal migrants.

Emmanuel Macron's new government outlined its priorities for the next five years in **France**. The president called for amendments to the constitution within the next year, notably the introduction of a form of proportional representation. Édouard Philippe, the prime minister, focused on the need to reduce spending, and said planned tax cuts would be delayed. But he also announced a costly plan to improve infrastructure.

Donald Trump was welcomed in Warsaw by supporters of the ruling Law and Justice (PiS) party. **Poland's** populist government, which rejects the EU's refugee policy and is suspicious of cosmopolitan liberals, sees Mr Trump as a

kindred spirit. His visit is expected to encourage nationalists throughout eastern Europe.

The bloodied revolution



Venezuela's political conflict intensified, as a group of supporters of Nicolás Maduro, the president, stormed the National Assembly, which is controlled by the opposition, and assaulted lawmakers. Some of the legislators required medical treatment. Military police who were guarding the building did not intervene.

At least 17 members of a drug gang were killed in a clash with security forces in **Mexico**. The incident happened near the resort town of Mazatlán. In the state of Chihuahua 14 men were killed in a shoot-out between rival drug cartels. Homicides are rising again in Mexico; May saw the highest murder rate since 1997.

In **Brazil** police arrested Luiz Carlos da Rocha, an alleged drug lord who had evaded capture for 30 years. Detectives used photo data to identify Mr Rocha after he had his face altered by plastic surgery. He is accused of heading a network stretching to Bolivia, Colombia and Peru, producing five tonnes of cocaine a month.

Crumbling all around IS

Iraq's government was poised to take control of Mosul. Just a small part of the Old City was still held by Islamic State, three years after the "caliphate" seized it. In **Syria**, American-backed forces entered the centre of Raqqqa, the caliphate's capital.

A deadline, set by Saudi Arabia and the United Arab Emirates, for **Qatar** to meet a long list of

harsh conditions in order to lift a partial blockade of the Gulf state expired. No further actions were taken, for now.

The government of **Burundi** is purging its army of minority Tutsi officers little more than a decade after the end of a bloody civil war and genocide against Tutsis, according to a report by the International Federation for Human Rights and Burundi-based partners. The army is now dominated by Hutu officers and is becoming politicised, the report said.

The head of the European Union's team of observers for presidential elections in **Kenya** warned of the possibility of violence. Human Rights Watch, based in New York, separately said it had received reports of threats and intimidation in Nakuru county, which was hit hard by election-related violence in 2008. The vote is scheduled for August 8th.

Jihadists from Boko Haram, a Nigerian group, kidnapped 37 women and killed another nine people in **Niger**.

Oh say, can you see



New Jersey's Republican governor, Chris Christie, and the Democratic legislature reached an agreement on the state budget, ending a short shutdown of some government services. The shutdown had closed state-run beaches over the Fourth of July weekend to New Jerseyans—except the governor and his family. They were photographed sunning themselves on an empty beach that was shut to the public, a perk of office. Mr Christie is not running for re-election in November's governor's race. ➤

Business

Volvo became the first of the world's big car manufacturers to announce that it will stop making vehicles that run solely on an internal combustion engine. From 2019 the Swedish carmaker will produce models that are either pure-electric, plug-in hybrid or "mild" hybrid, which use an engine but can also travel on battery power for short distances. The car industry has been revving up for the changes wrought by new technologies, but Volvo is taking a gamble. Although it is growing, the market for green-friendly cars is still small.

After several years of booming sales, the **car industry** in the United States recorded a weak first half of the year. Overall sales to the end of June fell by 2.1% compared with the same six months last year. This is in part because General Motors, Ford and Fiat Chrysler have drastically cut back on selling vehicles to car-hire firms and government fleets in order to maintain brand value.

Short circuit

Tesla's latest figures on production were at the lower end of its own estimates, a problem that has dogged the electric-car firm in the past. In the first half of this year it delivered a modest 47,100 vehicles, prompting its share price to drop by 10% in the three days following the announcement. Tesla may get a jump start with its new Model 3, priced for the mass market, which was expected to roll off the production line this week.

The Italian government's rescue plan for **Banca Monte dei Paschi di Siena** was formally approved by the European Commission. Under the plan the bank will receive €5.4bn (\$6.1bn) of public money, giving the government a 70% stake, and its toxic loans will be bundled up and sold off. Italy's use of state money to prop up its distressed banks has been sharply criticised by some politicians in Europe for not living up to the spirit of the

embryonic banking union, which seeks to avoid using taxpayers' money for bail-outs.

Four former senior bankers at **Barclays**, including John Varley, a one-time chief executive, appeared in court to face charges relating to emergency funding the bank obtained from Qatari investors during the financial crisis in 2008. Barclays has also been charged in the case. A trial is expected to start on July 17th, at which the accused will formally enter their pleas.

Quelle surprise

EDF said that its projected costs for building the new **Hinkley Point** nuclear power station in Britain had risen by £1.5bn (\$2bn) above its initial estimate. The French energy company thinks the controversial project will come in at £19.6bn.

A \$20bn proposed merger between **Huntsman**, an American chemical company, and **Clariant**, a Swiss rival, ran into opposition from a pair of activist hedge funds that have teamed up to scupper the deal. The funds have taken a 7.2% stake in Clariant with the intention of stopping it from completing a merger which they say will destroy shareholder value.

The European Union and Japan reached a political agreement on the outlines of a **free-trade pact**, overcoming obstacles on agriculture and cars. A final treaty has to be ironed out, but the agreement in principle represents a big advance for free trade after Donald Trump pulled America out of the proposed Trans-Pacific Partnership.

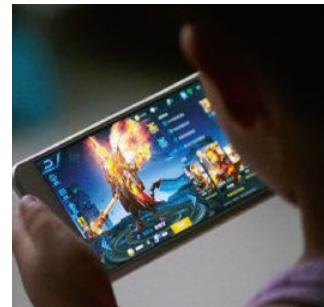
Vantiv, an American processor of credit- and debit-card payments, offered \$10bn to take over **Worldpay**, a British rival that specialises in mobile payments made in shops and on phones. Worldpay tentatively accepted the offer.

The ban on passengers carrying **laptops** on flights to the United States originating in the Middle East was lifted on four airlines. Etihad, Emirates, Qatar Airways and Turkish Airlines said they were now exempt from the ban, which America imposed in March amid fears of a terrorist attack, because they had improved their security checks.

Iran signed a deal with **Total** of France and **CNPC**, a Chinese state-controlled oil firm, to develop a huge, offshore natural-gas field. It is the first formal signing of a contract between a

large energy company and Iran since the international accord in 2015 over its nuclear project lifted sanctions. That accord, and the deal with Total, was thought to be in jeopardy after the election of Donald Trump.

Killjoys



Following criticism from China's state media for failing to be socially accountable for its addictive content, **Tencent** said it would restrict the amount of time that Chinese children can play its "Honour of Kings" mobile game. The Chinese internet firm is limiting players aged 11 and under to one hour a day and 12- to 18-year-olds to two hours, though it is unclear how it can police the curbs. "Honour of Kings" is played by 55m people a day in China, more than Pok閙on Go at its height.

Other economic data and news can be found on pages 72-73



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The German problem

Why Germany's current-account surplus is bad for the world economy



THE battle-lines are drawn. When the world's big trading nations convene this week at a G20 summit in Hamburg, the stage is set for a clash between a protectionist America and a free-trading Germany.

President Donald Trump has already pulled out of one trade pact, the Trans-Pacific Partnership, and demanded the renegotiation of another, the North American Free-Trade Agreement. He is weighing whether to impose tariffs on steel imports into America, a move that would almost certainly provoke retaliation. The threat of a trade war has hung over the Trump presidency since January. In contrast, Angela Merkel, Germany's chancellor and the summit's host, will bang the drum for free trade. In a thinly veiled attack on Mr Trump, she delivered a speech on June 29th condemning the forces of protectionism and isolationism. An imminent free-trade deal between Japan and the European Union will add substance to her rhetoric (see page 62).

There is no question who has the better of this argument. Mr Trump's doctrine that trade must be balanced to be fair is economically illiterate. His belief that tariffs will level the playing field is naive and dangerous: they would shrink prosperity for all. But in one respect, at least, Mr Trump has grasped an inconvenient truth. He has admonished Germany for its trade surplus, which stood at almost \$300bn last year, the world's largest (China's hoard was a mere \$200bn). His threatened solution—to put a stop to sales of German cars—may be self-defeating, but the fact is that Germany saves too much and spends too little. And the size and persistence of Germany's savings hoard makes it an awkward defender of free trade.

Imperfect harmony

At bottom, a trade surplus is an excess of national saving over domestic investment. In Germany's case, this is not the result of a mercantilist government policy, as some foreigners complain. Nor, as German officials often insist, does it reflect the urgent need for an ageing society to save more. The rate of household saving has been stable, if high, for years; the increase in national saving has come from firms and the government.

Underlying Germany's surplus is a decades-old accord between business and unions in favour of wage restraint to keep export industries competitive (see page 18). Such moderation served Germany's export-led economy well through its post-war recovery and beyond. It is an instinct that helps explain Germany's transformation since the late 1990s from Europe's sick man to today's muscle-bound champion.

There is much to envy in Germany's model. Harmony between firms and workers has been one of the main reasons for the economy's outperformance. Firms could invest free from the worry that unions would hold them to ransom. The state played its part by sponsoring a system of vocational training that is rightly admired. In America the prospects for men without college degrees have worsened along with a decline in manufacturing jobs—a cause of the economic nationalism es-

poused by Mr Trump. Germany has not entirely escaped this, but it has held on to more of the sorts of blue-collar jobs that America grieves for. This is one reason why the populist AfD party remains on the fringes of German politics.

But the adverse side-effects of the model are increasingly evident. It has left the German economy and global trade perilously unbalanced. Pay restraint means less domestic spending and fewer imports. Consumer spending has dropped to just 54% of GDP, compared with 69% in America and 65% in Britain. Exporters do not invest their windfall profits at home. And Germany is not alone; Sweden, Switzerland, Denmark and the Netherlands have been piling up big surpluses, too.

For a large economy at full employment to run a current-account surplus in excess of 8% of GDP puts unreasonable strain on the global trading system. To offset such surpluses and sustain enough aggregate demand to keep people in work, the rest of the world must borrow and spend with equal abandon. In some countries, notably Italy, Greece and Spain, persistent deficits eventually led to crises. Their subsequent shift towards surplus came at a heavy cost. The enduring savings glut in northern Europe has made the adjustment needlessly painful. In the high-inflation 1970s and 1980s Germany's penchant for high saving was a stabilising force. Now it is a drag on global growth and a target for protectionists such as Mr Trump.

The shift from thrift

Can the problem be fixed? Perhaps Germany's bumper trade surplus will be eroded as China's was, by a surge in wages. Unemployment is below 4% and the working-age population will shrink, despite strong immigration. After decades of decline, the cost of housing is rising, meaning that pay does not stretch as far as it used to. The institutions behind wage restraint are losing influence. The euro may surge. Yet the German instinct for caution is deeply rooted. Pay rose by just 2.3% last year, more slowly than in the previous two years. Left to adjust, the surplus might take many years to fall to a sensible level.

The government should help by spending more. Germany's structural budget balance has gone from a deficit of over 3% of GDP in 2010 to a small surplus. Officials call this prudence but, given high private-sector savings, it is hard to defend. Germany has plenty of worthwhile projects to spend money on. Its school buildings and roads are crumbling, because of the squeeze on public investment required to meet its own misguided fiscal rules. The economy lags behind in its readiness for digitalisation, ranking 25th in the world in average download speeds. Greater provision of after-school care by the state would let more mothers work full-time, in an economy where women's participation is low. Some say such expansion is impossible, because of full employment. Yet in a market economy, there is a tried and trusted way to bid for scarce resources: pay more.

Above all, it is long past time for Germany to recognise that its excessive saving is a weakness. Mrs Merkel is absolutely right to proclaim the message of free trade. But she and her compatriots need to understand that Germany's surpluses are themselves a threat to free trade's legitimacy. ■

North Korea

Containing Mr Kim

America cannot stop North Korea from building long-range nuclear missiles. But it can deter it from using them



21). So its claim to have built an ICBM is technically correct.

That is not quite as alarming as it sounds. It allows Kim Jong Un, North Korea's dictator, to threaten Anchorage, Alaska, as well as America's bases on Guam and in Japan and South Korea. But Los Angeles and New York are still out of reach. Moreover, North Korea has not yet mastered the technology to protect a nuclear warhead as a missile re-enters the atmosphere. And for the North to achieve much longer ranges it will have to add a third stage to its two-stage missiles—a further technological leap. Nonetheless, Mr Kim's drive to develop a nuclear-tipped missile capable of striking America is clearly advancing rapidly. At best, America may have a few years before North Korea can rain destruction on its cities, as it so often threatens.

It was not supposed to be this way. When Mr Kim boasted of being close to launching an ICBM, on New Year's Day, Donald Trump retorted: "It won't happen." America tried to enlist China, North Korea's main trading partner, to persuade Mr Kim to desist. For a few months China made encouraging noises about curbing the flow of goods across its border with the North. But Mr Trump's growing friendship with Xi Jinping, his Chinese counterpart, seems to have cooled (see page 27). Mr Trump recently admitted that pressing China into service "has not worked out". What else can he try?

Despite lots of martial talk from Mr Trump, a pre-emptive strike against North Korea is a terrifying option. It would risk setting off a war on the Korean peninsula that could claim mil-

lions of lives. The less incendiary step of trying to shoot down Mr Kim's missiles whenever he tests them would prevent the North from developing an ICBM. But America may not yet have perfected the anti-missile capabilities it needs.

Mr Trump might resort to direct negotiations with North Korea—he once said that he and Mr Kim could settle all their differences over a burger at the White House. But it is hard to imagine that the North would really abandon its missile programme, which it appears to view as its one ironclad defence against a hostile world. Meanwhile, the confidence-building step that the North demands of America—suspending all military exercises with South Korea—should be a non-starter. The exercises are legal whereas the missile-testing is not. Also North Korea has a dire record of cheating on its commitments; suspension would perturb America's allies; and China, which hates displays of American might on its borders, would have an incentive to keep Mr Kim as a near-nuclear threat.

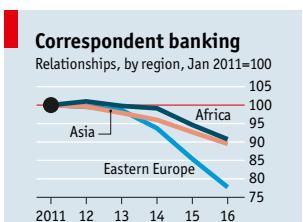
Sanctions do make life difficult for the North Korean regime. But the only measure that might truly threaten it would be to cut its oil supply—and China has already declined to do that. America could punish more firms in China that abet trade with North Korea (secondary sanctions, in the jargon). But the border trade is too fluid and diffuse to halt the determined Mr Kim, who cares nothing for his people's hardship.

It helps if people believe what you say
For all of Mr Trump's bluster, he has no good way of stopping North Korea from developing an effective nuclear weapon. Deterrence and containment remain the best (and possibly only) options to ensure that Mr Kim is never tempted to use his horrifying arsenal. But if deterrence is to be effective, America's threats must be credible. So Mr Trump must stop making promises he is not ready or able to honour—promises like stopping North Korea from developing an ICBM. ■

Financial derisking

Forget whiter than white

Swingeing fines have made banks too risk-averse. Regulators need to rethink anti-money-laundering rules



In the go-go years before the financial crisis, banks grew careless about dirty money. BNP Paribas helped sanctions-busters, HSBC channelled Mexican drug takings and Deutsche Bank moved cash for Russian launderers. When regulators began to take oversight seriously, the moneymen paid a high price. BNP alone was fined \$8.9bn and temporarily barred from dollar clearing (see page 63). Dozens of other banks have faced stiff penalties.

The crackdown was merited. But some of its results have

been perverse. Banks have pulled away from clients they fear might commit financial crimes and therefore regard as too dangerous to serve. Many have done so indiscriminately (see page 51). Money-transfer firms, especially those handling remittances to poor countries, and charities that work in conflict zones, have been hit hard by this "derisking". So have banks in Africa, eastern Europe, Latin America and the Caribbean, which have been dropped by the Western correspondent banks they relied on to clear dollar and euro transactions.

Some of the organisations and countries that have been abandoned deserve it. In Belize correspondent banks have even pulled away from the central bank—a reasonable consequence of the country's sloppy money-laundering controls. ►



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► But others are better seen as collateral damage.

The harm goes wider than specific institutions. People have frozen to death in Afghanistan and gone without medical supplies in Syria because legitimate aid groups had transfers delayed or their bank accounts closed. Derisking chokes off financial flows that parts of the global economy depend on. It undermines development goals such as boosting financial inclusion and strengthening fragile states. And it drives some transactions into informal channels, meaning that regulators become less able to spot suspicious deals.

Popular though it has become to bash banks, they have been acting rationally. The blame for the damage that derisking causes lies mainly with policymakers and regulators, who overreacted to past money-laundering scandals. They issued dire warnings about the dangers of serving entire classes of client, such as money-transfer firms, and imposed swingeing penalties for infractions. No wonder banks dumped less-profitable clients tainted by the merest hint of risk.

Financial technology offers the prospect of filtering suspicious transactions from legitimate ones. People are excited about the blockchain, a distributed-ledger technology that un-

derpins bitcoin, a digital currency. The blockchain could turn out to be a cheap, clean way to verify customers and transactions. But it will not be widely used for some time, if ever.

The Financial Stability Board, an international group of policymakers, is aware of the problem. It is co-ordinating efforts to reverse the trend. But so far it has done little except diagnose what is wrong. Persuading banks to "rerisk" will take more than toning down the warnings in regulatory guidelines.

Diligence where it's due

Banks deserve a new approach to financial regulation—one that accepts mistakes can be made in good faith. Multilateral institutions such as the IMF should do more to help the countries worst affected by derisking to improve their financial oversight. Regulators should create "white lists" of reputable charities, which banks can serve without fear. Most important, banks that can show they have strong anti-laundering controls and have done their due diligence should get credit for that if an occasional illicit payment slips through.

A financial system that lets dirty money flow freely is a bad one. One that blocks clean money is even worse. ■

Longevity

Over 65 shades of grey

To get the most out of longer lives, a new age category is needed



Perhaps "Nyppies" (Not Yet Past It) or "Owls" (Older, Working Less, Still earning) ring truer.

Branding an age category might sound like a frivolous exercise. But life stages are primarily social constructs, and history shows that their emergence can trigger deep changes in attitudes. Such change is needed if the questions that swirl around rising longevity are to get a fitting answer.

End of Generation zzz

Before 1800 no country in the world had an average life expectancy at birth beyond 40. Today there is not a country that does not. Since 1900, more years have been added to human life than in the rest of history combined, initially by reducing child mortality and lately by stretching lifespans. Longevity is one of humanity's great accomplishments.

Yet it is seen as one of society's great headaches. The problem lies in the increasing dependency of the old on the young. By 2100, the ratio of 65-plussers to "working-age" people will triple. As the world greys, growth, tax revenues and workforces will decline while spending on pensions and health care will increase. So, at least, goes the orthodoxy.

Doom-mongers tend to miss a bigger point, however. Those extra years of life are predominantly healthy ones. Five of the additional six years that a British boy born in 2015 can expect to live, compared with one born in 1990, will be healthy, accord-

ing to the Institute for Health Metrics and Evaluation, at the University of Washington. Too many governments and firms fail to recognise this fact, instead lumping all the extra years in the damning category of 65 and over. This binary way of thinking, seeing retirement as a cliff edge over which workers and consumers suddenly tumble, bears little relation to the real world. It also encourages unimaginative policy, whereby the retirement age is occasionally moved as lifespans lengthen.

A more radical approach would start by acknowledging that, in the rich world at least, many of the old are still young. As this week's special report argues, they want to work, but more flexibly. They want to spend money, too. In western Europe the over-60s will account for 59% of consumption growth in cities between now and 2030, says McKinsey, a consultancy.

Declaring a new stage of life could help change perceptions. It has done so before. Today's conception of childhood emerged in the 19th century, paving the way for child-protection laws and a golden age of children's literature. Spotty, awkward 15-year-olds predated the 1940s, but only then did mystified adults coin the label "teenagers", fuelling all sorts of products and services, from bobby socks to the music industry. In 1944 *Life* wrote that "American businessmen, many of whom have teen-age daughters, have only recently begun to realise that teen-agers make up a big and special market." By the mid-1960s both *Time* and *Newsweek* had splashed "The Teen-Agers" on their covers.

Marking out youthful old age as a distinct phase of life might have a similar effect, prodding employers and policymakers to think differently about how to keep the young old active. As life becomes longer, the word "retirement", which literally means withdrawal to a place of seclusion, has become misleading. At 65 you are not clapped out, but pre-tired. So, as they embark on the next stage, here's to all those pre-tirees. ■



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SQ362	DEP: 00:20	MON, TUE, THU, FRI, SAT	ARR: 06:00 DEP: 07:15	MON, TUE, THU, FRI, SAT	ARR: 08:25	
STOCKHOLM	—	✈	MOSCOW	—	✈	SINGAPORE
SQ361	DEP: 10:25	MON, TUE, THU, FRI, SAT	ARR: 13:30 DEP: 15:05	MON, TUE, THU, FRI, SAT	ARR: 06:20+1	+1 arrives the next day

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A STAR ALLIANCE MEMBER 

The war against Islamic State

After the caliphate

No one knows what will happen after the jihadists lose Mosul and Raqqa. That is alarming



IT HAS been a long war, with many horrors. But three years after Abu Bakr al-Baghdadi ascended the pulpit of the Nuri mosque in Mosul to call on all Muslims to flock to his “caliphate”, Islamic State (is) is suffering two crushing blows. In Iraq, the jihadsts have all but lost Mosul; they blew up the Nuri mosque in their last stand in a pocket of alleyways (see page 39). Mr Baghdadi, if he is alive, may have fled to Syria. But is is faring badly there, too. American-backed fighters have pushed into the old city of Raqqa; is’s Syrian stronghold will fall soon.

With the loss of its biggest cities, the mystique of the jihadist “state” is being shattered. is is turning into a nasty militia, and may yet become a nebulous terrorist group, like al-Qaeda. The world should rejoice at its decline. is committed untold barbarity, from mass beheadings to sexual enslavement, and inspired jihadsts to kill the innocent in Europe and elsewhere. America has led the campaign ably, giving training and air support, while letting local allies do the ground fighting.

But what will come after the caliphate? No one knows, least of all Donald Trump. He has yet to fill nearly 200 foreign and national-security jobs, and policymaking in his administration is dysfunctional. That is alarming. Adrift, America faces two perils: one is a vacuum that allows jihadsts to regroup, as they did repeatedly in Iraq; the other is being sucked into a regional war that would make everything worse.

Conflict, wrapped in strife, inside a war

The bloodbath in the Middle East consists of many conflicts: revolts against oppressive rulers who failed to earn legitimacy or foster prosperity; struggles over competing forms of Islam; regional contests between Saudi Arabia, Iran and Turkey; and rivalry between America and Russia. At its heart is Sunni Arabs’ sense of dispossession, of which is is the most grotesque manifestation. So America needs a strategy with many dimensions, blending military, political and economic means, and taking account of the complex geopolitics that feeds chaos.

There is no sign that Mr Trump’s administration is engaged in such thinking. On his first trip abroad, to Saudi Arabia, he was feted by Arab and Muslim leaders, and regaled with juicy defence contracts. In return, he seemed to embrace the Saudi worldview—and thus precipitated a crisis among America’s Gulf allies. Emboldened, the Saudis and Emiratis (along with the Egyptians and Bahrainis) cut off land, sea and air links with Qatar. They accuse the upstart gas-rich kingdom, which hosts America’s biggest air base in the region, of supporting terrorism (a charge often levelled at the Saudis). Mr Trump denounced Qatar on Twitter. But Rex Tillerson, America’s secretary of state, instead chastised the boycotters; James Mattis, the defence secretary, signed a deal to sell F-15 jets to Qatar, and sent two warships to call at Doha. Amid such incoherence, a strategy may fail, even if one existed.

Mr Trump seems to have three vague aims: destroy is, roll back Iran’s growing power and reduce America’s involvement

in the Middle East. These are inconsistent, because sustained diplomatic and military engagement will be needed both to prevent a new is rising from the ashes of the old and also to contain Iran, which is using its proxies and its own forces dotted around the region to extend its influence.

Start with is. To lock in its victories against the jihadsts, America must back pluralist and decentralised politics (don’t call it democracy) that gives voice to the region’s disparate groups, especially Sunni Arabs. In Iraq, America must urge the government to woo Sunnis and to include them in running the country; and it should use its air power, special forces and diplomats as a counterweight to Iran.

Syria will be even harder. The end of the civil war is a long way off. Mr Tillerson has put out feelers to Russia about co-operating to stabilise the country, but what he wants is unclear. For now, America can help local allies push down the Euphrates valley, not just to defeat the remnants of is but also to ensure that border crossings are in friendly hands. That would also secure an American voice in future peace talks.

This will mean redoubling the effort to train more moderate Sunni Arabs. The alliance led by Kurds is unlikely to want to go beyond Raqqa. The priority will thus be to foster a southern Arab force to fight and draw away support from is.

Inevitably, that will bring America into further contact with Iran. America’s forces and their allies are already rubbing against Syrians and others pushing eastward, seeking to link up with Iranian-backed Shia militias in Iraq and create a land corridor from Iran to Lebanon. America shot down a Syrian jet and bombed Iranian-backed fighters that threatened American and allied forces at al-Tanf, near the southern border with Jordan and Iraq. As if that were not complex enough, Mr Trump says that Iran “has been put on notice”, although he has for now kept to Barack Obama’s deal that froze Iran’s nuclear programme. As the administration debates a new Iran policy, there is much talk of fresh sanctions, with some arguing for “coerced democratisation”: ie, toppling the mullahs.

America could thus end up at war with Iran by military accident, or by being goaded into it by Gulf allies or because it succumbs again to the delusion that overthrowing foes is easy and painless. A conflict with Iran is unlikely to unseat the clerics; but it will undoubtedly spread instability and Shia radicalism. Iran is too big to be excluded from the region’s affairs; but it can be contained by a mixture of pressure and dialogue. America should therefore work to end the row among its Gulf allies, which benefits Iran, just as it should act to halt the war in Yemen, which creates space for al-Qaeda.

American power, vital but limited

Whatever America does will be messy, and its aims ought to be limited. The wars in Afghanistan and Iraq after the 9/11 attacks show that it is good at defeating foes but poor at building lasting institutions; grand plans to remake countries are usually doomed. Yet the collapse of Syria and the rise of is since 2011 show that neglect poses grave dangers, too. America has no choice but to contain the worst of the tumult. Mr Trump needs to hire good experts and draw up a plan—fast. ■

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Hungary's prime minister

According to *The Economist*, Viktor Orban, Hungary's prime minister, is eroding democracy ("Stop spoiling Viktor Orban", June 24th). You call on the European Union to take action. Your editorial begins with a standard polemic: Mr Orban was once a young, courageous rebel who stood up to communism, called for free elections and demanded the withdrawal of Soviet troops. Pity how things change, you say.

Indeed, much has changed in the world since that heroic speech in 1989, but our prime minister's cause remains the same: a strong and independent Hungary at home in a strong Europe. Contrary to your narrative, democracy is doing just fine, thank you. Elections remain free and, yes, fair. The laundry list of old issues was all put to rest long ago in our conversations with the European Commission. That's not the problem.

The problem is that since taking office again in 2010, Prime Minister Orban has dared to defend Hungary's national interest, ruffling some feathers. When the European troika advised us to take severe austerity measures, Hungary sent them packing and instead pursued its own reform path. It was dismissed as "unorthodox" then, but today Hungary's GDP growth is one of the best in Europe. The deficit is under control, debt is on the decline and unemployment is at record lows.

Our relationship with Russia is based on the pragmatic position that our economy benefits from normal relations with Europe's eastern neighbour. Meanwhile, we stand with the European Council on sanctions.

Prime Minister Orban has dared to oppose the European Union on migration, challenging the compulsory resettlement quota. Hungary has insisted on tough border security, opposed policies that would encourage migrants to come to Europe, and proposed asylum-processing centres in hotspots outside Europe. The

fence we built on the southern border is defending Europe's Schengen area, reducing illegal entries along that border to practically zero. Europe should be thankful.

And many of our European allies in fact are, which is why we won't be seeing the EU taking the kind of action suggested in your editorial. Hungary holds dear its national independence. In 1989 the issue was independence from the Soviet Union. Today, the threat to our national sovereignty takes on a much different, more benign shape.

It's about defending a strong EU based on strong nation states, limiting the overreach of an unelected, central bureaucracy in Brussels. In that regard, it's not Prime Minister Orban who has changed. Perhaps it's Europe.

ZOLTAN KOVACS
Government spokesperson
Cabinet Office of the Prime Minister
Budapest

Who owns the property?

One factor that you did not mention in your report on Canada's attempt to curb its booming house prices is the influence of illicit money on the housing market ("Maple grief", June 17th). Canada has become such an attractive destination for money launderers and tax dodgers that they have a unique term for their practices: "snow washing". Transparency International Canada has found that in Vancouver, Canada's most overheated market, nearly half of the luxury properties we surveyed were owned through opaque structures such as shell companies, trusts or nominees. Making property ownership more transparent would discourage the flow of laundered money from abroad into Canadian property, and would deter the use of local nominees and shell companies to circumvent the foreign-ownership tax and other efforts to curb speculation.

Though Canada has made lofty pledges at the G20 and other forums to improve ownership transparency, so far it

has done little to keep step with the likes of Britain and the EU, which are making commendable progress towards publicly accessible registers of beneficial owners.

JAMES COHEN
Interim executive director
Transparency International
Canada
Toronto

Not so PRI-dominant

Your assessment of the future electoral prospects of Mexico's Institutional Revolutionary Party holds that the once-hegemonic PRI "retains a voto duro, a hard core of supporters, many from trade unions" ("Keystone state", June 3rd). For many decades, government-allied unions were indeed a pillar of the PRI-dominated political order. However, that base of support is now greatly reduced in size and much less reliable in electoral terms.

Indeed, in 2006 a higher percentage of union-household members reported supporting the National Action Party's presidential candidate, Felipe Calderón, than the PRI's Roberto Madrazo. Many union leaders will no doubt back the PRI's presidential candidate in 2018, but the party can no longer take for granted the loyalty of union members in the voting booth.

KEVIN MIDDLEBROOK
Professor of Latin American politics
Institute of the Americas
University College London

Virtual reality and opioids

"Ohio high" (June 10th) underscored the need for medical science to explore new treatments for chronic pain in order to reduce America's dependence on addictive opioids. To that end, we're already seeing a promising, if unexpected, form of treatment: virtual reality (vr).

Recent studies have shown that vr is helping patients across a spectrum of conditions ranging from post-traumatic stress disorder to dementia to spinal cord injury. A large randomised controlled trial currently under way at

Cedars-Sinai Medical Centre in Los Angeles, in partnership with Applied vr and Samsung, is evaluating the effects of vr as a pain-management tool for hospitalised patients. Preliminary data indicate that vr reduces pain by 25% and potentially decreases narcotic usage. We cannot solve the opioid problem overnight, but if the final results of this trial confirm these findings, vr could provide a safe, non-invasive alternative.

DR DAVID RHEW
Head of health care and fitness
Samsung Electronics America
Los Angeles

I crave no pelf

Lexington's search for Trump in Shakespeare (June 17th) omits the pained query in "Timon of Athens": "What means that trump?"

JOHN DOHERTY
Stratford-upon-Avon,
Warwickshire

Lexington might, if he had referred to the president's performances on the world stage, have reasonably turned to "Measure for Measure": "Man, proud man, dress'd in a little brief authority."

HUGH CLIFT
Lesmurdie, Australia

Mr Trump's tweets are straight out of "Macbeth": "...a tale, told by an idiot, full of sound and fury, signifying nothing."

ANTHONY PETERSON
Peterborough, Canada ■

Executive Focus



**Wits
Business
School**

Director, Executive Education

The Wits Business School is an internationally recognised business school based in Africa's economic heartland, Johannesburg. It has almost 50 years of experience in business education and spearheaded innovation, teaching and research excellence in South Africa. The WBS is accredited by leading international organisations such as the Association of MBAs (AMBA) and the Global Admissions Council (GMAC). The WBS is the only business school in Africa to have been admitted to the Partnership in International Management (PIM), a student exchange programme for international study at over 60 leading business schools around the world.

The Wits Business School is looking to recruit, for a period of 5 years (renewable), a **Director Executive Education** who will be based on the Parktown campus in Johannesburg. This is a strategic leadership role within the Wits Business School, which is part of the Faculty of Commerce Law & Management of the University of the Witwatersrand.

The key responsibilities and objectives of this role will include:

- In alignment with the overall strategy of WBS, develop and execute a competitive strategy for Executive Education that is aligned, relevant, sustainable and impactful and will grow WBS reputation, both locally and across borders
- Design, customise and position WBS executive education offerings to specifically cater to the needs of clients in South Africa and Africa
- Build strong sustained partnerships with corporations and institutions to strengthen the reputation, standing and impact of Executive Education at WBS
- In collaboration with the Academic and Marketing Director, successfully design programs and market WBS as the premium provider of executive education
- Collaborate with a diverse team of Academics and Administrative support build on the values and culture of collaboration and accountability

The successful candidate will have:

- A solid academic background (preferably a Master's) and 10 years of work related experience
- Deep understanding of South Africa's and Africa's business environments.
- A passion for business and Executive education
- International experience a plus

The University of Witwatersrand retained the services of executive search firm Egon Zehnder. Applicants are to send their detailed CVs, cover letter, and references to Johannesburg@egonzehnder.com

Applications that meet the criteria must arrive by email no later than midnight on the 15th July 2017. Only suitable candidates will be contacted by Egon Zehnder for further interviews and referencing. Should you not receive any correspondence after two weeks of sending your application, please consider your application unsuccessful.

SCULPTING GLOBAL LEADERS

The University is committed to employment equity. In accordance with our Employment Equity goals and plan, preference will be given to suitable applicants from designated groups, as defined in the Employment Equity Act, 55 of 1998 and subsequent amendments thereto.



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JOHANNESBURG

WBS Wits
Business
School
Sculpting global leaders

Wits Business School, Director

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The key responsibilities and objectives of this role will include:

- Provide the academic vision and intellectual leadership to enable the Wits Business School to maintain and grow its position of excellence
- Drive the execution of the strategy of WBS to become the business school of choice in Africa by 2020
- Lead and manage an experienced executive team as well as around 40 academic professionals
- Manage the school in all its dimensions: financial, human resources, administration and relations with the University
- Create a culture of collaboration with accountability for managing resources and increasing reach
- Build strong partnerships with iconic corporations and institutions in South Africa, Africa, and the rest of the world to strengthen the reputation, standing and impact of WBS

THE CANDIDATE

A politically astute, experienced, inspirational and resilient leader, the Executive Director will have the professional standing and experience so as to command the respect and trust of members of the school, the University, and the business community. Ideally, s/he will have experience at the highest management level, including financial management, within an academic institution or a respected corporation. The successful candidate will have:

- A solid academic background (preferably a PhD) and 10 years of leadership experience
- Deep understanding of South Africa's and Africa's business environments.
- A passion for business and business education
- International experience

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Head of Operations



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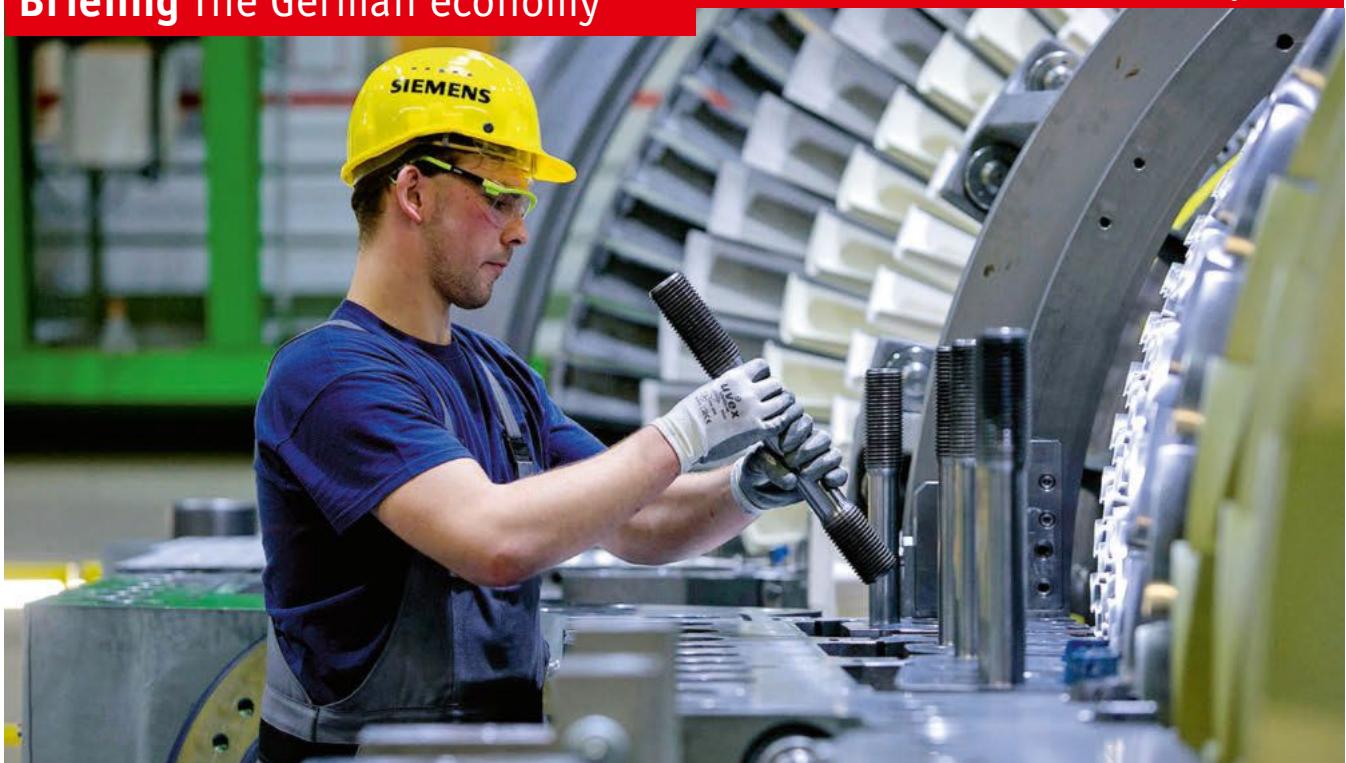
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Vorsprung durch Angst

BERLIN AND FRANKFURT

Admired for its stability but derided for persistent trade surpluses, the good and bad in Germany's economic model are strongly linked

TALK to Germany's policymakers in Berlin or Frankfurt and the chances are that somebody will invoke Goethe, the nation's foremost literary figure, on the perils of inflation. In "Faust", his masterpiece, an indebted emperor is persuaded by the devil to print "phantom money", prices rise and economic disaster looms. Foreign interlocutors might counter with a quote of their own from the great poet. "The Germans", he said, "make everything difficult, both for themselves and everyone else."

For many years "everyone else" has complained that Germany's economy causes difficulties for the rest of the world. They grumble that the country saves too much and spends too little and that Germany exports far more goods than it imports. In most years since 1950, Germany has run a surplus on its current account, a broad measure of the balance of trade (see chart 1). When in surplus, domestic savings exceed domestic investments, with the excess lent abroad.

These surpluses mean other countries must run current-account deficits (in other words, borrow) in order to ensure there is enough aggregate demand to keep people in work. Last year, Germany's surplus was a mammoth 8.3% of GDP. At almost \$300bn that is far larger than China's sur-

plus, which was once a target of angry American congressmen. Now Germany is accused of piggybacking on other countries' spending and of exporting job losses. Donald Trump has castigated Germany's surplus as "very bad" and bemoaned the number of German cars sold in America—"we will stop this". Within the euro club, the gripe is that Germany, as the most creditworthy member, has insisted on austerity for countries with heavy debts, without recognising that its own tight rein on spending makes that adjustment harder.

Yet Germany's economy is also ad-

mired. The unemployment rate has fallen to 3.9%, lower than almost all rich countries. The economy was brutally side-swiped by the "Great Recession" of 2008-09 but employment was barely affected, in stark contrast with other countries. The political shocks of the past year in Britain and America are linked to the steady loss of well-paid blue-collar jobs to automation and to cheaper imports, notably from China. Germany has bucked this trend. The share of manufacturing jobs has not fallen anything like as far (see chart 2 on next page). Other countries, notably France, are again hoping to emulate Germany's system of apprenticeships, by which those not suited for university can instead acquire vocational skills.

Germans are proud of this record. The idea that the country's trade surplus is a malignancy is dismissed in policy circles. "It would be a worry if it is down to an economic-policy distortion," says an official. "But it's not." Its thrift is defended as rightful prudence. The country needs to save hard, the argument runs, because it is ageing faster than other countries. Not everyone sees it that way. The IMF counters that Germany's trade surpluses are bigger than can be justified or than is desirable for global economic stability. The dialogue continues, at cross-purposes, just as it has for decades. "What do you want us to do—export less?" says another official, weary of the same debate.

What makes the issue so difficult to resolve, or even to acknowledge, is that Germany's savings surpluses are not the outcome of explicit economic policy. Instead, their roots lie in a tacit business model ➤



from which emerge both the admired and disparaged facets of Germany's economy.

To understand this model, go back to the late 1990s when the economy was failing. Unemployment was above 4m, a tenth of the workforce. Germany's share of merchandise exports was shrinking. The current account was in a rare deficit. The economy's struggles were in part a legacy of devaluations against the Deutschmark earlier in the decade, when speculators broke the bounds of Europe's exchange-rate mechanism, a system that limited currency fluctuations. The orders and jobs lost to Italy's capital-goods industry in the 1990s are part of German business folklore.

The funk also reflected overgenerous wage rises, especially in East Germany, after reunification in 1990. Crises in Asia and Russia, two big export markets for Germany, did not help matters, but the problems ran deeper. It became routine to refer to Germany as the "sick man of Europe". Yet remarkably, just as things seemed hopeless, an old reflex began to kick in. When the Bretton Woods system of fixed exchange rates collapsed in the 1970s, the Deutschmark soared, making Germany's exports more expensive. German industry then found a way to regain competitiveness. Now it did so again.

Competing values

German firms slowly began to claw back the export competitiveness they had lost in the reunification boom. An important gauge of this is a country's relative unit labour costs, which shifts downwards as wages fall, productivity relative to other countries improves or the currency weakens. The index for Germany fell by 16% between 1999 and 2007 (see chart 3), largely because of wage restraint.

Pay growth was a modest 1% a year between 2000 and 2007, compared with an OECD average of 3.5%. What made this possible, according to a study by Christian Dustmann of University College London, and his co-authors, was a deeply-rooted system of co-operative industrial relations. An important feature of the system is that unions have representatives on company boards: they can see at first hand how pay rises may hurt competitiveness. For their part, firms see negotiations on pay as a means to pursue other areas of common interest, such as training or flexible hours.

Good labour relations, governed by norms rather than legislation, meant firms were flexible enough to adapt to new challenges. One such was the accession to the EU of low-cost neighbours, including Poland, Hungary and the Czech Republic. Another was the emergence of China as an exporter of global significance. By the late 1990s, firms and unions had already started to move away from a system of industry-wide wage deals to one where pay was set to suit the challenges faced by individ-



ual companies.

A consequence of the greater reliance on company-level pay deals was a growing dispersion in wages: those for the best-paid workers rose faster than average while wages at the bottom of the scale fell sharply. The falling cost to manufacturers of local services, where pay was most constrained, played a big role in Germany's export revival.

This was not the whole story. In 2002 Gerhard Schröder, the leader of the SPD government, asked a commission, chaired by Peter Hartz, an executive at Volkswagen, and including company bosses and union chiefs, for a blueprint to tackle unemployment, which was still rising. The proposals, which became part of a broader package of reforms, known as Agenda 2010, were implemented in four stages. The final leg, Hartz IV, came into effect in January 2005. It controversially restricted benefits for the long-term jobless to a flat rate, irrespective of previous earnings. To qualify for benefits, the jobless had to show they were actively looking for work.

The Hartz reforms should take at least as much credit as pay restraint for the jobs recovery, says Michael Burda of the Humboldt University in Berlin. The reforms are still celebrated by the Mittelstand, Germany's much-admired legion of medium-sized, mostly family-owned firms. "The journey from sick man to number-one economy is because of Schröder's Agenda 2010," says Mario Ohoven, head of BVMW, the Mittelstand association. But the success came with a political cost. The SPD lost blue-collar support and has not led a government since.

The culture of co-operation cuts both ways. When the Great Recession struck, firms in other rich countries laid off workers. In Germany, companies held on to staff despite a slump in orders and output. In this they were aided by the widespread adoption of working-time accounts, first used in the 1990s. Workers could bank overtime hours to take as paid holiday at a later date. Short-time working schemes also helped to limit the damage to jobs. But the response by the Mittelstand was a reflection of a system of conventions that standard economics ignores, says Dennis

Snower of the Kiel Institute for the World Economy. Firms had stuck by an implicit deal with their workers.

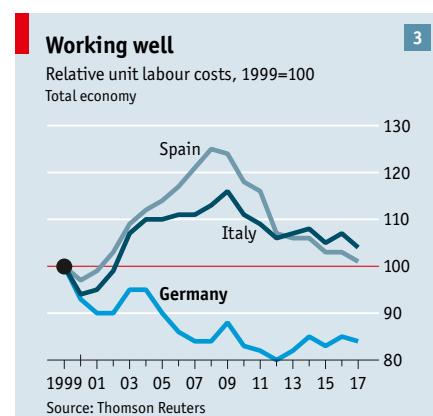
Pay restraint put Germany back on track but at a cost. It has left the economy more unbalanced than ever. Exports are super-competitive. In last year's annual health-check, the IMF said Germany's real effective exchange rate was undervalued by 10-20%. Consumer spending, meanwhile, remains depressed. Despite abundant jobs growth, the share of GDP going to households has fallen from 65% in the early 1990s to 60% or below, to the benefit of corporate profits (see chart 4 on next page). The rate of household saving, however, has not changed much: it is currently 9.8%, exactly in line with its 20-year average.

As a consequence, the share of consumer spending has fallen to 54% of GDP, far lower than in America or Britain. If workers were paid more, they could buy more. That would mean fewer exports (because firms would produce for a bigger domestic market) and more imports. But Germany is hopelessly locked into a model that always puts exports ahead of anything else.

Following the form book

The exports-first response to the adversity of the late 1990s is a refinement of a tried-and-trusted German model. The country's talent for precision engineering means that for decades it has had an edge in luxury cars, chemicals and machinery. To have industries of the required scale in these areas requires a global market: a national market is too small to be efficient.

Germany's particular talents thus naturally gave rise to an economy that is led by exports rather than domestic spending. A lot of high-wage jobs relied on exports, either directly or indirectly. Sustained success in such high-end manufacturing required a commitment to vocational training and to research and development. For German firms to stay ahead and sustain a premium for their superior products, profits had to be continuously ploughed back into innovation and skills. These requirements have over decades shaped the norms and institutions that govern Ger-



many's economy, according to an insightful paper by David Soskice and David Hope, of the London School of Economics, and Torben Iverson, of Harvard University.

Wage restraint in export industries was a crucial strut. The bargaining power of skilled workers makes this tricky to enforce. Before Germany joined the euro and ceded its monetary policy to the European Central Bank (ECB), the Bundesbank acted as policeman. Inflationary wage bargains would be "punished" by higher interest rates. Another strut was a strict fiscal policy to keep public-sector wages in check and thus in line with those in industry. But the state supported vocational training to ensure an ample supply of skilled workers.

The cement for this is a society with a strong preference for stability, notes Mr Snower. There is a culture of responsibility, of hewing to rules, of extreme risk aversion. A high level of savings helps guard against an uncertain future. People work hard but in return expect job security. To provide it, firms combine their domestic operations with more flexible plants overseas, acquired using surplus profits.

Steady state

Two changes make the resulting savings higher than in the past. First, competition from low-cost emerging markets has made unions even less willing to ask for big pay rises. Job security is paramount. Second, German companies are less likely, or able, to recycle higher profits into investment at home. Marcel Fratzscher of the German Institute for Economic Research reckons half of Germany's current-account surplus reflects an "investment gap". A dearth of public investment is one cause. Others are red tape and a tax system that is not conducive to startups.

German firms will argue that it makes more sense to invest abroad, where populations are growing, than in a domestic market in relative decline. The figures offer some backing. A study by the Bundesbank found that annual returns on German foreign direct investment were a healthy 7.25% between 2005 and 2012. What is more, Germany's rate of domestic investment is not obviously weak by comparison with other countries. Indeed it is the share of consumer spending that looks unusually low.

Peter Bofinger, one of the German Council of Economic Experts, which advises the government, believes there is a simpler explanation for the surpluses. "It's all about wages," he says. Pay restraint is not just a problem for German workers, particularly the low-paid. Other euro-area countries must keep an even tighter lid on wage growth to claw back their competitiveness. That imparts a deflationary bias throughout the zone: almost all euro-area countries now run current-account surpluses. It is in large part why inflation in the



bloc has fallen short of the ECB's target.

A surge in German wages might be good for all sorts of reasons. But can it happen? German pay rates are subject to two influences: the bargaining institutions and the economic fundamentals, says Henrik Enderlein of the Hertie School of Governance in Berlin. The institutions are set up for wage restraint: employers want it; unions will trade it for job security. But economics pushes against all this.

It is not just that, with unemployment below 4%, the jobs market is tight. The indigenous working population is likely to shrink faster than the rate of immigration. For the first time in decades, firms are facing a scarcity of workers. House prices, which had been flat or falling in real terms for decades, have been rising since 2009. Workers who were content to keep a lid on wages when property prices were dormant are more likely to push for higher wages when the price of a home is moving out of reach. Moreover, interest rates are low and unlikely to rise soon: the ECB sets

monetary policy for the euro area, where there is still plenty of economic slack, not just for Germany, where there is little.

Faster wage and price growth in Germany would be welcomed by the ECB, which is falling short of its inflation goal because of weak price pressures in the rest of the currency area. This is the first boom that the Bundesbank cannot snuff out, says Mr Enderlein. The habit of wage restraint among union bosses is ingrained but their influence is steadily eroding. Union membership has shrunk from 35% of workers in 1990 to 18% in 2013, even if more than half of the workforce is still covered by union-brokered wage deals.

Nominal wage growth last year, at 2.3%, might have been stronger were it not for unusually low consumer-price inflation, of 0.4% (thanks to a slump in the oil price). Anxiety about China's economy may also have nudged unions towards their customary caution. Even so, since 2010, Germany ties with Canada for the fastest wage growth among G7 countries. Mr Enderlein expects nominal pay rises of 3-4% over the next few years in Germany. Allow for productivity growth of 1% and unit-wage inflation will be 2-3%. Such a pickup in wages would gradually shift demand away from exports towards consumption. A stronger euro would help this rebalancing.

Pay or conditions?

Old habits are hard to shift, however. A few years ago, Mr Bofinger argued in favour of faster wage rises in Germany, instead of pay cuts in southern Europe, as a better way to restore balance to the euro zone. He was taken to task by a union leader who reasoned that Germany would lose jobs to China as a consequence.

The impulse for caution is hard-wired into the country's psyche and institutions. Reiner Hoffmann, leader of the DGB, a big union federation, says the key issues for his members go beyond simply pay. Flexible working time that suits the interests of employees is becoming increasingly relevant. "Wages are negotiated sector by sector, so you first look at how each sector is doing." In the tug-of-war between buoyant economic conditions in Germany and the institutions of pay restraint, the former is starting to gain momentum. The national instinct against pay rises is formidable, nevertheless.

Germany's economy has many buttresses: an over-sized trade surplus; lots of foreign assets; an enviable share of global trade; solid public finances; and full employment. Yet its business leaders are anxious about Germany's readiness for the digital economy, the prestige of luxury brands in a world of driverless cars and the prospect of higher inflation when interest rates remain so low. The fundamentals say Germany is long overdue a pay rise. The form book says don't hold your breath. ■



Germans, open your wallets



North Korea

The wrong kind of fireworks

The test of a long-range missile is ringing alarm bells in Washington

WHEN North Korea claimed it was in the final stages of developing an intercontinental ballistic missile (ICBM) at the beginning of the year, Donald Trump scoffed: "It won't happen." So it was perhaps not a coincidence that North Korea chose America's independence day to test a device that it claimed was indeed an ICBM. Although the claim is technically correct, the country's leader, Kim Jong Un, will probably have to wait a few more years before he can brandish a missile capable of delivering a nuclear warhead to Los Angeles or New York.

The missile appears to have flown for 37 minutes before splashing down some 930km from its launch. According to David Wright of the Union of Concerned Scientists, it had a lofted (heightened) trajectory, reaching an altitude of 2,800km. On a more conventional trajectory, the same missile would have a range of about 6,700km. That would be enough to reach Alaska, but not Hawaii or California.

This test comes after a similar one on May 14th; the missile used then, also on a lofted trajectory, was thought to have a potential range of 4,500km. John Schilling of the website "38 North" believes that missile to have been a scaled-down, two-stage version of the three-stage KN-08 prototype ICBM. The smaller missile, which the North Koreans called the Hwasong-12 and which Western intelligence analysts have

tentatively designated as the KN-17, was displayed during a military parade on April 15th.

After the launch on May 14th, Mr Schilling speculated that the Hwasong-12 was being used to develop the technologies and systems needed for future ICBMs. This would be cheaper and less provocative than testing the KN-08.

The North Koreans, in an announcement several hours after the July 4th launch, dubbed the latest missile the Hwasong-14, which indicates that it may be a more powerful version of the Hwasong-12. The test, as well as demonstrating greater range, could have been designed to gain additional knowledge of the engineering requirements for a warhead-carrying re-entry vehicle by flying for longer and at higher altitude. Making a warhead small enough to fit on a missile and protecting it as it plummets through the earth's atmosphere are two of the technologies needed to build a working ICBM that North Korea may not yet have mastered.

On hearing the news, Donald Trump took to Twitter to harrumph: "North Korea has just launched another missile. Does this guy have anything better to do with his life? Hard to believe that South Korea and Japan will put up with this much longer. Perhaps China will put a heavy move on North Korea and end this nonsense once and for all!"

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That is unlikely. Mr Trump has been forced to admit that his earlier hopes of getting China to rein in North Korea have gone unfulfilled. Mr Trump seems also to be more aware than before that military options, while still "on the table" according to Mike Pence, the vice-president, are very much a last resort. His defence secretary, James Mattis, recently said that outright war with North Korea would be "catastrophic" and "probably the worst kind of fighting in most people's lifetimes".

In a meeting in Washington last week with South Korea's new president, Moon Jae-in, Mr Trump emphasised that he was open to dialogue with North Korea "under the right circumstances". But there seems scant prospect of that, given the zeal with which Mr Kim is pursuing his missile programme. Even a new raft of "secondary" sanctions aimed at Chinese firms and banks that do business with North Korea would be unlikely to exert sufficient pressure on Mr Kim to bring him to the negotiating table, while antagonising China.

Fighting ballistics with ballistics

One remaining possibility, albeit a risky one, is that America might threaten to shoot down North Korean missiles in their boost or ascent phase. If North Korea cannot test, it cannot build a reliable ICBM. To do this, says Michael Elleman of the International Institute for Strategic Studies, a think-tank, America and Japan would have to deploy a new generation of interceptors, which are 50% faster than the current ones, on their Aegis-class destroyers. But following the failure of a test firing in June, they are still some way from entering service. Given the speed at which North Korea's missile programme is advancing, its ICBMs may be ready before America's new interceptors are. ■



Japanese politics

Tokyo blows

TOKYO

An electoral thumping in the capital puts Shinzo Abe on the back foot

WHEN the summer heat descends on Tokyo like a warm wet blanket, politicians grab their clubs and head to the fairways. That could spell trouble for Shinzo Abe, the prime minister: in Japan, political plots start on golf courses, says Takashi Inoguchi of the University of Tokyo. The Liberal Democratic Party (LDP), which Mr Abe heads, is casting around for a scapegoat following a drubbing by voters in the capital. The LDP recorded its worst result ever in the election for Tokyo's regional assembly, winning just 23 of 127 seats, down from 57 last time (see chart). The assembly is now dominated by Tomin First No Kai (Tokyoites First), a fledgling party barely six months old.

The ballot was widely seen as a referendum on the policies of Yuriko Koike, Tokyo's governor and founder of Tomin First, but it was also a measure of the prime minister's sinking popularity. Just a few months ago Mr Abe had an aura of invincibility, having won election after election despite pursuing controversial policies. But influence-peddling scandals have taken off some of the sheen. Mr Abe has been dogged by claims that he helped one friend to win government approval to open a new veterinary institute and another to secure favourable treatment for a nationalist kindergarten.

With the LDP on the defensive, Mr Abe's divisive plan to amend Japan's pacifist constitution to clarify the status of its armed forces is doomed, says Jerry Curtis of Columbia University. It was always a tall

order: Mr Abe would have to secure a third term as leader of the LDP next year, maintain a two-thirds majority of amendment-minded parties in both houses of the Diet (Japan's parliament) and then win a national referendum. His re-election as leader of the LDP no longer looks assured. Komeito, the LDP's coalition partner at the national level, has doubts about changing the constitution. Mr Abe's hold over it is diminishing: it formed an alliance with Tomin First in the Tokyo election. Mr Abe cannot afford to divide the country further, says Mr Curtis, "and nothing divides it more than constitutional reform."

As it is, there is more embarrassment in store for Mr Abe. The scandals that seem to have turned voters off the LDP will continue to be raked over throughout the summer. A Diet committee will convene on July 10th to probe how the director of the veterinary school managed to get hold of a free plot of state land, worth millions of dollars. The bureaucrat who first levelled the accusations against Mr Abe will testify, although the prime minister himself will be absent, on a tour of Europe. When he returns, he is expected to reshuffle his cabinet and, perhaps, bow to demands that he sack Tomomi Inada, his gaffe-prone defence minister.

Mr Abe's trip is a chance for the party's grandees to plot his downfall, but he will not be easy to dislodge. He had a brief, disastrous stint as prime minister in 2006-07. But he has been much defter since reclaiming the leadership of the LDP in 2012, leading it to three landslide electoral victories. Critics complain that his economic reforms have not lived up to the hype, and that the stagnation and deflation that have afflicted the country for the past 25 years have not been banished. That said, the rock-bottom unemployment rate of 3.1% blunts popular discontent.

There are few obvious contenders to replace Mr Abe. Shigeru Ishiba, his most vocal rival, may not muster the support to challenge him, says Mr Inoguchi. Ms Koike, a former LDP minister who many believe

wants to be prime minister, would have to be reconciled with the LDP to win power nationally. But the party has "no intention" of taking her back, says Hakubun Shimomura, the head of its Tokyo chapter. The Democrats, in theory the main opposition party, are floundering: they won just five seats in the Tokyo poll, barely a quarter of the tally of the Japanese Communist Party.

Still, after four-and-a-half years in office, Mr Abe suddenly seems to be on the back foot. On Monday he promised to reflect on what he called the "harsh" verdict of Tokyo's voters. But he also insisted he would put forward a bill to revise the constitution in the Diet's next session, which starts in September. Polls show ordinary voters care far more about bread-and-butter issues than about the prime minister's pet project. LDP members of the Diet already have their eyes on next year's general election. They may not want to risk alienating voters by advancing the amendment. Mr Abe seems likely to survive the long, hot summer, but his political future is looking much less assured. ■

Australia's aborigines

Counted but not heard

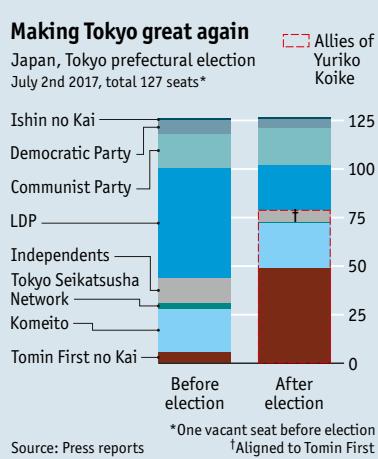
SYDNEY

Indigenous people want more than a mention in the constitution

LINDA BURNLEY was ten when Australians voted in 1967 to remove the clause in the constitution that excluded aborigines from the national census. "The notion that you weren't worthy of being counted was very painful," she recalls. Ms Burnley belongs to the Wiradjuri clan, and grew up in rural New South Wales. Last year she became the first aboriginal woman to be elected to the lower house of the federal parliament. Australians should soon get the chance to vote on another constitutional amendment concerning aboriginal rights. The new one is intended to go quite a bit further than that of 1967, in some way acknowledging aborigines as the first Australians. But just how far it should go is a matter of intense debate.

In late 2015 Malcolm Turnbull, the conservative prime minister, and Bill Shorten, the leader of the opposition Labor party, agreed to set up a council to propose a specific change to be put to a referendum. On June 30th the referendum council delivered its recommendation to the government, which has not yet made it public. Mark Leibler, the council's co-chair, says the referendum will be an "important milestone in Australia's history".

Aborigines inhabited Australia for perhaps 60,000 years before the British began ►



settling it in the late 18th century. But they were excluded from the conventions that drew up the constitution in the 1890s. The document only acknowledged their existence insofar as it denied them certain rights. It also imposed a high bar for amendments: a majority of voters nationwide, plus a majority in at least four of the six states. Just eight of 44 proposed changes have succeeded. Yet the amendment 50 years ago to include aborigines in the census was approved in every state, and by more than 90% of voters nationwide—a record to this day.

Aborigines are about 3% of Australia's 24m people. They are more likely to go to prison and tend to die younger than most Australians. Ken Wyatt, one of five aborigines in the federal parliament, says a few aboriginal MPs are not enough to achieve an "aboriginal voice" on issues affecting his people.

At a referendum 18 years ago Australians rejected a clunky proposal by John Howard, the prime minister at the time, to mention aborigines in the constitution's preamble. Mr Wyatt is "glad" it failed: "It was done in haste with the wrong set of words." (The proposal simply spoke of "honouring" indigenous people "for their deep kinship with their lands and for their ancient and continuing cultures which enrich the life of our country"; veterans and immigrants also got a shout-out.)

This time, the referendum council took a different approach. For six months it consulted indigenous people around Australia, culminating in a "First Nations National Constitutional Convention" at Uluru (Ayers Rock), in central Australia in late May. The resulting "Uluru Statement" demanded more than token recognition. It called for "Makarrata", or "agreement-making between governments and First Nations"—a treaty, in other words. (Unlike

those in neighbouring New Zealand, the British colonisers in Australia never signed any treaties with the indigenous people.)

A treaty would not necessarily involve constitutional change. But the convention's other big demand would: it asks for a "First Nations voice enshrined in the constitution". At the very least, this seems to mean that aborigines should have some formal involvement in the drafting of laws that affect them. "In 1967 we were counted," the convention declared. "In 2017 we seek to be heard."

Distilling all this into a referendum question will be a challenge. Mr Leibler expects the council's report will be released after the council meets Messrs Turnbull and Shorten later this month. Its proposal, he says, will be "reasonable, moderate and achievable", with "a great deal of respect for the Uluru Statement".

Ms Burney would like to add a further element to the mix. Two embarrassingly antiquated articles of the constitution—one allowing the use of racial criteria in defining eligible voters and one allowing laws specific to particular races to be made—should be deleted. Unless these "race powers" are finally discarded, she says, the referendum's legitimacy will be diminished.

A vote had been projected for this year, but is now unlikely before 2018. For some indigenous leaders, the risk that a substantive amendment might be defeated is reason to delay even further. Such an outcome might set their cause back decades and would embarrass all involved. Political and business leaders seem more optimistic. So is Ms Burney, who sees the vote as part of a bigger process of reconciliation: "I think Australia is up for it." ■

Housing in Singapore

The high life

SINGAPORE

The city-state's public-housing system works well. But does it have to be so bossy?

"**S**UPERCOOL you're here," says Eugene, looking like he means it. The young Singaporean is showing visitors around his new apartment, a three-bedroom flat in one of the city-state's many high-rise blocks. Eugene says he and his new wife can't wait to start filling the space with babies. He even sounds excited that his in-laws are coming to stay.

If Eugene sounds too good to be true, that's because he's a hologram, trapped behind glass at a self-aggrandising museum in the bowels of Singapore's Housing & Development Board (HDB). Lots of countries show off their public-housing projects, but few are quite as devoted to them as Singapore, where four-fifths of the permanent population live in subsidised units built by the government, most of them as owner-occupiers. The city-state's suburbs bristle with HDB towers, painted calming pastel hues.

This vast national housing system surprises visitors who think of Singapore as a low-tax hub for expatriate bankers and big multinationals. But HDB is a linchpin of economic and social policy and an anchor for the ruling People's Action Party (PAP), which has led Singapore since independence. It is also a tantalising but tricky model for Singapore's fast-urbanising neighbours to follow.

HDB was formed in 1960, replacing a city-planning agency created by British colonialists. The agency intended at first to build rental housing for poor families, but

within four years it had switched to building apartments for sale to the masses. Lee Kuan Yew, Singapore's prime minister from 1959 to 1990, wrote later that he thought promoting widespread home ownership would give every citizen a "stake" in the country, better knitting together an island-nation populated by ethnic Chinese, Indians and Malays. The government used its powers to acquire much of the land that was not then under its control (it now owns around 90% of Singapore's territory), and gradually moved Singaporeans from low-slung villages into concrete high-rises.

Today there are about 1m HDB apartments, largely clustered in two dozen new towns that extend in a semicircle around the city's coastal core. Each year the government sells a fresh batch of as-yet-unbuilt flats, predominantly to first-time buyers. They all come with 99-year leases and are sold at lower-than-market prices, though successful applicants must wait three or four years for their blocks to be completed. Alternatively Singaporeans can choose to buy existing HDB apartments directly from their owners, at whatever price buyer and seller can agree. First- and second-time buyers get money through government grants, regardless of whether they buy new or old flats. Quotas ensure that the mix of Chinese, Indians and Malays in each HDB block reflects the ethnic make-up of the country as a whole, a measure designed to preclude the forma-



Bearing coffee, didgeridoos and demands



Mike Nefkens



Dan Hushon

The future of business: How DXC Technology is leading digital transformation

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Global companies that are digital leaders view IT as crucial to meeting their strategic goals, according to executives polled in an Economist Intelligence Unit survey. This finding reflects the importance IT plays in business strategy as innovative technologies from analytics to machine learning reshape the competitive playing field.

These technologies can increase agility, enhance productivity, and substantially improve processes. But while many executives understand these benefits, the path to adopting the technologies can be daunting.

Mike Nefkens, executive vice president and general manager of regions and industries for DXC Technology, a global IT services and solutions leader, knows well the challenges companies face. "Most enterprises need to execute quickly at extreme scale, and they must innovate globally while keeping their infrastructure secure," he says.

"Technology service providers can create a new digital platform that frees up organizations to focus on differentiated services instead of traditional IT plumbing."

An external technology partner can also add a critical aspect to the digital journey. "Companies must engage differently—with cloud providers, service integrators, and

other ecosystem participants," says Dan Hushon, senior vice president and chief technology officer at DXC.

Why all this collaboration? Because digital is about much more than just learning or implementing a technology—it's a vast cultural change in the way we work. A complete digital transformation involves empowering employees, optimizing business processes, and reimagining how employees work with clients and collaborate internally. "True digital transformation is about bringing information into the fabric of every transaction with a client, employee, partner and process," Hushon says.

**Technology service providers
can create a new digital platform
that frees up organizations to
focus on differentiated services
instead of traditional IT plumbing.**

But a complete transition to digital can't happen overnight. "For at least the next five years, it will be a hybrid world. Since many applications are too costly and risky for companies to tackle all at once, companies will have one foot in the traditional world and one in the digital world," Nefkens says. "But once companies replace archaic infrastructures

and applications with modern, next-generation IT solutions, they will be able to move faster, stay a step ahead of their competitors, get to customers first, and create new growth. That's the definition of a successful digital transformation."

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tion of racial enclaves.

New three-bedroom flats that were offered this year in Punggol, an outlying suburb that has been home to much of HDB's recent development, cost a little over \$300,000 (\$217,000) on average. A means-tested government grant entitled first-time buyers to shave up to \$75,000 off the purchase price. Buying a comparable HDB flat on the secondary market would have cost about a fifth to a quarter more. Buying an apartment built by private developers—whose projects cater primarily to the richest Singaporeans and to foreigners—can easily cost three times as much.

The cash Singaporeans use to buy HDB's properties is provided in part by the Central Provident Fund (CPF), a mandatory national-savings scheme into which most citizens of working age are required to squirrel 20% of their monthly salary (employers must contribute a further 17%). Citizens are entitled to draw down a portion of their savings to use as a deposit on an HDB apartment. Many are also entitled to cheap mortgages provided by HDB, and to use their CPF contributions to meet some or all of the monthly payments.

By many measures the system is a success. Singapore has virtually no homelessness. HDB's towers are somewhat drab to look at, but they are clean and safe and their apartments spacious enough. HDB housing is more affordable than comparable accommodation in Hong Kong, London and some other rich cities: the agency says that on average first-time buyers devote less than a quarter of household income to their mortgages.

It is also a good deal for the state. In 2015-16 the treasury put aside \$1.8bn, or 2.4% of the national budget, for housing, which was enough to cover HDB's annual deficit. (The agency itself had a budget of \$17bn; it benefits from government loans but also borrows from banks and the bond market.) The government says it has paid a little over \$28bn in grants to HDB since its founding in the 1960s.

Handouts linked to housing are one reason Singapore manages to do without a conventional tax-funded pension scheme. The theory is that almost all Singaporeans will own apartments outright by the time they finish working, in addition to having savings of their own. Those willing to downsize upon retirement—or “right-size”, as the government likes to say—do best. Singaporeans are granted an extra discount if they choose to buy property located in the same neighbourhood as their parents, nudging them to help with care that could otherwise fall to the state.

The system is also a reason for the longevity of the People's Action Party, soon to enter its seventh decade in power. Its admirers say it is no surprise that a party that prioritises housing has retained voters' trust, but it is also true that extremely high

rates of home-ownership have helped make Singapore's electorate unusually risk-averse. In election campaigns, PAP candidates have often noted that HDB buildings in constituencies that vote for the opposition go to the back of the line for government-funded upgrades.

Moreover, the government uses its control of the housing system to help shape how Singaporeans live. Strict rules dictate who may and may not buy HDB flats. Some of these decrees keep costs down, but they also reek of paternalism. Most sweeping is the priority granted to married couples, justified in recent years by Singapore's eagerness to raise its low birth rate. Loners can apply for flats of their own, but only if they are still unwed by the age of 35.

This means that young adults tend to live at home until they get hitched (unless they have the means to rent or buy on the open market, where they must compete with well-heeled expatriates who need not pay into the CPF). Gay couples are in the same boat, given that they may not legally marry. Since a moral panic in the mid-1990s mothers of young children born out of wedlock have also found it more difficult than other parents to purchase government flats.

Poor planning

There are other complaints. Provisions for the poorest look meagre compared with social-housing programmes in America or Britain. Subsidised rental apartments are generally only available to those with household incomes below \$1,500 a month who are unable to bunk up with relatives. They consist only of studios and one-bedroom flats—not a good fit for families who fall on hard times. (HDB says that people earning only slightly more than that should be able to afford to buy a home through the usual schemes.)

Meanwhile, the link between HDB-ownership and a comfortable retirement is less certain than it once seemed. For one thing, older Singaporeans have turned out to be keener than expected to hang on to their homes, rather than release capital by moving in with their children or “right-sizing” to smaller flats. One solution is that oldies may now sell back to HDB whatever portion of their remaining lease they expect not to live long enough to use. But that scheme has not wowed, in part because HDB-owners are still coming to terms with the idea that their properties could be worth nothing when their 99-year leases expire. (Whether and how leases will be renewed is a growing concern for all sorts of HDB-buyers, given that some blocks are more than 40 years old.)

More broadly, it remains to ask whether a system fixated on home ownership and dismissive of renting will continue to suit Singaporeans' needs. Some question whether the money young adults are pouring into mortgages might be better spent starting businesses. Buying HDB property requires commitments that young people in other countries would find stifling, beyond having to commit to a mate: they must seek permission to move or let within the first five years of ownership, even though many will have already waited three years for their apartments to be built.

So far it has seemed a reasonable deal. But Singaporeans continue to marry later in life, despite HDB's incentives. Rising prices have stretched wallets, even if cooling measures have lately brought costs down. Today's buyers will certainly not enjoy the capital gains which their parents and grandparents experienced, when Singapore was growing at breakneck speed. The risk is that youngsters will come to see the system less as a national asset, and more like a gilded cage. ■



Room for mum, dad and 1.2 children



China and America

The end of the beginning

BEIJING

From friendship to friction in a few easy steps

AFTER their first meeting in Florida in April, President Donald Trump enthused about his Chinese opposite number, Xi Jinping: "We had a great chemistry, not good but great." But as the two leaders prepare for a second meeting, this time in Hamburg at a gathering on July 7th and 8th of the G20 group of countries, the sweetness of their citrus summit has turned sour.

Over the past fortnight, in a calculated escalation of criticism, America's State Department downgraded China to the lowest ranking in its annual report on human trafficking. Then the Treasury said it would impose sanctions on the China-based Bank of Dandong because, it claimed, the bank was helping North Korea's government to finance a ballistic-missile programme. Next the State Department approved the sale of arms worth \$1.4bn to Taiwan, which China says is a mere province of the People's Republic (the sale must still be approved by America's Congress).

Three days later, the Pentagon sent a destroyer on a "freedom of navigation" operation within 12 nautical miles of Triton, an island in the South China Sea. It is part of the Paracel archipelago, which is occupied by China but claimed by Vietnam. This was only 39 days after the Trump administration's first such operation, an unusually brief interval, causing China's foreign ministry to complain about "a serious political and military provocation" (as China sees it), waters less than 12 nautical miles from Tri-

ton's shore count as its sovereign territory).

Then, on July 4th, North Korea—the main source of America's frustration with China—reminded the two big powers of the potential dangers of inaction. The government in Pyongyang claimed it had successfully tested an intercontinental ballistic missile that American experts reckon is capable of hitting Alaska (see page 21). One day earlier Mr Trump had called Mr Xi to tell him that, if China would not ratchet up pressure on North Korea, America would. The recent steps taken by his administration seem designed to influence Mr Xi not by persuasion (which has got nowhere) but by sanctions and coercion.

The surprise is not that the honeymoon has come to an end but that there was ever one at all. The interlude depended on wishful thinking by both sides. China saw Mr Trump as just one more American president who, though he might roar anti-Chinese rhetoric on the campaign trail, would be constrained by the responsibilities of office. Mr Trump's penchant for personal (rather than institutional) power and for installing family members in the White House, also pleased Chinese leaders: this is the sort of thing they are familiar with at home. And when Mr Xi demanded that Mr Trump endorse America's traditional one-China policy and Mr Trump duly obliged, the Chinese concluded that all they had to do was sit tight and Mr Trump would cave in. All this seems to have led China to over-

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estimate its influence over Mr Trump.

Mr Trump may have miscalculated, too, perhaps out of naivety. He seems to have thought he could persuade Mr Xi to be tough enough to force the government in Pyongyang to the negotiating table. But though China has stepped up sanctions, it is reluctant to do anything that it believes might threaten the stability of North Korea's regime. America's understanding of how far Mr Xi will go may well have been clouded by a lack of senior appointees at the top of the State Department. For instance, there is still no deputy secretary of state, let alone a diplomat responsible for overseeing East Asian affairs.

Still talking, at least

The end of the honeymoon does not mean that China and America are at daggers drawn. A recent phone call between the presidents suggests they are still prepared to work together on North Korea. But the timing of America's China-riling moves was significant. They came on the eve of the G20 summit, overshadowing what Mr Xi hopes will be an opportunity to bask in global acclaim by again proclaiming his support for globalisation and for the Paris climate treaty, which Mr Trump has said America will abandon.

They also came just before the deadline (on July 16th) that America and China set themselves to implement a list of trade measures that were promised at the citrus summit, such as letting foreign credit-rating agencies into China. Most important, the end of the honeymoon comes just as the administration is again threatening to impose tariffs on steel and other imports into America, which would affect China more than most. The risks of a trade dispute are rising, even as mutual rancour grows over North Korea, Taiwan and the South China Sea. ■

Animal welfare

Dog days of summer

BEIJING

Man bites dog

IN LATE June, thousands of people throng the streets of Yulin, a city in the southern province of Guangxi, for an annual dog-eating festival. The event is controversial worldwide. Animal-welfare groups claim that 15,000 dogs are inhumanely slaughtered for the occasion every year, most of them pets or strays.

The festival is contentious in China, too. Thousands of people protest online against the festival and demand that dog meat be made illegal, as it has been in Taiwan—in April the island became the first Asian country to ban eating or trading the meat of dogs and cats. Dog-meat sellers in Yulin respond that eating dogs is no different from killing and consuming any other domestic animal. Yulin's government shuttles back and forth between competing views. Rumours flew that this year it would close down the festival. In the end, it did not. State media quoted local officials as saying they had issued no such order.

In traditional rural China, dogs were guardians or herders, not so often food. In the biggest cities, pet ownership is soaring, as is concern for animal welfare. But in the swathes of China that are neither traditional nor modern, where regulations are elastic and crime is common, the dog-meat market is thriving. It is a case study in unfinished modernisation.

Dog meat is not taboo in China, as it is in most Western countries. But, says Guo Peng of Shandong University, eating dogs has always been uncommon, except in parts of the south and among the ethnic Korean minority, who number 2.3m and mostly live in the north-east. Many Chinese, she says, regard dog meat as a kind of medicine that can regulate the heat of the body. But they do not treat it as a main source of protein. This view is consistent with a survey in 2016 by Dataway Horizon, a polling firm, for a Chinese NGO, Capital Animal Welfare Association. It found that about 70% of Chinese people said they had never eaten dog. Of those who said they had, most claimed it was not by active choice, but because the meat had been served to them on a social occasion.

Over the past two decades, however, dog meat, like drugs, has become a source of criminal income, according to Ms Guo. Sellers in Yulin and elsewhere say their meat comes from dog farms. But when animal-welfare groups have tried to inspect such farms, they have usually been unable to find any. In late June activists intercepted

a lorry carrying 1,300 dogs, apparently destined for sale as meat in Yulin (one of the rescued animals is pictured). They suspect many were stolen pets.

Ms Guo has carried out rare research into the dog-meat market, focusing on the coastal province of Shandong. Most of the meat, she found, came from criminals who were going from village to village, using crossbows to shoot dogs with poisoned darts. Some of the hunters were equipped with infrared sights. The meat became contaminated by the poison, but since the business was unregulated, this did not matter to the dealers. Between 2007 and 2011 a third of the dogs in one village, Yao-jia, were stolen. Almost every household lost at least one animal.

In for a hound

Hunters got about 10 yuan (\$1.30) per kilo of meat, so a medium-sized dog might be worth 70-80 yuan. One hunter interviewed by Ms Guo was a young man raising money to get married. He was making 200 yuan a day, an average income. The meat was shipped to the north-east. Hunters in Shandong and in the neighbouring province of Henan are now thought to supply a large share of China's dog meat. Since it is stolen, it is cheap to produce. It is more expensive than pork or chicken, but is affordable for many people.



Saved from the table

The combination of non-existent regulation and consumer-friendly prices has helped to create a far larger dog-meat market than ever existed in the past. The Yulin festival reflects this recent development. Though its supporters call it a traditional event, the first festival took place in 2009.

Richer parts of China, meanwhile, are adopting more Western attitudes. In Beijing there has been a big increase in dog ownership. Dog-lovers sometimes clash with hunters and meat-sellers.

In Mao's day, dog ownership by city dwellers was condemned as a "symbol of decadence" and strays were shot on sight. In the capital dogs were banned until 1994 and strictly licensed until 2003. Since then, a relaxation of the rules has allowed ownership to grow by 25% a year, bringing the total number of registered dogs to more than 2m in 2016, says the Public Security Bureau, which issues dog-keeping permits. According to Mary Peng of the International Centre for Veterinary Services, a charity, only 50-60% of dogs in the city and 30% of those in suburbs are licensed. So, she reckons, there may be 4m-6m dogs in Beijing, more than five times as many as in London or New York.

Regulations are still onerous. In the inner city of Beijing a dog licence costs 500 yuan a year—almost ten times as much as in New York. The price includes a rabies shot but is still considered steep. Many owners refuse to register their hounds, leading to worries about disease. According to the World Health Organisation, China has the world's second-highest death toll from rabies after India—around 2,000-3,000 human fatalities a year. In an attempt to reduce dog numbers and unregistered animals, the capital has joined some other Chinese cities in adopting a one-dog policy: only a single pooch may be registered per household.

Activists from Beijing have caused traffic jams by stopping lorries carrying dogs to slaughterhouses. Last November, they persuaded China's largest food-delivery company to stop carrying dog-meat meals. In May Zhang Xiaohai of AITA, China's first registered animal-welfare organisation, went to Yulin to try to encourage local opposition to the festival. He said officials told him that they knew the event was harming the city's reputation and contributing to the spread of rabies, but were reluctant to ban it. (The local government says it is not involved in the festival.)

China has no national animal-welfare laws. For years the National People's Congress, China's rubber-stamp parliament, has discussed one; this year the idea got more public backing than any other proposed legislation, to judge by comments on the government's news website. But nothing has come of it. China's dog lovers and dog-meat lovers will be snarling at each other for a while to come. ■

Banyan | The emperor and the pesky spot

In Hong Kong, Xi Jinping highlights the gulf between his party and the territory's people



IT IS the rainy season in Hong Kong, but for journalists and others greeting Xi Jinping at the airport, on his first visit to the territory as China's leader, the order was categorical: no umbrellas. Officials have grown sensitive about antipluvial implements since yellow umbrellas became a symbol of opposition during largely peaceful protests in 2014 against Chinese proposals for restricting democracy in Hong Kong. Mr Xi came for three days to celebrate the 20th anniversary of Hong Kong's return to China on July 1st 1997. Yet to judge from the precautions taken on his behalf, he seemed to think he was passing through enemy-held territory.

For Mr Xi's visit, no-fly zones were decreed. The harbour buzzed with fast-pursuit boats. Workers were not allowed out of their offices until the president's armoured cavalcade had passed. Massive barricades were thrown up in Wanchai, the district where Mr Xi was billeted in a luxury hotel and the anniversary celebrations were held in a convention centre. Not only were a handful of determined protesters kept out of sight; with no presidential walkabouts, even ordinary folk were kept at arm's length. Certainly, Mr Xi received the territory's grandes, and he attended a mushily patriotic variety show. But his chief excursion was to inspect mainland troops of the People's Liberation Army garrison in Hong Kong. China's press refers to the garrison's special forces as the "tip of a pointed knife" and the "best of the best". The implication scarcely needs emphasising. Their presence, for all that it is largely out of sight, is not just to safeguard the motherland from outside attack. It is also to show muscle to those who want Hong Kong to enjoy greater independence.

Given the puny student activists they are up against, not to mention a general sense in Hong Kong of protest fatigue, it is hard to imagine a more unequal contest. Yet on his visit Mr Xi left no doubt that territorial integrity and national unity trumped all other considerations. He warned in his anniversary speech that any attempt to "challenge the power" of the central government in Beijing, or even the authority of the Basic Law, China's governing precepts for Hong Kong, "crosses a red line, and is absolutely impermissible". The same went for any perceived use of Hong Kong as a base for infiltration and subversion of the mainland—however hazily defined. If "one country, two systems" remains the defining creed for Hong Kong's status, the first part of the for-

mula emphatically trumps the second.

Mr Xi's remarks highlight a growing gulf in understanding between mainland rulers, increasingly inclined to interfere, and the people of Hong Kong. After all, three-fifths of Hong Kongers consistently vote (when given the chance) for candidates who want greater democracy—an aspiration that China sometimes construes as tantamount to wanting independence and therefore a dangerous violation of the red line. Mr Xi's narrative of Hong Kong's return from British rule to China is one of a joyous end to past humiliation. It fails to resonate in a territory where people increasingly see themselves as Hong Kongers first, Chinese second.

Where Mr Xi sees Hong Kong "grown exuberant like a bamboo or a pine tree" in the Chinese embrace, many see constricted political space and economic opportunities. Mr Xi called for greater patriotism in Hong Kong. But, democrats say, the Communist Party must understand that patriotism is something earned, not produced on demand. Instead of interfering more and more, asks Joshua Wong, a student activist, why doesn't Beijing try to win young people over with liberal reforms?

Even had she been democratically elected rather than handpicked by the central government, the new chief executive, Carrie Lam, whom Mr Xi swore in on July 1st, would have a nearly impossible job. Her predecessor, "C.Y." Leung Chun-ying, had polluted the political atmosphere by showing fealty towards the party, undercutting colleagues and treating democrats with contempt. That Mrs Lam, formerly head of the civil service, is retaining most of Mr Leung's top officials is less a desire for continuity than a reflection of her problems in attracting political talent.

Unlike Mr Leung, Mrs Lam acknowledges the need to heal bitter political divisions. Yet, in her first speech as chief executive to the Legislative Council, she dismissed the idea of early democratic reform. That is disheartening. Meanwhile, the party is dropping hints that it wants Mrs Lam to enact anti-sedition legislation as stipulated in the Basic Law. Plans to do so were shelved in 2003 following huge street protests that led to the early retirement of the first chief executive, "C.H." Tung Chee-hwa. Since 1997 all leaders, indeed, have ended their time in office in failure. Mrs Lam risks starting hers that way.

Guarantee? What guarantee?

For some, the promise that one country, two systems still has at least 30 years to run remains a consolation. But not for others. After all, the guarantee that Hong Kong would remain unchanged for 50 years after the handover was agreed between Britain and China; that treaty, the Sino-British Joint Declaration of 1984, was even lodged with the UN. But on June 30th a Chinese spokesman said it had "no practical significance". It was, he claimed, "not at all binding for the central government's management over Hong Kong". Shamefully, no strong protest came from the British government. Hong Kong people are on their own.

For young democrats such as Mr Wong, who is 20, the expiry of the no-change guarantee in 2047 is a deadline every bit as important as the handover was a generation ago. Deng Xiaoping once said that if a further 50 years was needed, then Hong Kong would have it. But few in power talk like that any more. And not only are Hong Kong's freedoms at stake. What, Mr Wong asks, happens to land leases that run beyond 2047, or 30-year mortgages? Such concerns will only grow stronger in the coming years. Hong Kong people had no say in their future leading up to 1997. They look unlikely to let that happen again. ■



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State shutdowns

Spot the governor

CHICAGO

State governments are imitating Washington's bad behaviour

IT WAS a holiday weekend of high political drama in Illinois as lawmakers scrambled to avert a humiliating downgrade to junk status of their state's bonds by credit-rating agencies. "For me today, right here, right now, this is the sword that I am willing to die on," proclaimed Michael Unes, one of the Republican state representatives who voted for the revenue and spending bills passed over the weekend by the Democratic-run House of Representatives. Several other Republican lawmakers broke into tears as they voted for tax increases they opposed ideologically but felt are needed to avoid a fall into the financial abyss. Fifteen Republican members of the house broke ranks with Bruce Rauner, the governor, who categorically refused to back the House bills.

Illinois was one of 11 states that failed to meet the deadline for passing a budget. Connecticut, Delaware, Maine, Massachusetts, New Jersey, Oregon, Rhode Island and Wisconsin were all without budgets on July 1st. In Pennsylvania and Michigan, the budget was on the governor's desk. Illinois's budget stalemate has been by far the longest, adding to the state's reputation for shoddy government. But in two other states with a divided government, New Jersey and Maine, the failure to agree on a spending plan caused moments of tension and absurdity, too.

From July 1st to 3rd, state parks, beaches and government offices were closed by a partial government shutdown in New Jer-

sey because Chris Christie, the Republican governor, wanted to tap the funds of the state's largest health insurer. His constituents were hopping mad when they saw photos of the governor lounging with friends and family on a pristine beach off-limits to everyone else (a scene captured from the air by an enterprising local paper, the *Star-Ledger*). In Maine, where government also partly shut down, state workers demonstrated outside the state house on July 1st, chanting "Do your job!" Maine's Republican governor, Paul LePage, had refused to sign the budget because he opposed an increase of the state's lodging tax.

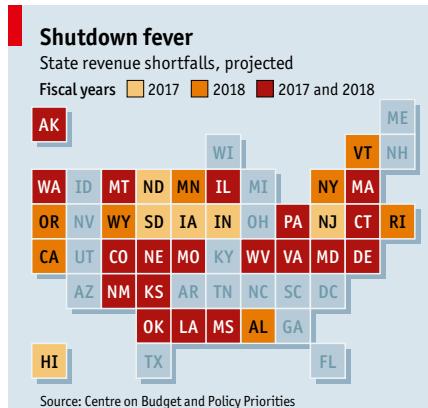
Governors Christie and LePage signed budget deals after three-day stand-offs with their respective legislatures, with Mr Christie defiantly stating that he was going

back to the infamous beach. Their mid-western counterpart refused to budge. After state senators approved the House bills on July 4th, Governor Rauner vetoed them as soon as they reached his desk. Senators swiftly voted to override the governor's vetoes. The Speaker of the House, Michael Madigan, promised the House would follow suit on July 6th.

Illinois is an extreme example of a more general phenomenon, as states across the country grapple with declining revenues (see map). The state has not had a budget for two years. The governor and the Democratic-run legislature have engaged in brinkmanship: the governor insists that any spending plan must include some of his proposals, including a property-tax freeze, legislative term limits and a reform of workers' compensation insurance. Democrats retort that these reforms would hurt the middle class.

Meanwhile, Illinois's operating budget deficit has grown to 0.6% of GDP, though the state constitution says the budget must be balanced. The backlog of unpaid bills reached \$16bn and total debt \$210bn. The state has seen eight downgrades of its bonds by credit-rating agencies, the last of which, in early June, made them fall to just one notch above junk—with a negative outlook. "If Illinois does not agree on a budget plan, there is a greater than one in two chance that we will downgrade the state's credit rating to below investment grade," warned Gabriel Petek of Standard & Poor's, a credit-rating agency, before the holiday weekend. That would make future borrowing much more expensive.

The imminent danger of a junk rating for Illinois's bonds seems to have cooled the trench warfare between the governor and lawmakers. But the conflict has already done lasting damage to the Land of Lincoln. Providers of state-funded social services that help the mentally ill, the el- ➤



► derly, victims of domestic violence and those infected with HIV have not received any funds from the state for two years. Many have folded or are running reduced operations. The next in line would be schoolchildren. Without a budget, some schools downstate and in the suburbs will not be able to reopen after the summer.

Illinois is in a league of its own, but many states are under similar pressure. State revenues have not recovered since the financial crisis, says John Hicks of the National Association of State Budget Officers. Thirty-three states have had to revise their revenue forecasts downwards in the past year. The main reasons were lower receipts from sales taxes and income taxes,

which account for half of state revenue. Sales are shifting online, prices of tangible goods are falling and consumption is tilting towards services, all of which diminishes sales-tax revenue. Income-tax receipts were lower than expected because pay for many jobs is still below pre-recession levels, and growth in the stockmarket in 2015 and early 2016 was sluggish. Ill-advised tax cuts played a role, as did lower energy prices, which affected Alaska, Louisiana, Oklahoma and West Virginia.

The tighter-than-expected squeeze on state finances is fuelling an unusually high number of budget battles this year, but so is greater political polarisation over fiscal policy. As political donors and primary

voters have become more pugnacious, they expect politicians they back to fight harder, says David Gamage at Indiana University. As a result government shutdowns, which were extremely rare 30 years ago, have become more frequent both at the federal and state level.

Uncertainty over fiscal policy can harm economic growth, sapping investors' confidence. To deal with the growing problem of government shutdowns and budget stalemates, Mr Gamage proposes, in a paper he helped write, the adoption of default budget policies along the lines of those in place in Wisconsin and Rhode Island. Under this arrangement, if lawmakers cannot agree on a spending plan the latest budget remains in effect until they can.

It is a tidy solution, though sceptics argue that it would allow governments to avoid passing budgets and thus duck hard choices. This has not been the case in Wisconsin and Rhode Island, which have generally taken no longer than other states to pass a budget. This year is an exception: as *The Economist* went to press, both states were still without a budget. Yet thanks to their default policies, both states' governors could head to the beach without fear of mockery. ■

New York

Notes from underground

SUBTERRANEAN NEW YORK

The city's creaking subway system needs more than the customary bodge

“WE ARE delayed because of train traffic ahead of us,” intoned the familiar automated message on a stalled subway train on June 27th. Earlier that morning a train had derailed, injuring 34 people. The derailment caused delays, re-routings and suspended trains across the century-old system. “The subway is worse now than in the 70s,” grumbled one experienced commuter. Back then the subway was plagued by crime, graffiti and delays galore. Today crime is low, graffiti gallery-worthy and rider numbers at levels not seen since the 1940s. Partly as a result of this popularity, delays have increased by more than 200% since 2012.

The problems have become so bad that Andrew Cuomo, New York’s governor, declared the Metropolitan Transportation Authority (MTA), the state entity that runs the subway, bus lines and two regional commuter rails, to be in a state of emergency. Emergencies are usually called when a natural disaster strikes. The problems plaguing the transit system are man-made. The antiquated signal system, some of which dates back to the 1930s, breaks down frequently. According to the current timetable, updating it will take up to half a century.

Mr Cuomo has given Joe Lhota, the new MTA chairman, 30 days to come up with a reorganisation plan, ordering him to start with a blank piece of paper and giving him 60 days to assess and allocate capital for track repairs, signal upgrades and new carriages. Mr Lhota is a familiar face. Prior to an unsuccessful run for mayor in 2013, he ran the MTA during the clean-up after Hurricane Sandy, which flooded subway tunnels.

The MTA was meant to be somewhat removed from politics. Instead, it has

been micromanaged by governors, who control its board. “People like to put their names on big projects, obviously. I’m talking about elected officials,” notes Jeffrey Dinowitz, a state assemblyman. “You can’t put your name on a railroad, on a train.” Governor Cuomo intends to add \$1bn to the capital plan, which is a drop in the bucket. Fares, which are relatively low compared with other cities, need to go up. Higher taxes, perhaps a property surcharge along new or improved lines, are another option. Yet the state of disrepair is such that the MTA needs to do something even more unpopular: close lines while work is carried out. The suspensions of the L and M trains are a sort of pilot for this. Sweet Jane’s, a bar near the M line, is offering a number of “f the M train” cocktails to help ease the pain for straphangers.



If you miss the A train

Health-care politics

Raining on the parade

EASTPORT, MAINE

The Republicans’ chances of replacing Obamacare are receding

NO REPUBLICAN senator looms larger in the schemes of left-wing protesters than Susan Collins of Maine. One of the last New England moderates, a once-common Republican species, Ms Collins is considered the likeliest holdout against the draft Republican health-care reform that has overshadowed the week-long Independence Day recess. But on the evidence of her appearance at the Fourth of July parade held in Eastport, Maine, America’s easternmost city, liberals can relax.

“Everyone wants to talk about health care—I’ve never known everyone wanting to discuss the same issue like this before,” said Ms Collins, seated in an office at the town’s harbour, after she had marched alongside the local pipe bands, beauty queens and veterans, and chatted with the crowds that lined the parade route. “Almost everyone says the same things: ‘Stay strong’, ‘We’re with you’, ‘Thank you for being opposed to the Senate bill’.” Of the “hundreds and hundreds” of people who raised the issue with her in Eastport—which is in one of Maine’s most conservative counties, 56% of whose voters backed ►

► President Donald Trump last November—Ms Collins said only one person had told her to quit griping and repeal Barack Obama's health-care regime, as the Republicans have long vowed to do.

For Mitch McConnell, the Republican majority leader in the Senate, this is the nightmare he had sought to forestall by trying to hustle the health-care bill—derided on the left as “Trumpcare”—through before the recess. Exposed to anxious voters—22m of whom stand to lose their health-care coverage over a decade, according to the Congressional Budget Office's assessment of Trumpcare—Republican senators seem increasingly unlikely to rally behind Mr McConnell's bill, or anything closely resembling it.

The left-wing activists will claim success for that, but should not. In fear of a baracking from angry lefties, only three of the 52 Republican senators, Bill Cassidy of Louisiana, Ted Cruz of Texas and Jerry Moran of Kansas—all of whom criticised Mr McConnell's bill—scheduled a town-hall hearing during the recess. Only four, including Ms Collins and Mr Cruz, were willing to advertise their Independence Day plans. Mr Cruz, who objects to the draft health-care bill on the basis that it retains too much of Obamacare's pro-poor regulation, was rewarded by being greeted in McAllen, Texas, by protesters waving “Ted wants us dead” placards. (“Isn't freedom wonderful?” he said.) Yet Republican lawmakers are more concerned about the effect of the threatened reform on their own voters, millions of whom could lose their health insurance under the draft bill.

Mr McConnell, who has himself been subjected to a range of protests—including a street-rave by gay dancers outside his Washington, DC, residence—maintains he will address all Republican objections to the bill, and bring it to the Senate floor shortly after the recess. He can hardly promise less. Republican lawmakers are also keenly aware that they face humiliation and a backlash from conservative voters if they—while in control of all arms of the government—cannot claim to have scrapped Obamacare, after having promised for seven years that they would.

Under the provisions of the draft bill, which would cut an estimated \$160bn from annual Medicaid spending by 2026 compared with current plans, Mr McConnell has substantial means at his disposal to try to coax support. Some senators, led by Rob Portman of Ohio, worry that narrower Medicaid coverage would jeopardise treatment for opioid addiction (see next story). A dollop of extra cash for the affected states might go a long way to satisfying that complaint. But even with his war-chest, and reputation for ruthlessness and cunning, Mr McConnell may fail.

To muster the 50 votes he needs (assuming Mike Pence, the vice-president, is



Susan Collins in the spotlight

prepared to cast a tiebreaking vote for his party), the majority leader can afford to lose the support of no more than two senators (also assuming no Democratic senator backs his bill). Currently, at least two moderates, including Ms Collins, and four hard-line conservatives, including Mr Cruz, have said they cannot support it in its current form. And Mr McConnell cannot expect much help from the president in bringing them into line. An attempt by Mr Trump to drum up support for the Republican bill, at a pre-recess gathering of Republican senators at the White House, was unsuccessful. The president appeared not to understand the bill he was lobbying for.

Maine-lining

If conservative holdouts such as Mr Cruz may yet come around, Ms Collins appears pretty much irreconcilable. “It is hard for me to see how we get there,” she said. “If Senator Mitch McConnell can satisfy my concerns so that we no longer have 22m people losing insurance and deep cuts to Medicaid, he will have problems satisfying some of our more conservative colleagues.” Ms Collins also ruled out two alternative reforms belatedly being pushed by some Republicans—which indicates how little Mr McConnell's convoluted proposed makeover of Obamacare is liked by any of them.

The first, offered by Mr Trump (in a tweet) and backed by at least two senators, Rand Paul of Kentucky and Ben Sasse of Nebraska, would scrap Obamacare and only later, over the course of an extended phase-out period, worry about what to replace it with. “I would not support that and I do not believe it would have widespread support,” said Ms Collins. “I'm afraid, if you look at our current difficulties, we would never get to 'replace'. Many of the people involved in the debate want to diminish the role of the government in pro-

viding medical care.” A proposal by Mr Cruz, who is certainly one of them, to placate moderates by retaining Obamacare's subsidies and conservatives by allowing insurers to provide only bare-bones coverage, was also a non-starter for Ms Collins. “I don't want to see insurance that's not really insurance.”

Time is against Mr McConnell. The Senate is due to break up for a month-long recess on July 28th, and other important business is encroaching. Congress must pass a budget and raise the debt ceiling, or risk the federal government running out of cash by the end of September. That is liable to lead to similar clashes between moderates and conservatives and, on the Republicans' past form, the party's leaders may require support from the Democrats to end the impasse. Though if the Republicans have just wrecked Obamacare—the proudest achievement of a president revered by Democrats—that support might not be forthcoming. This is an additional headache for Mr McConnell.

The debacle suggests he, instead of improving on Obamacare, is determined to recreate its biggest political weaknesses, and throw in some new ones, too. Mr Obama did at least try to persuade his opponents to back his health-care proposal. Yet the fact that Obamacare was passed without any Republican support made it so toxically divisive that the parties have never talked seriously about co-operating to improve it. Mr McConnell is now promising the same again—a reform that, because of the complexity of health-care policy, as well as the inevitable compromises, misjudgements and oversights, will at some point require bipartisan remedial action, which, for the same reason, would probably be unavailable to it.

This would be a poor way to govern even if the stakes—the health care of millions and a sector equivalent to nearly a fifth of the economy—were not so high. “The Republican leadership is making the same mistake President Obama made,” sighed Ms Collins. “It has written a very complex, major health-care bill without support from the other side.” If politics would only permit compromise, she claims, a group of ten Democratic senators would stand ready to work with moderate Republicans to fix Obamacare's high deductibles, shallow markets and other problems. But that is currently unimaginable.

Meanwhile, the longer the Republicans remain consumed by this issue, the likelier voters are to start pinning their many complaints about health care on their party—whether Mr McConnell passes his reform or not. “I've always voted Republican, but I don't know why, or if I will again,” said Rose, a mental-health nurse and middle-aged mother, at the parade in Eastport. Access to Medicaid, for her and her family, she said, was her biggest worry. ■

California against the rest

The longest flush

LEXINGTON AND LOUISVILLE

America's interstate bathroom wars rumble on

WE'RE not going to be the first edge of social change," concedes Jim Gray, mayor of Lexington, Kentucky's second-biggest city. "But over time we adapt." He illustrates that; Mr Gray, a successful businessman, who has won plaudits for his leadership of a rare liberal outpost in Kentucky, is the state's first openly gay elected official. Yet a clanking new face-off in the culture wars, opened by California against Kentucky and another seven Republican states, suggests the smooth transition he describes is by no means assured.

On June 22nd California's attorney-general, Xavier Becerra, announced he had added Alabama, Kentucky, South Dakota and Texas to a blacklist of states he adjudged to have passed anti-gay legislation. Under a recently passed state law, California will not pay non-essential travel costs for government employees to any such proscribed states, which also include Kansas, Mississippi, North Carolina and Tennessee. Most of them recently passed laws that could prevent gays from adopting or fostering children. Kentucky's heavily Republican legislature passed a "religious freedom" law that could allow students to exclude gays from Christian college clubs.

California's law was prompted by North Carolina's passage last year of an ill-fated "bathroom bill", which sought to bar transgender individuals from using the facilities of their choice; it was revised after investors began boycotting the state as a result. Some of the more recent offending legislation is less, or less gratuitously, illiberal; Kentucky's Republican lawmakers argued that their law was not intended to be anti-gay. Yet Mr Becerra appears to have been emboldened to use his new powers by the Republican sweep in November, which has left him, and a clutch of other powerful Democratic attorneys-general—including Eric Schneiderman in New York—as rare bastions of Democratic resistance.

The proscribed states are upset. A resolution passed by Tennessee's legislature in May urged "the other 48 states to refrain from imposing their unfounded moral judgment on their sister states as California has done in order to prevent escalating foolishness." That all but three of the states singled out by Mr Becerra were members of the Confederacy has added long-standing grievances to their sense of pique. "I thought we fought the civil war a long time ago," chuntered Senator Rand Paul of Kentucky, against whom Mr Gray ran a losing

campaign, as the Democratic candidate, back in November.

Kentucky's governor, Matt Bevin, who signed the offending "religious-liberty bill" into law, has downplayed the effect of California's sanction. "It will be negligible and it's a joke." But Mr Gray and his mayoral counterpart in Louisville, Kentucky's biggest city, Greg Fischer, say otherwise. On June 29th Mr Fischer announced that two business conventions scheduled to be held in Louisville had been cancelled in response to the travel ban; he estimated the cost to the city at \$2m.

He and Mr Gray wrote to Mr Becerra asking for their cities to be made exceptions to California's ban. "It does not fit us—we're a university city, open, welcoming, inclusive," said Mr Gray, seated in the open-plan former ballroom to which he has moved his mayoral bureaucracy. Well done—but no cigar, Mr Becerra replied; the offending law applies to the whole state and so must the ban. "It's kind of a moment of truth," said Mr Fischer, munching a quick sushi lunch at his desk in Louisville's elegant mayoral offices. "When the

Republicans say the bill was not intended to be discriminatory, I take them at their word. But now we are facing real economic consequences."

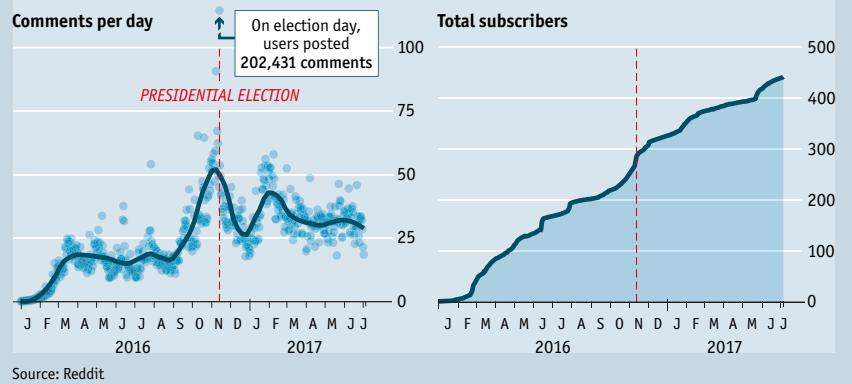
As in North Carolina last year, the controversy represents rising tension between two important Republican constituencies, businesses and social conservatives, whose views are increasingly unwelcome in the urban centres where business thrives. The extent of Hillary Clinton's urban sweep—the Democratic candidate won eight of the ten largest metro areas—was astonishing. The alacrity with which Louisville and Lexington broke ranks with the rest of Kentucky is another indicator of this urban-rural dissonance. A former market town, planted in affluent, southern farm country, Lexington is over 75% white and has little history of organised labour. It has gone Democratic because of the values of the college students and young professionals Mr Gray is working hard to attract to the city and retain. "Jobs go where talent is," he says. This is a warning of an ever starker political contrast between the city and its hinterland.

But the clash contains bad news for Democrats, too. The party has not been wiped out across much of America because of a lack of clarity about its liberal values. To regain its lost footing, it needs to persuade voters it is at least as dedicated to securing them access to opportunity as to the appropriate bathroom. California's well-meaning, but hectoring, stand will not help with that. ■

Origin of the specious

On the morning of July 2nd, Donald Trump tweeted a video showing himself wrestling a man with a CNN logo for a head to the ground and pummelling him. "#FraudNewsCNN #FNN," added the president. Mr Trump, a septuagenarian not known for his technical skills, almost certainly did not make the video himself. A user on Reddit, a social-discussion website, going by the moniker of "HanAssholeSolo", swiftly took credit. *The Economist* has downloaded and trudged through 1.5m posts made since January 1st 2016 on the forum Mr AssholeSolo frequented, which is a cesspit of bigotry and hatred ("500,000 dead Muslims is a good start", he wrote in one post). The president, known to be fond of adulation, could find plenty of it here. Some users refer to him as "God emperor", a phrase that appears more than 6,000 times in post titles.

/r/The_Donald subreddit, '000



The story of a shooting

Last ride home

ATLANTA AND EATONTON

A sensational court case has illuminated a successful city's problems

THE last day of Diane McIver's life began at the ranch she shared with her husband Claud "Tex" McIver near Eatonton, Georgia. It is a handsome property, with a large pond in front of the house, longhorn cattle, horses in a paddock, horse-head statuary at the gates. The McIvers, says Howard Sills, the local sheriff, were ornaments of the community: she was "the life of the party", he "a gentleman" with "consummate manners". On that Sunday—September 25th last year—they played golf on a pine-lined course beside Lake Oconee, a favourite playground of well-to-do Atlantans. Mrs McIver, a fine golfer, was on good form. They stopped at a steakhouse next to the highway for what would be her last meal, then headed into the city.

They were on the way to their condominium in a swanky tower in Buckhead, one of Atlanta's fanciest neighbourhoods. Mrs McIver, who was 63 and president of a marketing firm, had come a long way from her hard-up childhood in Alabama. She married Mr McIver, now 74 and, until recently, a partner in an employment-law firm, in 2005. Originally from Texas, after 50 years in Georgia he was well-connected in local politics. Subsequent events that evening are disputed, in a case that has come to encapsulate the city's rifts and problems, including race, elitism and guns. Appropriately, it also involves Atlanta's main bugbear: traffic.

The McIvers' car was being driven by their friend, Patricia Carter, known as Dani Jo. Mrs McIver was in the front passenger seat, her husband sitting behind her. They hit a jam on what Atlantans call the downtown connector, a choke-point in the heart of the city where two interstates converge. Mr McIver had been dozing; waking as they left the highway, he became alarmed and retrieved a revolver that was kept in the car's central console. A few minutes later, near Piedmont Park, Atlantans' favourite park, the gun went off—accidentally, Mr McIver says. The bullet struck his wife. She died in surgery a few hours later.

If the outline is clear, the details are blurry. Initially, for example, Charles Crane, then a spokesman for Mr McIver, said he took out the gun in part out of concern over recent Black Lives Matter protests nearby, an explanation that irked some black politicians. Mr Crane also said the bullet was fired when the car struck a bump in the road. Both details have been disavowed by Mr McIver and his team:

there was no bump, they clarified, nor any worry about Black Lives Matter. Instead he was discomforted by the area in which the party found itself when it detoured away from the congestion. (Homeless people, another doleful feature of Atlanta life, often loiter near that exit.) In Mr McIver's account, he fell asleep again, awoke suddenly near the park, and the gun discharged.

The authorities' view of the case has evolved, too. In December, after murmurs about their tardiness, Atlanta police charged Mr McIver with involuntary manslaughter and reckless conduct, charges suggesting that they, too, considered the death an accident. Mr McIver was released on bond. The district attorney's office, however, had other ideas. It launched a search for what it alleged was Diane McIver's secret will, which it accused Mr McIver of concealing. In court documents, Paul Howard, the DA, argued that the elusive will was "likely evidence of the motive in her death". In April a grand jury was persuaded to elevate the charges to murder, adding several counts of interfering with witnesses, namely the spokesman, Mr Crane, and Ms Carter, the driver. The indictment alleges that Mr McIver told her to say she had not been present when the shooting occurred.



Claud "Tex" McIver awaiting trial

By then, he was in jail. The terms of his bond forbade guns, but a search for documents in his condo turned up a pistol in his sock drawer; his lawyers insinuated that it had been planted, but the judge was unimpressed. Later efforts to secure his release, pending trial, have been thwarted in part by prosecutors' claims that Mr McIver—who served on the state election board, among other accolades—tried to sway the case from his cell. "I believe that this defendant, he is dangerous," Mr Howard told the judge during a recent skirmish over whether Mr McIver was receiving preferential treatment. In an earlier clash, the DA tried and failed to prevent estate auctions of the dead woman's clothes and jewellery. Unshaven, these days, and hangdog, glasses clipped to his smock, Mr McIver has clutched a bible as he shuffles into court.

Days in court

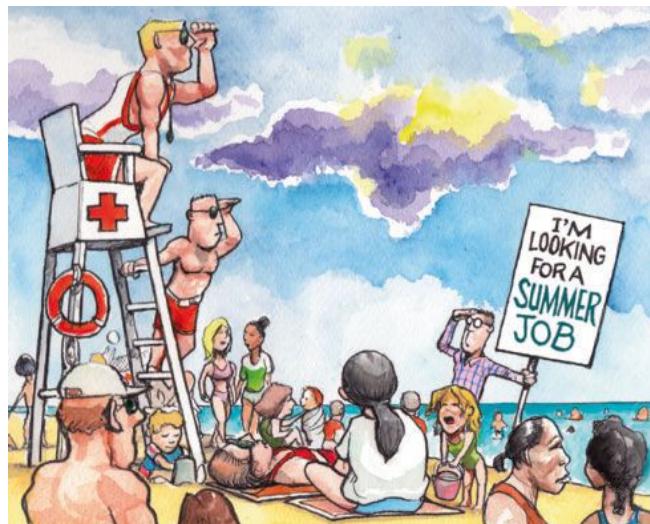
He denies meddling and has pleaded not guilty to all charges. He says he had no motive, financial or otherwise, to kill his wife; his team is adamant that the secret will is a fiction. "It was the perfect marriage," Mr McIver said in a jailhouse TV interview. "He seemed very doting," corroborates Mr Sills, the rural sheriff, who is not involved in the inquiry. Defence lawyers denounce what they see as "a trophy prosecution", accusing the DA of withholding testimony that the shooting was an accident. That is said to have come from an Atlanta detective and Ms Carter (though her lawyer has said that she did not see what happened in the back seat). Also, most explosively, from the victim herself: a doctor who treated Mrs McIver recalled that she "said it was an accident without me prompting".

The trial is scheduled for October. For now Mr McIver is confined behind the meshed windows of a squat, redbrick jail in Alpharetta, north of Atlanta. Still, amid the fug, a central element is stark and clear: the gun that killed Mrs McIver. Her husband had a lot of firearms, prosecutors note. Around 35 were taken from the ranch for safekeeping by Mr Sills, though "Here," he says, "that's not a lot of guns." The revolvers that decorate the chandelier in the couple's barn are replicas, he says. Mr McIver's lawyers insist two old incidents that have come to light are irrelevant. In one, he let off a shot to scare a buzzard for a Buckhead neighbour; in the other, in 1990, he was indicted after firing in the vicinity of a carload of teenagers, in self-defence, he maintained. They settled out of court.

Keeping a gun in a car, as the McIvers did, is legal in Georgia, his team observes. (Whether it is wise is debatable: by one count, Atlanta leads the nation in guns stolen from vehicles.) And Mr McIver was well-apprised of the need for caution. Last summer he was appointed to an advisory role on the American Bar Association's Standing Committee on Gun Violence. ■

Lexington | Teenage grit

A changing summer job market, seen from Reagan's boyhood home



THE first time that Ronald Reagan appeared on a newspaper front page was as a teenage lifeguard, hailed for saving a drowning man from a fast-flowing river. The future president was not yet "Ronnie", America's reassuring, twinkling, optimist-in-chief. He was still "Dutch", to use his childhood nickname: a slim, bespectacled youth, serious to the point of priggishness. A biographer, Garry Wills, unearthed a high school yearbook in which Reagan scolded swimmers he pulled from the cool, treacherous Rock River, near his boyhood home of Dixon, Illinois. "A big hippopotamus with a sandwich in each hand, and some firewater tanked away," Reagan wrote of one. Each summer from 1927 to 1932 the teenager would rise early to collect a 300lb block of ice and hamburger supplies before driving in his employer's van to the river, working 12 hours a day, seven days a week. The post offered responsibility, money for college and stability in a childhood blighted by frequent moves, brushes with financial ruin and his father's drinking. There was glory, too: in all he saved 77 lives. A picture of the Rock River hung in Reagan's Oval Office.

Strikingly often, self-made Americans have stories to share about teenage jobs, involving alarm clocks clanging before dawn, aching muscles, stern bosses and soul-fortifying hours of boredom. In 1978, a record year in the annals of the Bureau of Labour Statistics, 72% of all teenagers were employed in July, the peak month for youthful ice-cream scooping, shelf-stacking and burger-flipping. But for two decades the traditional summer job has been in decline, with 43% of teens working in July 2016.

Lexington decided to head to Dixon to ask why. This being an anxious and litigious age, Reagan's river beach is closed now. But the YMCA that trained him in lifesaving (and where he paraded as a drum major) still hires lifeguards. This summer finds one of them, Lexi Nelson, 18, between high school and community college, where she will study dental hygiene. Perhaps a quarter of her friends are working this season. The rest have mixed views of her job, which can start at five in the morning. "When I get up early they bash on it," Miss Nelson reports, "but most of the time they're jealous of the money." Lifeguarding in an indoor pool is not the most exciting job, she concedes, but that teaches patience.

The story of the vanishing job is not a simple one. Ask teenagers, their employers and the mayor of Dixon—a business-own-

er who hires teenagers each summer at a pair of sandwich shops and a frozen yogurt store—and they point to two main causes: well-meaning adults and a changing economy.

Reagan's stirring example is still taught in Dixon, a trim, conservative town, with an equestrian statue of the president on its waterfront and loudspeakers on lamp-posts that play the Carpenters and other easy-listening classics. But many parents discourage teens from working, it is widely agreed. Parents instead tell their children to study, take summer courses, volunteer or practise for sports that might help them compete for college places.

Local keepers of the Reagan flame see a town still filled with opportunities for self-advancement. Patrick Gorman, director of the Ronald Reagan Boyhood Home, a museum that preserves a house rented by the president's family in Dixon, is confident that anyone who wants a job can find one, even if it might be "detasseling" corn—picking pollen tassels from growing corn cobs, an arduous summer task traditionally reserved for the young, involving cold mornings, baking middays and scratches from corn leaves. Mr Gorman easily found six teenagers to volunteer as museum guides: "Good kids migrate to good kids," he beams.

Not all teenagers have the same needs. The three lifeguards interviewed at the YMCA are either college-bound or plan to be, and part-time work suits them. Bosses at the "Y" note that youngsters with only a high-school education typically have a different goal: landing a full-time job with health insurance and benefits.

Liandro Arellano Jr., Dixon's mayor, argues that teenage job prospects have been complicated by well-intentioned politicians raising the state-wide minimum wage to \$8.25 an hour. For that pay it is both tempting and possible to hire college students or older workers with a proven job record, references and the ability to turn up on time, says Mr Arellano, a Republican. The youngest workers, below 18, earn \$7.75 but need more training, and those aged 15 need work permits and cannot touch slicers or big bread knives. Larger economic forces have buffeted Dixon, too. After the credit crunch of 2008, a flood of laid-off factory workers and experienced adults wanted to work for Mr Arellano. With unemployment rates now below 5% in Dixon, applicants for entry-level jobs are getting younger again. Teenagers can be fine summer helpers, he says—"They're very excited about their first job"—though keeping them off smartphones is "a constant battle".

Buy that teenager an alarm clock

Nationwide, affluent white teenagers have historically been much more likely to take summer jobs than lower-income, non-white youths. Family connections help, and it is easier to find work at a golf course or tennis club than amid inner-city blight. Though big cities like Chicago, 100 miles from Dixon, have government-run schemes that prod employers to offer summer work, demand exceeds supply: last year 77,000 Chicago youths applied for 31,000 summer jobs or internships. For all that, some of Mr Arellano's worst staff have been youngsters who do not need the money or want a job reference: they are the ones who quit without warning to go on a family holiday. Well-off parents are not always "super-supportive", he sighs.

Some parents may question the value of manual work in an age of high-tech change. But an elite education counts for little without self-discipline and resilience. Drudgery can teach humility: when hauling boxes, a brain full of algebra matters less than a teen's muscles. At best, it can breach the social barriers that harm democracy. Summer jobs are called all-American for a reason. ■

Brazil's armed forces

Enemies wanted

CAMPINAS AND TABATINGA

Without external threats to repel, the world's 15th-biggest standing army is turning into a de facto police force



FEW places illustrate the modern role of the Brazilian army better than Tabatinga, a city of 62,000 on the shared border point between Brazil, Colombia and Peru. The frontier, protected by Amazon rainforest, has not budged since the Portuguese built a now-ruined fort there in the 1700s. But Júlio Nagy, a local commander, has his sights trained on unconventional threats. In February and March his troops intercepted 3.7 tonnes of cannabis. Last year they destroyed an airstrip built by illegal gold miners. Inside a small army-run zoo—home to toucans, a jaguar and even a manatee—garish macaws rescued from animal traffickers squawk intermittently.

The last time a big Brazilian city was attacked was in 1711, when a French corsair briefly captured Rio de Janeiro. The country's official defence review states that "at present, Brazil has no enemies". Lacking bellicose neighbours, armed insurrections or much appetite to project power abroad, the defence minister, Raul Jungmann, recognises that the country's armed forces "do not possess classic military attributes".

Brazilian strategists say that a dearth of military adversaries does not justify skimping on defence. Criminal gangs operating in border areas can overwhelm civil-

ian police, and in the future Brazil hopes to deter foreigners covetous of its natural resources. Maintaining control over sprawling, varied terrain is not cheap. Nonetheless, new threats require new responses. And the army's own top brass say that its current form—heavy on low-skilled personnel, light on equipment, and increasingly diverted towards routine policing—is ill-suited for the government's stated aims.

Brazil's army burgeoned during the cold war. In 1964 its generals staged a coup; during their first year in power defence spending rose by 75%. The military budget surged again after the junta fell in 1985, as the new leaders sought to forge a modern army under civilian rule. Since 1989 defence spending has fallen from 2.5% of GDP to 1.3%, roughly the regional average. Nonetheless, the army has retained enough influence to resist nominal budget cuts.

With 334,000 troops at its disposal, the government has had to find ways to deploy them. Brazil leads the UN's stabilisation mission in Haiti, to which it chips in 1,277 peacekeepers. But its peacekeeping contribution ranks just ahead of neighbouring Uruguay's, whose population is smaller than that of nine different Brazilian cities. For the bulk of its forces, Brazil has in-

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stead adopted what Alfredo Valladão of Sciences Po, a university in Paris, calls a "constabulary mentality"—plugging the gaps left by domestic security bodies.

Many of these operations fall within the army's mission. Federal law grants it policing powers within 150km (93 miles) of Brazil's land border. International gangs have long been drawn to the frontier: Pablo Escobar, a Colombian drug lord, is said to have owned a cargo plane that now sits outside Tabatinga's zoo. The army is also responsible for "law-and-order operations". Troops are a common sight during events like elections or the 2016 Olympics.

However, the army's remit has expanded to mundane police work. Decades of overspending and a long recession have drained the coffers of most Brazilian states. Although just 20% of their requests for soldiers for emergency assistance are approved, they still make up a growing share of the army's workload. During the past year, soldiers have spent nearly 100 days patrolling city streets—double the number from the previous nine years combined.

Most Brazilians seem unfazed by this trend. Unlike politicians and police officers, servicemen are seen as honest, competent and kind. Despite the shadow of the dictatorship, confidence rankings of institutions often put the army at the top.

Soldiers are trying to adapt to their new role. At a training centre in Campinas, near São Paulo, they are subjected to tear-gas and stun grenades, so they know what such weapons feel like before unleashing them on civilians. Residents of Rio's shantytowns bemoan the end of the army's 15-month mission to evict gangs. Once they left, the police resumed their trigger-happy ways. Soon the gangsters were back, too.

Nonetheless, blurring the lines between national defence and law enforcement is perilous. Soldiers make costly cops: a day's deployment of a few thousand can cost 1m reais (\$300,000) on top of their normal wages. More important, over-reliance on the army is unhealthy for a democracy. Troops are trained for emergencies, not to maintain order day to day. And transforming a last-resort show of force into a routine presence risks undermining public confidence in civilian authorities.

The army itself aspires to a much different role. A draft of the next official defence review is short on specific "threats"—the ➤

► term appears just one-tenth as often as it does in a similar British analysis from 2015—but long on desirable “capabilities”. Principally, it posits, Brazil must protect its natural riches. That risk might sound remote. But if pessimistic forecasts of climate change materialise, lush Brazil might look enticing to desperate foreign powers.

Refocusing the army on this priority is a daunting prospect. First, Brazil will need to strengthen its policing capacity. Mr Jungmann has called for a permanent national guard, starting with 7,000 men, to relieve the load on the army. Michel Temer, the centre-right president, backs this idea.

Beyond that, Brazil's armed forces of yesteryear are a poor fit to combat the threats of tomorrow. To fend off intruders in the vast rainforest or the “Blue Amazon”, as the country's oil-rich territorial waters are known, Brazil will need a flexible rapid-reaction force, able to intervene anywhere at a moment's notice.

That requires modern equipment and small teams of mobile, skilled personnel. Yet two-thirds of ground forces work on contracts that limit them to eight years' service, preventing their professionalisation. Three-quarters of the defence budget goes to payroll and pensions, leaving just a sliver

for kit and maintenance. In the United States, the ratio is the reverse.

Before the recession took root, Brazil was moving towards these ends. In 2015 it agreed to buy 36 Swedish Gripen fighter jets for \$4.7bn. But spending on military equipment has fallen by two-thirds since 2012, leaving a roster of half-baked projects. An effort with Ukraine to build a satellite launch vehicle was scrapped in 2015. A space-based monitoring system intended to detect incursions covers just 4% of the border. A 32bn-real nuclear-powered submarine is nowhere near completion. And the country's only aircraft carrier, never battle-ready, was mothballed in February.

In an age of austerity, even routine operations are coming under strain. Because the air force only provides one supply flight per month to a border garrison in Roraima, a northern state, Gustavo Dutra, its commander, has to charter private aircraft at 2,000 reais per hour. And in January the army was called in to quell prison riots in the state, whose precarious finances have stretched its security budget. General Dutra frets his men may be summoned there again before long. ■

Archaeology in Mexico

Head count

MEXICO CITY

Pioneers of gender equality, the Aztecs sacrificed women as well as men

THE Aztecs were not gracious victors. Their prisoners of war were frequently used for human sacrifice, as part of spectacles in which their hearts would be ripped from their bodies by priests, to be offered, still beating, to the gods. Their heads fared no better, usually ending up in a kind of skull wall, called a *tzompantli* in Nahuatl, the Aztec language. In its typical form it consisted of a platform, with posts connected by crossbeams onto which skulls would be threaded. *Tzompantlis* were generally placed in front of temples, so that friend and foe alike would be awed by the state's power.

In 2015 archaeologists identified the Huey (Great) *Tzompantli*, a particularly impressive version. It stood near the main temple of Tenochtitlán, the Aztec

capital on whose remains Hernán Cortés founded Mexico City after the Spanish conquest in 1521. As the digging season wrapped up last month, researchers announced their newest discovery: a gruesome, circular tower of skulls, which stood at one end of the 34-metre (100-foot) platform. It is thought to be one of two such towers cited in an account of the Huey *Tzompantli* by Andrés de Tapia, who fought alongside Cortés.

Today, the tower is around six metres wide. Researchers have uncovered less than two metres in height, but in its heyday, it was probably far taller. The skulls, stuck together with lime and clay, are mostly male, as would be expected of enemy warriors. But others belonged to women and children—groups whose skulls had not been found before on a *tzompantli*, according to Raúl Barrera, the archaeologist in charge of the excavation.

Even so, their use in the tower ties in with current understanding of certain Aztec ceremonies. Women were sacrificed at feasts and festivals where they were chosen to represent goddesses—on occasion by decapitation followed by flaying. And children were offered to the rain god, Tlaloc, as the tears they shed on the way to their deaths were considered an omen of plentiful rainfall. The adult skulls have holes in the sides, says Mr Barrera, indicating that they were previously displayed on the crossbeams before being moved to the circular tower.

So far, 450 skulls have been identified in the tower. The total in the Huey *Tzompantli* is likely to be in the thousands. However, the Spanish colonisers probably exaggerated how many they had seen. The squeamish would certainly hope so: de Tapia estimated the number of heads on the crossbeams alone at 136,000.



Montezuma's grim harvest

Energy politics in Canada

Graveyard of the pipelines

VANCOUVER

The fall of a provincial government could endanger a national climate pact

CANADA is a country of balancing acts. It treasures its reputation as an upstanding global citizen while pumping heavy oil from its tar sands. Its relatively weak federal government must strike compromises among provinces with varying ideologies, cultures and languages. Both of those tasks may have become harder after the fall of the Liberal Party's government in British Columbia (BC) on June 29th.

Among the signature policies of Justin Trudeau, the Liberal prime minister, is an effort to meet Canada's commitments under the Paris accord by requiring its provinces to impose a price on carbon. In exchange for the assent of provincial premiers, he approved three big energy projects, including a pipeline that would ship oil from Alberta to BC's Pacific coast. By tripling exports to overseas markets, this would reduce Canada's economic dependence on the United States.

BC pioneered the trade-off Mr Trudeau would later trumpet. Since 2001 it has been ruled by the provincial Liberal Party—which sits to the right of its federal namesake, because the Conservatives, Canada's national centre-right party, are all but defunct in BC, leaving the Liberals as the only ►

▶ home for their voters. In 2008 BC became the first jurisdiction on the continent to introduce a carbon tax, offsetting the revenue by cutting levies on personal and corporate income. The BC Liberals also approved the oil pipeline.

On May 9th the Liberals, led by Christy Clark, won their fifth straight election, securing 43 of the 87 seats in the provincial Parliament. However, they lost four seats and fell short of a majority. Although rural voters remained loyal to the Liberals, those in Vancouver, home to roughly half of BC's population, flocked to the left-wing New Democrats (NDP) and Greens. Together,

the two leftist parties could eke out the narrowest of majorities, 44 seats to 43. Both said they would oppose the pipeline.

Ms Clark, the premier since 2011, did her best to hang on to power. She promised to adopt many of the NDP's proposals, including raising spending on the poor, adding beds to nursing homes and ending tolls on bridges. Nonetheless, the opposition was desperate to dethrone her. She lost a confidence vote on June 29th.

The Liberals' defeat is not a death knell for the pipeline. The first piece of legislation for the incoming coalition is a ban on donations to provincial political parties by

companies and unions, and John Horgan, the new premier, says he will focus on increasing funding to combat the abuse of fentanyl, a dangerous opioid. Moreover, the pipeline's fate depends mainly on support from the federal government. Mr Trudeau has shown no sign of wavering.

However, the project was already behind schedule because of regulatory delays. The new government could easily extend them, by filing new legal challenges to bolster existing injunctions. If BC manages to forestall the pipeline for long enough, support from the right for Mr Trudeau's grand bargain could wither in a hurry. ■

Bello | Bird-watching in FARClan

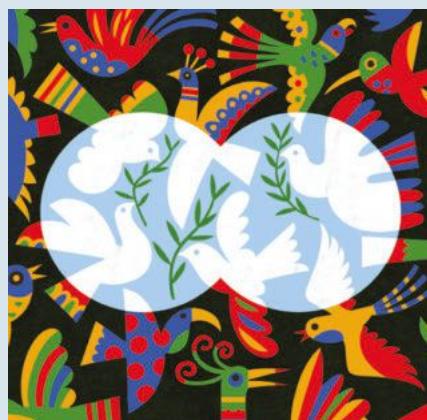
Colombia's future involves fewer terrorists and more ecotourists

THE dirt road that links the small town of Vista Hermosa in the department of Meta, in south-eastern Colombia, to the village of Santo Domingo is a slow and bone-breaking drive. But its tedium is relieved by magical bird life. Hoatzins, a kind of tropical pheasant, flap noisily between copses; kingfishers flash like jewels above the streams that gurgle down from the Sierra de la Macarena, an imposing outcrop of the Andes. Hawks hover above while parrots flit noisily by.

Colombia is to birds what Ascot is to hats; the number and variety are extraordinary, and many are photogenic. It has over 1,900 different species, more than any other country. At least 270 are endemic or near-endemic. The Sierra Nevada de Santa Marta, an isolated, snowcapped massif rising sheer out of the Caribbean, is a particularly rich aviary. It is home to some 15 species, including a pygmy owl, a mountain tanager and a foliage gleaner, which are found nowhere else.

Few outsiders have enjoyed this avian paradise. Until recently, Colombia, geographically challenging and historically conflict-ridden, received little international tourism. This has started to change in the past decade. In 2016, 1.9m tourists visited, double the number of 2005. Tourism has become the second-biggest source of foreign exchange (\$4.2bn last year), trailing oil but ahead of coffee, bananas and flowers.

That is still well behind Peru, for example. But Colombia has no single iconic attraction such as Machu Picchu. Instead, it offers natural beauty and ecological wealth: it has more varieties of orchid than anywhere else, too. However, many of the most diverse areas in the country have remained inaccessible for tourists because they suffered armed conflict involving the security forces, right-wing pa-



ramilitaries (who demobilised a decade ago) and the leftist guerrillas of the FARC.

Last year the FARC and the government of President Juan Manuel Santos signed a peace agreement. On June 27th, in a ceremony at Mesetas, not far from Vista Hermosa, the FARC marked the handover to UN monitors of their 7,322 personal weapons. Violence is not quite over: a couple of small leftist armed groups and some powerful criminal gangs remain. But the agreement with the FARC is a huge step. Last year Colombia's rate fell to its lowest level in 40 years.

Tourism can potentially offer a fairly swift peace dividend. And that is where bird-watching offers an important business niche. A study published last year that surveyed more than 5,000 members of the Audubon Society, the biggest bird-conservation charity in the United States, found that many would be willing to pay more to visit Colombia than, for example, Costa Rica, an established destination for ecotourists. The authors' conservative estimate was that bird tourism could generate revenue of \$46m a year, and create at least 7,500 new jobs.

Some of this is starting to happen. Last year the northern Colombia birding trail opened, a joint effort involving Audubon, the United States Agency for International Development and Colombian NGOs. They trained local guides and businesses, catalogued the route and are promoting it. Colombia's government has adopted a national bird-tourism strategy, which includes opening another four trails around the country. It is paying for bird hides and observation towers along the routes.

It will take co-ordination between public and private bodies and local organisations to put Colombia firmly on the birding map. Although some new eco-lodges have been built, environmentally friendly places to stay remain "few and far between", says John Myers, one of the authors of the study. There is a shortage of specialist tour operators. And tourism must go hand in hand with conservation. The International Union for the Conservation of Nature, a Swiss-based body, reckons that the Sierra Nevada de Santa Marta is "the most irreplaceable site in the world for threatened species".

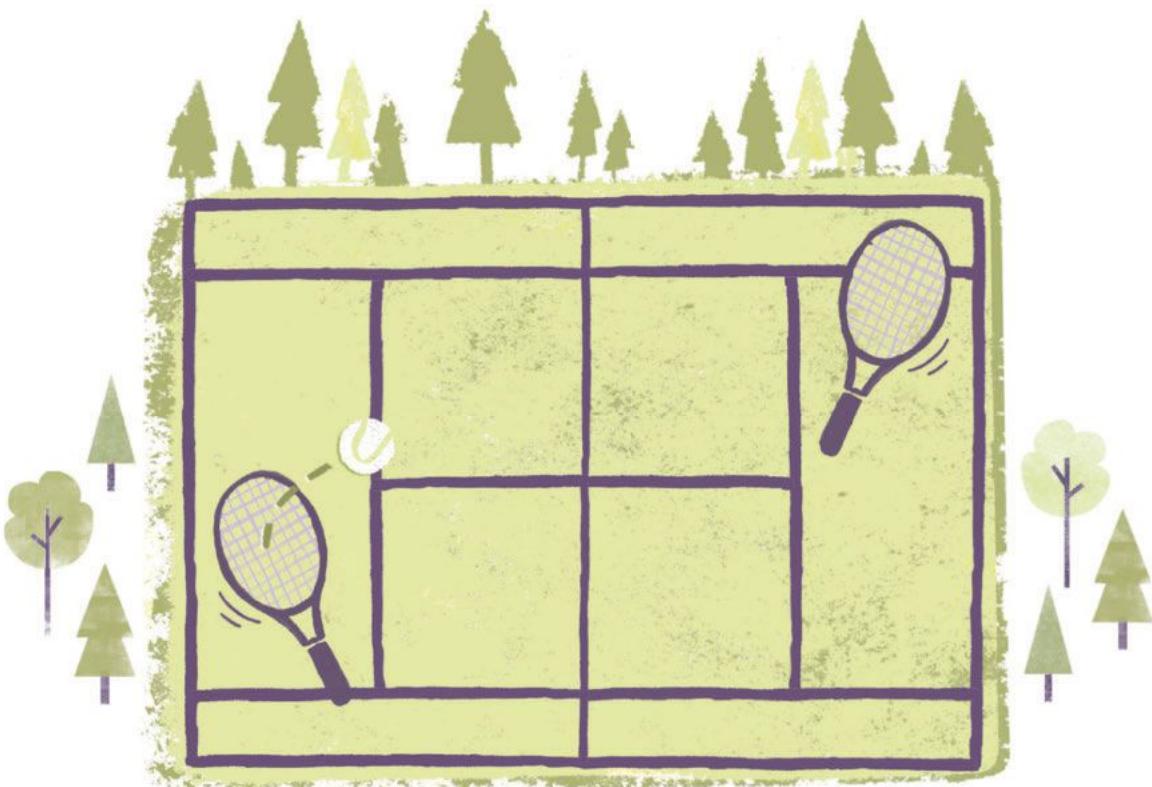
Not all that long ago the FARC roamed the Sierra Nevada. Could some of its former fighters, now gathered in temporary camps, find new, peaceful livelihoods as birding guides or in conservation? Most are from rural families. Achieving this would require both an effort by the government and a change of attitude by the FARC. Each former fighter should get a parcel of land, Iván Márquez, one of the group's leaders, told *Semanas*, a news-magazine, this week. That is a vision of peasant farming from the 1960s, when the FARC took up arms. Tourism and ecosystem services offer far more promising returns for the rural economy. Someone should tell Mr Márquez that twitchers bring riches.

The new old



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The new old

Ageing populations could be a boon rather than a curse. But for that to happen, a lot needs to change first, argues Sacha Nauta

“NO AGE JOKES tonight, all right?” quipped Sir Mick Jagger, the 73-year-old front man of the Rolling Stones (pictured), as he welcomed the crowds to Desert Trip Music Festival in California last October. The performers’ average age was just one year below Sir Mick’s, justifying his description of the event as “the Palm Springs Retirement Home for British Musicians”. But these days mature rock musicians sell: the festival raked in an estimated \$160m.

There are many more 70-somethings than there used to be, though most of them are less of a draw than the Stones. In America today a 70-year-old man has a 2% chance of dying within a year; in 1940 this milestone was passed at 56. In 1950 just 5% of the world’s population was over 65; in 2015 the share was 8%, and by 2050 it is expected to rise to 16%. Rich countries, on which this report is focused, are greying more than the developing world (except for China, which is already well on the way to getting old); the share of over-65s in the OECD is set to increase from 16% in 2015 to 25% by 2050. This has knock-on effects in older age groups too. Britain, which had just 24 centenarians in 1917, now has nearly 15,000.

Globally, a combination of falling birth rates and increasing life-spans will increase the “old-age dependency ratio” (the ratio of people aged 65 or over to those aged 15–64) from 13% in 2015 to 38% by the end of the century. To listen to the doomsayers, this could lead not just to labour shortages but to economic stagnation, asset-market meltdowns, huge fiscal strains and a dearth of innovation. Spending on pensions and health care, which already makes up over 16% of GDP in the rich world, will rise to 25% by the end of this century if nothing is done, predicts the IMF.

Much of the early increases in life expectancy were due not to people living longer but to lower death rates among infants and children, ►►

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ACKNOWLEDGMENTS

Apart from those mentioned in the text, the author is grateful for their help in the preparation of this report to Steven Barnett, John Beard, David Blake, Matt Carey, Dawn Carr, Yunsoo Cho, Angus Deaton, Mark Fawcett, Ben Franklin, Eric French, Jochen Frey, Mary Furlong, Ron Grether, Russell Hogenbotham, Dean Hochlaf, Tim Hodgson, Paul Irving, Stephen Johnston, Hyo-Jin Kim, Seunghyun Lee, Ripley Martin, Les Mayhew, Ron Mock, Miguel Ortiz, James Poterba, Walter Reinl, Lorna Sabbia, Domenico Savarese, Ha Kyung Song, Woo Sang Thak, Anthea Tinker, Eui-Sik Uhm, Ronda Warren, Ho-Jung Yoon and Barbara Zvan.

A list of sources is at
Economist.com/specialreports

► thanks to improvements in basic hygiene and public health. From the start of the 20th century survival rates in old age started to improve markedly, particularly in the rich world, a trend that continues today. More recently, life spans—the estimated upper limits of average life expectancy—have also been increasing. Until the 1960s they seemed fixed at 89, but since then they have risen by eight years, thanks in part to medical advances such as organ replacements and regenerative medicine. The UN estimates that between 2010 and 2050 the number of over-85s globally will grow twice as much as that of the over-65s, and 16 times as much as that of everyone else.

Warnings about a “silver time bomb” or “grey tsunami” have been sounding for the past couple of decades, and have often been couched in terms of impending financial disaster and intergenerational warfare. Barring a rise in productivity on a wholly unlikely scale, it is economically unsustainable to pay out generous pensions for 30 years or more to people who may have been contributing to such schemes only for a similar amount of time. But this special report will argue that the longer, healthier lives that people in the rich world now enjoy (and which in the medium term are in prospect in the developing world as well) can be a boon, not just for the individuals concerned but for the economies and societies they are part of. The key to unlocking this longevity dividend is to turn the over-65s into more active economic participants.

This starts with acknowledging that many of those older people today are not in fact “old” in the sense of being worn out,

Making longer lives financially more viable requires a fundamental rethink of life trajectories

sick and inactive. Today’s 65-year-olds are in much better shape than their grandparents were at the same age. In most EU countries healthy life expectancy from age 50 is growing faster than life expectancy itself, suggesting that the period of diminished vigour and ill health towards the end of life is being compressed (though not all academics agree). Yet in most countries the age at which people retire has barely shifted over the past century. When Otto von Bismarck brought in the first formal pensions in the 1880s, payable from age 70 (later reduced to 65), life expectancy in Prussia was 45. Today in the rich world 90% of the population live to celebrate their 65th birthday, mostly in good health, yet that date is still seen as the starting point of old age.

This year the peak cohort of American baby-boomers turns 60. As they approach retirement in unprecedented numbers, small tweaks to retirement ages and pensions will no longer be enough. This special report will argue that a radically different approach to ageing and life after 65 is needed.

The problems already in evidence today, and the greater ones feared for tomorrow, largely arise from the failure of institutions and markets to keep up with longer and more productive lives. Inflexible labour markets and social-support systems all assume a sudden cliff-edge at 60 or 65. Yet in the rich world at least, a new stage of life is emerging, be-

tween the end of the conventional working age and the onset of old age as it used to be understood.

Those new “young old” are in relatively good health, often still work, have money they spend on non-age-specific things, and will run a mile if you mention “silver”. They want financial security but are after something more flexible than the traditional retirement products on offer. They will remain productive for longer, not just because they need to but because they want to and because they can. They can add great economic value, both as workers and as consumers. But the old idea of a three-stage life cycle—education, work, retirement—is so deeply ingrained that employers shun this group and business and the financial industry underserve it.

What’s in a name?

History shows that identifying a new life stage can bring about deep institutional change. A new focus on childhood in the 19th century paved the way for child-protection laws, mandatory schooling and a host of new businesses, from toymaking to children’s books. And when teenagers were first singled out as a group in America in the 1940s, they turned out to be a great source of revenue, thanks to their willingness to work part-time and spend their income freely on new goods and services. Such life stages are social constructs, but they have real consequences.

This report will argue that making longer lives financially more viable, as well as productive and enjoyable, requires a fundamental rethink of life trajectories and a new look at the assumptions around ageing. Longevity is now widespread and needs to be planned for. The pessimism about ageing populations is based on the idea that the moment people turn 65, they move from being net contributors to the economy to net recipi-

ents of benefits. But if many more of them remain economically active, the process will become much more gradual and nuanced. And the market that serves these consumers will expand if businesses make a better job of meeting their needs.

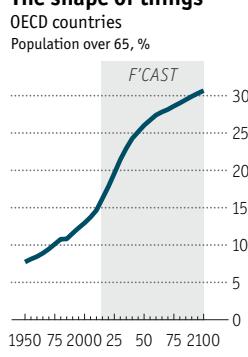
The most important way of making retirement financially sustainable will be to postpone it by working longer, often part-time. But much can be gained, too, by improving retirement products. The financial industry needs to update the life-cycle model on which most of its products and advice are based. Longer lives require not just larger pots of money but more flexibility in the way they can be used.

As defined-benefit pension schemes become a thing of the past, people need to be encouraged to set aside enough money for their retirement, for example through auto-enrolment schemes. It would also help if some of the better-off pensioners spent more and saved less. They would be more likely to do that if the insurance industry were to improve its offerings to protect older people against some of the main risks, such as getting dementia or living to 120. Many people’s biggest asset, their home, could also play a larger part in funding longer lives.

And for the oldest group, increasingly there will be clever technology to help them make the most of the final stage of their lives, enabling them to age at home and retain as much autonomy as possible. Perhaps surprisingly, products and services developed mainly for the young, such as smartphones, social media, connected homes and autonomous cars, could also be of great benefit to the older old.

But the report will start with the most obvious thing that needs to change for the younger old: the workplace. Again, there are parallels with young people. Working in the gig economy, as so many of them do, may actually be a better fit for those heading for retirement. ■

The shape of things



Sources: UN; *The Economist*



Working on

Footloose and fancy-free

The recently retired may have a promising future as entrepreneurs and giggers

IN THE SHADOW of towering apartment blocks in Nowon-gu, a suburb of Seoul, employees of CJ Logistics, a large South Korean delivery company, gather at the local welfare centre. A truck pulls up and the group, mostly men in their 70s, leap to their feet to unload parcels. "It's far better than staying at home," says Eun Ho Lee, a chirpy 77-year-old who in his younger days ran a bedlinen business. Like so many of his generation in this country, he has no pension and lives mainly on his savings, so the 800,000-900,000 won (\$700-800) he makes from this job are welcome. He cannot imagine himself ever leaving.

There are drawbacks to older workers, admits a local supervisor; they carry fewer boxes and are sometimes slower than their younger colleagues. But since the company pays its employees per delivery, that does not matter, and the unhurried chattiness of this side of the business, the "Senior Parcel Delivery Service", seems to appeal to customers.

In the rich world, and especially in Europe, the debate about retirement tends to focus on intergenerational conflict: pay-as-you-go public pension schemes mean that the young, in effect, are paying for the old. But if older people were to carry on working for longer, the resulting economic boost would benefit young and old alike, generating extra growth. The average 65-year-old in the rich world can now expect to live for another 20 years, half of them free of disability. If people in "older" countries, such as Germany, Japan and Spain, were to delay retirement by 2-2.5 years per decade between 2010 and 2050, it would be enough to offset the effect of demographic change, according to Andrew Mason, of the University of Hawaii, and Ronald Lee, of the University of California, Berkeley.

Older workers may be forgiven if they feel confused about whether or not they are wanted. In the period after the second world war, Britons preparing for retirement were told that "your economy needs you." Then, from the 1970s onwards, they (and many fellow Europeans) were urged to make way for the young,

causing large numbers to take early retirement even as life expectancy was rising. At the same time fertility rates were dropping, conjuring up the risk of future labour shortages. By the 1990s governments and employers realised they were making pension promises they would not be able to keep. The idea that there is only a finite number of jobs to go round—the "lump of labour"—was more widely exposed as a fallacy. It became fashionable to argue that "we must work till we drop."

A work ethic like no other

The baby-boomer generation, known for its energy and assertiveness, has embraced that creed, but on its own terms. Many of its members had always been planning to work past their formal retirement age, both for the fun of it and because they needed the money. Aegon, an insurer, found in a recent survey that more than half of workers over 55 were hoping for a flexible transition to retirement, but only a quarter said their employers would let them work part-time. Age discrimination in both retention and recruitment is also a serious obstacle to keeping people in work for longer. One American study involving 40,000 fictitious cvs sent in response to advertised vacancies for low-skilled jobs found that applicants between 49 and 51 had 19% fewer callbacks than those aged 29 to 31 with otherwise identical cvs. For the 64-66 age group the difference was 35%.

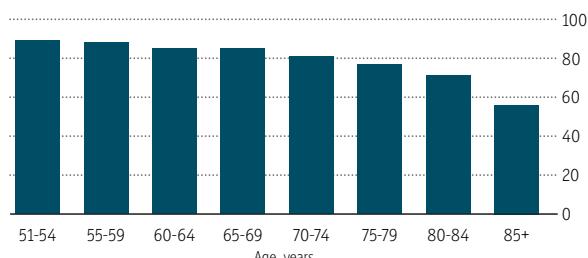
In response to such discrimination and inflexibility, some boomers try their luck in the gig economy. Though gigging is usually seen as something that young people do, in many ways it suits older people better. They are often content to work part-time, are not looking for career progression and are better able to deal with the precariousness of such jobs. A quarter of drivers for Uber, an on-demand taxi service, are over 50. More broadly, a quarter of all Americans who say they work in the "sharing economy" are over 55, according to PwC, a consultancy.

"Now I manage my own future. I manage my own life," says Aykut Durgun, a 60-year-old former retail manager who drives his beautifully kept Mazda 5 for Uber and Lyft, another ride-hailing firm, in San Francisco. The change from managing 40 people to being ordered around by a 20-year-old in the back seat took some getting used to, but he loves the socialising, flexibility and challenge of navigating the city's grid. The money isn't bad either; he earns about \$6,000 a month before tax and sees no reason to slow down: "It's the best way to prevent dementia."

It helps that the gig economy has moved well beyond delivering pizzas or people. Businesses that offer on-demand lawyers, accountants, teachers and personal assistants are finding plenty of recruits among older people. Wahve (short for Work At Home Vintage Experts), a New York-based company, provides work for

Hale and hearty

Americans healthy enough to do a job or housework
2013, % of total



Source: "Heterogeneity in Healthy Aging", by D. Lowsky et al, 2013, Journal of Gerontology

► hundreds of former finance and insurance professionals, mostly in their 60s and 70s. "Carriers and brokers have huge talent problems, it takes years to train an underwriter," says Sharon Emek, the firm's 71-year-old founder. She realised boomers were retiring from the workforce but didn't want to stop working; so now they are "pre-tiring".

Startup generation

The boomers are also becoming entrepreneurs. In America those between 55 and 65 are now 65% more likely to start up companies than those between 20 and 34, according to the Kauffman Foundation. In Britain 40% of new founders are over 50, and almost 60% of the over-70s who are still working are self-employed, which says as much about the limitations of conventional workplaces as about these seniors' entrepreneurial spirit.

In Japan and South Korea, which are among the world's fastest-ageing societies, large companies tend to get rid of older workers as they approach 60, and many of those workers then start a business. Some employers, including Hyundai, now also help older workers make the transition to life as an entrepreneur.

But "it's not employers' job to save society. They need to see the business case for older workers," says Laura Carstensen of

Stanford University. That requires a few myths about older workers to be tackled; mainly that they are less able-bodied, inventive and productive than the young. This may have been true 50 years ago, but both the workplace and the workers have changed. Over the past decades the point at which workers are physically no longer able to work has shifted much further up the age range. The idea that only the young can innovate has also been successfully challenged.

Whether older workers are less productive than younger ones is harder to say. In fields where physical prowess matters, such as sports, it is obvious. But in many areas performance does not necessarily decline with advancing age. And even in jobs where it might, there are often ways of getting round it.

As Gernot Sendowski, head of diversity at Deutsche Bank in Germany, explains: "In operational work older employees can be slower, but they make up for that with fewer mistakes, so in total they are no less productive. If we had teams with only older people, they'd be too slow; if we had teams with only younger ones, there'd be too many mistakes." The bank's answer is to deploy multigenerational teams.

Mercer, a consultancy, has also found that older workers' contribution is more likely to show up in group performance than in traditional individual performance metrics (how many widgets someone makes per hour). "It seems the contribution of older workers materialises in the increased productivity of those around them," says Haig Nalbandian, a partner in the firm. In repetitive work, productivity does seem to fall with age, but in knowledge-based jobs, age seems to make no difference to performance, finds Axel Börsch-Supan, of the Max-Planck Institute in Munich. And when such jobs also require social skills (as in the case of financial advisers, for example), productivity actually increases with age, he adds. That should give older knowledge workers an advantage in the world of artificial intelligence (AI), where social skills may be at a premium.

All this bodes better for high-skilled older workers than for low-skilled ones. "Who gets to stay healthy is not random; education is by far the top predictor," says Ms Carstensen. And more highly educated Americans are more likely to work on for longer, write David Bloom, from Harvard University, and colleagues. It has also become clear that some work can be good for both physical and cognitive health. This helps explain the substantial gap in both general and healthy life expectancy between skilled and unskilled workers, which could grow wider unless everyone has access to lifelong learning to make them more adaptable.

Fortunately the sort of changes to working life that older workers are looking for—flexible hours, a workplace designed with wellness in mind, the opportunity to keep learning—are also just the sort of things that millennials demand from prospective employers. And if employers keep their costs down by getting

Rock around the clock

The other gig economy

ROCKERS ARE NO different from the rest of us: they, too, need to work for longer to maintain a decent standard of living in retirement. Previous generations could rely on record sales and royalties to fund their pensions, but digital disruption has largely closed off such revenues, so the performers have to get back on the road. That involves new financial risks. Rock stars have always been risky assets; one study suggests that they are 1.7 times as likely to die as others of the same age. Now that revenues from concerts have become so much more important, the potential losses to tour organisers have ballooned. That applies all the more if the performers are a bunch of 70-year-olds who may not always have treated their bodies as temples.

This is where financiers come in. Concert organisers and others who depend on mature rockers for their income are more likely to insure against the risk that their performers might not show up, says Jonathan Thomas, a Lloyd's underwriter. He has seen this market for "non-appearance products" grow as musicians get older. Film studios take out similar cover for mature stars. Disney must have been relieved to have done so for Carrie Fisher, who died at the age of 60 last year before completing filming on all the "Star Wars" films she was contracted for, triggering a claim which could go up to \$50m.

Rockers themselves are also taking

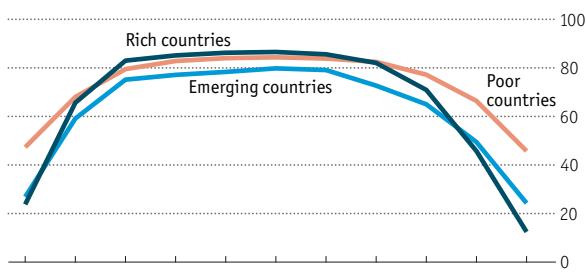
out insurance against the most common ailments that could stop them from carrying on working. Aside from overdosing, typical career-ending injuries used to include electrocution (all that electrical equipment), but now are more likely to be osteoporosis and loss of hearing. The Rolling Stones' lead guitarist, Keith Richards, who is 73, has insured his hands for \$1.6m.

Underwriters are ready to accept their clients' lifestyle and work hazards, arguing that where there is risk, there is reward—if the price is right. "It's a badly misunderstood market, and one 70-year-old rocker is not like the other; there's plenty of scope for savvy underwriting," says one of them. And the insurers do take precautions. Exclusions for pre-existing conditions, especially those related to alcohol abuse or failing livers, are common.

Rockers of advanced years are also good for busting stereotypes about older workers. Their energy levels may be lower, but they often pace themselves more and look after themselves better than in their younger days; not so much sex and drugs, more tea and yoga. Sometimes such moderation is imposed by their insurers. The Stones "14 on Fire" tour contract is said to have contained exclusion clauses for a variety of dangerous pursuits. Besides, says the underwriter, by the age of 70 some of the riskier rockers have already been weeded out by the Grim Reaper.

Keep going

Labour-market participation rate by age, % of population



Source: International Labour Organisation

rid of age-related perks, such as seniority-based pay and promotion, they will have less reason to shun older people—and make the workplace fairer and more productive for everyone.

One large economic contribution made by older people that does not show up in the numbers is unpaid work. In Italy and Portugal around one grandmother in five provides daily care for a grandchild, estimates Karen Glaser from King's College London. That frees parents to go out to work, saving huge sums on child care. In Britain unpaid older caregivers save the state around £11.4bn per year, according to Age UK, a charity.

Apart from providing support within the family, a quarter of people also aspire to doing some voluntary work after retirement, according to a recent study by Aegon. In America the over-55s formally volunteered 3.3bn hours in 2016, making an economic contribution worth \$78bn, says the Corporation for National and Community Service, a federal agency. A number of studies have found that this benefits not only the good causes they work for but also their own physical and mental health.

But there is another way in which older people support the economy: by spending their money. ■

Consumers**Don't call us silver****From adventure travel to dating websites, older consumers display resolutely young tastes**

"THERE'S NOTHING WRONG with bingo and chicken," says Tom Kamber, before explaining why you won't find either in the senior centre he runs in Manhattan. Instead, members of the Senior Planet Exploration Centre are given VR goggles and other digital gadgets to play with, though most head straight for a wall of computers to check their Facebook accounts or shop online. A group of 15 seniors, some in their 80s, clad in sportswear, huddle around their fitness coach. People come for classes on starting their own businesses, using smartphones, booking travel on the web and setting up online dating profiles. "We just demystify the technology and away they go," explains Mr Kamber.

Businesses could learn from this. With longer lives, more free time and a lot of cash, older people clearly present a "silver dollar" opportunity. In America the over-50s will shortly account for 70% of disposable income, according to a forecast by

Nielsen, a market-research organisation. Global spending by households headed by over-60s could amount to \$15tn by 2020, twice as much as in 2010, predicts Euromonitor, another market-research outfit. Much of this will go on leisure.

Yet the market has failed to respond to this opportunity, even though it has been clear for a long time that the baby-boomers would start to retire in larger numbers, in better health and with more money to spend than any previous generation. They feel much younger than their parents did at their age, and most of them have no intention of quietly retreating from the world. "Retirement used to be a brief period between cruise ships and wheelchairs, with a bout of norovirus," says Joe Coughlin, who runs the AgeLab at the Massachusetts Institute of Technology. Now it has become a complete new stage of life, as long as childhood or mid-life, which boomers want to structure very differently; "yet we still offer my grandfather's retirement."

Over-60s adventure travel has become a booming business opportunity. In America more than 40% of adventure travellers are over 50, according to the Adventure Travel Trade Association. In Britain older travellers are the largest spenders in the industry, with the fastest growth in the 65-74 age group. Instead of comfortable cruises or bus tours, they demand action, from expeditions to the Arctic to cultural trips to Asia.

Jane Dettloff, a 73-year-old from Minnesota, has just returned from a two-week cycling tour in Chile. "The culture, the cuisine, the beaches and—oof—the Andes wine!" By day the 16 women, aged 61 to 87, pedalled, chatted and "felt like young girls again". By night they enjoyed "wine-o'clock, without the whining about pills". The travel company that organised the tour, VBT, does not explicitly bill itself as a specialist in senior travel, but offers subtle hints: "at your own pace", "since 1971", "good wine". More than 90% of its customers are over 50.

Out of date

Another emerging market is dating. Whereas overall divorce rates are falling in some countries, including America, Australia and Britain, "silver splits" are soaring as new pensioners suddenly face the prospect of spending a lot more time with their partner. Americans over 60 are now getting divorced at twice the rate as they were in 1990, and Britons at three times the rate, write Lynda Gratton and Andrew Scott in "The 100-Year Life". More than a quarter of the members of Match.com, a popular dating website, are between 53 and 72, and that group is growing faster than any other.

Older people seem more concerned than younger ones about the risks of online dating, prompting the setting up of specialised sites such as Stitch, an online companionship site with 85,000 members. "There's more fun to be had after 50," proclaims its promotional video, adding that "it's all very safe." Older customers seem more willing to pay for online memberships than the young, provided they add value. Stitch screens members and organises social events, explains Andrew Dowling, the co-founder. "Most people want companionship, but dating does change with age."

Jody, from New Jersey, was inspired by her nieces, who all use dating apps, and ended up at a Stitch "drinks and mingling" event in a trendy New York bar. It turned out to be ten women sipping Margaritas, laughing as they swapped experiences of disastrous online dates and debating whether they would be more likely to meet a man if they went in for predominantly male activities such as mountain biking or golf.

Women spend more on trying to find a companion than men, because in the higher age groups there are more of them (in the rich world they live an average of five years longer), and they are more likely to be single. In 2014 nearly three-quarters of ►

American men over 65 were married and only one in ten was widowed; of women in the same age group, under half were married and one in three was widowed. In Europe, too, women over 65 are more than twice as likely as men to be living alone. This can be problematic if they lack adequate savings, but also opens up new demand for all sorts of things that hardly anyone would have imagined a generation ago.

One is different sorts of accommodation. With longer time horizons ahead of them, the younger old are spurning lonely granny flats and looking for something more convivial, closer to a bachelor pad. "Retired golden girl seeks two cosmopolitan, easy-going, positive people with a (wacky) sense of humour to share this lovely, charming property," starts an ad on golden-girls-network.com, a single-senior housemate-finding website.

But businesses that want to get into this new market of the younger old should note that they are fussy. They do not see themselves as old, and will respond badly to ads specifically targeted at older people (as Crest found when it launched a toothpaste for the 50+ age group). The over-50s are also intolerant of websites or gadgets that underdeliver, says Martin Lock of SilverSurfers.com, the largest over-50s community in Britain: "If something doesn't work, they'll be the first to leave."

Between now and 2030, most of the growth in consumption in the developed world's cities will come from the over-60s, according to McKinsey, a consultancy. So this is the market to go for; but to provide the wherewithal, the financial industry will first have to reinvent itself. ■

Finance

Your money and your life

As lives get longer, financial models will have to change

IN 1965 ANDRÉ-FRANÇOIS RAFFRAY, a 47-year-old lawyer in southern France, made the deal of a lifetime. Charmed by an apartment in Arles, he persuaded the widow living there that if he paid her 2,500 francs (then about \$500) a month until she died, she would leave it to him in her will. Since she was already 90, it seemed like a safe bet. Thirty years later Mr Raffray was dead and the widow, Jeanne Louise Calment, was still going strong. When she eventually passed away at 122, having become the world's oldest person, the Raffray family had paid her more than twice the value of the house.

Underestimating how long someone will live can be costly, as overgenerous governments and indebted private pension schemes have been discovering. They are struggling to meet promises made in easier times. Public pensions are still the main source of income for the over-65s across the OECD, but there are big differences between countries (see chart, next page). In both America and Britain public provision replaces around 40% of previous earnings, but in some European countries it can be 80% or more. Where it makes up a big share of total pension income, as in Italy, Portugal and Greece, a shrinking workforce will increasingly struggle to finance a bulging group of pensioners.

Private pension schemes, which supplement state provision, have been shifting from defined-benefit plans, where workers are promised a fixed amount of income in retirement, to defined-contribution plans, where workers themselves take on the risk. Such schemes are good for employers but tricky for individ-



uals, who become personally responsible for ensuring they do not outlive their savings. The new stage of life now emerging between work and old age adds a further complication. To accommodate these changes, the financial industry needs an overhaul.

First, it has to update the rigid three-stage life-cycle model on which most of its products are based. Second, it needs to resolve two opposite but equally troubling problems: undersaving during working life and oversaving during retirement. The first puts pressure on public provision, the second leads to underconsumption as cash is left under the mattress. Third, a more creative approach is needed to the range of assets that pensioners can draw on, including their homes, which have so far played little part in provision for old age.

"In a multi-stage life, the idea of hitting a cliff-edge retirement at 65 and then living off an annuity is outdated," says Alastair Byrne, from State Street Global Advisors, a money manager. His clients, many of whom intend to work past normal retirement age, are asking for more flexibility to get at their savings at a younger age. They also want a secure income for the last phase of life. "It's not at all obvious that the traditional pension industry, which still sees life as a three-stage event, will survive this transition," says Andrew Scott of the London Business School.

Nothing in the kitty

Many people simply do not save enough. Roughly 40% of Americans approach retirement with no savings at all in widely used retirement accounts such as IRAs or 401(k)s. In Britain 20% of women and 12% of men between 55 and 65 have no retirement savings, according to Aegon. Yet with the demise of defined-benefit schemes, the increase in the retirement age and the steady rise in life expectancy, most of today's workers will need to save more than their parents did. Some of them do not earn enough to put money aside, but for many the problem is in the mind: they consistently underestimate how long they will live and overestimate how long their money will last. As more people become self-employed, getting them to save for their old age becomes ever more important.

One solution is to allow retirement funds to be used more flexibly, which may encourage people to save more. But nudges are unlikely to be enough. "People need a push," says Myungki Cho, from Samsung Life's Retirement Research Centre in Seoul. Some countries, such as Denmark and the Netherlands, provide such a push by making enrolment in pension schemes more or less mandatory. Short of that, auto-enrolment, recently intro-



Often people just need the confidence that they really can afford to spend a little more on themselves

duced in Britain, and auto-escalation (increasing contributions over time) can also make a difference.

At the same time many pensioners spend less than they can afford, which creates its own problems. Ronald Lee and Andrew Mason have found that in most rich countries the elderly are net savers. Since they cannot be sure how long they will live and what their state of health will be, and have no way of predicting inflation, interest rates and markets, some caution is clearly in order. But Chip Castille, from BlackRock, an asset manager, thinks oversaving is often unintentional. "It would be an extraordinary coincidence if you saved exactly enough for retirement," he says.

This gets to the heart of why some economists are pessimistic about greying societies. In a phase when older people should be spending freely, many are accumulating wealth, says David Sinclair, of the ILC UK. He thinks the greater pension freedoms granted in Britain in 2015 are more likely to lead to frugality rather than spending sprees.

Such "accidental" oversaving will increase in a world of defined-contribution plans, predicts Tony Webb, an economist at the New School, in New York City. Given a choice, people will assemble their own kitties rather than buy annuities that provide an agreed lifetime income in exchange for a lump sum. If they die young, the money will be a windfall for their heirs. Similarly, since money locked up in homes is difficult to get at during the owner's lifetime, much of this too will be passed on, Mr Webb adds. Raising inheritance-tax rates could make a difference, but better insurance is equally important. This dormant wealth, which is often neither invested nor spent, is stopping many of the younger old from realising their full economic potential. "Often people just need the confidence that we've run the numbers and that they really can afford to make that donation to a charity, or spend a little more on themselves," says Kai Stinchcombe, from True Link, a financial-advice firm for pensioners.

Take care

Depending on where people live, how much they earn and whether they have family willing to care for them, one of the greatest financial risks of ageing can be end-of-life care expenditure. A 50-year-old American has a better-than-even chance of ending up in a nursing home, estimate Michael Hurd and colleagues from RAND, a research organisation in America. In Britain an official review in 2011 of long-term care reckoned that a quarter of older people in Britain needed very little care towards the end of life but 10% faced care costs in excess of £100,000.

Most countries will need to find a mix of public and private provision to pay for long-term care costs. A well-functioning insurance market should be an important part of this, but care insurance has mostly failed to take off. American providers who piled in too enthusiastically in the 1990s got burnt when customers needed more care than expected, and are still haunted by the experience. Low rates of return on bonds have not helped.

Every country has its own peculiarities, but four common factors help explain the market failures. First, the future of public care is uncertain. Second, despite or because of this, many people think they do not need insurance because the state or their family will look after them. Third, the market is subject to "adverse selection"—the likelihood that insurance will appeal only to those most at risk of needing care. And fourth, care costs are unpredictable and could spin out of control in the future. As a result, insurers either avoid the care market altogether, or charge exorbitant premiums and add lots of restrictions.

As with any big risk, pools need to be large to make protection products work. The easiest way to achieve this is to make insurance compulsory, as in Germany. One alternative is auto-enrolment in a public-private scheme with an opt-out, a method with which Singapore is experimenting. At a minimum, some government intervention—such as providing a backstop for the most catastrophic risks—seems to be required for the market to establish itself. But perhaps the biggest problem is that government policies chop and change far too often.

Insurers could help, not least by offering more hybrid products such as life insurance with the option of an advance on the payout if customers need care, or annuities that pay a lower-than-usual income but convert to a higher-than-usual rate if pre-agreed care levels become necessary. And there is a need for clearer guarantees against unexpected premium hikes. Most importantly, though, insurers will need to persuade people to enroll long before they are likely to require any care.

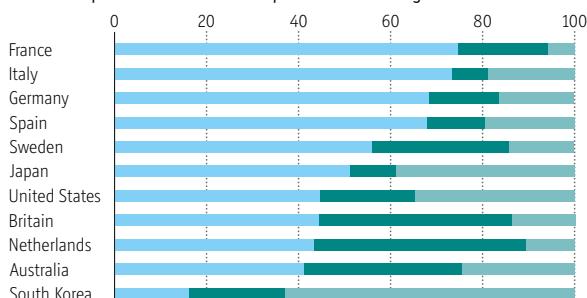
By far the most common reason for someone needing long-term care is that they are suffering from Alzheimer's or some other form of dementia. Globally around 47m people have dementia. Without a medical breakthrough this number could grow to 132m by 2050, according to the World Alzheimer's Report. One study found that people suffering from dementia accounted for four-fifths of all those in care homes worldwide.

In the absence of other options, for many people the ultimate insurance is their home, though few homeowners see it that way. In the rich world much of the wealth of lower and middle-income households is tucked away in bricks and mortar. With house prices soaring in many countries, releasing some of this equity could greatly benefit asset-rich but cash-poor pen-

Changing the mix

Sources of income for over-65s, 2012 or latest, % of total

Public pensions Private pensions and savings Work



► sioners, as well as the wider economy.

The most obvious tool for this is a reverse mortgage, which lets homeowners exchange some of their home's equity for a lump sum or a stream of income in retirement. But it is not widely used. In America fewer than 49,000 reverse mortgages were sold last year, most of them provided by only about ten banks. Mis-selling scandals in the early days now seem to have been resolved, says Jamie Hopkins, of the American College of Financial Services, but people find such mortgages scary and worry that they might lose their home. Because of the lack of competition, the products also remain expensive. Mainstream financiers could help expand the market.

In the meantime, entrepreneurial empty-nesters have found another way to sweat their assets: Airbnb. The over-60s are the fastest-growing group of hosts on the home-sharing site and receive the highest ratings. Almost half of older hosts in Europe say the additional income helps them stay in their home.

The longer that people live, the more varied their life cycle will become. Workers will take breaks to look after children or go back to school; pensioners will take up a new job or start a business. Financial providers need to recognise these changing needs and cater for them. That includes helping to fund technology that could vastly improve the final stage of life. ■



Easy once you know how

homes (a model that emerging economies such as China are now beginning to copy). But most old people do not want to live in institutions for long periods, and the cost of such care is exorbitant. So the new buzz phrase is "ageing in place".

That is mostly a good thing, but it does carry risks of its own. An old person's home may be his castle, but if he suffers from bad balance or tends to leave the cooker on, it can become a death trap. Another risk is that the shift will undo the progress in gender equality made in the past few decades. Having to care for elderly family members is already a prime reason for women to drop out of work. Just as women have tended to leave their jobs to care for new babies in their 30s, a second "hole in the pipeline" is appearing around the age of 50. There is no reason why men could not provide such care, but typically it is women who are doing it—though by the age of 75 men in rich countries become much more likely to do their bit, usually for a spouse.

Technology holds great promise to make life better for the elderly, enabling them to retain their independence and live full lives for longer. Equally important, it can lend a helping hand to those who care for them and provide peace of mind. And it should be good for health and care funders because it helps prevent expensive spells in hospitals and care homes. The difficulty lies in deciding who pays. Much of the technology that can improve the last stage of life already exists, but the uncertainty over funding discourages inventors from pursuing good ideas and venture capitalists from investing in them.

Oddly enough, the greatest potential for improving the lives of the elderly lies in technology built for the young. Two broad developments that seem a perfect fit for the lives of millennials—the smart home and the on-demand economy—might well have an even bigger impact on old people.

At first sight, Dolf Honée's tidy brownstone looks like any other house in a sleepy residential street in Oostvoorne, a town west of Rotterdam, in the Netherlands. But a set of eight sensors from Sensara, a tech company, have transformed the 87-year-old's home into a cyber-castle. His children, all in their 50s, keep an eye on when he gets out of bed, goes to the toilet, has a meal or leaves the house, using an app that pings them if anything is wrong. "They're always watching me," jokes Mr Honée, but he feels safer, he says "without feeling spied on as with cameras."

The little things that can cause big trouble

Such a fairly basic version of a smart home can make a big difference to the growing number of older people who live alone and wish to stay where they are. Reinout Engelberts, of Sensara, thinks the main value of such systems is "catching little things before they become big discomforts and big costs for the provider". Increased toilet visits can flag up a urinary-tract infection; changes in gait can predict an impending fall, the leading cause ►

Technology

Tablets for every problem

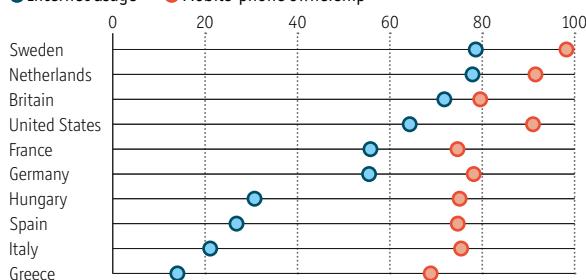
The latest technology is even more beneficial for the old than for the young

NO MATTER HOW much lifespans are being stretched, the very last chapter is often grim. From the age of 80, in the rich world one person in five will be afflicted with some form of dementia, one in four will suffer from vision loss and four in five will develop hearing problems. Of those who make it to 90, the majority will have at least one health problem that counts as a disability; many will have multiple ones. Unfairly, for poorer and less well-educated people this decline often starts sooner.

In former times, the old used to spend this final, increasingly dependent phase at home, looked after by relatives. Over the past century, as ageing in the rich world became medicalised, care for the elderly was outsourced to retirement or nursing

How tech-savvy?

Technology adoption by over-65s, % of total
● Internet usage* ● Mobile-phone ownership



Sources: OECD; Pew Research Centre; Eurobarometer

*65- to 74-year-olds

► of death from injury among older adults. By picking up such things early, the algorithms can alert the elderly or their caregivers to the need for simple interventions.

So far most elders experimenting with smart homes or wearables use only basic tools: sensors in their home or a monitor around their wrist. But it does not take much to imagine a home where the occupant's sleep is monitored via a device in his ear, his fridge suggests what he might eat, based on information from other monitoring devices, and a pill dispenser can give him tailored medication. A smart stove switches itself off if it detects a fire hazard, and smart pipes turn off a tap left running. When the doorbell rings, his smart watch tells him who has arrived. All the while these data are mined for information that might be useful for caregivers.

Most of the technology needed to do all this already exists, at least in prototype form. The hard part is getting providers to pay for it. In the Netherlands five insurers now reimburse users for Sensara's sensors and the company is in talks with others, including the health ministry. Other insurers are experimenting with reimbursements on wearables. But on the whole providers are still reluctant to pay for a gizmo today that might prevent a hip fracture and hospitalisation tomorrow.

One reason for optimism is that the cost of such consumer products is coming down. Amazon's Echo, a voice-controlled digital assistant, answers questions, reads the news, can phone relatives and control other smart devices such as lights, thermostats and the television on demand. August's smart lock keeps track of comings and goings in a home and allows doors to be opened or locked remotely. Such gadgets were conceived with young consumers in mind, but could be even more useful for older people.

In a mock-up of the connected home of the future in Framingham, near Boston, Philips, a health-technology company, displays both its own smart medical devices and the high-street kind. It aims to bring all of them together and crunch the data with its predictive analytics tools. One floor up, in a blast from the past, phones ring in the call centre for Philips Lifeline, an alarm system used by 750,000 elderly Americans that features a pendant with an emergency button. Occasionally a life is saved this way, but many calls are set off accidentally. Such pendants now seem pretty standard stuff, but they did persuade a generation that grew up offline to adopt wearables for the first time. For their children, it should be an easier sell.

"Facebook may have been built for kids who spend all day together in the classroom, but the elderly, who could otherwise become isolated, stand to benefit most," says Katy Fike, from Aging2.0, an innovation platform. Encouragingly, over a third of Americans over 65 use social media and 64% of those between 50 and 65 do, according to Pew Research. Europeans are a bit behind, but the trends are similar.

Technological elves

The other great opportunity is on-demand services. Cars, grocery deliveries, handymen and concierge doctors at the swipe of a smartphone could all be a boon to older people. Boomers are already familiar with these services, so once they become less mobile they will just use them more. Lyft, a ride-hailing service, is already trying to recruit older customers by offering senior-friendly ways to book without a smartphone. Trials have shown that on-demand ride shares can reduce lateness and no-shows for medical appointments.

On-demand care services could make an even bigger difference. Traditional care companies are inflexible, typically insisting on advance booking in blocks of so many hours. Seth Sternberg, a former Google employee, got so frustrated with this that

he launched Honor, a tech-enabled care company through which carers can be booked round the clock, via an app, on a pay-as-you-go basis for whatever time is required. The company has raised \$65m in venture capital and operates in 12 American cities. Other entrepreneurs are looking at on-demand nurses and light help in and around the house. Such services would not only make it easier for elderly people to stay in their homes, but also provide work for the younger old looking for gigs. The challenge will be to make the economics stack up.

Demand for this kind of technology will only increase as populations age, but unless funding mechanisms can be found, it will be available only to those who can pay for it outright, thus increasing inequality. In future doctors might prescribe all kinds of preventive technology-based services for older people at risk, just as they prescribe preventive pills today. Government may well have a role in this, but the obvious funders are insurance companies: they, too, have much to gain from prevention.

Encouragingly, in every centre for seniors visited for this report, from New York to Seoul, the most popular classes were in the use of smartphones and tablets, often sponsored by telecoms companies who spotted an opportunity. If insurers and healthcare providers do not come up with a funding model, tech and telecoms companies may eat their lunch. ■

The longevity dividend

A blessing, not a burden

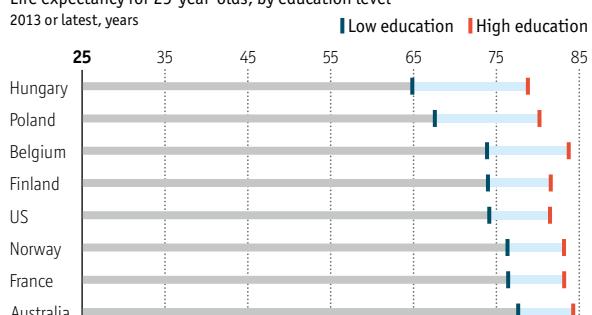
How to make the most of ageing populations

FOR MOST OF history humans lived only long enough to ensure the survival of the species. Today babies born in the West can expect to see their grandchildren have children. With more time come many more opportunities for work and pleasure, enriching individuals, societies and economies alike. Whether mankind is able to reap this "longevity dividend" will depend on how those opportunities are used.

By the early 2000s the state of health of American men aged 69, as reported by themselves, was as good as that of 60-year-olds in the 1970s; 70 really does seem to be the new 60. This report has argued that if employers, businesses and financial services adapt to make far more of such people, big economic bene-

Education is destiny

Life expectancy for 25-year-olds, by education level



Source: OECD

► fits for everyone could follow. There are striking parallels between the longevity dividend now in prospect and the gender dividend that became available when many more women started to enter the labour market in the 1970s. The last stage of life could also be greatly improved by letting more people retain their autonomy, often with the help of technology.

But for all those benefits to be realised, two things need to happen. First, employers must adapt to an ageing workforce. Although the gig economy and self-employment have been helpful in allowing older people to carry on working, the fact that they are so widely used suggests that traditional employers are often insufficiently flexible to accommodate this new group.

The business case

Ageist recruitment practices and corporate cultures can be big impediments to keeping older workers employed. Nearly two-thirds of this group surveyed in America said they had witnessed or experienced age discrimination at work, according to the AARP, a lobby group for the over-50s. Legislation can help, but the best hope is for employers to recognise that offering opportunities to older workers is smart business rather than a social duty. Academics have found that older people in multi-generation teams tend to boost the productivity of those around them, and such mixed teams perform better than single-generation ones. Companies that have taken this advice to heart, such as Deutsche Bank, report fewer mistakes and positive feedback between young and old.

As one of the world's oldest countries, Germany offers other encouraging examples. "It used to hurt in all the usual spots," says Andreas Schupan, grabbing his back, elbows and shoulders. Aged 47, he has worked on a production line at BMW, a carmaker, for over 20 years. Now a computerised cart does most of the lifting for him, and he hopes to stay on for another 20 years.

The second thing that needs to happen is for the benefits of longer, healthier lives to be spread much more equitably. As things stand, greater longevity is something of a lottery that favours the well-off and the well-educated. Not only do people in the rich world live significantly longer than those in poor countries, but huge differences in lifespan persist even among rich-country dwellers. In America the difference in mortality rates among those with and without a college degree has been widening for the past 20 years.

Across the OECD, the average highly educated 25-year-old man can expect to live eight years longer than a contemporary with only a basic education (see chart, previous page). In Britain a baby girl born between 2012 and 2014 in Richmond, a wealthy area in south-west London, is not only likely to live 3.4 years longer than her equivalent in Tower Hamlets, a run-down part of east London; she will also enjoy 14.5 more years in good health, estimates Britain's Office for National Statistics.

The causes of such gaps in life chances between haves and have-nots are well known. Smoking, obesity, air pollution, drugs and alcohol consumption all have a strong, and in some cases growing, influence on differences in life expectancy within countries, says Fabrice Murtin of the OECD. The best way to level the playing field is to invest in public health, offer universal access to health care and provide high-quality education for everyone. Unsurprisingly, in countries such as Canada or Sweden, which attach great importance to such matters, the gap in life expectancy between the most and the least educated people is much narrower than it is in America.

Individuals will also have to take more responsibility for unlocking their own longevity dividend. In a survey of Americans conducted by researchers at Stanford University, 77% of respondents said they wanted to live to 100, but only 42% claimed to be making a real effort to get there.

Given the right input from governments, employers and individuals, it should be possible to stretch the increasingly productive in-between stage and compress the dependent period at the very end of life. But that last stage will always remain costly, and the state will probably continue to pick up most of the tab.

Estimates of life expectancy over recent decades have regularly proved too conservative. Some demographers already think that children born in the rich world today will routinely make it to 100. With vast sums being pumped into fields such as stem-cell research, regenerative medicine, biomedical technology and genomics, human lives could stretch well beyond that. If that happened rapidly, it could prove highly disruptive. Economies would suffer, social tensions could erupt and progress on gender equality might be reversed as many more women were obliged to become caregivers for the elderly. To avoid such ill effects, societies and economies must start in earnest to prepare for those longer lives right now. ■



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Older people in multi-generation teams tend to boost the productivity of those around them



Islamic State in Iraq

Last days of the caliphate

Even before the battle is won, hopes of a fresh dawn for Iraq are fading

THE fireworks have been ordered. Street parties are planned. The Iraqi government has prepared a week of festivities to mark the fall of Abu Bakr al-Baghdadi's self-proclaimed caliphate. Three years after seizing control of the great alluvial plains of the Tigris and the Euphrates, Islamic State, which has claimed so many victims in north-western Iraq, Syria and beyond, is finally dying. American-led forces in Syria breached the old city walls of IS's capital, Raqqa, on July 4th. In Mosul, in Iraq, all but the last alleyways of the Old City were back in government hands as *The Economist* went to press on July 6th.

Finding a backdrop from which to celebrate the liberation of Mosul will be difficult, though. Between them, IS and the coalition have destroyed too many shrines and mosques to leave much of historic value, including the al-Nuri mosque dating back to Crusader times from where Mr Baghdadi proclaimed himself caliph. Gone is the Jewish quarter, the markets with their monasteries, and the lattice balconies and sculptured masonry of another Sunni silk road city. "Overlooking the Tigris, there could be no nobler or more beautiful place to sit in," waxed Ibn Jubayr, a Spanish travel writer who visited in the 12th century. What one side booby-trapped, the other side shelled. Almost half the neighbourhoods of west Mosul have been destroyed, including much of

the Old City, estimates a foreign observer, perhaps some 20,000 houses in all. "Like Dresden," an American general was heard muttering, touring the ruins.

The odour of putrefaction hangs in the hot air. Cameramen entering the honeycomb of the Old City return with footage of bodies, old and young, lying under blankets in front rooms for days. Many more are buried under the rubble. Thousands trapped in the alleys still holds are without water or food. Iraqi soldiers maintaining a siege prevent aid workers from getting food to those inside.

Previous battles for the city have been short-lived. In 1918 and 2003, opposition



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melted away when British and American forces respectively marched in. Even in the earlier battle for east Mosul, IS fighters ceded one neighbourhood after another, and retreated west over the Tigris and into Syria. But besieged in their western redoubt, they have nowhere else to go. Unlike during the fall of Aleppo to the Assad regime earlier this year, no one has negotiated safe passage in the final stages of battle. The fighting goes on alley by alley.

The clear-up operation will do much to determine whether Iraq's government wins the war as well as the battle. Mosul's exodus has realised the UN's worst-case predictions. About 900,000 of the city's 2m people have been displaced; 700,000 are still homeless. The prime minister, Haider al-Abadi, wants to get people home quickly, but the UN says 200,000 have none to return to. Most of the latter come from poor neighbourhoods, like the Old City, where IS found many recruits. Strewn across Iraq, they may now spread their anger countrywide. Other reconstruction operations are proceeding slowly, too. Six months after its liberation the east side remains cut off from the electricity grid. For want of water, the UN is carting in 6m litres a day. Schools quickly reopened, but initial jubilation has turned to despondency among teachers who, six months on, remain unpaid. Mosul's university, once home to the region's best engineering college, lies destroyed and abandoned.

The coalition should know better. In 2003 America's forces rested on their laurels after their race to Baghdad, letting insurgents fill the vacuum. They did the same after beating back al-Qaeda in 2007. But once again, reconstruction is a distant prospect. Iraqi ministers estimate that rehabilitating areas liberated from IS will cost \$100bn, roughly the sum they and the ►

► Americans spent on the war. But the government is broke. Sunni Gulf states are said to be considering involvement, but have contributed next to nothing. The World Bank has reportedly committed \$300m. Germany is offering €500m (\$570m). Coalition talks on a ten-year reconstruction plan, set to begin in Washington on July 10th, might drum up a bit more. But, runs an Arabic proverb, commitments are clouds, implementation the rain.

Even if money is found, procurement and contracts will take time. "It will take a year before you see anything happening," says Ammar Shubbar, an Iraqi economist. "And that will be patchwork—some sewage repair here and there." Almost a year after taking Qayyarah to the south of Mosul, Iraq's government has yet to reconnect it to the grid. General Electric, an American company that won the contract, says it is still trying to negotiate financing. Danger and corruption, says a GE employee, are further hampering the company's hopes of re-entering Mosul. And material reconstruction is only part of the task. More perturbing than the children who shriek at the bombardment around them are those who barely flinch.

In Mosul, the initial relief at liberation from IS's reign of terror is already turning to grumbling. IS ran services and rubbish collection better, say residents. They repaired the potholes in the road faster and kept electricity going. "Why did the Iraqi government abandon us to IS in 2014, only to destroy our city when they returned?" asks a Mosul University graduate. Locals still report lurking fighters and suspicious packages to the plethora of security forces in the city. After a lull of several months, sleeper cells are reawakening in the east of the city. Suicide bombing has begun again. In the space of a week last month, three *mukhtars*, or neighbourhood elders, were killed. Some predict the return of a low-level insurgency much as before is swept control in June 2014. After all, though Iran and Russia say that Mr Baghdadi is dead, his organisation still occupies swathes of (thinly-populated) territory either side of the Iraqi-Syrian border.

IS's vestiges, though, may anyway be one of the lesser problems facing Iraq. Exultant armies and militias now occupy the ground once held by the caliphate. A generation of young Iraqis currently earn a living from fighting IS; they may now develop ambitions of their own. Having avoided confrontation while they were assaulting IS, America and its allies are now coming to blows with Iran and its allies across the border in south-eastern Syria. A similar struggle looms in Iraq. Meanwhile, Iraq's politicians squabble, largely confined to the Green Zone, the walled city within a city occupying the core of Baghdad. So far there is not much sign of the fresh dawn that IS's downfall should bring. ■



Protests in Morocco

Rough in the Rif

MARRAKESH

Unrest in a neglected region threatens Morocco's stability

THE protest movement that has shaken northern Morocco for the past eight months is as creative as it is persistent. After being blocked from the main square in Al Hoceima, the epicentre of the unrest, and then beaten by police as they marched down side streets, the protesters decided to go to the beach, thinking that the authorities would not follow them. But on July 1st police in full riot gear waded into the sea as protesters in swimming trunks splashed them with water.

The trouble began in October after a fishmonger called Mouhcine Fikri was crushed by a garbage compactor at a port in Al Hoceima, which is located in the Rif, a northern mountain region with a rebellious streak. Fikri was trying to retrieve fish that had been confiscated by the authorities. To locals, his death was a striking example of *hogra*—humiliating treatment by an abusive state. (Something similar triggered the riots in Tunisia in late 2010 that led to the upheaval of the Arab spring.) So they took to the streets, demanding justice for Fikri and venting pent-up frustration over corruption and economic neglect.

The government has since exacerbated the situation with yet more *hogra*. In May it called the protesters separatists, though most are not, and suggested that they were foreign agents. It then arrested one of the movement's leaders, Nasser Zefzafi, and dozens of other activists. The unrest not only increased, but spread to other parts of the country, including Rabat, the capital, where on June 11th thousands of people rallied in support of the Riffians. All told, it

is the largest display of public anger in Morocco since the Arab spring in 2011.

As the country's reputation for stability has suffered, the prime minister, Saad Ed-dine El Othmani, has turned conciliatory. But the protesters have had it with the government, which they see as corrupt, ineffectual and insulting. "We were waiting for a helping hand; we received a slap in the face," says one protester. They want the prisoners released and are demanding to meet representatives of King Muhammad VI, who has expressed "displeasure and concern" over the plodding pace of development projects in the Rif.

The king is popular, even among the protesters. Unlike his father, Hassan II, who crushed a Riffian revolt in the 1950s, suppressed the local Berber culture and neglected what he called the "savages", Muhammad VI has recognised the Berbers and tried to turn the northern coast into a manufacturing and trade hub based around Tangier. But progress has been slow and locals feel the authorities are out of touch. The monarch deserves much of the blame. He maintains a tight grip on power, and few decisions are made locally.

The protesters' list of demands shows how long they have been neglected. They want a university, a library, a theatre, a cancer hospital, roads and facilities for processing fish. They say local investments worth hundreds of millions of dollars, promised by the government in 2015, have yet to materialise. Moreover, they want a say in how that money is spent.

The protests have resonated in other marginalised areas, where demonstrations have broken out. Rural Moroccans say they feel alienated. Poverty has declined considerably over the past decade, but the unemployment rate is nearly 11% and probably higher in the countryside.

Political reform has stalled, leaving the government ill-equipped to respond to local concerns. The country is still relatively stable and unlikely to suffer its own version of the Arab spring. But Morocco is looking more like its turbulent neighbours, run by out-of-touch autocrats. ■



Oman

Uneasy sits Qaboos

MUSCAT

The sultan's economy is taking a kicking

FEW leaders are as ubiquitous as Sultan Qaboos of Oman. His ageless portrait hangs as per regulation from every shop wall. Every six months or so, between bouts of cancer treatment, he also appears on television to prove he is still alive. At his last appearance in May, his fist seemed clenched in pain. He wore a similar white-cut tunic to the one his father used to wear before his son intervened to unseat him, stave off bankruptcy and pack him into exile in Delhi.

Forty-seven years on, Oman is again in need of a strong leader to mend its finances. Lavish welfare (and an iron grip) keep an oft-rebellious people, now numbering 4m, quiescent. The Sultan calmed protests during the Arab Spring of 2011 by hiking public expenditure by 70% over the three years that followed. But since the oil price crashed in 2014 he can no longer afford that. To make matters worse, Oman's Arab neighbours are withholding aid; they are vexed by its friendship with Iran, neutrality in Yemen and now its closeness to Qatar. The Sultan ran a budget deficit of 15% of GDP in 2015 and 21% in 2016. But spending goes on rising regardless. In 2016 he doubled the unaccounted part of the budget, which includes his own allowance, promised state employees another salary rise, and took delivery of a fresh batch of British-made Typhoon warplanes. As the cost of servicing Oman's debt rises, doubts grow about whether it will repay it. In May S&P, a ratings agency, cut Oman's bonds to junk status. The Sultan may yet become the first Gulf leader to call in the IMF.

Oman's tame media calm anxieties by predicting an imminent oil-price hike from \$50 to \$80 per barrel, which is the level Oman needs to break even. Goons deal with the doubters. Last autumn the authorities jailed editors and journalists for running a Reuters report about corruption, along with a dissenting judge. "I can be arrested just for talking to you," was one of the apologetic texts this correspondent received while in the country.

When he was younger, the sultan was transformative. After overthrowing his father's medieval rule in 1970, he proclaimed "a renaissance". He abolished slavery, increased the number of schools three-hundred-fold (from three), and added 30,000km (19,000 miles) to Oman's 15km of paved roads. The 2020 Vision he unveiled in 1995 aimed to wean the economy off oil dependence, unleash the private

Intellectual property

Ethiopia's cunning pirates

ADDIS ABABA

Not even a slow internet can stop the bootleggers of Addis Ababa

DOWNLOADING a movie, legally or not, is prohibitively slow in Ethiopia, thanks to glacial internet speeds. Bootleg DVDs are everywhere, but even so it can be hard to find a reasonable-quality version of the latest Hollywood blockbuster. Only one cinema in Addis Ababa, the capital, screens foreign hits. Resourceful pirates spy an opportunity.

Last year yellow ATM-style kiosks began to spring up around Addis Ababa. The brainchild of three Ethiopian science graduates and their software company, Swift Media, the Chinese-built kiosks allow customers to transfer any of 6,000 pirated foreign movies or 500 music albums onto a USB stick they insert for as little as 10 cents per file. The kiosks are located in large malls in full view of authorities, who show no interest in shutting them down.



sector and create a broad industrial base. But last year, he renamed the vision 2040. Oil exports were only supposed to supply 40% of government revenues by now, down from 66% in 1995. Instead, that share has grown to over 80%. Politics is as command-driven as the economy. In addition to being sultan, Qaboos is also prime, foreign, defence, and finance minister, and chairman of the Central Bank. His Shura, or consultative council, is cosmetic. "You don't speak to the monarch," complains a western diplomat. "He speaks to you."

As Oman's coffers empty, completion of Muscat's new airport has been delayed by another year. Private firms are too squeezed to absorb the tens of thousands of graduates entering the workforce every

This is just one manifestation of a general disregard for foreign intellectual-property (IP) rights in Ethiopia. Swift Media is breaking no local laws by selling plundered foreign films. Ethiopia is not a member of the World Trade Organisation (WTO). Indeed, it is the largest country that has not yet signed any of the big international treaties governing IP, according to Seble Baraki, a local lawyer. Foreign trademarks are infringed with impunity. Kaldi's, the country's biggest coffee chain, has a logo suspiciously similar to that of Starbucks. Intercontinental Hotels Group, a British-owned hotel company, is suing a large hotel in central Addis Ababa with the same name. In-N-Out Burger, an American fast-food franchise, has a popular equivalent in Ethiopia that the American firm only learned about when tourists complained to it about poor standards.

In an effort to shift attitudes the authorities burned half a million pirated CDs and DVDs in the centre of the capital in 2008. But the thieves are undeterred. Only a handful of records are released each year. In 2010 Ethiopia's Audiovisual Producers Association, a film and music producers guild, stopped releasing albums for several months in protest over the Supreme Court's decision to drop charges against a record-shop owner accused of copyright infringement.

In the hope of attracting more foreign investment the Ethiopian government has been trying to bring its IP laws into line with international standards. But Ms Baraki doubts that her country is about to change. Ethiopia is poor and has a desperate shortage of foreign currency. "How would we pay?" she asks.

year. The muttering has resumed. Protests against higher petrol prices briefly erupted last February. "Having wasted our wealth in times of plenty, the government is now making its people bear the costs," gripes a nervous young activist. If nothing is done, outsiders fear the country might fragment or succumb to another palace coup.

Might Qatar's escalating spat with its bigger brothers have a silver lining for Oman? As tensions mount inside the GCC, and between the GCC and Iran, Oman's position beyond the mouth of the Gulf's choppy waters looks ever more enviable. Under blockade, Qatar is routing air-traffic via Muscat. This week it unveiled a new route to Oman's industrial town of Sohar. Oman is also planning to entice traffic ➤

► away from Dubai's giant port of Jebel Ali. With little cash of his own, the Sultan is letting Chinese managers expand Duqm, his new Indian Ocean port, in exchange for \$10bn of investment earmarked for Chinese companies.

But tensions with Qatar also make Omanis nervous. After the Saudi-Emirati campaign to clear Yemen and Qatar of Iranian influence, they fear they might be

next. In decades past, they fought off Saudi and Emirati predations, often with Western help. But President Donald Trump might be less ready to come to their rescue. He is said to resent Oman's role in brokering secret Iranian-American talks under his predecessor, Mr Obama. In kiosks all over Oman, the Sultan's portrait is still smiling. Omnipresence and omnipotence, though, are not the same thing. ■

a hurry, without bothering to consult mining firms. Whereas South Africa's first-ever mining charter, introduced in 2004 and revised six years later, was the product of extensive talks with the industry, the new rules were simply handed down.

They are also hard to understand. The Chamber of Mines has gone to court seeking to block the charter, calling it "so confusing and confused, and so contradictory in its core provisions", that it has left mining companies and legal experts perplexed. The chamber's CEO, Roger Baxter, argues that the new rules would deter investment and put up to 100,000 mining jobs at risk. The charter's release triggered a sell-off of South African mining stocks. A drawn-out legal battle is looming, which means more uncertainty.

South Africa is already a tough sell. In a 2016 survey of attractiveness to mining investors, the Fraser Institute, a free-market think-tank, ranked South Africa 74th of 104 mining jurisdictions, well behind neighbouring Botswana (19th), Namibia (53rd) and many other African countries. Meanwhile South Africa dipped into a recession last quarter, and official unemployment has reached a 14-year high at 27.7%.

Adding to the confusion are differing messages from Mr Zwane and other senior members of his party, the African National Congress (ANC), which is deeply divided as it prepares to elect new leaders in December. The charter is championed by President Jacob Zuma and his supporters, who have backed populist policies under the guise of "radical economic transformation", perhaps to distract public attention from a growing mountain of corruption scandals. The deputy president, Cyril Ramaphosa, a former union leader turned businessman who is seeking to succeed Mr Zuma, leads a separate faction that has called for the new charter to be reconsidered. The policy uncertainty will probably only end with change at the top. ■

South African mining

Deep trouble

WESTONARIA

The mining industry faces tough times, made worse by foolish policies

AT THE start of a 4am shift, gold miners scan their fingerprints and squeeze into tiny "mantrap" turnstiles, designed to prevent thieves from slipping through. Then they pile into cages and descend nearly three kilometres (2 miles) underground at Sibanye Gold's Driefontein mine. A warren of increasingly narrow tunnels leads to the reef, where miners blast a rock face rich with gold. It is grueling work. Deep in the bedrock, the air feels as hot and humid as a tropical jungle.

Most of the world's deepest (and historically richest) gold mines are clustered some 70km (40 miles) south-west of Johannesburg. The deeper they go, the more expensive and difficult the work of extracting the ore. Most mines are mature (Driefontein is 65 years old), and the cost of extracting the gold may soon exceed its value. Illegal miners known as "zama-zamas" ("taking chances") are another problem, undeterred by the extreme depths and high-tech security. At Sibanye's nearby Cooke mine, a recent wildcat strike had the unexpected side-effect of flushing out 461 zama-zamas who were being abetted by legitimate miners. Nash Lutchman of Sibanye estimates that roughly 3.5-4% of gold production across all of the company's operations is lost to illegal miners. Industry wide, they pilfer some 20 billion rand (about \$1.5bn) a year. Sibanye's tactical response team has faced gunfire and even grenades while chasing after zama-zamas.

South Africa's mining industry is shrinking. At its peak in 1980, mining accounted for a fifth of the country's GDP; the number now stands at 7.3%. High costs, low commodity prices, labour strife and falling productivity have all taken their toll. Mines have shed 70,000 jobs over the past five years. More cuts are coming. Anglo-Gold Ashanti, a gold-mining giant, last week announced plans to lay off 8,500 workers, a third of its South African workforce. At Sibanye, many of the zama-zamas

are former miners who return to work underground for powerful syndicates.

Mining firms are also being hurt by government policies. A new mining charter introduced last month by South Africa's mining minister, Mosebenzi Zwane, would force companies to ensure that at least 30% of their shares are in black hands, up from the current minimum of 26%. Under the new charter, companies would be required to maintain this level of black ownership regardless of whether black investors sell out. They would also have to pay out at least 1% of their turnover each year to their black shareholders. Had this rule been in effect in 2016, black shareholders would have got 5.8bn rand of the total of 5.9bn rand paid as dividends, leaving almost nothing for anyone else, notes the Chamber of Mines of South Africa.

The industry's top brass remain mostly white; workers toiling in the mines are nearly all black. The government claims to be outraged about this; perhaps this explains why it drafted the new rules in such



Some toil to mine gold; others just write laws



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Germany's reluctant leadership**The Merkel doctrine**

BERLIN

Why Germany is not the new leader of the free world

IF HELMUT KOHL, the deceased chancellor for whom Germany commemorated in a ceremony on July 1st, could have looked up from his coffin to assess his country's global standing, it would have made him proud. European and Chinese leaders were passing through Berlin for preparatory talks ahead of the annual G20 summit of large economies, which this year takes place in Hamburg from July 7th. A week earlier Angela Merkel lambasted the isolationism and protectionism of Donald Trump's America in a speech to the Bundestag. Once Mr Kohl's protégée, the chancellor of his reunified Germany is sometimes dubbed the "leader of the free world" in the Anglo-Saxon media.

Yet such epithets get things wrong. To understand why, look at Germany's relations with Africa, Poland and America.

The flummery is not all misplaced. Mrs Merkel is the most respected (see chart) and longest-serving of the main world leaders. Germany's new economic pre-eminence has given it the leading role in Europe. The scars of its 20th-century history are healing, and it is becoming more assertive: having got used to foreign military deployment in Afghanistan, it has now broadened into new missions in Mali and Lithuania. Today an isolated Britain and an unpredictable America channel international hopes for stability and leadership towards Berlin.

A measure of Germany's new confi-

dence is its "Marshall Plan for Africa". Named after the American scheme that pumped money into Europe after the second world war, this programme of aid and private investment takes aim at the root causes of the refugee crisis. Berlin is pouring cash into the Lake Chad basin, where the jihadists of Boko Haram have spread fear and misery, and into border-security improvements across West Africa. Jan Techau of the American Academy in Berlin explains that, because Germany is a trade-based economy, and (unlike America or Britain) has no oceans to protect it, it is increasingly willing to make sacrifices to pre-

serve the global order.

Yet Germany in 2017 is not America in 1947. It is much smaller, and has little military power. Its "Marshall Plan" vastly overstates its capacity. German officials in West Africa have been told to stop using the term. Development work "won't curb the numbers of migrants", admits one. Berlin's efforts will be insignificant unless others pitch in, too. Thus Mrs Merkel intends to use the G20 to win allies for her plan. Such diplomacy is Germany's great strength. For example, it was Poland that first argued for European sanctions on Russia for its interference in Ukraine in 2014, but Mrs Merkel who made them happen.

Nevertheless, Berlin's relations with Warsaw are terrible. Poland's populist Law and Justice government uses Germany (and especially its liberal refugee policy) as a bogeyman and rides roughshod over democratic norms. The Poles evoke the second world war to mobilise anti-German sentiment. Such memories still dissuade Berlin from taking the lead on European issues, until leadership vacuums force it to. During the migrant crisis, Berlin was too slow to ask for co-operation from the Poles, who, after Law and Justice took power in 2015, refused to accept any refugees. When the European Union insisted, Poland ignored it. And this from a country economically dependent on Germany.

With America, Mrs Merkel may sound as if she is boldly rejecting Trumpism. (Europe should rely less on the United States for its security and should press ahead with globalisation, she told a crowd in Munich in May.) But much of this is for domestic consumption. Mr Trump is wildly unpopular in Germany, and the chancellor is preparing for an election in September. In any case, commitments to multilateralism and free trade are uncontroversial in Germany, "the ultimate status quo power", ►

Liebe Mutti

Confidence in Trump/Merkel to do the right thing regarding world affairs, 2017, % polled



» says Tyson Barker of the Aspen Institute. And most important, Berlin's limited hard power makes it militarily dependent on the United States.

For these reasons Germany's real American policy is not confrontation (hardly Mrs Merkel's style, in any case) but damage control. The chancellor is trying to woo Mr Trump by offering Germany's industrial model as an example to his country. Her officials are extending links to other parts of the American government, like Congress and the states. Mr Trump's uncompromising tone on his last visit to Europe, in May, prompted them to begin contingency planning, to decide where Germany should hold its ground in case of clashes. But all recognise that their country does so from a position of weakness.

Germany's greatest constraint is that more than most other powers, it depends on the multilateral order. Berlin is becoming more self-assured, and now has a like-minded ally in Emmanuel Macron of France. But Mrs Merkel simply cannot supply the leadership that is being demanded of her. The liberal world is looking to Germany not because the world is going Germany's way, but because it is not. ■

Cutting CO₂ emissions

Without America, for now

As America stands down on global warming, Europe stands up

CAN Europe carry the Paris agreement on climate change forward now that America has left? That was one of the big questions as leaders of the world's largest economies gathered for the G20 meeting in Hamburg on July 7th and 8th. Donald Trump's promise that America will pull out has weakened the deal. Many fear that other countries' future pledges to cut greenhouse-gas emissions will be less ambitious without the world's second-largest polluter (after China) doing its share.

Yet America's departure has galvanised China, which promotes itself as a champion of the deal—and Europe, which thinks itself in the vanguard of greenery. If they remain staunch, reluctant converts such as Saudi Arabia and Turkey are more likely to stay the course. The G20 meeting was just beginning as *The Economist* went to press, but laying out the next steps for the agreement was on the agenda.

Europe has always played an outsized role in the climate-change debate. It was a Swedish scientist who, in 1896, first posited a link between surface temperatures and the concentration of carbon dioxide in the atmosphere. A century later the European

Union's environment ministers (who at the time numbered among their members one Angela Merkel) adopted the aim of keeping global warming to below 2°C. For years the European Union has set policies to curb emissions and discourage energy use (see chart). Germany is switching to renewables in a massive "energy transition". The Paris agreement, which saw more than 190 countries pledge to keep global warming to "well below" that threshold, was a triumph of Gallic diplomacy.

At least, so goes the boosterish story Europeans tell themselves. In fact, the EU's stated goal of a 40% cut in greenhouse-gas emissions by 2030, as measured against levels in 1990, is inadequate if it is to do its share in keeping global warming below 2°C. Its policies for electricity generation have misfired, too. True, subsidies have boosted wind and solar power, and by around 2030 these will become the EU's largest source of power generation, according to the International Energy Agency. But that has had two perverse consequences. The first is lower wholesale electricity prices, meaning squeezed revenues and lower investment. The second is rising imports of fossil fuels to keep the lights on when the sun is hidden and the winds are still. Together, these have meant a heavy reliance on plants burning cheap-but-dirty fuels such as brown coal. Europe's shift away from nuclear power, which generates no carbon dioxide, has made reducing emissions harder—especially in Germany, which decided in a panic to close all 17 of its nuclear plants after the Fukushima meltdown in Japan.

Natural gas could provide a bridge between a smoggy past and a clean future. But supplies depend on a hostile Russia, which provides about a third of the EU's total. That share would rise under plans for Nord Stream 2, a proposed Russian pipeline. And though natural gas emits less carbon dioxide than coal, it is not truly green. Carbon dioxide stays in the atmosphere for more than 500 years; methane, the main constituent of natural gas, lingers for about 12 but can be 25 times more potent. No long-term environmental plan can rely

heavily on it. The EU Emissions Trading Scheme has also fallen short. After the financial crisis of 2007–08, there was a glut of carbon permits. Prices have dropped by four-fifths since then, to around €5 (\$5.67) per tonne. To help the planet much, they would have to be €40 or so.

Some lessons have been learned from past failures. From 2021 on, the number of carbon permits is supposed to be cut. President Emmanuel Macron wants to set a minimum price of €30 per tonne in France in the hope that other countries will follow. The European Parliament is discussing laws to help meet climate targets after a package of energy policies was unveiled by the European Commission last year.

Mrs Merkel and Mr Macron are emerging as the bloc's green champions. The commission says its clean-energy package will create hundreds of thousands of jobs by spurring investment in smart meters, electric cars and so on. Sceptics retort that it will destroy jobs, too, by increasing costs to businesses. Nick Mabey of E3G, a consultancy, says the EU now needs to focus on its diplomacy. The talks in Hamburg, and the need to keep everyone besides America on board, will test them sorely. ■

Turkey

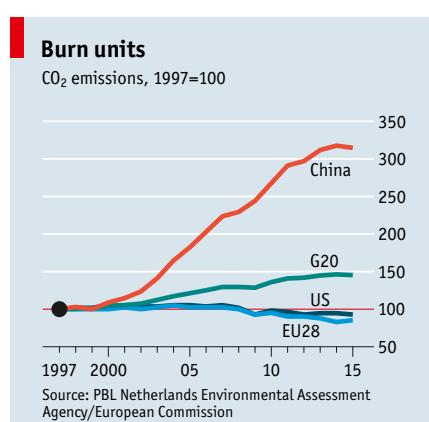
Heated opposition

IZMIT

The largest protest since 2013 approaches Istanbul

THE worst that Kemal Kilicdaroglu has suffered so far, on the 450km (280 mile) protest march he is leading from Ankara to Istanbul, are blisters and broken toenails. In that sense, the 68-year-old leader of Turkey's biggest opposition party, the Republican People's Party (CHP), is lucky. Other opposition politicians are in prison. Turkey's president, Recep Tayyip Erdogan, has jailed more than 50,000 people and sacked more than 110,000 in ever-wider purges following an attempted coup last July. Mr Erdogan and his Islamist AK party have muzzled the country's media, stacked the schools, courts and army with loyalists and changed the constitution to grant the president untrammelled executive power.

"We had to do this, because we ran out of options," said Mr Kilicdaroglu, his face sunburnt from the day's hike. Mr Kilicdaroglu and thousands of fellow marchers had just walked 22km along a highway through 34°C heat, pausing at rest stops to nap and recharge mobile phones. Now several hundred were camped out for the night in a supermarket parking lot in Izmit, an industrial town on Istanbul's outskirts. Organisers urged the demonstrators to keep their ►





Unflagging determination

► voices down to avoid disturbing residents in the surrounding high-rise blocks, some of whom had draped Turkish flags over their balconies to show support.

Mr Kilicdaroglu launched the “March for Justice” on June 15th. It has grown into Turkey’s largest anti-government protest since 2013. The trigger was the sentencing of a CHP deputy to 25 years in prison for leaking a video to a newspaper that embarrassed the government. (The video seems to show illicit Turkish arms shipments to Syrian rebels in 2014.) The CHP, which mostly represents Turkey’s secular urban classes, had earlier failed to protest strongly against the prosecutions of MPs from a pro-Kurdish party, the HDP. Indeed, a few CHP deputies voted for the government’s move to lift their parliamentary immunity. Some accuse Mr Kilicdaroglu of not opposing Mr Erdogan’s purges early enough.

The marchers hope to energise Turkey’s fractured opposition, reaching beyond the CHP’s traditional base. They have garnered support from some nationalist politicians, a small Islamist party and even the pro-Kurdish HDP. “The march is recognition that the polite game of parliamentary opposition that Kilicdaroglu has played is no longer operative,” says Howard Eissenstat, a Turkey expert at St Lawrence University in New York.

The new recruits are people like Nuran Erman, a housewife who was one of the few female marchers to wear a religious headscarf. Escaping the midday sun in a thicket of trees beside the motorway, munching on watermelon and apricots to cool off, Mrs Erman rattled off a long list of grievances, including the jailing of more than 100 journalists and the destruction of forests in a construction boom led by companies close to the government. “I cried for two days after the referendum” in April that approved Mr Erdogan’s enhanced powers, she said.

The real test is expected to come when the marchers enter Istanbul. Organisers say the march will swell as locals join in. On the road, their numbers have ranged from about 5,000 up to 20,000, and a cordon of police has chased off cars that occasionally slow to hurl insults or flash Mr Erdogan’s four-fingered salute. But in Istanbul they may encounter resistance from Mr Erdogan’s supporters. The president has called them “wilful partners in treason against the nation”. ■

Macron’s ambitions

The tasks of Jupiter

VERSAILLES

Euphoria gives way to economics

EMMANUEL MACRON likes pomp. In a speech to MPs and senators on July 3rd in the gilded Palace of Versailles, he referred five times to the “grandeur” of France. His predecessors rarely made such addresses, but he will do so annually, state-of-the-union style. He has said France needs a “Jupiter-like” president: remote and dignified, like the Roman king of the gods. (This sounds less conceited in French than it does in English, but has still raised eyebrows.) Mr Macron’s supporters say he needs to invest his office with more authority to pass ambitious reforms.

For example, Mr Macron wants to change the constitution within a year, by referendum if need be. He wants to cut by one-third the number of parliamentarians, add an unspecified “dose” of proportional representation to the electoral system, slim government and make judges more independent. He reckons voters, who dumped

once-dominant political parties in the election, are hungry for big changes.

A poll conducted in the spring suggested he is right: 93% of respondents wanted fewer MPs. It may also be politically helpful to stage a prolonged debate on rejigging the constitution, if only as a distraction from gloomier battles over public spending. Edouard Philippe, the prime minister, spelled out changes in this area in his own speech to MPs on July 4th.

Mr Philippe is not one to sugar-coat. He says France is “dancing on a volcano” of €2.1trn (\$2.4trn) of debt, roughly equal to its annual GDP. He promised to keep the fiscal deficit under 3% of GDP from this year, essential if he is to be seen as credible by Germany. But that looks harder than it did even a week ago, after the public auditor revealed that the previous government fiddled its figures, hiding an €8bn shortfall this year.

The government thus begins in a tight spot. Mr Philippe responded by announcing delays to promised tax cuts. He still talks of getting the corporation tax rate down from 33.3% to 25% by 2022. But a plan to exempt most of the population from a local property tax is being delayed. And reform of a wealth tax has been pushed back by a year, to 2019, when a reworked income-tax plan is supposed to be in force.

Putting off cuts, however, will not fix rotten public finances. For that the government needs to reduce spending, for example by speeding early retirement of civil servants and not replacing them. But few details have been offered. More dubiously, Mr Philippe announced a special €50bn plan to improve infrastructure.

Parliamentarians, meanwhile, are to debate letting the government pass labour reforms quickly. These would mean unions negotiate directly with individual companies, and should make it simpler to sack workers. Other changes will also be published by late September.

Already this is provoking the first anti-government protests. Jean-Luc Mélenchon, a leftist MP who leads the Unsubmissive France party, boycotted Mr Macron’s grand speech and is calling a resistance rally in central Paris on July 12th. A hardline union, the CGT, promises mass mobilisation against the labour changes on September 12th. Not all groups will rally: an equally big, moderate union, the CFDT, accepts the planned reforms for now.

More protests could arise spontaneously, or be organised by youngsters online, suggests Philippe Marlière, a political scientist at University College London. He talks of “volatile and radicalised social movements that can come out of the blue”. Just as traditional political parties were barged aside in the recent election, upstart protesters could vie for unions’ traditional space on the streets. The tasks for Jupiter, and his team, are truly Olympian. ■

Charlemagne | The church of data

Estonia tries to convert the EU to its digital creed



ESTONIANS are among Europe's least pious folk. Just 2% of the population attend services weekly in the medieval churches of Tallinn, or anywhere else. A growing number of the inhabitants of this forested, sparsely populated land subscribe to the nature-loving precepts of neo-paganism. But there is only one faith that truly unites Estonians. Broach the subject of digital technology, and you will be amazed by their fervour.

Estonia has carved out a niche as a startup hub and a friendly environment for foreign businesses. Its biggest innovation, however, lies in e-government. Citizens of this tiny Baltic nation can conduct almost every encounter with the state online. A digital-signature system makes official transactions a doddle. Armed with an ID card and a PIN, Estonians can vote, submit applications or sign contracts in seconds. Officials claim this lifts annual GDP by 2% while saving a mound of paperwork and creating opportunities for business. Estonians abroad lament the red tape involved in even simple tasks like applying for a driving licence.

These achievements have made e-government a potent source of soft power for Estonia. Its latest startup is an e-governance academy designed to spread the word, and pilgrimages to Tallinn are now compulsory for governments curious about digitisation. "Is it true that there's only 1.3m of you? I don't believe it! You are everywhere," exclaimed an African emissary on a recent visit. Japan has built an ID system with Estonian help. Its prime minister, Shinzo Abe, is one of over 21,000 foreign "e-residents" of Estonia, all of whom can incorporate businesses in the country without setting foot in it. (The first was one of Charlemagne's colleagues.) Estonia is aiming for 10m e-residents by 2025. Many of them, it hopes, will be British entrepreneurs otherwise severed from the European Union's single market by Brexit. "E-residency", says an official, "is our gift to the world."

Now, as Estonia assumes the rotating presidency of the EU's Council of Ministers, it has been granted a pulpit from which to preach the digital gospel to the rest of Europe. As well as managing legislative disputes between the EU's 28 governments, Estonia will spend the next six months pressing its vision upon the rest of the club, which, it fears, may be left behind by more digitally astute policymakers in other parts of the world. The crowning moment will be a "digital summit" in September, which almost

all of the EU's leaders will attend.

Chief among Estonia's plans is a proposal to expand the EU's familiar four freedoms—the unhindered movement of goods, services, capital and people across borders—to include a fifth: data. Data-localisation rules can hinder cross-border trade as effectively as tariffs on goods, or regulations that protect service industries. (The European Commission counts over 50 such laws across the EU.) By one estimate, a fully functional data market could raise the EU's GDP by about €8bn (\$9.1bn) a year. Data-sharing between governments can make life easier for travellers, too. Optimists hope that a pilot programme between Estonia and neighbouring Finland to share medical records, which enables travelling patients to pick up prescriptions in either country, could serve as a prototype. And because Estonia's platforms are open, businesses can build upon them to provide their own services.

Encountering such grand ideas on a recent trip to Tallinn, Charlemagne was reminded of the tech evangelists of California, his previous posting. Like the dreamers of Palo Alto who see no problem an app cannot fix, Estonians often struggle to understand how anyone could question the benefits of the e-society they have built. "Estonia has a message to the wider world, and particularly to other nations attempting to transfer" to democracy, says Kersti Kaljulaid, Estonia's president and high priestess of its digital credo. (Her predecessor, Toomas Hendrik Ilves, learned to code at 13 and is now installed in a think-tank at Stanford, Silicon Valley's favourite university.) It is hard not to be converted.

Will it play in Perugia?

But not everyone shares the vision. In Estonia, a small place with high social trust, few people worry about corruption or infringement of privacy. In other countries they do. The challenge was encapsulated at a dinner Charlemagne attended in Tallinn. On hearing yet another Estonian encomium to the ease of paying taxes online, a Greek colleague said she feared that under such a system at home some jerk in the civil service would spot an anomaly in her data and shake her down for bribes. A German fretted about hackers stealing his files. Governments, too, often refuse to play along. There is always an excuse to lock data inside national borders, notes Andrus Ansip, a former Estonian prime minister now running the European Commission's digital policy. It starts with national security, continues to public health and soon extends to every area of governance.

"Our experiences are inspiring but definitely not transferable directly," acknowledges Ms Kaljulaid. To countries seeking to emulate Estonia's example, she suggests building trust by placing smaller services, such as school applications, online before progressing to weightier matters like e-voting. Done properly, she adds, digitisation can actually enhance security. (Other officials note the potential of blockchain technology to overcome gaps in trust.) But countries must want to change. Mr Ansip says that groups of EU governments may need to move ahead with data-sharing initiatives rather than waiting for all the laggards to agree.

Vested interests and distracted politicians have often limited Europe's ambitions on digital matters. Having regained their self-confidence, Europe's leaders are seeking fresh ideas to boost growth. The EU has long paid homage to the potential of the digital economy, and Estonia's presidency offers them a chance to make this word flesh. "We are on the brink of an ideological shift in the rest of the EU," says Ms Kaljulaid. With luck, this will turn out to be more than an expression of faith. ■



Public-sector pay

The tipping-point

Trimming wages has caused less damage than is supposed. That may soon change

AFTER their unexpectedly dismal performance in June's general election, the Conservatives are soul-searching. Since taking charge in 2010 they have presided over the longest and biggest fall in spending on public services on record. Yet Britons are fed up with the Tories' austere fiscal policy, as the large vote for Jeremy Corbyn's Labour Party suggested. According to the British Social Attitudes survey, a long-running questionnaire, half the country supports higher taxes and public spending, the highest level in a decade. Even within the Conservative Party, calls are growing for a change of approach.

The restrictions on pay for Britain's 5.4m public-sector workers are particularly controversial. All but the lowest-paid public servants had their salaries frozen between 2011 and 2012. Their pay rose slightly in the following three years. Then the government announced that it would cap annual public-sector pay increases at an average of 1% until 2020.

The cap has been blamed for all manner of ills, from difficulties in recruiting teachers to nurses being forced to use food banks. In recent weeks the heroism of firefighters at the Grenfell Tower disaster and unarmed police officers fighting terrorists has made the stinginess seem especially mean. Meanwhile, the government's ability to rustle up £1bn (\$1.3bn) to buy enough

votes from the Democratic Unionist Party to stay in power has made people doubt that the cupboard is as bare as politicians claim. Michael Gove, the environment secretary, and Boris Johnson, the foreign secretary, have both hinted that they would like to scrap the cap (partly, perhaps, to destabilise Philip Hammond, the chancellor, who is pushing for a softer Brexit than they would like). Is Britain due a pay rise?

Following the financial crisis of 2007-08 poor productivity growth, coupled with high inflation, crushed British wages. One advantage of the squeeze was that unemployment did not rise by as

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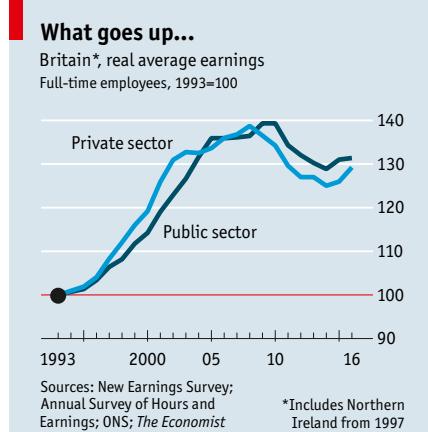
much as in other rich countries. But nearly a decade on, average real pay is still below its pre-crisis peak.

Although attention is focusing on the woes of public-sector workers, they have done relatively well in the past couple of decades. In the early 2000s Labour boosted public-sector pay to plug shortages of teachers and nurses (see chart). In 2008-10, after the financial crisis, public-sector workers got pay rises well above inflation, while others saw big falls in real terms.

Statutory "pay-review bodies", which cover roughly half of public-sector workers, from dentists to teachers, may have given their members a measure of collective bargaining rarely available to those in the private sector, suggests a recent report by the quaintly named Office of Manpower Economics, a government agency. By 2010 the premium enjoyed by public-sector workers over comparable private-sector folk, after taking into account their generous pensions, reached 15%, according to research from the Treasury.

But the belt-tightening since 2011 has eroded the unusually large public-sector wage premium that had built up. And the pain has not been equally shared. The median annual pay of junior firefighters has stagnated in real terms since the cap was introduced in 2011. Nurses, the mascots of the anti-pay-cap movement, have seen theirs fall by about 6%. Police officers at the rank of sergeant or below have seen a similar decline. Senior police officers, however, have enjoyed a 2% pay rise.

Yet overall the caps on pay have been implemented in a fairly progressive way. Public-sector workers in the poorest decile have seen their real salaries increase by a tenth since 2011, in part because of a higher minimum wage from which all workers ➤



► can benefit, but also because many were excluded from the cap altogether.

And the axe has generally fallen hardest on those earning big bucks. Despite a stream of articles about “public-sector fat cats”, public servants in the top earnings decile have seen their salaries fall by about 2% since 2011, the most of any. A report last year from the IMF drily commanded Britain for “stricter monitoring and control of approval for salaries above that of the prime minister.”

With the public-pay premium still fairly healthy, the public sector has faced less trouble recruiting staff than is commonly supposed. A recent paper from the Institute for Fiscal Studies, a think-tank, looks at the quality of new teachers, doctors and nurses. It finds that up to 2015 there was “no decline in the educational attainment amongst graduates going into these major public-sector occupations.” On July 5th Theresa May defended austerity policies, warning that Britain could go the way of Greece if it failed to tame its deficit.

Pushing their luck

But the toughest years lie ahead. The government announced the 1% cap at a time when inflation was close to zero. Now, inflation is nearly 3%, meaning that the cap is imposing real-terms cuts in pay. Private-sector workers are also expecting measly pay growth in the coming years, in part because of higher inflation, but the squeeze on them is less severe.

On current trends, therefore, the public-sector wage premium may soon reach its lowest level in at least two decades. For reasons that are not understood, the pay of public servants appears to be falling fastest in London. Perhaps not coincidentally, the capital is a hotbed of anti-austerity feeling.

At some point the quality of public services will suffer. Recruiting is already more difficult because of Brexit-related falls in immigration. The Health Foundation, a charity, points to a 96% drop in the number of nurses from the EU registering to practise from July last year to this April. Similar problems may be emerging in schools. The Migration Advisory Committee, an official expert panel, recently recommended widening the number of subjects for which schools could recruit from outside Europe.

So just as in the early 2000s, the government may before long have little choice but to boost public-sector pay. That worries Mr Hammond, the chancellor. Within his self-imposed fiscal targets he has some £25bn of fiscal room for manoeuvre. But he is keen not to use it yet, in case the economy slows after Brexit. Keeping public-sector pay in line with inflation might cost around £5bn a year by 2021-22. Allowing it to rise as fast as private-sector pay could cost a further £4bn or so. The chancellor may feel that is money he does not have, but before long his hand may be forced. ■

Fish wars

Have your fishcake and eat it

A silly spat about seafood shows the sort of compromises that Brexit will force

BRITAIN’S fishing industry is a tiddler, contributing less than 0.1% of GDP. But the island nation has great affection for its fleet. During last year’s Brexit referendum campaign, a flotilla of trawlers steamed up the Thames to protest against European Union fishing quotas. On July 2nd Michael Gove, the Brexiteer environment secretary (who claims that his father’s Aberdeen fish business was sunk by EU rules), announced that Britain would “take back control” of its waters by unilaterally withdrawing from an international fishing treaty.

Gutting such agreements is strongly supported by coastal communities. The pro-Brexit press cheered Mr Gove’s bold announcement. But landing a new deal for British fishermen will be legally complex, expensive to enforce, oblige Britain to observe European rules that it has had no hand in setting and, most likely, leave its businesses and consumers worse off than before. It is, in other words, a case study of the Brexit negotiations as a whole.

The EU’s Common Fisheries Policy (CFP) was drawn up before Britain joined, to its disadvantage. But membership has allowed Britain to improve the policy. Countries’ quotas are now set on a basis that is more scientific than political. Unwanted fish can no longer be discarded at sea, which has helped to reverse the depletion of stocks.

Unpicking decades of tangled legal agreements will be harder than it looks. Mr

Gove has initiated Britain’s withdrawal from the London Fisheries Convention. But Michel Barnier, the European Commission’s Brexit negotiator, argues that this 1964 agreement has since been superseded by the CFP. Regardless of these conventions, foreign fishermen may claim historic fishing rights going back decades or even centuries. Many of them have set up units in Britain to buy quotas from British fishermen. Unless the government overturns these property rights by decree, it may face a large compensation bill.

In any case, Britain will find that, unless it is willing to continue sharing access to its waters, it will lose access to valuable foreign markets. Consider Norway, which as a non-EU member has control of its own waters. It nonetheless co-operates with the EU and other countries over fish quotas in 90% of them, in order to maintain its own fishermen’s access to fisheries inside the EU.

Of the 700,000 tonnes of fish landed in Britain each year, some 500,000 is exported, two-thirds of it to the EU. Without a mutual deal, which would surely include giving European fishermen some access to British waters, those exports would face World Trade Organisation tariffs averaging some 12%. In the past the EU has responded to fishing disputes with Norway and the Faroe islands by banning all imports. British fishermen would soon find that, to borrow a phrase from the Brexiteers, “we need them more than they need us”.

Consumers would notice, too, since most of the fish on British dinner plates is imported. A third of it comes from the EU, and British fishermen net about a sixth of their total catch in French, Belgian, Dutch, Danish or Irish waters.

Britons may decide that they are willing to pay higher prices for the privilege of banning foreign vessels from British waters. But such a rule would have to be enforced, at extra cost. The “cod wars” with Iceland in the 1950s-70s saw gunboats deployed to protect fisheries. Some Brexiteers would doubtless enjoy such a muscular exertion of sovereignty. But for ordinary Britons who, since the referendum, have endured a squeeze on incomes comparable to that during the financial crisis of 2008, the fishing industry is a distraction. The aviation business is bracing for a hard exit (see page 54). The finance industry, which contributes 7% of GDP, is in danger of decamping (see page 59). Britain’s Brexit negotiators have bigger fish to fry. ■



Brexit’s bounty: a haul of red herrings

De Montfort University awarded Gold in the Teaching Excellence Framework

De Montfort University Leicester is proud to be recognised as a university ranked Gold under the 2017 Teaching Excellence Framework, a Government initiative to recognise excellence in learning and teaching.



Earlier this month more than 800 students and staff from DMU visited Berlin - one of the largest European trips ever carried out by a UK university. They were there to undertake a range of activities linked to their studies, develop new skills, boost employability prospects and to enjoy the rich cultural experiences on offer.

The TEF panel highlighted a range of strengths for which DMU has become well-known:

- The way employability is embedded in the curriculum in every faculty
- The significant contribution DMU Square Mile makes to the social and economic development of Leicester
- The way that real-world research feeds into students' learning
- The pastoral support on offer for students throughout their time at DMU
- The outstanding and personalised study support given to students
- The involvement of students to support any changes to assessment methods and teaching delivery
- The excellent physical and digital resources that enhance learning, retention and employability
- A culture that encourages, recognises and rewards excellent teaching

For further information: dmu.ac.uk/TEF



Bagehot | Corbyn and the bourgeois dream

Labour's leader will badly disappoint his young supporters



JOHN LANCHESTER'S novel, "Capital", provides a vivid portrait of life in a street in south London in the run up to the 2008 financial crisis. The residents watch with delight as the value of their houses rises ever upwards ("Having a house in Pepys Road was like being in a casino in which you were guaranteed to be a winner"). But there is trouble in paradise. The residents start receiving mysterious messages through their letterboxes proclaiming: "We want what you have". Soon the messages are accompanied by videos and the tone becomes more threatening.

Mr Lanchester's novel helps to solve the biggest puzzle in British politics: why the vast majority of young people voted for a 68-year-old who has spent his life flirting with organisations such as Sinn Fein and Hamas and backing hard-left causes like the public ownership of the means of production. One interpretation of Jeremy Corbyn's rise, popular on the left, is that he is satisfying a pent-up desire for "real socialism". But this ignores the fact that many people voted for the Islington MP despite his policies, not because of them. Mr Corbyn is a long-standing critic of the European Union who did as much as he could to ensure that Remain would fail while pretending to support it. Another interpretation, popular on the right, is that his supporters are woolly minded virtue-signallers, determined to prove how compassionate they are while ignoring the fact that Corbyn-style policies have invariably led to disaster. This ignores the fact that millennials have suffered more from the long stagnation that followed the financial crisis than any other generation. They have reason to be angry.

The most intelligent explanation has been provided by John Gray in the *New Statesman*. Mr Gray argues that Corbynism is "populism for the middle classes, serving the material and psychological needs of the relatively affluent and the well-heeled". Far from being a repudiation of Tony Blair's policies, Corbynism represents the completion of the takeover of Labour by middle-class people who put their own interests (such as free university education) above those of the working class. But Mr Gray's strictures miss an important point: most young Corbynistas are not so much settled members of the middle class as frustrated would-be members. Ben Judah, a millennial-generation journalist and author of "This is London", points out that members of his generation are angry that they have done everything they were told,

from studying hard at school to going to university to trying to get a respectable job, but are still holding on by their fingertips.

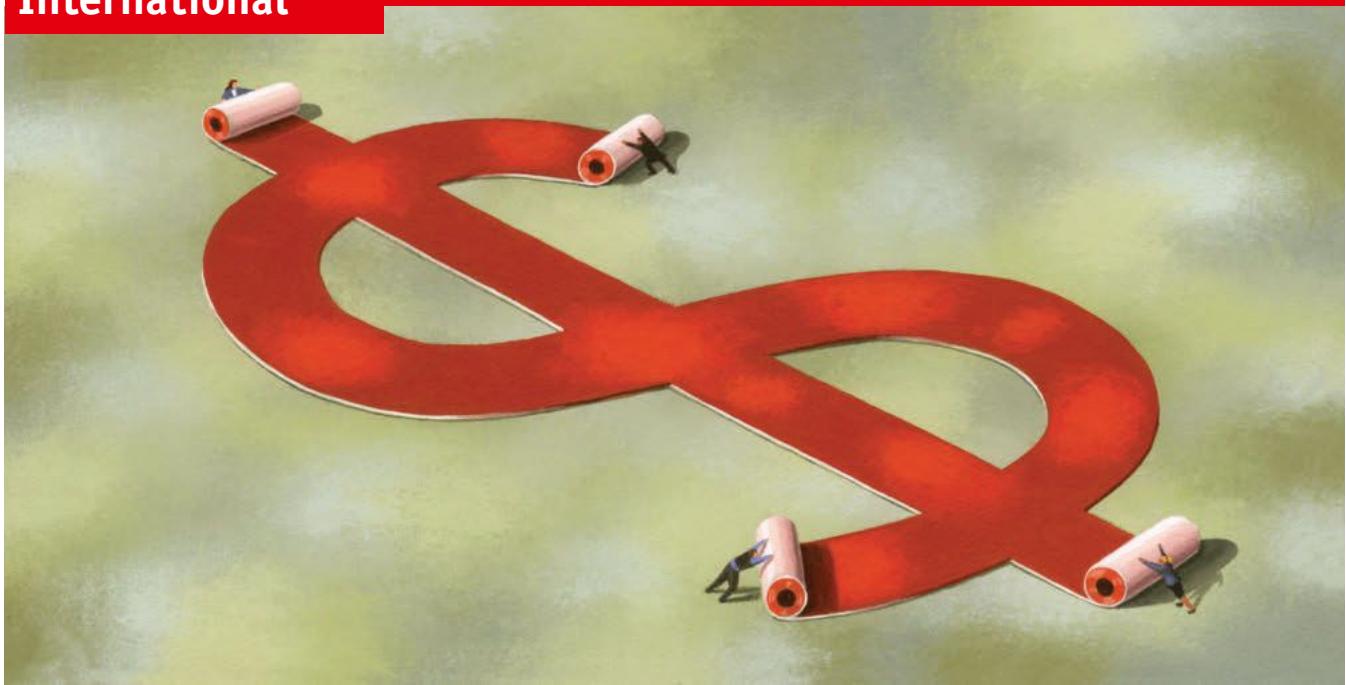
The problem starts with Pepys Road. It is getting ever harder for young people to get a foot on the property ladder or find somewhere decent to rent. Thirty-year-old millennials are one-third less likely to own their own homes than baby boomers were at the same age, and spend £44,000 (\$58,000) more on rent in their 20s than baby boomers did. The problem then extends to the workplace. The young have been on the sharp end of two economic shocks: the 2008 crisis, which squeezed living standards, and a technological revolution, which is doing for middle-class jobs what mechanisation did for working-class ones. Automation is hollowing out entry-level positions as companies use machines to do the routine tasks, such as searching through legal precedents or examining company accounts, that used to be done by junior employees. Companies of every type are cutting costs by ditching long-term perks such as defined-benefit pensions.

These problems reinforce each other. People who are subjected to flexible work contracts find it almost impossible to qualify for a mortgage. They are magnified by the London effect. Young people flock to the capital, where the best professional jobs are concentrated, but exorbitant property prices force them to migrate to the farthest corners of the city or to share with strangers. And they are curdled by generational antagonism. The Resolution Foundation, a think-tank, calculates that people aged 65-74 hold more wealth than those under 45, a group that is almost twice the size. Browse the Facebook pages where young Corbynistas hang out and you do not find hymns of praise to the workers' control of the means of production, but laments for the indignities of modern metropolitan life and jeremiads against baby boomers who grabbed all the cheap houses and got free university education into the bargain.

You say you want a revolution

As it picks itself up after the debacle of the election, the Conservative Party can take some hope from the bourgeois nature of these complaints. All is not lost so long as the party can update its promise of a property-owning democracy to suit the new generation. Ageing cabinet members who have done well out of the past 30 years should be replaced by young people who might have some experience of student debt and out-of-reach house prices. The Tories need policies for the frustrated middle class, particularly building new homes, including on the green belt. They also need to expose the contradictions of Corbynism. Far from democratising the bourgeois dream, Mr Corbyn's policies would quickly kill it. Empowering trade unions would produce disruption, particularly of public services. Abolishing university fees would make it harder for Britain to compete as a knowledge economy. And drastically increasing public spending would damage international confidence and risk capital flight.

Time is running out. Mr Corbyn continues to mesmerise his young supporters with offers of free tuition and well paid jobs. The Conservatives continue to flail around offering bribes one minute and defending austerity the next. And the political class as a whole ignores the deeper causes of Britain's stagnation, from stalled productivity to a failure to produce high-growth companies. The most likely outcome is that Britain will add an experiment with hardcore socialism to its experiment with Brexit. Then, the relative deprivation suffered by Mr Corbyn's middle-class fans will be the least of the country's problems. ■



Financial derisking

The great unbanking

A crackdown on financial crime has led global banks to run from risk. That has caused problems for swathes of deserving customers

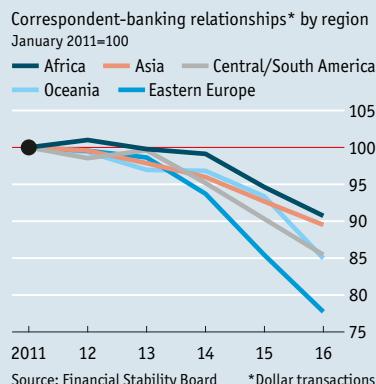
WHEN some of Latvia's banks became infected with dirty money, all paid the price. "Correspondent" banks—international banks that clear smaller banks' foreign-currency transactions through big financial centres—began detaching from the Baltic country. JPMorgan Chase withdrew in 2013. By last year only Deutsche Bank was left. It soon stopped serving half of Latvia's lenders, and in March began dropping the rest, leaving them at risk of being unable to conduct dollar-denominated transactions, from paying remittances to financing trade.

The exodus happened despite Latvia's improved financial oversight. In the past two years its regulators put a dozen banks through stringent anti-money-laundering audits. The banks shed 19,000 high-risk clients in the past year alone. As Deutsche continues its phased withdrawal, Latvian banks are trying to persuade it to change its mind, while scrambling to find alternatives. A switch to settling in euros, Latvia's currency, might be an option, but that poses problems in sectors where goods are priced in dollars, such as commodities.

Strict new rules on capital and liquidity after the financial crisis have tilted the cost-benefit balance away from global banks' least-profitable clients. But another cause of Latvia's travails is "derisking": banks dropping customers in places or sectors

deemed to pose a high risk of money-laundering, sanctions evasion or terrorist financing. Though correspondent-banking traffic has continued to rise, banks in small or poor countries are increasingly shut out. The number of correspondent-banking relationships fell in all regions between 2011 and 2016, according to a survey of banks and payments data published on July 4th by the Financial Stability Board, a group of international policymakers (see chart 1). Worst-hit was eastern Europe, which saw a decline of more than 20%. The number in the Caribbean fell by around 10% in 2016 alone. Money-transfer firms and charities

Rush for the exit



have also been hit. Big banks have "unbanked everyone from porn actors to pawnbrokers", says a regulator.

Banks are driven by fear: fines for aiding financial crime have shot up, in both amount and number (see chart 2 on next page). A decade ago banks were paying fines in America, the most punitive country, of tens of millions of dollars a year between them; now they are paying billions. In 2014 France's BNP Paribas stumped up \$8.9bn for violating sanctions on Sudan, Iran and Cuba. Deutsche has been fined several times, including \$630m in connection with Russian money-laundering.

In some countries a complete shut-out from correspondent banking looms. The Central African Republic and Nicaragua, as well as Latvia, are down to a single correspondent; in Belize and Liberia even the central banks have lost correspondent-banking services. Some countries, like Belize, brought this upon themselves with lax financial oversight. But others were simply caught in the rush to derisk. The International Monetary Fund says the retreat from correspondent banking has made the global finance system more fragile by concentrating cross-border flows.

The smaller firms that handle remittances are suffering, too. Some 250 had their accounts closed by Barclays in 2013; other banks soon followed. The banks were, in part, reacting to a declaration by the Financial Action Task Force (FATF), an intergovernmental forum that shapes anti-money-laundering policy, that such clients were high-risk. Remittances to developing countries fell in 2015 and 2016 (to \$429bn)—the first two-year decrease in three decades—partly because money-transfer firms' travails made it harder and pricier for migrants to send money home. (Low oil ➤)

►rices, which hit South Asians working in the Middle East, also played a part.)

Dominic Thorncroft of the Association of UK Payment Institutions (AUKPI), which represents money-transfer firms, says 65-70% of its members describe banking as a major challenge. Some have given up their independence and become agents of giants such as Western Union and MoneyGram, for whom international clearing is not a problem. A banker based in the Bahamas says that correspondent banks often tell local institutions: "You can deal with small remittance firms, or you can deal with us, but not both."

Charities have suffered even more. A recent survey of several hundred by Charity & Security Network (C&SN), a lobby group, found two-thirds had experienced financial problems such as delayed transfers or account closures. Fear of being caught up in funding terrorism has made banks particularly wary of charities active in conflict zones. Though some have indeed been used as fronts by terrorists, "many innocent people are harmed when donations do not get to their intended destination," says John Byrne of the Association of Certified Anti-Money Laundering Specialists. Imran Madden, the UK director of Islamic Relief, says the charity had accounts abruptly closed by UBS and HSBC, delaying distribution of life-saving aid. It has found other banks, which have taken the trouble to understand its "painstaking" due diligence, says Mr Madden. But four years ago it had fewer than 50 transfers queried each year; now hundreds are.

Most charities will speak only on condition of anonymity, fearful that publicity might suggest elevated risk and cause their banks to turn them away. One Syrian-American charity had a transfer to a Turkish vendor blocked by an American bank. It was intended for a hospital in Aleppo; by the time it was approved the city was no longer under siege. An NGO working in Afghanistan says that delays to wire transfers for blankets and other supplies to help a remote village through the harsh winter meant that people froze to death.

Path of least resistance

Concern has grown among the FATF's members that derisking is actually increasing the risk of financial crime, by boosting cash transactions and the use of informal, unregulated financial networks. More charities are carrying cash: 42% of respondents in the C&SN survey said they were now doing so at least occasionally. A group of 190 American non-profits has formed a lobbying network, InterAction, to raise awareness of derisking in Washington.

Banks argue that they are reacting rationally to zero-tolerance regulation. Regulators have imposed a risk-based approach on banks, giving them little guidance and then punished them for making some

Fine time

United States, number of anti-money-laundering fines by regulators



wrong calls, says Jason Sharman of Cambridge University. The IMF has described regulators' expectations as often "unclear, inconsistently communicated [and] unevenly implemented".

Until recently, regulators mostly ignored complaints about collateral damage. But they have started to come in for more criticism. Leaving people to die as charities struggle to transfer money does not play well. And the governments that want to clean up financial flows also want to boost poor countries' development. That requires international banking services, both for firms and for people. For many countries, remittances from their migrant workers dwarf international aid.

So regulators are trying to improve their guidance. The FATF, for instance, has said that correspondent banks need not "KYCC" (know your customer's customer)—that is, look through their client banks to scrutinise those banks' account-holders. It has toned down sweeping assertions about charities and money-transfer firms being particularly likely to be involved in financing terrorism. The IMF is working with regulators in the most severely affected countries to improve their financial oversight. Big banks are starting to chip in. Standard Chartered, for example, runs correspondent-banking "academies", sharing expertise in due diligence; the most recent, in Dubai, was for Middle Eastern banks.

Some of the countries affected are responding creatively. Mexico, long plagued by drug-money-laundering, is working out how to make payments easier to trace. A domestic dollar-payments system requires payment messages to include an IP address and biometric data from a legal representative of the sender. Similar identifiers are used for cross-border transactions, allowing regulators to spot suspicious patterns. These go into a database to which banks must refer when doing risk assessments. This has reassured some foreign correspondent banks, says Miguel Diaz, the head of payments at Mexico's central bank. "We knew we had a particular problem here and had to go the extra mile."

Better, cheaper compliance should al-

low banks to take back some of the clients who were ditched because they were not profitable enough to outweigh the risk, says Vijaya Ramachandran of the Centre for Global Development, a think-tank. About 3,700 of the banks that are members of SWIFT now use the payment-messaging system's data registry to collect required information about the banks for which they act as correspondents, thus cutting compliance costs. Takis Georgakopoulos of JPMorgan Chase, the largest clearer of dollar transactions, holds out hope for the blockchain technology behind bitcoin, a digital currency. This encodes a record of valid transactions with time stamps, which can be a cheap, easy way to verify customers.

At a recent conference for American bankers, only one in ten said they expected to reduce the number of correspondent-banking partners in the next year. In contrast, an earlier straw poll of European banks suggested more than half thought they would. This may suggest that American banks, which were first to derisk, will also be first to ease off.

Emile van der Does de Willebois of the World Bank says that big banks seem a bit more willing than a couple of years ago to service small banks in places like the Caribbean and Africa—albeit often indirectly, through mid-sized regional banks in "nesting" arrangements. As for money-transfer firms, Mr Thorncroft at the AUKPI cites two potential improvements: proposals to require banks to give their reason for rejecting a client, and the rise of new "challenger" banks in Britain, which seem keen to woo his members.

Paralysed by fear

But these are only tentative signs. Anti-money-laundering compliance costs remain high: \$60m a year for the average bank and many times that for the largest. And the screening products used by banks are still far from perfect: in February, for instance, the Finsbury Park mosque in London won an apology and damages from Thomson Reuters after being wrongly placed in a terrorism-linked category on a database compiled by the financial-information firm. That had made banks wary of serving the mosque.

Most banks still worry that if they dare to "re-risk", it could lead to a fresh round of hefty fines. Charities remain pessimistic, too, despite talk of creating government-endorsed lists of vetted humanitarian-relief groups that banks could safely serve. "Banks are responding to a regulatory crackdown," says Tom Keatinge, a former banker now with the Royal United Services Institute, a think-tank. "Regulators worry about the strength of that response but don't want to micromanage risk. Both are acting rationally, but combined they create a problem that looks intractable." ■



Virtual reality

Get real

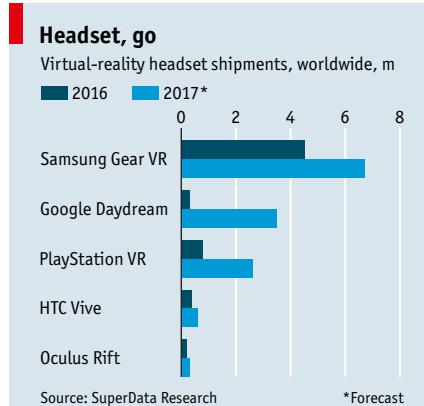
LOS ANGELES

VR has been more about hype than substance. Will that change?

JUSTIN WILLIAMS takes off a virtual-reality (VR) headset and wobbles away from a demo area at E3, the world's largest gaming convention, in Los Angeles. The bottoms of his feet and calves are "on fire," he says. Mr Williams, a 32-year-old former marine, was playing "Sprint Vector", a VR running game: players swing hand-held controllers to simulate motion. Though he has been standing in one place, his brain believes he has just run for several miles.

This sensation of complete immersion is called "presence". Boosters of VR say it is what will drive the technology's mass adoption, in time. When Facebook bought Oculus, a VR startup, for \$2bn in 2014, and sent interest in the technology rocketing, it was this feeling of being present that Mark Zuckerberg, the social network's boss, described as "incredible".

Yet despite many pronouncements that 2016 was the year of VR, a more apt word for virtual reality might be absence. Of the 6.3m headsets that were shipped last year, most were cheaper, less sophisticated devices, such as the Samsung Gear VR, that rely on smartphones to act as their screens, according to SuperData, a games-market research firm. Only 200,000 high-end Oculus Rift headsets were sold globally (see chart). In the end, SuperData revised its first forecast, made in January last year, that total revenue from VR software and hardware would reach \$5.1bn in 2016, down to \$3.6bn. The actual figure for total worldwide revenue was a meagre \$1.8bn.



The expectations set for VR were plainly unrealistic, says George Jijashvili, an analyst with CCS Insight, a research company. Even in the gaming industry, which has been quick to adopt the technology, people noted that Microsoft's release of its new Xbox gaming console at the convention made no mention of VR. Oculus did not even set out a stall.

Several obstacles still stand in the way of widespread use. The gear is expensive and clunky, and requires a powerful computer or gaming console to function. Consumers are hesitant to splash out on expensive kit when there isn't a lot to do with it; developers are reluctant to spend resources making games for a tiny market. Developers are also held back by the sheer variety of headsets, which means they

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need to code content several times for different platforms. The way in which users must wave around hand-held controllers such as HTC's "wands" to input movements falls short of the promise of VR, which will eventually use sensors to convey bodily movement.

And yet signs of progress are also visible. Despite the lack of splashy announcements at E3, there were plenty of smaller companies eager to show off their wares. More than 120 of the 293 exhibitors, mostly gaming-related companies, had some sort of VR product, up from 53 last year, 27 in 2015, six in 2014 and none in 2013. Their offerings included everything from "haptic" feedback (giving VR users a sensation of touch) to advertising inside VR content.

Some tech giants still see VR as integral to their future. Despite its underwhelming sales of Oculus Rift, Facebook is convinced that VR is "the next major computing platform". It recently hired Hugo Barra, a well-known former Google and Xiaomi executive, to head up its VR division. It has a new offering, "Spaces", which is a place to socialise with friends in VR that allows users to create avatars, to express some emotion through facial expressions, answer video calls, share photos and take selfies. As a first go, it is surprisingly compelling.

Other tech firms reckon VR may be a stepping stone to a bigger prize: augmented reality (AR), which allows users to overlay the digital world onto the real one. AR has more everyday applications, such as navigation, than VR, which is expected to be used chiefly for leisure activities and in industry. Apple believes that AR will become a bigger phenomenon than VR.

Google is trying both. It had a salutary experience with its "Glass" headsets, a much-maligned set of primitive AR spectacles that it launched in 2013 only to withdraw them from sale two years later. It has now developed and started selling "Day-

► dream" mobile headsets, a cheap smartphone-based VR kit, and has invested in several VR and AR companies, such as Magic Leap, an AR startup. It has bought Owlchemy Labs, the creator of "Job Simulator", a VR game set in a future in which humans no longer need to work thanks to machines. Microsoft is betting on what it calls "mixed reality", arguing that it is pointless to draw a line between AR and VR. Although it did not emphasise VR at E3, it is enthusiastic about its potential on the Windows 10 operating system.

If VR is to take off at last, tech-industry executives agree that avid gamers will be crucial. Such people tend to be early adopters of expensive new equipment, so they subsidise innovation. Games developers know how to engage players and keep them interested, and how to tell stories in a

non-linear fashion. And they have for years created content in three dimensions, a basic requirement for VR. Indeed, virtual reality is integrating games and the broader technology industry as never before. "It's like two continents that were apart, and continental drift is bringing them together," says Neil Trevett of the Khronos Group, a non-profit industry group.

HTC developed its Vive headset in collaboration with Valve, a games developer and distributor. Google is funding independent games developers to boost the creation of content. When Apple introduced new virtual-reality and augmented-reality features at a conference for software developers last month, its emphasis was on games. Members of the Khronos Group, including Google and Apple as well as games firms such as Epic and Nintendo, are

working on industry-wide standards.

New headsets from a variety of hardware firms—Acer, Asus, Dell, Lenovo and Hewlett-Packard—all running on Windows, are expected later this year. Many new games and entertainment products using VR (see box) are poised to go on sale. Better technology and more content will encourage gamers who were on the fence to join in, expanding the market and setting off a virtuous cycle, argues Dan O'Brien, head of VR at HTC. As part of that cycle, headsets will become smaller, cheaper and wireless. Some of those advances will come from China, which leads the world in the adoption of VR. Chinese firms have been quick to invest, and its hardware industry is churning out new products. Xi Jinping, the president, has mentioned VR as important for economic growth.

Virtual reality also has new functions in business and beyond. Mr O'Brien says he receives many inquiries from carmakers, for example, which are using VR as a way quickly and cheaply to prototype and collaborate on new models of vehicles. Hospitals in America are experimenting with 3D models in VR as a way for doctors to get a closer look at tricky bits of bodies or to prep for surgery. The Pentagon is eyeing new VR technologies aimed at consumers as a cheap addition to its existing use of VR for training. The lessons from making shoot-'em-up games for bored teenagers could one day be applied to real training programmes for soldiers—as well as being useful for the doctors who come after. The VR industry has not yet fulfilled the hype. But the believers have not lost their faith. ■

Immersive experiences

VR in La La land

BURBANK

Hollywood studios try out virtual reality

OUTSIDE a squat grey building in Santa Monica, the California sun melts the tar. Inside, in a dark room roughly the size of a small shipping container, two men are exploring the world by means of virtual reality (VR). They squash spiders in an abandoned temple, hit a home run at Yankee Stadium and float through a Blade Runner-esque landscape, all in the span of eight minutes. It feels much longer than that, and also shorter—time is hard to grasp in VR.

The creator of the experience is Walter Parkes, a former boss of DreamWorks Pictures, a film studio, who last year co-founded Dreamscape Immersive. The startup plans a chain of VR multiplex cinemas offering ten-minute interactive experiences for around \$15 each. The first will open at a shopping mall near Beverly

Hills at the end of the year; another 14 are planned for 2018. Mr Parkes says it costs about \$2m to make a ten-minute VR experience, compared with around \$200m for a big-budget Hollywood movie (not counting marketing and distribution). The economics work even though people are entertained for much shorter periods, he argues.

The men and women over in Burbank, where the big studios are based, are interested. Dreamscape has attracted around \$10m in investment from Fox, Warner Brothers and MGM, along with Steven Spielberg and Westfield, a shopping-centre operator. Disney has invested \$66m in Jaunt, which makes tools for creating VR content. Warner Brothers recently announced a partnership with IMAX, which specialises in large-screen cinemas, to fund and create VR "experiences" for three upcoming films.

Promotional and extra material for films in VR is the first priority. Later on studios expect VR to become a format of its own, a cross between movies and games. "The lines are getting blurred. They use a lot of the same tech, the same tools," says Thomas Husson, an analyst at Forrester, a research firm.

Hollywood is in a battle for attention as well as dollars. In the future Harry Potter fans, for example, may consider it a waste to go to an attraction in the English countryside when they can visit Diagon Alley at home in a headset. They may even do both. If studios get a grip of VR, every minute spent in a cinema could mean an extra one in a park and yet another in a headset.



For your eyes only

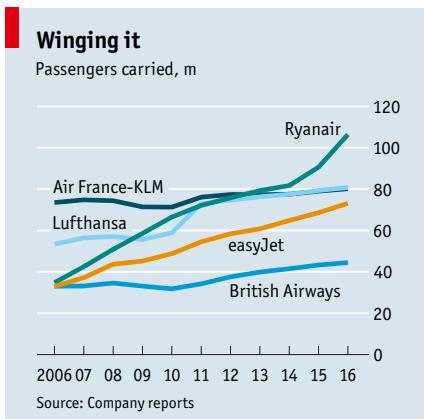
European airlines and Brexit

Brace position

Brexit could entail a hard landing for low-cost carriers

THE European Commission celebrated 25 years of the EU's internal aviation market in June. The liberalisation of European aviation, which allowed EU carriers to fly between any airport within the bloc, opened the skies to the masses. Greater choice of airlines has cut fares—by as much as 96% between Paris and Milan since 1992, for example, in large part because of low-cost carriers (LCCs). Cheap fares have pushed passenger volumes to record levels, from 360m in 1993 to 920m this year.

Yet the bosses of Europe's two biggest LCCs, Ireland's Ryanair and Britain's easyJet, are in no mood to cheer. The problem is the possibility of a hard Brexit. In the 1990s Britain was the country driving forward airline liberalisation in Europe, against the ➤



► instincts of France and Italy, which preferred to protect their own flag carriers. The British government's plan to leave the EU by March 2019 means that the country will probably exit the European Common Aviation Area (as an expanded version of that initial aviation market is known). Continued membership would require acceptance of European court jurisdiction, a "red line" for British negotiators. Without a new agreement to replace it, flights between Britain and the EU might have to stop entirely, says Michael O'Leary, the chief executive of Ryanair.

Other airline executives do not think a complete stop in flights is on the cards. Negotiators on both sides have an incentive to avoid howls of protests from Britons denied summers in the sun and Mediterranean hoteliers left with empty resorts. Even if a permanent arrangement is not forged in time, some sort of interim deal to allow existing Britain-EU routes to continue after Britain leaves seems likely.

But Mr O'Leary is right to worry. Brexit is likely to create a worse environment for many European airlines. Growing rates of migration among young people in the bloc have boosted revenues. The share of passengers flying within the EU to see friends and family, rather than for tourism, has grown from 5% in the early 1990s to around a third. Restrictions on migration between Britain and the EU could sap demand.

Budget airlines have the most to lose. In the past decade, LCCs have been responsible for 99% of the increase in passenger traffic at Europe's 20 biggest airports, according to Olivier Jankovec of ACI Europe, an industry group. Bringing competition to routes once dominated by cosseted national carriers, they stimulated demand by slashing fares.

Now their full-service rivals scent a chance to grab back some business. The flag carriers of France and Germany, which have a close relationship with their respective governments, have every incentive to make sure that rivals are caught by rules that ban foreign airlines from flying within the EU, says Andrew Charlton of Aviation Advocacy, a consultancy. In February

Lufthansa's CEO, Carsten Spohr, said he will oppose any attempt by easyJet or British Airways to re-enter the European Common Aviation Area after Brexit.

Even if an interim deal is reached to continue flights between Britain and the EU, it is possible that Ryanair will be prevented from flying within Britain and that easyJet, a British carrier, will be unable to fly within the EU. In March 2019 they may each have to split themselves into a British-registered firm and one based in the EU.

The LCCs are famously flexible. They can move aircraft around their networks in a way that legacy carriers that base their operations around specific hub airports cannot. This sort of response enables them to respond to temporary disruptions. But if Britain cannot forge a deal to replace the European Common Aviation Area, there will be fewer airlines on many routes. And that will be to the detriment of both British and European passengers. ■

Rosneft v Sistema

Russian brawl

MOSCOW

An oligarch falls from grace again, worrying investors in Russia

HE WAS back in favour, or so it appeared. After spending several months under house arrest in late 2014, Vladimir Yevtushenkov, a Russian oligarch, relinquished control of Bashneft, a midsized oil firm, to the state. "If you like another company tomorrow and want to take it, you are welcome," he told Vladimir Putin at the time, he later recalled. The president publicly gave his approval to Sistema, Mr Yevtushenkov's conglomerate, shares in which had plunged. Mr Yevtushenkov subsequently appeared at annual Kremlin receptions and late last year joined a presidential delegation to Crimea.

Now he is under pressure again, facing a lawsuit from Rosneft, a state-run oil giant, which is demanding 171bn roubles (\$2.8bn) in damages. Rosneft's boss is Igor Sechin, a Putin confidant, who many in Moscow reckon orchestrated the initial 2014 case against Mr Yevtushenkov as well. (Rosneft and Mr Sechin have denied any involvement in it.) Late last year, Rosneft purchased Bashneft from the state for \$5.3bn. It now claims that Sistema inappropriately took assets in a restructuring of Bashneft.

The case attests to Rosneft's appetite for deals, as well as to Mr Sechin's clout. Since acquiring Bashneft, Rosneft has sold a 19.5% stake in itself to Glencore, a Swiss-based commodities firm, and the Qatar Investment Authority for €10.2bn (\$11bn), despite being a target of American sanctions. Mr Sechin also just concluded a deal worth \$12.9bn to acquire India's Essar Oil. A Rosneft spokesman, Mikhail Leontyev, says "there's nothing personal" about its case against Mr Yevtushenkov's firm, even if many in Moscow's business community see the affair as a clash of titans.

The assets that Sistema is alleged to have taken from Bashneft include an energy supplier held by a subsidiary. Rosneft also asserts that Bashneft incurred damages as a result of Sistema's decision to buy out Bashneft's minority shareholders during the 2013-14 restructuring and because it cancelled some treasury stock in the firm. Sistema calls the case "groundless". Under its ownership, it notes, Bashneft's market value rose eightfold and its production of oil rose by nearly half. "Investors were largely happy," says Andrey Polischuk, an oil-and-gas analyst at Raiffeisen Bank.

Investors in Russia will watch the suit closely. It underlines the frailty of property rights, says Oleg Kouzmin, an economist at Renaissance Capital, an investment bank in Moscow. Sistema's shares lost more than one-third of their value the day after the suit was filed in early May. Late last month a court seized as collateral Sistema's shares in MTS, Russia's largest mobile operator; in Medsi, a private medical clinic; and in an ►



► electrical company in Bashkiria.

The conflict also hints at rising tensions inside Russia's elite as the economy continues to sputter. The chieftains are fighting each other, observes Mikhail Krutikhin of RusEnergy, a consultancy. Russia's formal institutions have long had a tendency to falter, but a system of unwritten rules, known as *ponyatiya*, understood both by local players and foreigners, has helped govern business dealings. Thus Mr Yevtushenkov, who is loyal to the Kremlin and stays out of politics, was widely considered to be in favour before his initial arrest. His reconciliation with Mr Putin was expected to put him back on firmer ground. As Sistema's CEO, Mikhail Shamolin, said recently, "In terms of *ponyatiya*, there are no claims to be made against us."

"It is unclear what the rules are now," laments Konstantin Simonov, head of the National Energy Security Fund, a consultancy. Independent members of Sistema's board have asked the Kremlin to act as an arbiter, but Mr Putin has largely remained silent on the matter. Some people say the conflict is a new version of the corporate-raiding culture of the 1990s, but carried out with lawyers and court briefs instead of the earlier period's methods, including henchmen toting Kalashnikovs. ■

Online hot-food delivery

We can be heroes

PARIS

Food-ordering firms such as Delivery Hero are thriving

NIKLAS OSTBERG spent much of his youth as a competitive cross-country skier in Sweden. Then he ditched his skis for a less healthy cause. A decade ago he founded a firm that matched online pizza orders to restaurants. It grew into Delivery Hero, a Berlin-based service that last year dispatched nearly 200m takeaway dinners to customers around the world. It is in over 40 countries and claims to be the local leader in 35, including Germany.

The recipe has delivered in financial terms. The company's initial public offering (IPO) on June 30th proved popular with investors and its share price has climbed since. Delivery Hero is now valued above \$5bn, a handy premium over a valuation of \$3.1bn in May, when Naspers, a South African online giant, invested in it.

It is not alone; shares in similar businesses have performed well after going public in recent years. Shares in Just Eat, a British company with a market value of £4.5bn (\$5.8bn), have more than doubled since its IPO in 2014. The value of Grubhub, a food-delivery company based in Chicago,



Bringing home the bacon

goes up by a third in the same period to around \$4bn. The market capitalisation of Takeaway.com, a Dutch firm, is up by a third since it listed in September; it is now worth €1.6bn (\$1.8bn).

What matters in food-ordering is gaining dominance in what analysts and Mr Ostberg agree are "winner takes most" individual markets. In any given country, consumers are unlikely to have more than one food-ordering app on their phones. For second- or third-placed competitors a reverse "network effect" occurs, says Mr Ostberg, in which they must constantly struggle to avoid losing restaurants and customers and margins tend to fall. Firms that dominate can enjoy profit margins of up to 20% per order, although Delivery Hero's are only half that level.

Those margins are drawing online giants, Amazon and Uber, into the business. Their bulk and expertise in digital platforms and deliveries threaten the independent operators. Mr Ostberg puts a brave face on it and notes that the potential market for hot food globally could be worth \$72bn, which leaves room for various firms to flourish in different parts of the world. He vows to take much of the capital raised from the firm's IPO to invest in new technology.

Prospects for Delivery Hero depend on how smart Mr Ostberg's team proves to be in this regard. The firm, which is part-owned by Rocket Internet, a Berlin-based company-incubator, is not a pure tech startup. It expanded partly through acquisitions and a merger late in 2016 with a rival, Food Panda (also controlled by Rocket). It organises deliveries through its digital platform, but managing fleets of cycle couriers is a complex business to scale up. Its wide exposure to emerging markets, from Saudi Arabia to Hong Kong, although offering growth, also brings lots of potential headaches because of local regulations

and cultural quirks.

Mr Ostberg talks up the focus on tech, citing the firm's experimental deliveries by drones and robots, plus its efforts on data-gathering and analysis to anticipate customer desires or resolve problems with logistics. But the firm is not as advanced as, for example, Zalando, an online fashion firm that grew out of Rocket Internet and floated in 2014. Florian Heinemann, who founded Project-A, a venture-capital firm, in Berlin and spent years at Rocket, praises Zalando's team of 2,000 tech engineers for their skill in using data from customers. He does not see the equivalent, yet, at Delivery Hero.

The IPO should nonetheless boost Berlin's profile as a startup hub, making it easier for other entrepreneurs to raise more capital in turn. It should also help Rocket Internet, shares in which have fallen in recent years as other firms it backed have failed to take off. "Opting for an IPO is a very hard route and there are very few positive examples in Germany," says Ulrich Schmitz of Axel Springer, who oversees the media firm's incubator of tech startups in the city. Later-stage funding can be especially hard for firms to raise, so anything that encourages investors to see clear exit routes is helpful, he says.

Mr Ostberg agrees, saying he dreams that his firm can grow to become a "category leader" and "inspire others" in the European tech scene. That is still an uphill task—but cross-country skiers, at least, are good at those. ■

America's beer market

Half-empty

NEW YORK

A slowing market and the might of AB InBev worry craft brewers

JULY 4th is a day to celebrate American independence, first and foremost, but also to grill meat and swill beer. For American beer lovers in particular, the pint-glass runeth over in terms of choice. They had 5,000 breweries to pick from this year; 35 years ago there were under 100. Drinkers can enjoy time-honoured traditions, guzzling Budweiser to wash down all that sizzling beef, and newer ones such as sipping ale "finished with fennel, liquorice and anise" at Tørst, a Brooklyn bar.

For the producers of beer, the mood is darker. Though the number of brands has proliferated, the number of drinkers has not. Sales have been flat for a few years and 2017 has been especially slow so far. The volumes of beer sold at stores for the three months to June 17th were 1% lower than in the same period last year, according to ►

► Nielsen, a market-research firm. Brewers are now waiting with some anxiety for data about sales during the July 4th holiday. "The start of the year has been as bad as I can remember," says Trevor Stirling of Sanford C. Bernstein, a research firm.

The dip is the result of two problems, one old and one new. First, the consumption of wine and spirits is growing more quickly than that of beer, and has been for nearly 20 years. Women are drinking more booze but often prefer wine and spirits. Men are turning to a wider range of drinks, including whisky and wine.

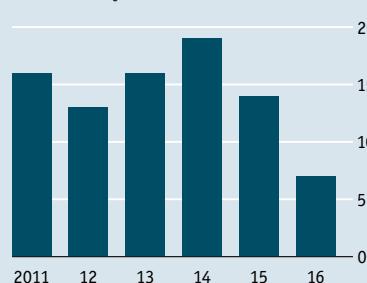
The second difficulty is that after years of effervescent growth, craft beer has gone flat. Volumes grew in 2016, but half as quickly as in 2015 (see chart). In the 13 weeks to June 17th craft-beer sales and volumes both dropped, by 0.7% and 1.5%, respectively. It may be that craft beer has reached its natural limit, both because there are only so many people who want to buy it and because there is only so much shelf-space that stores can provide.

Olivier Nicolai of Morgan Stanley, a bank, notes that many distributors and retailers are weary of dealing with a jumble of brands, with some cases of beer going bad before they can be sold. It is hard for retailers to know which beers to stock because consumers, spoilt for choice, have proved fickle. Sales of Saison farmhouse beers, a spicy pale ale, for example, rose by 28% in 2015, according to Nielsen, only to fall in 2016.

As the market loses its fizz, debates are intensifying about whether independent beer companies can thrive in the shadow of behemoths such as AB InBev, which controls about half the American beer market. Last year the group, which is backed by 3G Capital, a New York-based

Refill, please

United States, craft-beer sales volume % increase on a year earlier



Sources: BMI; Sanford C. Bernstein

private-equity firm, bulked up further by buying Britain's SABMiller. By some measures AB InBev's American division, Anheuser-Busch, looks less than intimidating. It is experiencing a much steeper drop in beer demand than craft brewers. In the four weeks to June 17th its Bud Light and Budweiser brands each saw volumes drop

by more than 8%, declines not seen since 2009, in the depths of the financial crisis.

But small brewers still fret about its scale. It has recently shown interest in buying small brands as well as big ones, downing nine American craft brewers in just the past three years. Some small brewers worry that AB InBev's craft brands will push aside their own. Bob Pease of the Brewers Association in Boulder, Colorado, which represents independent beer firms, argues that AB InBev's expanding portfolio of beer makers and its relationships with distributors may mean that few rivals make it onto delivery trucks. His group introduced a new seal in June to help consumers find properly independent brewers.

João Castro Neves, head of AB InBev's American business, disputes the idea that his company has a stranglehold on the market. "There is no way that Anheuser-Busch or anyone else can impose a beer on the consumer," he insists. Brewers both large and small may find that increasingly hard to contest. ■

Air India

Down the aisle

MUMBAI

Wanted: a new pilot for a struggling national emblem

AFAMOUS brand in the world's fastest-growing aviation market, sitting on valuable slots at international airports and able to borrow cheaply thanks to being state-owned: Air India ought to be hugely profitable. But under state ownership it has guzzled public funds as hungrily as its jets consume kerosene. Last week the authorities threw in the towelette and announced an "in principle" cabinet agreement to privatise it. The chances of that going ahead rose on June 30th when IndiGo, a well-run private low-cost carrier, said it wanted to bid.

Whoever seizes the controls can expect a hard task. Air India has struggled since private rivals were first allowed in 1994 to fly in India's skies. Together with Indian Airlines, another state-owned carrier with which it merged in 2007, it has a domestic market share of just 13% and is shedding one percentage point or so every six months. A bail-out of 300bn rupees (\$4.7bn) agreed in 2012 was meant to stop losses, but has failed.

The company's top bosses last year claimed they had steered the airline to its first operating profit for a decade, helped by a fall in the price of aviation fuel, only for the state auditor to accuse it of incorrect accounting. Air India blamed accounting standards for the difference. The cash it made would not have covered interest payments on its debt of some 520bn rupees. Analysts calculate that its

operations are worth less than that. To facilitate a sale, the government could restructure its borrowing, much of which is owed to state-owned banks. It could also spruce up the carrier's balance-sheet by selling some of Air India's valuable real-estate holdings in Mumbai.

IndiGo, which has a 41% market share at home, is clearly most interested in Air India's overseas operations. These are underpinned by its slots in rich-country airports such as Britain's Heathrow, which are worth tens of millions of dollars. But the prospect of it bidding for a rival with a third of its market share but nearly twice its staff numbers (Air India has around 20,000 employees) sent shares in IndiGo's parent swooning.

Foreign carriers may take a look. Another buyer could be the Tata Group, India's biggest conglomerate, which founded Air India in 1932 before losing it in 1953 to nationalisation. But Tata has no lack of businesses it needs to turn around in its current collection without looking for new ones. The likeliest future owner may be none other than the government. It has talked for years of privatising the over 200 state-owned companies on its books, but no sale has taken place. Air India has been on the block before, in 2000, but was reprieved. Unions are agitating to prevent a sale. Fasten your seat-belts and fold your trays away, but expect plenty of delays before landing. ■



Over a barrel

Schumpeter | My car's sexier than yours

Detroit's car firms try to show that anything Silicon Valley can do, they can do better



IT IS fashionable to say that the city of Detroit is on the up after decades of decline. Amid the derelict buildings there are signs of revival; art shops and trendy food trucks abound. But for a truer augury of the city's possible future, consider the rock-bottom stockmarket valuations of Ford and General Motors (GM), Motor City's two big domestic car firms. (A third, Chrysler, is owned by Fiat Chrysler Automobiles, whose chairman is a director of *The Economist's* parent company.) If you put the members of the S&P 500 index in order of their price-earnings ratios, Ford and GM are at the bottom, among the walking dead.

For their investors, creditors and 426,000 staff, about 18% of whom are in Detroit, it is a terrifying signal. A low price-earnings ratio is the stockmarket's way of telling you that business as you know it is over. GM and Ford together made \$18bn of underlying profit last year but have a market value of \$98bn. That ratio implies that their profits will halve or worse, and quickly. Wall Street has got the hots for a younger crowd of firms that investors think will dominate the transport technologies of the 21st century; electric engines, ride-hailing, ride-sharing and driverless cars.

Three Silicon Valley firms—Uber, Tesla and Waymo (Alphabet's driverless-car unit)—are each reckoned to be worth more than GM or Ford. All lose money and bring in no more sales in a year than Ford or GM do in a fortnight. No matter. Expectations are sky high. Morgan Stanley, a bank, expects Waymo's sales to exceed \$200bn by 2030, making it roughly America's fifth-largest firm. Not bad given it does not have any products for sale.

For the people running GM and Ford it is hard to ignore such huge differences in valuation, even if they reflect bubbly thinking about Silicon Valley. Shareholders and directors are becoming restless, and talented staff demoralised. The pressure to act is intense. GM recently had to fend off an activist attack from a hedge fund. In May Ford fired its boss, Mark Fields, replacing him with Jim Hackett, whose experience as a car executive consists of 15 months running Ford's tech incubator. Its chairman, Bill Ford, said new blood was needed to deal with technological change.

Investors are making two mistakes, the car firms argue. First, they underestimate how hard it is to mass-produce cars, and second, they discount the possibility that hidden within them are Detroit's equivalent of a Tesla, an Uber or a Waymo. Certainly,

when you see the view from Ford's headquarters, of miles of woods, test tracks and factories owned by the company or by the Ford family, it is easy to believe that there might be some buried treasure there.

Take the point on mass production, first. Detroit's experts sniff that Silicon Valley has no idea how to make millions of vehicles that adhere to the safety and reliability standards of the conventional car firms. Tesla produced the equivalent of 1% of GM's vehicle volumes last year. One Detroit executive reckons it is 10,000 times harder to build an autonomous vehicle that works on real roads rather than on a Californian test track.

Yet he is no Luddite, and expects a revolution. Electric vehicles will be mainstream by 2020, he says. Driverless cars will slash the cost-per-mile of travelling, especially if you count the time saved by freeing people from the hours they waste clutching steering wheels. Ride-sharing will mean that the utilisation rate of cars will go up and therefore that fewer vehicles are sold. But that could be offset by new revenue from services such as charging passengers for rides or selling data that is gathered about them.

The car firms try hard to draw attention to the businesses they own that will benefit from these trends. GM has a 9% stake in Lyft (a rival to Uber that is gaining market share), and in 2016 bought Cruise, an autonomous-vehicle firm based in San Francisco, for \$600m. GM's subsidiary, OnStar, connects 7m drivers to various data services. Its electric-car model, the Chevrolet Bolt, is on the road. Ford owns Chariot, a "crowdsourced" shuttle service, and will have 13 models of electric car on the road by 2020. It is investing \$1bn over the next five years in Argo, an artificial-intelligence firm that is developing software for autonomous vehicles.

Investors do not seem to care. In the past few months they have begun to fret about a new risk, that American car sales may be at a cyclical peak. In previous downturns, profits have slumped. Both GM and Ford want to emphasise that their costs can be more easily cut than before the crisis in 2008-10, when GM went bust and Ford nearly did. They also want to show that they will not waste money abroad. In March GM sold its European arm to France's PSA Group. Ford says that it is prepared to sell some emerging-market operations if they do not produce higher profits soon. But their price-earnings ratios have not budged.

Wall Street: the world's most demanding backseat driver

In their desperation, Ford and GM are toying with a new strategy: putting their tech assets into ring-fenced divisions that can be promoted as "new Ford" and "new GM". These units' accounts will not be pretty, with few sales, and combined investments of \$3bn-4bn a year. But with a speck of the glitter that Tesla's Elon Musk sprinkles on his loss-making firm, they might capture investors' imaginations and resuscitate their parents' share prices.

But by re-engineering their structures, the car companies might start something uncontrollable. Wall Street could get excited and demand that they sell or spin-off the new divisions, robbing Detroit of its best assets. In the 1990s and early 2000s stodgy telecoms firms such as AT&T spun-off their mobile arms only to be reunited with them years later. Ford and GM may be goaded into unwisely blowing their \$48bn of cash on tech acquisitions.

The underlying shift in the car industry is real: the way in which cars are made and are used is changing. But it is surrounded by a swirl of hyperbole. Detroit's firms face a classic incumbent's dilemma. They must show they can dance with the cool kids, while not losing either their wallets or their dignity. ■



Brexit and the City of London

The City's hazy future

As the clock runs down, banks and other financial firms must make plans—even if they don't know what for

OVER a year has passed since Britons voted to leave the European Union. More than three months have gone by since Britain gave formal notice to quit. Less than 21 months remain until March 29th 2019, the scheduled date of Brexit. Yet banks, insurers, asset managers and other financial firms that use London as a base from which to serve the entire EU are little wiser than they were on referendum day about what Brexit will entail. They must plan for it nonetheless.

The Prudential Regulation Authority (PRA), Britain's financial supervisor, wants to see their contingency plans by July 14th. The European Central Bank (ECB) has also asked the banks it watches to lay out their post-Brexit strategies. This is probably not demanding for big banks, which are in constant touch with their overseers and already operate both in London and elsewhere in the EU. But some smaller lenders, especially, have work to do. "I think it is fair to say that most banks are not where they should be," said Danièle Nouy, the ECB's chief supervisor, on June 30th.

Financial firms in any of the EU's member states can serve customers in any of the other 27 without setting up a local branch or subsidiary. Once Britain leaves the EU's single market, operations based in London will lose this "passport". No one yet knows what will replace it. A free-trade agreement covering only goods, even if it could be ne-

gotiated in time, will plainly not suffice. The CityUK, a trade body, has been arguing for a bespoke deal for financial services, comprising mutual recognition of regulations with the EU-27, transitional arrangements to avoid a post-Brexit crunch and "mutual access to talent", so that London will still attract bankers, fintech entrepreneurs and others.

Bankers think that since Britain's general election on June 8th, when Theresa May's Conservatives lost their parliamentary majority, a softish Brexit, with a gradual shift to a new relationship, has become more likely. More business-friendly members of the government than Mrs May, such as Philip Hammond, the chancellor, sound more confident. But bankers also fear that with a weaker, possibly unstable, government, the risk of an abrupt departure in 2019 with no deal and no transition has gone up. Although they hope for the best they must still plan for the worst, and be ready for the hardest of Brexits.

The timetable is tighter and more complicated even than it looks. Lindsey Naylor of Oliver Wyman, a consulting firm, says that banks are trying to keep their options open for as long as they can. That means not shifting people or putting equity into the EU-27 until they have to: such decisions are hard to reverse. But some commitments cannot be put off. Given the months needed to kit out a trading floor, say, it is

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worth renting extra space whether it is needed or not. And within six months or so, Ms Naylor reckons, banks will have to start hiring senior people. For example, bringing in a chief risk officer for a new European home—who will probably have a job elsewhere and therefore be obliged to take "gardening leave", and may have to be interviewed and approved by regulators before taking up the job—could take a year.

More firms are taking the first step, of deciding where their EU base will be. By July 4th 59 of the 222 tracked by EY, another consultancy, had said they had started moving staff or operations out of Britain, or were reviewing their domiciles; 22 investment banks had declared their intention to shift some people. On July 3rd Sumitomo Mitsui Financial Group, one of Japan's three giant banks, said it would establish new banking and securities subsidiaries in Frankfurt. By the end of the year, says Hubertus Väth of Frankfurt Main Finance, a local booster group, between 12 and 20 banks will have committed themselves to the city. Mr Väth says "things are going very well" for Frankfurt—although Amsterdam, Dublin, Luxembourg and Paris are also eager. He thinks most companies made their choice as early as the first quarter of this year, even if they have not gone public. Kieran Donoghue, head of financial services at IDA Ireland, the country's inward-investment agency, expects more announcements after the PRA's deadline.

What seems plain is that a hard Brexit would be costly. Risk-management, compliance, information-technology and other operations now concentrated in London will have to be duplicated, albeit on a smaller scale, elsewhere in Europe. A study published on July 3rd by the Association for Financial Markets in Europe, a trade body, the Boston Consulting Group and ►

Clifford Chance, a law firm, assumes that Britain leaves the European single market and customs union, with no passporting rights or agreement that its regulations are "equivalent" to the EU's. It estimates the cost of restructuring banking and capital-markets businesses to maintain the same level of service across the EU after Brexit at €15bn (\$17bn), cutting returns on equity by 0.5-0.8 percentage points.

In addition, banks would have to put €70bn of regulatory capital into legal entities in the EU-27, most of it because of the shift of trading activity. Most business customers interviewed by the study's authors assumed that the costs of Brexit would be absorbed by the banks, but in fact they are likely to be passed on, in higher charges and reduced services. The study concludes that small and medium-sized enterprises are likely to be hit hardest, and that most of those customers interviewed had made no preparations.

The threat of an abrupt, deal-less Brexit, notes Ms Naylor of Oliver Wyman, makes the role of supervisors—as guardians of financial stability—all the more important. In May Sabine Lautenschläger, Ms Nouy's deputy, told banks considering relocating to the euro area that the ECB would not simply nod through internal models approved by the PRA. But with time tight, banks could keep using their models for a while, pending permission. Ms Naylor calls this "one example of where pragmatism is starting to come into the discussion". If politicians can't smooth the path to Brexit, regulators may have to. ■

Pensions

Pepped up

The EU proposes pan-European pension products

THE story of the European Union is in part that of the steady accretion of power by its central bodies. But until now the politically touchy business of running pensions has, like taxation, been zealously guarded by national governments. No longer: on June 29th the European Commission presented a long-awaited proposal for a pan-European personal-pension product, the snazzily named "Pepp".

Any attempt to encourage Europeans to make adequate provision for their old age is welcome. The combination of ageing populations, falling birth rates and generous state pensions could leave future generations footing the bill, unless people work for longer. Especially in countries such as Italy and Greece, where the state is the main pension provider, encouraging

people to make personal savings for their retirement would be sensible (see this week's special report).

Europe's pension landscape is fragmented. In some countries, citizens have plenty of products to choose from; others have very few. A patchwork of European and national rules, and divergent tax treatments, has meant pension pots tend to sit in national silos. The commission hopes that the new products will both help savers and provide an extra pot of money to boost investment in Europe. Indeed, the commission reckons that today's total personal-pensions savings of €700bn (\$794bn) could exceed €2trn by 2030, of which €700bn would be in Pepps alone.

The idea is that a Pepps trademark would provide reassurance about the quality of these products, which could be sold by insurers, pension funds, asset managers and banks across the EU. That should bring increased cross-border competition, leading to simpler and cheaper products for savers. The pensions would be portable, making it easier to continue to save for someone who moves jobs or countries or both. Consumers would have more choice than they do today and providers could fish in a pond of 240m (the estimated size of the EU's working-age population).

But critics think the idea falls short of what is needed. Pepps merely broaden what is available to those choosing voluntary, private savings plans. Collective and semi-mandatory plans are arguably more important, but are not touched. In countries that rely heavily on state-funded pensions and where traditions of saving for retirement are weak, these products might make little difference. Tax treatment could also prove a hurdle. The commission can merely recommend, not mandate, that Pepps are afforded the same favourable tax treatment that governments give to their own national products.

For now Pepps are most likely to appeal to a limited number of groups, such as mobile professionals, the self-employed and those living in underserved markets, notably in eastern Europe. The announcement is, however, a victory for the EU's "capital-markets union" (CMU), a project to reduce European dependence on bank finance and to ease the flow of capital across the continent.

Much of the progress so far on CMU—such as liberalising rules for venture-capital funds and making it easier for small firms to list on stock exchanges—counts for less without new pools of capital to tap into. Pepps amount to the first initiative to create a brand-new source of funds. The CMU was conceived, at least in part, as a way to bind continental Europe's markets closer to Britain's. After the Brexit vote the need to develop a pan-European capital market seems more important than ever. Pepps may do a bit to help. ■

Payments

Acquirer acquired

An American payments firm goes online and buys British

A BIDDING war was briefly but eagerly anticipated. In the end, not a shot was fired. On July 4th the share price of Worldpay, a British payments processor, leapt by 28% after the company said it had received preliminary approaches from JPMorgan Chase, America's biggest bank, and Vantiv, an American payments firm. The next day Worldpay said it had accepted a cash-and-shares bid from Vantiv, worth £7.7bn (\$10bn), giving its shareholders 41% of the combined group. JPMorgan Chase, snifflly explaining that it had considered a bid after an "invitation" from Worldpay, which is a client, declined to proceed. Under Britain's takeover code that refusal rules out a counter bid for six months. The shares slipped back by nearly 9%.

Vantiv and Worldpay are "merchant acquirers": companies that have contracts with sellers of goods and services, and licences from credit- and debit-card companies, to accept and process card payments. They also provide insurance—for example, refunding disappointed holidaymakers when an airline goes bust.

Until a few years ago, explains Ali Farid Khwaja of Autonomous, an investment-research firm, acquirers in both America and Europe had to have banking licences. As a consequence, banks still feature in lists of leading acquirers. According to the Nilson Report, a newsletter, they accounted for three of America's top seven last year: JPMorgan Chase ranked first, with Vantiv ►►



Purchasing power

► second. Both Vantiv and Worldpay, indeed, emerged from banks. Vantiv was spun off in 2009 by Fifth Third, an Ohio-based lender which still owns 17.9%. The European Commission obliged the Royal Bank of Scotland to sell Worldpay in 2010, as a condition of RBS's bail-out by the British state after the financial crisis. Two private-equity firms bought it for £2bn. It was floated at a value of £4.8bn in 2015.

Mr Khwaja says that by buying Worldpay, Vantiv will reduce its reliance on bricks-and-mortar merchants, which are losing out from a shift of retailing to online competitors such as Amazon. Less than

10% of its revenue comes from processing e-commerce payments. Worldpay, by contrast, makes more than one-third of its revenue from a fast-growing, global e-commerce business. It is also the market leader in Britain, claiming a share of 42%, and has an American business of its own (the country's eighth-biggest, one-sixth of the size of Vantiv's, says the *Nilson Report*).

The deal marks a further step towards the industry's consolidation. Last year, for example, Global Payments, the sixth-biggest American acquirer, bought Heartland, a smaller rival, for \$4.3bn in cash and shares. TSYS bought TransFirst for \$2.4bn.

Vantiv snaffled Moneris USA, the American arm of a Canadian payments processor, for \$425m.

In Europe, Mr Khwaja notes, national markets tend to be ruled by local players, despite the EU's supposedly single market. Cross-border consolidation has far to go. But in a business of thin margins, scale is starting to count. Worldline, descended from the acquiring subsidiaries of three French banks, has spread into the Benelux countries and Germany. On July 3rd Nets, a Nordic payments company, said it had been approached about a takeover. It's an acquisitive business. ■

Buttonwood | Cutting off their allowance

Bond markets fret about a change in central-bank policy

IN JANE AUSTEN'S novel, "Sense and Sensibility", Henry Dashwood's death plunges his wife and two daughters, Elinor and Marianne, into financial distress, because his heir grants them only a meagre allowance. Bond-market investors have started to worry that something similar is about to happen to them.

Since 2009 central banks have been incredibly supportive of the financial markets—keeping short-term interest rates at historic lows and buying trillions of dollars worth of bonds. But in recent weeks, several of them have been hinting at reducing their largesse.

The Federal Reserve has been slowly pushing up interest rates and has talked about reducing the size of its balance-sheet, by not reinvesting the proceeds of bonds when they mature. There have been suggestions that the Bank of Canada might push up rates when it meets on July 12th. Both Mark Carney, the governor of the Bank of England and Andrew Haldane, its chief economist, have hinted that a rate rise may be on their agenda.

But the biggest shock to markets came on June 27th, when Mario Draghi, the head of the European Central Bank, remarked that "deflationary forces have been replaced by reflationary ones." The result was a sudden rise in bond yields (see chart). "Super Mario" carries great weight with investors; he was widely credited with halting the euro crisis back in 2012 with his vow to do whatever it took to save the single currency.

The ECB tried to calm investor nerves in the aftermath of the statement. Mansoor Mohi-uddin, a strategist at Royal Bank of Scotland, thinks the markets over-reacted to Mr Draghi's words. The ECB is not about to stop its stimulus. He thinks that, in September, the bank will merely indicate that it will be reducing its month-



ly rate of purchases from €60bn (\$68bn) to €40bn at the start of 2018. Mr Draghi is just preparing the ground.

There was some speculation that central banks had deliberately co-ordinated their comments. But the simpler explanation is that they were reacting to similar factors. First, global growth seems to have picked up in the second half of 2016, allowing banks to withdraw some stimulus. Second, Fed tightening gives other central banks cover; any bank tightening on its own would probably see its currency strengthen strongly, risking overkill.

Caution is essential in calling the turn in the bond market, an event that has been predicted many times before. Bond yields have merely reversed some of the declines seen earlier in the year. Inflation in most economies remains subdued; Britain is an exception because of the decline in the pound following the Brexit referendum. British bonds may also be less attractive to international investors because of signs that the budget deficit will widen under the current Conservative government, and even more so if the Labour opposition takes power.

There are also signs that the global recovery may not be that robust. Commodity prices, an indicator of global demand, have fallen since the start of the year. China's economy is showing signs of a loss of momentum, according to Capital Economics, a consultancy. David Owen of Jefferies, an investment bank, says that global trade and industrial production are both growing at an annualised rate of less than 2%, based on the past three months. "This is not consistent with a strong recovery in investment," he adds.

Central banks will have to tread very carefully. Global debt is higher as a proportion of GDP than it was before the financial crisis started in 2007. Ultra-low interest rates have made borrowing sustainable but have also encouraged companies and consumers to take on more debt. The annual report of the Bank for International Settlements, released on June 25th, warned of elevated credit risks in a number of emerging economies and smaller developed economies. "Financial-cycle downturns could weaken demand and growth, not least by dampening consumption and investment," the report said. The BIS also worries that a return of trade protectionism could sap the global economy's strength.

It is a lot easier to begin monetary stimulus than to end it. More than a quarter of a century has passed since the Japanese bubble burst in 1990, and the Bank of Japan is still pumping money into the economy and trying to keep ten-year bond yields close to zero. By the end of the novel, Elinor (sense) and Marianne (sensibility) find contentment with a vicar and a retired colonel respectively. Unlike Austen, central banks cannot always arrange a happy ending.

Japan-EU trade

Jeepa's creepers!

A new trade agreement sends a powerful political message

FREE-TRADE agreements have seemed out of fashion as President Donald Trump has set about scotching some of America's. But on July 5th Cecilia Malmström, the EU trade commissioner, and Fumio Kishida, the Japanese foreign minister, announced they had achieved consensus on a Japan-EU Economic Partnership Agreement (JEEPA). In front of the cameras, they swapped Japanese Daruma dolls, talismans of perseverance and good luck, and, they hope, of a win-win agreement.

The timing of JEEPA was just as carefully co-ordinated. When negotiations started in 2013, it was neither side's main priority. But now both want to show that they can fill the vacuum left by America's withdrawal under Mr Trump from its role as the world's trade leader. To highlight its political importance, they note that this is the first trade agreement to mention the Paris climate accord, another deal Mr Trump has spurned. Haste is handy: the EU wanted success before Brexit negotiations and national elections swamp its agenda.

The deal is about more than political symbolism, however. Average tariffs between the two sides are already low, but prizes are still there to be grasped. Exporters from the EU pay €1bn (\$1.1bn) in export duties to Japan each year, and on agricultural products face average tariffs of 21%. JEEPA will slash Japanese tariffs on beef,

pork and wine, eliminating 85% of the tariffs on agricultural food products going into Japan. European producers of Roquefort cheese or prosecco can cheer: their products become two of 205 protected "geographical indications". Similarly, only feta from Greece will be sold under that name.

Tariffs on European exports of textiles and clothing will also be cut. When the deal enters into force, Japanese tariffs on shoes will drop from 30% to 21%, and then

to zero after ten years. The Japanese have won concessions, too. Tariffs on Japanese cars going into the EU are currently 10%, but will be lowered over seven years. An assessment of the impact of the deal (before the final details were agreed on) suggested that almost half of the benefit to Japan would be from these lower tariffs. It found the deal could raise the EU's exports to Japan by 34%, and Japan's to the EU by 29%.

For all the doll-swapping bonhomie, however, the deal bore the scars of a difficult negotiation. Both sides haggled fiercely. Japan had started the negotiation expecting to offer the EU a version of the Trans-Pacific Partnership (TPP), a 12-country agreement from which Mr Trump has withdrawn America but which Japan is still pursuing. But they found the Europeans were much more interested in lowering tariffs on cheese, chocolate and wine ➤

Payday lending in Japan

Shark attack

TOKYO

A boom in consumer lending leads to some strange excesses

ALMOST anything can be bought and sold online. Even so, sales of ordinary banknotes at a big premium are puzzling. On a newish e-commerce site in Japan called Mercari, ¥10,000 (\$90) notes were on sale earlier this year for as much as ¥13,000. So bizarre was the phenomenon that it created a furore, leading the firm to ban such deals in April. A rival site, Yahoo Auctions, soon followed suit. The buyers were not indulging a passion for rare banknotes. They simply wanted the money. In need of emergency finance, and having used up all their bank limits, they resorted to buying cash with their credit cards.

The ban has prompted some crafty work-arounds. "Valuable portraits" of Yukichi Fukuzawa, a thinker revered as a guiding light of Japan's 19th-century modernisation, have been on sale for as much as ¥15,000. That is a hefty premium to the highest-denominated banknote, ¥10,000, which happens to be adorned with Fukuzawa's likeness. Or take the bottles of water claiming to contain subatomic particles called neutrinos. These were considerably sold with a cash refund attached, because of their "extremely high defect ratio".

The rise of this shady trade in cash is an unintended consequence of a sub-prime borrowing binge prompted by Japan's big banks. Squeezed by years of near-negative interest rates, banks have been forced to look for more lucrative business. That includes high-risk consumer-finance activity known as *sarakin*, or loan sharking. The interest rates

can be as high as 15%—this at a time when mortgage rates, often below 1%, are being forced even lower by fierce competition.

According to the Bank of Japan, outstanding unsecured consumer loans by all banks soared by 72%, to ¥5.6trn (\$50.3bn), in the six years ending in March 2017. Of this nearly 30% was on the books of the three "mega-banks"—Mitsubishi UFJ, Sumitomo Mitsui and Mizuho. Advertisements for consumer lending flood the media.

Big banks moved into this market in the 2000s by buying consumer lenders. They did so in part because the payday industry's record of ruthless debt-collection and harrowing tales of bankruptcy and related suicides had made it a butt of criticism and brought tighter regulation. Loopholes lenders had exploited to set interest rates higher than the regulatory maximum were closed. Loan sizes were capped at one-third of a borrower's annual income. But these lending limits did not apply to the supposedly well-behaved, respectable banks. The result was a surge in payday lending by high-street names.

The tide may be turning against them, however. After the first rise in personal bankruptcy in 13 years last year, the Japan Federation of Bar Associations, a lawyers' lobby, has called for an end to the special treatment for banks. Regulators are investigating, too. The Japanese Bankers Association seems to be feeling the heat. It recently confirmed its members' intent to act "more responsibly". About time, too.



than on basic agricultural crops such as rice that were sticking-points in TPP.

Offering concessions on some cheeses was relatively straightforward in JEEPA as in TPP. Under both deals tariffs on cheeses like Cheddar and Gouda will be phased out. Other cheeses, like Camembert and Mozzarella, were trickier. A strong domestic Japanese lobby had resisted concessions even under TPP. (Japanese eat an average of only 2kg of cheese per person a year, but Camembert is produced domestically. The website of its largest producer suggests spreading the melted cheese on rice balls seasoned with soy sauce.) This put the Japanese government in a bind. Offering tariff concessions to the EU could scupper its efforts to revive TPP, as miffed Mozzarella producers from Australia could demand better terms too. So JEEPA ended up with a compromise: a duty-free quota.

Described in these terms, as a deal easing the flow of cheese in one direction and cars in the other, JEEPA sounds like an old-style trade haggle prey to national vested interests. In theory, both Japan and the EU have higher ambitions. They see trade deals as a way to shape globalisation by moving beyond tariff cuts to agreements on shared standards and procedures. But in practice, Japan and the EU may have different ideas about what this should involve. The agreement, to be signed after *The Economist* went to press, will include agreement neither on procedures for settling disputes between investors and governments, nor on data protection. Both will be dealt with separately.

The Japanese have so far refused to sign up to the EU's proposed investor courts, which are supposed to settle trade disputes in a more transparent and accountable way. They are reluctant to pay for a new expensive structure, particularly since Japanese companies tend to shun such legal procedures. Hosuk Lee-Makiyama, director of the European Centre for International Political Economy, a Brussels-based think-tank, suspects that the Japanese are also wary of adopting a system that could become a template for future deals, in which state-appointed judges might rule on claims by Chinese or Korean companies against Japan's government.

The politics of JEEPA made it too important to be held up by such issues. But that means there are more details to be negotiated, as well as plenty more procedure to go through. Once the text is finalised, it will need to be ratified by both houses of the Japanese parliament, as well as each European national government. Depending on what the European Commission decides, it may also need the approval of regional and local European parliaments too—a requirement that almost scuppered the EU's most recent trade deal, with Canada. It will take a while for the rounds of European Camembert to reach Japan. ■



BNP Paribas and Rwanda's genocide

A long reckoning

PARIS

A pillar of French finance is haunted by its past

BNP PARIBAS, France's biggest bank, pleaded guilty in America three years ago to assisting a monstrous regime in east Africa. In 2006 it had helped to finance Sudan's government, which in turn supported militias that massacred tens of thousands of civilians in Darfur. The firm thus abetted genocide and circumvented American sanctions on Sudan. It agreed to pay a fine of \$9bn for breaking that embargo, as well as ones on Cuba and Iran.

The bank, naturally, hopes to put that grim episode behind it. These days it makes much of its social-responsibility efforts. Its 2015 annual report, for example, trumpeted the financing of a big supermarket in Ivory Coast as typical of its contribution to African development. On July 3rd it named a new head of compliance plus a new "company engagement department", responsible, among other things, for setting strategy on human rights.

Yet the past is hard to banish. The bank faces scrutiny over an even uglier episode. On June 29th three human-rights groups in France submitted a complaint to a judge, accusing BNP of war crimes and complicity in genocide in Rwanda in 1994, when 800,000 people, mostly members of the Tutsi minority, were killed. The groups say they can prove BNP transferred funds to finance a weapons deal, breaking a UN arms embargo and equipping the killers. The bank has said only that it does not have enough information about the complaint.

Details of the case have been aired for years. Following the Rwandan genocide, various organisations—notably the UN, in a lengthy report to the Security Council in January 1998—said BNP in June 1994 had fi-

nanced a deal for 80 tonnes of weapons, including AK-47 rifles, ammunition, hand-grenades and mortars, delivered to the Rwandan army. Two shipments were brokered by a South African gunrunner, Willem Ehlers, who got payments of \$592,784 and \$734,099 respectively. The source of the funds was listed as Banque Nationale de Paris (which later merged with Paribas). The bank this week refused to comment on its reaction to the 1998 report.

Such alleged crimes face no statute of limitation. Marie-Laure Guislain of Sherpa, one of the complainants, says she expects the case to move ahead, albeit slowly. In the meantime, she says, the groups will raise customers' awareness "that banks can be involved in a very serious violation of human rights" and urge the "new government in France to be really vigilant".

That suggests a broader reason for the activists' legal efforts. They hope to draw attention to a new French law, passed in February, obliging companies with over 5,000 staff, including banks, to prove their "duty of care" in reducing the risk of human-rights violations. It comes into force next year, and the activists hope next to push for similar EU-level legislation. Rights campaigners also want France's new government to open archives expected to reveal complicity between French officials—not only bankers—and the génocidaires.

BNP has no choice but to hunker down and hope the attention will pass. The financial threat looks lower than in the case of Sudan, when American authorities denied the bank access to dollar clearing for some transactions for a year. But the spotlight may prove just as uncomfortable. ■

Free exchange | Wage against the machine

Rising minimum wages may force economists to face some hard labour-market truths

JUST what is the point of a minimum wage? It seems a straightforward enough question to answer. Minimum wages are designed to protect vulnerable workers who might otherwise lack the bargaining power to command a decent pay package. They are a means to limit severe poverty among those in work.

Yet they also attract opposition from critics who see wage minimums as price controls that discourage firms from hiring as many workers as they otherwise might. For decades, feuding camps of dismal scientists have tussled over whether the good done by minimum wages outweighs the bad. A series of recent minimum-wage increases in America will shine a light on that question and others as well. Indeed, the time may have come for economists to broaden their view of just what a minimum wage is meant to accomplish.

As voter frustration at stagnant pay has grown, politicians on the American left have spotted an opportunity to court popularity by calling for higher minimum wages. Democrats are united behind a demand for a national minimum wage of \$15 an hour, more than double the current \$7.25 rate. State legislatures in California and New York have enacted laws that gradually raise their minimum wages to \$15. Few governments, however, have moved as aggressively as the city of Seattle. In 2014 the council voted to raise the minimum wage, the hourly rate set by the state of Washington, then \$9.32, to \$11 an hour from April 2015, followed by further rises, to \$13 in January 2016 and \$15 in January this year. Smaller firms and those that provide benefits on top of pay were given longer to implement the changes.

On the surface, Seattle's economy seems to have weathered the increases well—indeed, to have benefited from them. Since the initial rise, in April 2015, the unemployment rate in the surrounding area has fallen from 4.3% to 3.3% and employment has grown strongly. An analysis published in June by the Centre on Wage and Employment Dynamics at the University of California, Berkeley, compared employment in the food-services industry in Seattle with that in the same industry in comparable areas elsewhere over the period of the first two increases (to \$11 and then \$13). It concluded that, despite increased wages in the industry in Seattle, there was no detectable effect on employment.

Another recent analysis, however, by a team from the University of Washington, arrives at a very different conclusion. Its authors use data that are not publicly available, on wages earned and hours worked by individuals. They also find that the increase

in the minimum wage to \$11 seems not to have had much of an effect on employment. But the second rise, to \$13, led to a sharp decline in both jobs and hours worked below \$13 an hour (as the new rate was phased in), which was not fully matched by increases in jobs and hours worked at or above \$13. The hours lost were large enough to result in a net reduction in pay to low-wage workers averaging \$125 a month in 2016.

The paper attracted withering criticism from some other economists. Some noted that its analysis left out workers who adjusted to the changes by becoming contractors rather than full employees or by moving away from Seattle, or who switched to jobs at large firms with multiple locations (which were not included in the data set used by the authors). Others pointed out that even though there was no offsetting rise in employment at wages between \$13 an hour and \$19 an hour, employment at wages above the \$19 mark rose sharply. What is more, the fine-grained data used in the report covered only the state of Washington, whereas other parts of America might have provided a better control case. Some of these criticisms are stronger than others. There are limitations to the data, as the authors themselves admit, and this is hardly the last word on the subject.

Elastic bands

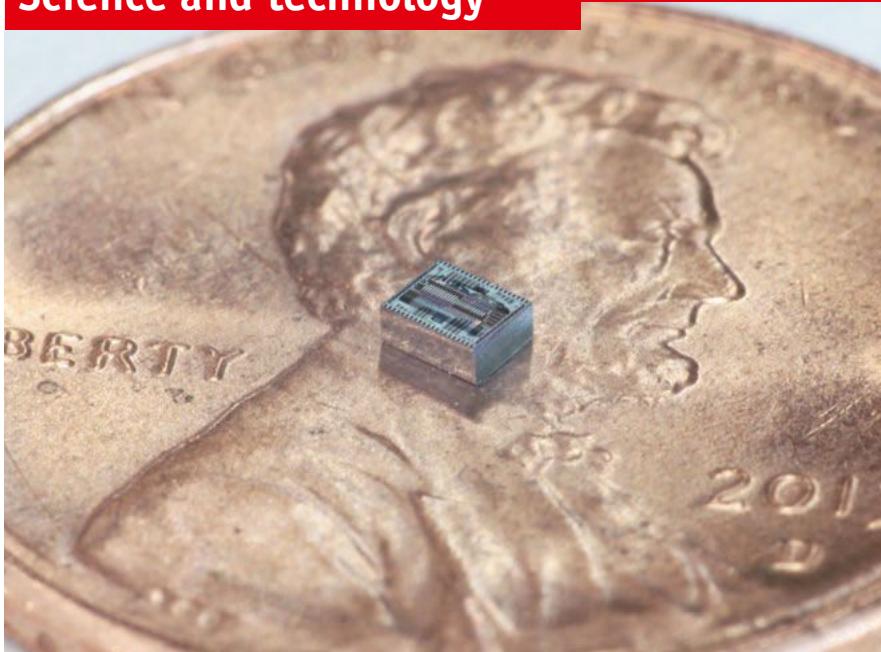
But these studies raise other pressing questions. Another way of looking at the effect of higher wages on employment is by calculating what economists call the “elasticity of employment” with respect to wages: that is, by how much employment changes for a given change in the wage. Most studies find an elasticity of around zero, meaning that whatever employment changes occur in response to a minimum-wage change, positive or negative, they are relatively small. The University of Washington team, in contrast, finds that in moving from \$11 per hour to \$13 the elasticity was close to -3: that is, small jumps in the wage led to freakishly large declines in employment. Subsequent studies should provide clues about how robust that finding is. If true, however, it suggests that firms can more easily adjust their business models to reduce the role of low-wage labour than was previously believed: by automating, perhaps, or by eliminating jobs that were not particularly necessary in the first place.

For politicians looking to improve the fortunes of low-paid workers, signs that higher minimum wages lead to job losses will suggest that other tools, such as wage subsidies, must be relied on more heavily. But another question might also be asked. If workers can find employment only at a low wage, is society actually better for having those jobs? Tens of millions of workers fall into such categories. Nearly 13m American workers, for example, are employed in food preparation. The Bureau of Labour Statistics reports their median hourly wage is just \$10 an hour.

If, at higher minimum wages, some of these low-wage workers end up being unemployed, that is personally and socially destructive. But if research suggests that large numbers of workers can find jobs only if wages are low enough to discourage firms from automation, or to encourage them to create unnecessary jobs, then the right balance between a minimum wage and other income-boosting measures might not be the big concern. Instead, politicians need to think harder about how to prepare workers for higher-paid, higher-productivity jobs—or, failing that, how to help them contribute in roles outside paid private-sector work. ■

Cloudy skies





Photography

Wide-eyed and lensless

Cameras are about to get a lot smaller and flatter

THE pill-sized cameras in today's mobile phones may seem miraculously tiny, given that a decade ago the smallest cameras available for retail sale were the size of a pack of cards. But Ali Hajimiri of the California Institute of Technology is unimpressed. In his opinion even these phone cameras are far too thick (witness the optical bump on the back of most mobile phones), so he and his team plan to replace them with truly minuscule devices that spurn every aspect of current photographic technology. Not only do Dr Hajimiri's cameras have no moving parts, they also lack lenses and mirrors—in other words, they have no conventional optics. That does away with the focal depth required by today's cameras, enabling the new devices to be flat. The result, he hopes, will be the future of photography.

Brave words. But, as an inventor, Dr Hajimiri has form to back them up. In 2002 he helped found a firm (now taken over by a bigger one) to build power amplifiers for mobile phones. More than 250m of these have been made. In 2004 he came up with the world's first radar on a chip, which is now being used in prototype self-driving cars. To round things off, in 2012 he created an all-silicon imaging system that uses the terahertz part of the electromagnetic spectrum (which is slightly higher in frequency than radar) to see through objects opaque to light. This system has found employ-

ment in everything from medical-diagnostic equipment to security scanners.

The latest venture moves his focus to higher frequencies still than terahertz waves—those of visible light. The new camera, known as an optical phased-array receiver, or OPA, collects the light from which it forms its image using a grid of devices called grating couplers. The prototype (the blue structure pictured above, attached to a thick mounting block to make it easier to handle) has 64 of them. Grating couplers are optical antennae. They collect light and send it to a device called a waveguide. This carries light around in a way analogous to a wire carrying electricity.

Flash, bang, wallop. What a picture

Each grating coupler is tiny—about five by two microns (millionths of a metre)—and so picks up only a minuscule amount of light. That signal has to be amplified. This is done by heterodyning, a process which combines the light in the coupler with a minute laser beam, strengthening the signal at the desired wavelength.

To mimic the image-making role of the optics in conventional cameras, the OPA manipulates incoming light using electrons. Dr Hajimiri compares the technique to peering through a straw while moving the far end swiftly across what is in front of you and recording how much light is in each strawful. In the OPA this scanning ef-

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fect is created by manipulating the light collected by the grating couplers electronically, using devices called photodiodes. These place varying densities of electrons into the amplified light's path through the OPA, either slowing it down or speeding it up as it travels. That shifts the arrival times of the peaks and troughs of the lightwaves. This "phase shifting" results in constructive interference between waves arriving from the desired direction, which amplifies them. Light coming from other directions, by contrast, is cancelled through destructive interference. Change the pattern of electrons and you change the part of the image field the OPA is looking at. Scanning the entire field in this way takes about ten nanoseconds (billions of a second).

The photodiodes, then, determine where the camera is pointing without any mechanical movement being needed. They also permit the camera to capture different kinds of images, such as close-ups and fish-eye views. To zoom in for a close-up, the device selects a specific part of the image and scans it more thoroughly. To zoom out for a fish-eye, it scans the entire optical field, including light from the edges of that field. To change from zoom to fish-eye takes nanoseconds.

The processed optical signal is then passed down the waveguide to further photodiodes. These convert it into an electrical signal, which is used to create the final photo. Crucially, all this can be achieved in a stack of electronics five microns thick—about a fifteenth of the diameter of a human hair.

The exact size of any production version will depend on the job to be done. The prototype can manage fuzzy images of barcodes, but not much else. To achieve the same resolution as the camera in a modern Apple iPhone, Dr Hajimiri reckons an array

► of about 1m grating couplers will be needed. Allowing for the space between these, the result would, at the moment, have an area of 1cm². This is similar to the area of an iPhone's camera, but that camera is 1,000 times thicker. Dr Hajimiri thinks, moreover, that a production version of the new device would be smaller.

He concedes that there are challenges: improving the optical performance of the elements; suppressing spillover effects between different signals in the device; and honing the algorithms that calibrate the camera's performance. But all these matters, he believes, can be dealt with and he envisages his lensless cameras being commercially available within five years.

Such tiny cameras would have uses far beyond eliminating the optical bumps from mobile phones. They might be deployed, Fantastic Voyage-like, to take pictures inside blood vessels. Conversely, they could be combined into massive arrays to create lightweight but extremely large-aperture telescopes able to resolve images from the deepest parts of the universe. They might even be strewn to the winds, photographic dust particles scavenging the energy they need from stray radio signals, and broadcasting what they see. Or they could be attached, almost invisibly, to walls, to act as spies.

In the "Ringworld" series of science-fiction novels, the books' author, Larry Niven, envisages spray-on devices called "webeyes" that can be applied to any surface, and used for such espionage. Cameras of the sort Dr Hajimiri is developing are scarily close to making that idea real. ■

Additive manufacturing

Print me a brewery

SEATTLE

A better way to make drinks and drugs

SINCE the dawn of civilisation, people have used yeast to leaven bread, ferment wine and brew beer. In the modern era, such fermentation has extended its range. Carefully selected moulds churn out antibiotics. Specially engineered bacteria, living in high-tech bioreactors, pump out proteinaceous drugs such as insulin. Some brave souls even talk of taking on the petroleum industry by designing yeast or algae that will synthesise alternatives to aviation fuel and the like.

But fermentation remains a messy process, and one prone to spoilage and waste. Whatever the product, the reaction must generally be shut down after a matter of days to clean out the detritus of biological activity—both cells that have died and the



Cubist art

surplus of living ones which growth and reproduction inevitably yield. Alshakim Nelson, a chemist at the University of Washington, in Seattle, and his team, propose to change all that. They have developed a bioreactor that not only keeps bugs alive and active for months at a time, but can also be made in minutes, using low-cost chemicals and a 3D printer.

Dr Nelson's bioreactors are composed of a substance called a hydrogel, which is about 70% water. The remaining 30% is a special polymer, infused with yeast. Unlike edible jelly, which, as parents of small children will know, breaks into tiny lumps when squeezed, Dr Nelson's hydrogel has a consistency resembling peanut butter. That permits it to be extruded smoothly through the nozzle of a 3D printer.

Dr Nelson's team have built a printer specifically designed to do this. Their device lays down thin strips of hydrogel in a cubic lattice structure (see picture) intended to maximise the amount of surface area for a given volume of material. The cube, which has sides 1cm long in the current design, is then cured by a burst of ultraviolet light, to increase its rigidity. Turning one out takes about five minutes.

The fun starts when such a cube is plopped into a solution of glucose. The hydrogel is permeable to this solution, so the yeast is able to get to work on the glucose, converting it into ethanol as if it were the sugar in the wort of a brewery.

This, Dr Nelson had predicted. The surprise was that it keeps on doing so, day after day, week after week, as long as the fermented solution is regularly replaced with fresh. The team's bioreactors have continued to produce ethanol in this way for over four months now, with no signs of slowing down. The cause of this desirable phenomenon is not yet clear. Dr Nelson believes that immobilising the yeast cells in the hydrogel somehow stops them both ageing and reproducing, without affecting their ability to ferment. Somehow, the cells' confinement is signalling to them to

stop growing without affecting their normal metabolism.

That discovery has enormous potential. If it could be industrialised, it would pave the way for continuous fermentation to replace today's batch-processing approach, with all the advantages such continuity of production would bring. To this end, Dr Nelson now plans to scale up the size of the cubes. He also proposes to experiment with yeast cells engineered to turn out more complex molecules than ethanol—proteins, for example—that might have purposes other than getting people drunk. This may require tweaking the hydrogel, the current structure of which is likely to be too dense to permit the passage of a large protein molecule.

In the longer term, it is possible to imagine a chain of bioreactors, each specialised for a single step in the synthetic pathway that leads to a desirable product such as a drug. Dr Nelson's first task, though, will be to increase the concentration of glucose in the bioreactor design that he knows, without question, works, in the hope of brewing up something stronger in his laboratory. "Can we take our yeast," he wonders, "embed it in hydrogel, print it as a cube, put it in fruit juice and convert it to alcohol?" That thought, of a cheap, domestic hooch plant which works for months on end, will have brewers around the world wanting to pour themselves a stiff drink. ■

Detecting explosives

Honing the hounds

A new device to help train sniffer dogs

WHEN it comes to finding hidden explosives, the self-propelled detection system known as a sniffer dog has no equal. But sniffer dogs have to be trained, and that is a delicate process. In particular, the trace levels of explosive vapour involved are so low (because dogs' noses are so sensitive) that accidental contamination of supposedly residue-free "control" samples is a serious possibility. That confuses the animal and slows down its training. Things would therefore go more smoothly if a trainer could find out instantly whether a sample had indeed been compromised by traces of explosive, so that he could tell whether a dog's reaction to a supposed blank was justified.

This is no theoretical risk. When Ta-Hsuan Ong of the Massachusetts Institute of Technology monitored one such training session he found that six out of 68 controls were contaminated—and that one out of 28 supposedly "live" samples had no ex-

► plosive residue. Dr Ong thinks, however, that he has a solution to the problem. The monitoring device he and his colleagues built for their experiment, the details of which they have just reported in *Analytical Chemistry*, lets handlers check instantly whether an apparent mistake by a dog is a real one. That will both speed the process of training and, if deployed in the field, permit a suspicious object which a dog has nosed out to be double-checked by technology, and to have its precise explosive characteristics logged instantly.

Dr Ong's invention is a type of mass spectrometer—a device that, by measuring the flight time of ions (electrically charged molecules) in an electric field, is able to work out their mass and therefore their probable composition. A conventional mass spectrometer depends on samples being collected, concentrated and deliberately fed into it, but that would not be a practical way to provide the instant feedback needed for dog training. Dr Ong required something that could pick up chemical compounds directly from the air around a suspicious object.

Sniffers that can detect explosive vapours do, of course, exist. They are used in places like airports. But they are not as sensitive as dogs' noses. Instead, Dr Ong turned to what is known as electrospray ionisation technology (EIT). Commercial EIT works by applying a high voltage to a reservoir of solvent containing compounds of interest. This both sprays the liquid into the air, creating an aerosol, and ionises the molecules within. An adjacent spectrometer then sucks in the aerosol and conducts an analysis. Dr Ong and his team adapted that approach by using pure solvent and aiming the charged aerosol droplets directly at an air stream being pulled into a spectrometer. This ionises the compounds within the air stream, including any derived from explosives, before they enter the device.

The spectrometer the researchers used was set up to sound the alarm if one or more of nine explosive-related materials, such as nitroglycerine, cyclohexanone and triacetone triperoxide, turned up. When tested, it proved able to detect those compounds in concentrations as low as parts per quadrillion—the same sensitivity as a dog's nose. As the trial showed, it was able to confirm dogs' opinions about a sample when those opinions were at variance with the ones held by a human handler.

In principle, once turned into a robust product, Dr Ong's invention might replace the canine variety of detector altogether. In practice, though, that is unlikely to happen. The mobility and tenacity of a dog give it qualities that a piece of hand-held equipment is never going to replicate. And when it comes to searching people, at least, it is hard to beat a tail-wagging quadruped for user-friendliness. ■

Frogs

Failure to croak

Some surprising beneficiaries of a cataclysmic event

AROUND 66m years ago Earth collided with a space rock so large that it punched a crater more than 180km across in the area now known as the Yucatán peninsula, in southern Mexico. This collision did for the dinosaurs and many other sorts of animal besides. It thus wiped much of the ecological slate clean, permitting the survivors—those that did not, as it were, croak in the impact's aftermath—to strut their evolutionary stuff unconstrained.

Human beings, with phylogenetic arrogance, often refer to the subsequent period, extending to the present day, as the "Age of Mammals"—and it is true that mammals have done well in it. At the moment, zoologists recognise about 5,400 species of this hairy, milk-secreting group of creatures. But another sort of terrestrial vertebrate has done better even than this, with almost 6,800 living species. It might be at least as fair to call the post-dinosaur world the "Age of Frogs".

Like mammals, frogs have been around for a long time. Their fossils date back at least 190m years (the oldest known mammals date from 230m years ago). But, as Zhang Peng of Sun Yat-sen University, in Guangzhou, China, and his colleagues report in the *Proceedings of the National Academy of Sciences*, most modern frogs are beneficiaries of the dinosaur-destroying collision in Yucatán.

Dr Zhang and his colleagues have built an anuran cladogram—a family tree of 156 species of frog for which reasonably good data have been deposited in GenBank, the world's largest repository of DNA sequences. They looked, in particular, at 95

genes believed to be shared by all frogs. That made possible a detailed comparison of how those genes have evolved, and thus how the organisms containing them are related to each other. Averaged over time, such changes act as ticks of a molecular clock, giving some idea of when genetic lines separated. To calibrate this clock, the researchers also looked at 20 fossils of known age, which they placed at plausible points on the tree, based on the specimens' morphological characteristics.

Their analysis showed that 88% of existing frog species belong to one of three groups—*Hyloidea*, *Microhylidae* and *Natanura*—and that each of these groups underwent a sudden, rapid diversification and expansion immediately after the Yucatán impact. The researchers did not, though, neglect the remaining 12% of species. In the case of these, they were able to show how three earlier periods of diversification were related to the break-up of the supercontinent, called Pangaea, into which most of Earth's dry land was united between 250m and 175m years ago, after which it began to divide.

The first of these diversifications was caused by a split between the northern and southern parts of Pangaea. The second happened when South America split from Africa. The third occurred when India and the Seychelles (which are geologically a continent, albeit a small one) separated from one another.

So, is the post-dinosaur world truly the Age of Frogs? That rather depends on what is meant by "post-dinosaur". For a different cladogram, based on fossil rather than genetic evidence, shows that one group of dinosaurs not only survived the impact but, with almost 10,000 living species, has outperformed both frogs and mammals. Those surviving dinosaurs, though shorn of teeth and with added wings, nevertheless remain members of the theropoda, a group that also includes *Tyrannosaurus rex*. It is just that, these days, they are known as "birds". ■



Looks like we made it



Evgeny Kissin

Class act

The Russian-born prodigy is the world's most acclaimed classical pianist. His first solo recording in a decade shows how his playing has matured

EVGENY KISSIN has written an autobiography. He has also married a childhood friend and is about to release his first recording for a decade. A European tour will fill the coming months. "I want people to know who I am," he told a BBC interviewer last month. That remark was about reciting his own poetry in Yiddish, but it implied something more general: the image of the wild-haired, baby-faced *Wunderkind* who had to be defended from hordes of female fans no longer applies. Mr Kissin is now an imposing 45-year-old who needs no help in fighting his professional corner, or in publicly championing the Israeli state whose citizenship he recently accepted, in addition to the British one he got thanks to a family connection in 2002.

Born to a Russian-Jewish family in Moscow (his father was an aerospace engineer and his mother a piano teacher), Mr Kissin was a sickly child whose phenomenal musical gift was obvious from the start: aged 11 months, he suddenly sang the theme from the Bach fugue that his elder sister was studying. At two he was reproducing all the music he heard around him on the piano under which he had to sleep as the family flat was so small. At six he was taken to the celebrated Gnessin school and put under the tutelage of Anna Kantor. Her first impression was that "he could play everything, but didn't know anything". Ms Kantor moved in with the family, and has been his only tutor. Other children mocked his

Jewishness—it was decided to replace his father's surname, Otman, with his mother's more Russian-sounding Kissin—but he was cocooned by adoration. His family gladly sacrificed everything on the altar of his genius.

That genius was publicly hailed with his solo debut, aged 12, at the Moscow Conservatory. He sustained the filigree beauty of Chopin's two piano concertos with cool authority; listening to a blind recording, some judged the pianist to be a performer at the peak of his powers. With no need to prove himself further by winning competitions, Mr Kissin went on discreetly refining his art in Moscow before making his west European debut at 16, and his explosive American debut at Carnegie Hall in New York just ten days before his 19th birthday.

The recording of that event amply demonstrates why the audience response was so ecstatic, and why so many critics were impelled to speak of him as the new Vladimir Horowitz, Arthur Rubinstein or Sviatoslav Richter. There were moments when Schumann's "Symphonic Etudes" went too fast for their own good, but the alternating fire and lyrical tenderness of the "Abegg Variations", also by Schumann, contrasted with the playful crispness of Mr Kissin's attack in Prokofiev's "Sonata No. 6". To Liszt's towering "Rhapsodie Espagnole" he brought a high-octane virtuosity. After a charmingly understated Chopin "Waltz", the coup de grace among the en-

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Economist.com/culture

cores was a notorious Prokofiev finger-twister, "Etude in C minor, Opus 2 No. 3", which went like the wind. Like everything else in the programme, it was technically flawless. "All one could do was laugh," one professional pianist in the audience commented ruefully afterwards.

Mr Kissin's trajectory was stellar, and soon he was playing to packed houses all over the world, as he still does. In 1997 he gave the first solo piano recital at the BBC Proms, breaking its record for the size of the audience (over 6,000) and the number of encores played (seven). But there was no hint of the circus in his appearances. His delight in his own technical prowess was evident, but, as his repertoire broadened and his discography lengthened, the refinement of his artistry intensified. Whether in Liszt, Beethoven, Schubert, Scriabin or his beloved Chopin, he could be depended upon to find new things to say, and with magisterial power.

Some critics, however, began castigating his pianism as mere heartless dazzle. And as he moved into his 30s, Mr Kissin's ego seemed in overdrive, leading to inappropriately gladiatorial performances of Schubert and Schumann. He himself admitted that his recording of Beethoven's "Moonlight" sonata only scratched the surface of that serene work.

In his 40s, however, Mr Kissin has made an aesthetic breakthrough, with performances of Liszt tone-poems and late Beethoven sonatas which are revelatory in their sweep and authority. No matter how big or complex a work, he now has an unerring mastery both of the fine detail and the architecture. Beethoven's 32 "Variations in C minor" is a ferociously condensed work, presenting a unique aesthetic challenge. Mr Kissin turns each variation into a small explosion of rage, grotesquery or pathos, and moves repeat- ►

edly from a smoulder to a blaze and back again, with magical results. This will be one of the Beethoven works on the double-CD of live recordings which Deutsche Grammophon will release in August.

But Mr Kissin is still a pliant spirit. To watch him reverentially drinking in performances by his heroes, Grigory Sokolov and Martha Argerich, at the Verbier summer festival where he frequently performs with his Russian-virtuoso friends, is to realise that he is not above learning lessons. And he is a born entertainer, up for any post-recital fun that's going and able to deliver ragtime with the best of them; the blind American jazz pianist Art Tatum is another of his heroes.

In interviews he has always been strikingly gauche, leaving long silences before giving lapidary answers. His autobiography, "Memoirs and Reflections", is an eccentric work with a similarly jerky momentum, but its revealing leitmotif is embodied in the extraordinary epitaph which he wrote for himself when still a young boy: "When I die, bury me in the region around Moscow, in the forest, and let the stone, under which my remains will lie, be barely visible in the grass, and it should [read]...HERE LIES EVGENY KISSIN, SON OF THE JEWISH PEOPLE, A SERVANT OF MUSIC." One of the world's greatest living musicians he may be, but Mr Kissin sees himself as a child of history. ■

China and America

Fated to fight?

Destined for War: Can America and China Escape Thucydides's Trap? By Graham Allison. Houghton Mifflin Harcourt; 384 pages; \$28. Scribe; £18.99

ON JULY 2nd an American guided-missile destroyer sailed within 12 nautical miles (22.2km) of Triton, a tiny Chinese-occupied island in the South China Sea. It was on a "freedom of navigation" operation, sailing through disputed waters to show China that others do not accept its territorial claims. Such operations infuriate China. But they have not brought the two superpowers to blows. So far.

Graham Allison, a Harvard scholar, thinks the world underestimates the risk of a catastrophic clash between China and the United States. When a rising power challenges an incumbent, carnage often ensues. Thucydides, an ancient historian, wrote of the Peloponnesian war of 431-404 BC that "It was the rise of Athens and the fear that this instilled in Sparta that made war inevitable." Mr Allison has examined 16 similar cases since the 15th century. All

but four ended in war. Mr Allison does not say that war between China and the United States is inevitable, but he thinks it "more likely than not".

This alarming conclusion is shared by many in Washington, where Mr Allison's book is causing a stir. So it is worth examining his reasoning. America has shaped a set of global rules to suit itself. China has different values and different interests which it would like others to accommodate. Disagreements are inevitable.

War would be disastrous for both sides, but that does not mean it cannot happen. No one wanted the first world war, yet it started anyway, thanks to a series of miscalculations. The Soviet Union and America avoided all-out war, but they came close. During the Cuban missile crisis in 1962, when the Soviets tried to smuggle nuclear missiles onto Cuba, 90 miles (145km) from Florida, there were at least a dozen close calls that could have led to war. When American ships dropped explosives around Soviet submarines to force them to surface, one Soviet captain thought he was under attack and nearly fired his nuclear torpedoes. When an American spy plane flew into Soviet airspace, Nikita Khrushchev, the Soviet leader, worried that America was scoping targets for a nuclear first strike. Had he decided to pre-empt it, a third world war could have followed.

China and America could blunder into war in several ways, argues Mr Allison. A stand-off over Taiwan could escalate. North Korea's dictator, Kim Jong Un, might die without an obvious heir, sparking chaos. American and Chinese special forces might rush into North Korea to secure the regime's nuclear weapons, and clash. A big cyber-attack against America's military networks might convince it that China was trying to blind its forces in the Pacific. American retaliation aimed at warning China off might have the opposite effect. Suppose that America crippled China's Great Firewall, as a warning shot, and China saw this as an attempt to overthrow its government? With Donald Trump in the White House, Mr Allison worries that even a trade war might turn into a shooting war.

He is right that Mr Trump is frighteningly ignorant of America's chief global rival, and that both sides should work harder to understand each other. But Mr Allison's overall thesis is too gloomy. China is a cautious superpower. Its leaders stoke nationalist sentiment at home, but they have shown little appetite for military adventurism abroad. Yes, the Taiwan strait and the South China Sea are dangerous. But unlike the great powers of old, China has no desire to build a far-flung empire. And all the wars in Mr Allison's sample broke out before the invention of nuclear weapons. China and America have enough of these to destroy the world. That alone makes war extremely unlikely. ■

Racism in Australia

Shortcoming of the heart

The Hate Race: A Memoir. By Maxine Beneba Clarke. Corsair; 261 pages; £18.99

MAXINE BENEBA CLARKE, an Australian writer and poet, describes her parents, in their flared cords and velour turtlenecks, as "Black Britain to a tee". Her father was an academic of Jamaican descent with a PhD in pure mathematics, and her mother, an actress of Guyanese heritage. They emigrated to Australia in 1976, when the country was opening its borders ever so slightly, after the "White Australia" policy (which openly excluded migrants of colour) was abolished in 1973 by the then prime minister, Gough Whitlam.

"The Hate Race" explores what happened next. It is a memoir about growing up black in Sydney's outer suburbs, where everybody knew everybody (the kind of place that inspired Howard Arkley's hyper-coloured paintings of a cookie-cutter suburbia). "Racism was as commonplace as cornflakes," and anything unfamiliar was scorned or hidden from view. Amid the homogeneity, houses owned by the Exclusive Brethren (a fringe group of fundamentalist Christians) slotted in neatly. And Ms Clarke describes, to chilling effect, how decades later she learned that the Marella Mission Farm—one of many institutions where Aboriginal children were raised after being forcibly removed from their families as part of the state's programme to dilute the indigenous race—was only two kilometres from her home.

The book has been glowingly received in Australia and rightly so. Rooted in the specifics of the author's childhood years in the 1980s and 1990s, it has a nostalgic bent with moments of levity. She recounts after-►



The poet's story

▶ noons spent sprawled on the floor blaring Salt-N-Pepa and Boyz II Men cassette tapes over and over on her “sunflower-yellow boom box” and tells of mornings spent “roller skating round the smooth, deserted streets” warbling Cole Porter’s “Don’t Fence Me In”. Yet, despite these lighthearted touches, this is an unflinching account of exactly how it feels to endure racism: a poison that eats away at “the very essence of your being”.

It is a catalogue of horrors. A white boyfriend tells her that her hand is “like a possum paw”, and a fellow student stages psychological warfare by anonymously

leaving a series of notes that read “FUCK OFF BACK TO WHERE YOU CAME FROM” in her schoolbag. She is overlooked for a prize she clearly deserved at a public-speaking competition, mercilessly teased, excluded by some of her peers and told by a geographically challenged teacher that her mother’s family must be from Ghana not Guyana: she cannot be from India as she has those “striking African looks”.

Ms Clarke says that she has written the book she wished she had been able to read as a teenager, but that did not exist back then. Everything was about white people doing white things. She struggled to find

herself reflected in print or on screen and writes about how she was “overcome with disappointment” by a Cabbage Patch Kid doll her mother gave her because it had brown skin and would not carry the same social value in the school playground as one which was white. “The Hate Race” articulates the quotidian experience of living with racism. It deserves the widest possible audience. A study in 2014 found that one in five Australian children experiences racism at school every day and Ms Clarke dedicates her book to this cause and the next generation: “May all your classrooms and playgrounds be kept safe.” ■

Johnson | Learning from fingered speech

Twitter is useful for many things—including (unexpectedly) for studying dialects

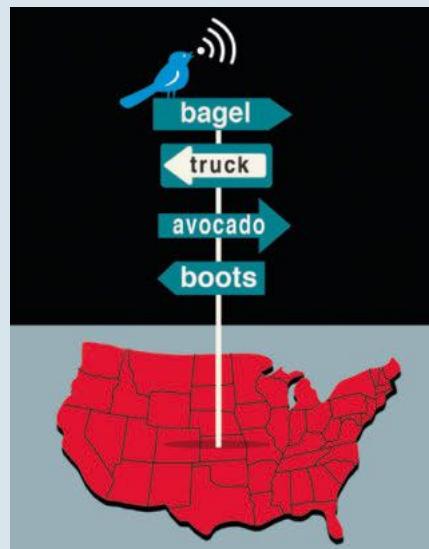
“**T**HAT’S pants!” says the exasperated Londoner, confusing Americans. Why would anyone swear by pants? Transatlantic types know the reason: in Britain, pants are undergarments, in America they are mere trousers. Or at least that’s what the New York-London jet-set believes. But in the north-west of England, “pants” are trousers, just as they are in America (and just as they were first elsewhere in England). “Pants” as underpants is the newcomer.

Jack Grieve, a linguist at Birmingham University, uses Twitter to study regional patterns in English. Those who think Twitter is only good for being rude about others are dead wrong. Millions of people use Twitter for ordinary chitchat and unfiltered thoughts. This may be no great contribution to world literature, but it is a gold mine for dialectologists.

That’s because people on social networks write much as they speak. Dialectologists otherwise have a tough job. To find dialect words or expressions, they track down old people in the countryside, sit with them and patiently question them about their childhood, hoping to draw out distinctive local words and expressions. But it is time-consuming, allowing dialect researchers to interact with only a small number of speakers. They are nagged by the thought that they may not have found truly representative ones, or that they are missing changes afoot.

Enter big data. People writing on Twitter or Facebook leave an electronic data trail that can be gathered and analysed almost instantly. And in those media they put what they would say in speech into text, in a new mode of communication that John McWhorter of Columbia University has come to describe as “fingered speech”.

Fingered speech is perfect for the dia-



lectologist who wants lots of data but is short of time. If people “talk” on Twitter as they do in real life, all you need is access to lots of tweets. Not all tweets are public, and not all show the location of the tweeter, but there are enough that they offer billions of bits of usable data.

Mr Grieve can make postcode-by-postcode maps showing dialect features. “Trousers” shows up as a stark white on his maps in north-western England, meaning the word is hardly used there. In the south-east “Trousers” is deep red. “Pants”, meaning trousers, is a dusky light blue in London and the south-east, but a dark blue in north Wales and the north-west. (Oddly, people don’t seem to talk about underwear much on Twitter.)

The same goes for other shibboleths. “Sofa” is near-universal in England, and “couch” dominant in Scotland. Smaller words are naturally harder for dialectologists using traditional methods to find. But

with Twitter data, researchers can easily find the rarer “settee” enough times to show that it is popular in south Wales and in bits of the north of England.

The results are culturally interesting, too. Mr Grieve’s maps for “gosh” in America show this “minced oath” to be popular not only in Mormon Utah, but in a contiguous region of the inland south, from Texas to Oklahoma, Arkansas, Missouri, Tennessee and Kentucky. But contrary to what one might expect, it hardly shows up in the deep-Dixie states of Mississippi, Alabama and Georgia.

Things get even more interesting when Mr Grieve stacks his maps—some 9,000 of them—on top of each other to find bigger patterns. And here the mystery of “gosh” is solved: the inland south is heavily white and religious. Many blacks still live in the lowland south, where their ancestors worked as slaves. And black Americans, on the whole, speak (and tweet) differently from white ones, a fact that shows up brightly in Mr Grieve’s work: the south-east is easily the most distinct region on his map. In other words, these are not just dialect regions, but cultural regions. The second most distinctive difference in his maps comes from the rural-urban divide. The coasts and big cities use “bagel” and “avocado”; in rural and inland bits “truck” and “boots” abound.

That’s a lot of work to confirm stereotypes, but it has the advantage of capturing quickly what pollsters and cultural geographers could only speculate over with census data. Billions of data points also make the work robust. And last, Twitter can capture changes that would take traditional researchers—whether geographers or dialectologists—so much time that they might miss quick-moving developments. Tomorrow’s researchers have a lot to look forward to.



The Republic of Uganda

GENERAL PROCUREMENT NOTICE

UPGRADING OF THE RWENKUNYE-APAC-LIRA-ACHOLIBUR ROAD PROJECT
ISSUE DATE: 7th July, 2017 PROCUREMENT REF No.: UNRA/WRKS/16-17/00002/01-02



Uganda National Roads Authority

1. The *Government of the Republic of Uganda* has applied for the financing in the amount of US\$210.0 million equivalent from the Islamic Development Bank to finance the Upgrading of the Rwenkunye-Apac-Lira-Puranga Road project, and intends to apply part of the proceeds to payments for goods, works, related services and consulting services to be procured under this project.
2. The objectives of the Project are to: a) Upgrade 191 km of existing Gravel road between Rwenkunye, Apac, Lira and Puranga towns to Asphaltic Paved road Standard to among others to reduce on travel time, operational cost and economic losses, increase comfort, safety and reliability during travel, meet current and future transport demands; and b) help accelerate economic activities by improving access of people to social amenities, market places, business and employment opportunities resulting from improved internal and sub-regional connectivity and economic growth.
3. The project is targeting Upgrading of 191 Km 2-lane existing earthen/gravel roadway to Asphaltic Paved Road Standard which connects the Western part with the Northern parts of Uganda. It traverses through four districts and connects several local trading centers and villages to the District Headquarters of Masindi, Apac, Lira and Pader. The road is part of the Lira – Kitgum – Musingo road which is a link to Southern Sudan. The road link starts at Rwekunye in Masindi District on the Kampala – Gulu highway, runs through Masindi Port where there is a ferry crossing across the Nile River, Apac Town, Lira Town and terminates at Puranga in Pader District. The Project scope includes all works related to Upgrading of the existing 2-lane earthen/gravel roadway to two 3.5m wide traffic lanes (7 meters asphaltic carriageway), 1.5m paved shoulders on each side.
4. The project comprises the following components:
 - a **Component 1:** Civil Works for Primary Road Construction: includes all works related to Upgrading of 191 km long existing Earthen/Gravel Roadway to Asphaltic Road Standard in two lots. Major work items include earthworks, granular pavement layers, asphalt pavement, paved shoulders, retaining structures, gabion walls, bridges, culverts, pipe culverts, road side drainage system, installation of road safety devices, weighing stations, construction of roadside facilities such as laybys, bus stops and waiting area, service areas, emergency stopovers, environmental mitigation measures, etc., and other associated miscellaneous civil works.
 - b **Component 2:** Consulting Services: includes consulting services for Detailed Design Review and Construction Supervision of Civil Work Contracts under the Project. The Consultant will ensure high Standards of Construction, compliance with established Highway Safety Standards, specifications with special emphasis to the Road Safety, Highway Drainage and Environmental mitigation measures. Also, provide on-job training to selected UNRA Staff during Project Implementation.
 - c **Component 3:** Project Management Support (PMU): includes purchase of Office Equipment, Furniture, two Vehicles, etc.
 - d **Component 4:** Financial Audit: includes auditing of project's financial statements, its accounts, utilization of budget, special account and other financial aspects by an independent, qualified and well experienced local financial audit firm.
5. The overall procurement process will be conducted in accordance with IDB Guidelines for the Procurement of Goods and Works and conditions of the Financing Agreement. The IDB Standard Pre-Qualification Documents, Bidding Documents, Standard Bid Evaluation Report Form and Standard Contracts shall be used as noted below:
 - a The two (2) lots under Civil Works Component 1 would be procured through International Competitive Bidding (ICB) procedures with prequalification of bidders as defined in IDB Guidelines for Procurement of Goods and Works, dated May 2009. Firms would be allowed to prequalify and bid for both lots and sign single or multiple contracts. Multiple contracts will be awarded to a bidder offering the lowest evaluated cost for combined lots provided that it meets the required qualification criteria for combination of lots.
 - b An International consultancy firm for Component 2 will be selected from a short-list of 6 to 8 International Consultancy firms limited to IDB member countries based on Quality and Cost Based Selection (QCBS) method as defined in IDB Guidelines for the Use of Consultants.
 - c The PMU equipment and furniture as well as two vehicles under Component 3 would be procured through National Shopping procedures as defined in IDB Guidelines for Procurement of Goods and Works, dated May 2009.
 - d The project financial auditor under Component 4 will be selected from a short-list of internationally reputed local audit firms based on Least Cost selection method as defined in IDB Guidelines for the Use of Consultants.
6. Specific procurement notices for the above contracts will be announced separately through international and regional newspapers, concerned Embassies, Consulates and Local representatives of IDB Member Countries, email list, IDB website, Uganda National Roads Authority Website (www.unra.go.ug), and Public Procurement and Disposal of Assets Authority (PPDA) tender portal (www.ppda.go.ug), as they become available.
7. Interested eligible bidders who wish to be included on the email list to receive invitations for prequalification/bid under ICB/MC procedures and interested Consultants who wish to receive a copy of advertisement requesting expressions of interest for consultancy contracts, or those requiring additional information should contact the address below:

**The Head, Procurement and Disposal Unit,
 Uganda National Roads Authority
 Plot 3-5, New Port Bell Road,
 UAP Nakawa Business Park
 First Floor, Block D,
 P. O. Box 28487, Kampala, Uganda**

Tel:+ 256 (0) 312 233 100/(0) 414 318 000, Fax: + 256 414 232 807/347 616, E-mail: procurement@unra.go.ug

EXECUTIVE DIRECTOR

Economic data

% change on year ago

	Gross domestic product latest	qtr*	2017†	Industrial production latest	Consumer prices latest	2017†	Unemployment rate, %	Current-account balance		Budget balance % of GDP 2017†	Interest rates, % 10-year gov't bonds, latest	Currency units, per \$ Jul 5th	Year ago
								latest 12 months, \$bn	% of GDP 2017†				
United States	+2.1 Q1	+1.4	+2.2	+2.2 May	+1.9 May	+2.0	4.3 May	-449.3 Q1	-2.6	-3.5	2.35	-	-
China	+6.9 Q1	+5.3	+6.7	+6.5 May	+1.5 May	+2.0	4.0 Q1§	+169.5 Q1	+1.6	-4.1	3.54§§	6.80	6.67
Japan	+1.3 Q1	+1.0	+1.3	+6.8 May	+0.4 May	+0.6	3.1 May	+188.4 Apr	+3.6	-5.1	0.08	113	102
Britain	+2.0 Q1	+0.8	+1.6	-0.8 Apr	+2.9 May	+2.7	4.6 Mar††	-99.8 Q1	-3.1	-3.6	1.30	0.77	0.77
Canada	+2.3 Q1	+3.7	+2.3	+5.7 Apr	+1.3 May	+1.8	6.6 May	-48.4 Q1	-2.6	-2.7	1.79	1.30	1.30
Euro area	+1.9 Q1	+2.3	+1.9	+1.4 Apr	+1.3 Jun	+1.6	9.3 May	+391.1 Apr	+3.1	-1.4	0.48	0.88	0.90
Austria	+2.3 Q1	+5.7	+1.8	+3.3 Apr	+1.9 May	+2.0	5.4 May	+6.4 Q1	+2.3	-1.1	0.71	0.88	0.90
Belgium	+1.6 Q1	+2.6	+1.6	+2.2 Apr	+1.6 Jun	+2.2	7.6 Mar	-4.2 Mar	+0.3	-2.3	0.82	0.88	0.90
France	+1.1 Q1	+1.9	+1.5	+0.6 Apr	+0.7 Jun	+1.2	9.6 May	-23.7 Apr	-1.2	-3.1	0.82	0.88	0.90
Germany	+1.7 Q1	+2.4	+1.8	+2.8 Apr	+1.6 Jun	+1.7	3.9 May‡	+272.5 Apr	+8.0	+0.5	0.48	0.88	0.90
Greece	+0.8 Q1	+1.8	+1.0	+1.1 Apr	+1.2 May	+1.3	22.5 Mar	-0.8 Apr	-1.1	-1.3	5.35	0.88	0.90
Italy	+1.2 Q1	+1.8	+1.1	+1.0 Apr	+1.2 Jun	+1.4	11.3 May	+48.6 Apr	+2.1	-2.3	2.14	0.88	0.90
Netherlands	+3.2 Q1	+1.7	+2.2	+2.3 Apr	+1.1 May	+1.2	6.1 May	+68.4 Q1	+9.4	+0.7	0.67	0.88	0.90
Spain	+3.0 Q1	+3.3	+2.9	-10.2 Apr	+1.5 Jun	+2.0	17.7 May	+21.1 Apr	+1.8	-3.3	1.64	0.88	0.90
Czech Republic	+4.0 Q1	+6.3	+3.0	-2.5 Apr	+2.4 May	+2.3	3.0 May‡	+14.4 Q1	+0.9	-0.5	1.02	23.0	24.4
Denmark	+3.6 Q1	+2.5	+1.6	-5.6 Apr	+0.8 May	+1.2	4.3 Apr	+25.2 Apr	+7.7	-0.6	0.65	6.56	6.70
Norway	+2.6 Q1	+0.9	+1.8	-5.1 Apr	+2.1 May	+2.4	4.6 Apr‡‡	+22.4 Q1	+5.5	+4.1	1.65	8.40	8.39
Poland	+4.4 Q1	+4.5	+3.6	+9.1 May	+1.5 Jun	+2.0	7.4 May§	-0.5 Apr	-0.8	-2.8	3.32	3.75	4.00
Russia	+0.5 Q1	na	+1.4	+5.7 May	+4.1 May	+4.2	5.2 May§	+36.0 Q1	+2.2	-2.2	8.13	60.2	64.6
Sweden	+2.2 Q1	+1.7	+2.6	+8.0 May	+1.7 May	+1.6	7.2 May§	+22.0 Q1	+4.8	+0.3	0.61	8.50	8.50
Switzerland	+1.1 Q1	+1.1	+1.4	-1.3 Q1	+0.5 May	+0.5	3.2 May	+73.6 Q1	+9.9	+0.2	nil	0.97	0.97
Turkey	+5.0 Q1	na	+3.4	+5.9 Apr	+10.9 Jun	+10.2	11.7 Mar§	-33.2 Apr	-4.4	-2.4	10.71	3.61	2.92
Australia	+1.7 Q1	+1.1	+2.4	-0.8 Q1	+2.1 Q1	+2.2	5.5 May	-25.0 Q1	-1.6	-1.8	2.57	1.32	1.34
Hong Kong	+4.3 Q1	+2.9	+3.0	+0.2 Q1	+2.0 May	+1.6	3.2 May‡‡	+14.8 Q1	+6.6	+1.5	1.59	7.81	7.76
India	+6.1 Q1	+7.2	+7.1	+3.1 Apr	+2.2 May	+4.2	5.0 2015	-15.2 Q1	-1.2	-3.2	6.55	64.8	67.5
Indonesia	+5.0 Q1	na	+5.2	+6.4 Apr	+4.4 Jun	+4.3	5.3 Q1§	-14.6 Q1	-1.7	-2.0	6.77	13,367	13,140
Malaysia	+5.6 Q1	na	+5.2	+4.1 Apr	+3.9 May	+4.0	3.4 Apr§	+6.6 Q1	+1.4	-3.0	3.97	4.30	4.03
Pakistan	+5.7 2017**	na	+5.7	+9.8 Apr	+3.9 Jun	+4.8	5.9 2015	-9.2 Q1	-3.6	-4.5	8.10†††	108	105
Philippines	+6.4 Q1	+4.5	+6.5	+5.9 Apr	+2.7 Jun	+3.1	5.7 Q2§	-0.4 Mar	+0.4	-2.8	4.66	50.6	47.0
Singapore	+2.7 Q1	-1.3	+2.9	+5.0 May	+1.4 May	+1.3	2.2 Q1	+59.0 Q1	+19.1	-1.0	2.17	1.38	1.35
South Korea	+3.0 Q1	+4.3	+2.6	+0.1 May	+1.9 Jun	+1.9	3.6 May§	+88.3 May	+6.0	+0.7	2.28	1,151	1,156
Taiwan	+2.6 Q1	+3.8	+2.4	+0.8 May	+1.0 Jun	+0.5	3.8 May	+69.1 Q1	+12.8	-0.9	1.11	30.5	32.3
Thailand	+3.3 Q1	+5.2	+3.5	+1.4 May	nil Jun	+0.8	1.3 May§	+45.1 Q1	+11.8	-2.4	2.39	34.0	35.1
Argentina	+0.3 Q1	+4.3	+2.5	-2.5 Oct	+24.0 May‡	+24.2	9.2 Q1§	-16.8 Q1	-2.8	-5.9	na	16.9	15.1
Brazil	-0.4 Q1	+4.3	+0.6	+3.9 May	+3.6 May	+3.8	13.3 May§	-18.1 May	-1.0	-7.8	9.95	3.32	3.29
Chile	+0.1 Q1	+0.7	+1.5	+0.1 May	+2.6 May	+2.8	7.0 May‡‡	-5.0 Q1	-1.4	-2.7	4.19	666	661
Colombia	+1.1 Q1	-0.9	+2.0	-6.8 Apr	+4.0 Jun	+4.1	9.4 May§	-11.9 Q1	-3.6	-3.2	6.75	3,062	2,965
Mexico	+2.8 Q1	+2.7	+2.0	-4.4 Apr	+6.2 May	+5.4	3.5 May	-22.0 Q1	-2.2	-2.3	6.83	18.4	18.7
Venezuela	-8.8 04~	-6.2	-7.0	na	na	+591	7.3 Apr§	-17.8 Q3~	-0.6	-19.6	11.02	10.1	9.99
Egypt	+3.8 04	na	+3.5	+12.9 Apr	+29.7 May	+22.5	12.0 Q1§	-18.0 Q1	-5.8	-9.3	na	17.9	8.88
Israel	+3.9 Q1	+1.2	+3.7	+4.2 Apr	+0.8 May	+1.0	4.5 May	+11.7 Q1	+3.9	-2.5	2.09	3.51	3.88
Saudi Arabia	+1.7 2016	na	-0.5	na	-0.7 May	+2.2	5.6 2016	-24.9 Q4	+1.3	-7.4	3.68	3.75	3.75
South Africa	+1.0 Q1	-0.7	+0.7	-0.2 Apr	+5.4 May	+5.5	27.7 Q1§	-7.9 Q1	-3.2	-3.2	8.86	13.4	14.8

Source: Haver Analytics. *% change on previous quarter, annual rate. †The Economist poll or Economist Intelligence Unit estimate/forecast. §Not seasonally adjusted. ‡New series. ~2014. **Year ending June. ††Latest 3 months. ††3-month moving average. §§5-year yield. †††Dollar-denominated bonds.

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Markets

	% change on			
	Index Jul 5th	Dec 30th 2016	one week	in local currency terms
		in \$		
United States (DJIA)	21,478.2	+0.1	+8.7	+8.7
China (SSEA)	3,358.8	+1.1	+3.4	+5.6
Japan (Nikkei 225)	20,081.6	-0.2	+5.1	+8.2
Britain (FTSE 100)	7,367.6	-0.3	+3.1	+7.9
Canada (S&P TSX)	15,153.1	-1.3	-0.9	+2.2
Euro area (FTSE Euro 100)	1,191.4	-1.4	+7.1	+15.1
Euro area (EURO STOXX 50)	3,478.4	-1.6	+5.7	+13.5
Austria (ATX)	3,144.1	+1.6	+20.1	+29.0
Belgium (Bel 20)	3,839.0	nil	+6.4	+14.3
France (CAC 40)	5,180.1	-1.4	+6.5	+14.4
Germany (DAX)*	12,453.7	-1.5	+8.5	+16.5
Greece (Athex Comp)	841.3	+2.3	+30.7	+40.4
Italy (FTSE/MIB)	20,939.4	-0.5	+8.9	+16.9
Netherlands (AEX)	511.4	-1.0	+5.8	+13.7
Spain (Madrid SE)	1,060.4	-1.9	+12.4	+20.7
Czech Republic (PX)	986.8	+1.0	+7.1	+19.0
Denmark (OMXCB)	902.7	+0.2	+13.0	+21.4
Hungary (BUX)	35,298.1	-0.4	+10.3	+18.6
Norway (OSEAX)	768.2	nil	+0.5	+2.9
Poland (WIG)	60,936.6	-0.8	+17.7	+31.2
Russia (RTS, \$ terms)	1,007.9	+0.5	-12.5	-12.5
Sweden (OMX30)	1,627.2	-0.2	+7.3	+14.7
Switzerland (SMI)	8,954.1	-1.4	+8.9	+14.6
Turkey (BIST)	100,744.4	+0.1	+28.9	+25.5
Australia (All Ord.)	5,800.9	+0.1	+1.4	+6.9
Hong Kong (Hang Seng)	25,522.0	-0.6	+16.0	+15.2
India (BSE)	31,245.6	+1.3	+17.3	+22.9
Indonesia (JSX)	5,825.0	-0.1	+10.0	+10.8
Malaysia (KLCSE)	1,768.2	-0.2	+7.7	+12.4
Pakistan (KSE)	45,413.4	-2.0	-5.0	-8.3
Singapore (STI)	3,248.7	+1.0	+12.8	+17.8
South Korea (KOSPI)	2,388.4	+0.2	+17.9	+23.7
Taiwan (TWI)	10,404.8	+0.1	+12.4	+18.9
Thailand (SET)	1,575.0	-0.5	+2.1	+7.4
Argentina (MERV)	22,415.8	+4.8	+32.5	+23.8
Brazil (BVSP)	63,154.2	+1.8	+4.9	+2.7
Chile (IGPA)	24,240.2	+1.9	+16.9	+17.5
Colombia (IGBC)	11,017.9	+2.4	+9.0	+6.9
Mexico (IPC)	50,300.8	+1.9	+10.2	+23.7
Venezuela (IBC)	123,644.9	+1.2	+290	na
Egypt (EGX 30)	13,334.9	-0.5	+8.0	+9.5
Israel (TA-100)	1,292.9	+0.2	+1.3	+10.9
Saudi Arabia (Tadawul)	7,266.4	-2.1	+0.4	+0.4
South Africa (JSE AS)	52,483.9	+1.7	+3.6	+5.4

The Economist poll of forecasters, July averages (previous month's, if changed)

	Real GDP, % change		Consumer prices		Current account	
	Low/high range	average	2017	2018	2017	2018
Australia	2.0/3.1	2.5/3.4	2.4 (2.6)	2.9 (3.0)	2.2	2.3
Brazil	nil/1.2	0.3/3.0	0.6	1.9 (2.3)	3.8 (4.1)	4.4 (4.6)
Britain	1.2/2.0	0.7/1.6	1.6	1.2 (1.3)	2.7	2.7
Canada	1.7/2.8	1.5/2.7	2.3 (2.2)	2.0 (2.1)	1.8 (1.9)	1.9
China	6.5/6.8	4.6/6.9	6.7	6.3	2.0 (2.1)	2.3
France	1.2/1.7	1.4/1.9	1.5 (1.4)	1.6	1.2 (1.3)	1.2
Germany	1.3/2.1	1.4/2.2	1.8	1.7	1.5 (1.6)	8.0 (8.1)
India	6.2/7.5	7.0/8.0	7.1 (7.2)	7.6	4.2 (4.6)	4.7 (4.9)
Italy	0.9/1.4	0.7/1.2	1.1 (1.0)	1.0 (0.9)	1.4 (1.5)	1.2
Japan	0.8/1.7	0.5/1.7	1.3 (1.4)	1.1 (1.0)	0.6	0.9
Russia	0.8/2.0	0.9/2.3	1.4	1.7	4.2	4.1 (4.2)
Spain	2.7/3.2	1.9/2.8	2.9 (2.8)	2.4 (2.3)	2.0 (2.1)	1.4 (1.5)
United States	2.0/2.4	1.8/3.1	2.2	2.3 (2.4)	2.0 (2.2)	1.9 (2.1)
Euro area	1.7/2.1	1.4/2.0	1.9 (1.8)	1.7 (1.6)	1.6	3.1 (3.0)

Sources: Bank of America, Barclays, BNP Paribas, Citigroup, Commerzbank, Credit Suisse, Decision Economics, Deutsche Bank, EU, Goldman Sachs, HSBC Securities, ING, Itaú BBA, JPMorgan, Morgan Stanley, Nomura, 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 Jul 5th	Dec 30th 2016		
		one week	in local currency terms	in \$
United States (S&P 500)	2,432.5	-0.3	+8.7	+8.7
United States (NAScomp)	6,150.9	-1.3	+14.3	+14.3
China (SSEB, \$ terms)	329.4	+1.1	-3.6	-3.6
Japan (Topix)	1,618.6	+0.3	+6.6	+9.7
Europe (FTSEurofirst 300)	1,505.3	-0.9	+5.4	+13.2
World, dev'd (MSCI)	1,920.3	-0.6	+9.7	+9.7
Emerging markets (MSCI)	1,009.8	-0.2	+17.1	+17.1
World, all (MSCI)	465.9	-0.5	+10.4	+10.4
World bonds (Citigroup)	918.7	-1.0	+3.9	+3.9
EMBI+ (JPMorgan)	816.7	-0.9	+5.8	+5.8
Hedge funds (HFRX)	1,234.5 ^s	-0.2	+2.6	+2.6
Volatility, US (VIX)	11.1	+10.0	+14.0 (levels)	
CDSs, Eur (iTRAXX) ^t	55.3	+1.7	-23.4	-17.7
CDSs, N Am (CDX) ^t	61.2	+1.8	-9.7	-9.7
Carbon trading (EU ETS) €	5.0	-1.0	-23.4	-17.7

Sources: IHS Markit; Thomson Reuters. *Total return index.

^tCredit-default-swap spreads, basis points. ^sJul 3rd.

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The Economist commodity-price index

	2005=100			
	Jun 27th	Jul 4th*	one month	one year
Dollar Index				
All Items	140.1	144.7	+2.9	+4.0
Food	149.8	157.3	+2.8	-3.4
Industrials				
All	130.0	131.7	+3.0	+15.0
Nfa [†]	130.7	131.2	+0.3	+8.3
Metals	129.6	131.8	+4.2	+18.1
Sterling Index				
All items	199.4	203.7	+2.6	+5.0
Euro Index				
All items	154.3	158.5	+2.1	+1.8
Gold				
\$ per oz	1,247.4	1,223.2	-5.6	-9.1
West Texas Intermediate				
\$ per barrel	44.2	47.1	-2.3	+1.0

Sources: Bloomberg; CME Group; Cottlook; Darmenn & Curl; FT; ICCO; ICO; ISO; Live Rice Index; LME; NZ Wool Services; Thompson Lloyd & Ewart; Thomson Reuters; Urner Barry; WSJ. *Provisional

[†]Non-food agriculturals.

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Liberated

Simone Veil, a French stateswoman, died on June 30th, aged 89

LIKE the other children, she should have been slaughtered on arrival. But with whispered advice from another prisoner, she claimed to be 18, so instead they sent her to forced labour, tattooing her arm to show that she was no longer a schoolgirl from Nice but a numbered slave, awaiting death by starvation and exhaustion.

The deportation to Auschwitz shaped her life, Simone Veil said; it would be the event she would want to recall on her deathbed. As a magistrate, civil servant and politician, she heard echoes of that humiliation in the trampled dignity of women. It spurred her to end the mistreatment of female inmates, particularly Algerian prisoners of war, and to push through contraception reform, making the Pill available at taxpayers' expense. Foreshadowing her greatest achievement, she set up an organisation to defend women being prosecuted for terminating their pregnancies.

Her arrival in politics was accidental. It was her husband, Antoine, whom President Giscard d'Estaing intended to invite to the government when he came to visit in 1973. But she proved an inspired choice as his health minister. Legalising abortion

was the defining defeat of the old order—censorious, hypocritical, male—in post-war France. Theoretically banned since 1920, terminations took place annually in the hundreds of thousands: secretly, shamefully and dangerously. She introduced what became known as the Loi Veil into a National Assembly with just nine women deputies and 481 men. Some, she said caustically, were even then secretly trying to arrange abortions for mistresses or family members.

Cowards daubed swastikas on her car and in the lift in her apartment block. A deputy called Jean-Marie Daillet asked her if she supported throwing embryos into a crematorium oven. No woman ends a pregnancy lightly, she responded calmly. Though the issue split the ruling conservatives, her steely persuasion rallied centrists and left-wingers behind the bill. Pierre Mauroy, later a Socialist prime minister, complimented her, without irony, as "the only man in the government".

For years she was France's most popular politician. She could—should, many thought—have been prime minister or even president. But she lacked the necessary tribal instincts. Instead, her political career peaked in 1979 as president of the first directly elected European Parliament. She delighted in the post's symbolism—of

reconciliation among wartime foes, and that a Jew and a woman could hold the continent's highest elected office.

"Simone always starts by saying 'no,'" her father said. Some found her impatient and demanding. But she spied a double standard: the features that people admire in men are a point of criticism in women.

In 1979, when National Front thugs attacked a meeting where she was speaking, she shouted, "You do not frighten me! I have survived worse than you!" She had. Of the 75,000 Jews deported from wartime France, she was one of only 2,500 to return. Her father and brother perished, somewhere, in the east. But the most painful and powerful memories were of her mother Yvonne, her lifelong inspiration, dying slowly of typhus in Belsen after a 45-mile death march at the war's end.

The abyss had opened in 1944, days after she passed her *Baccalauréat*; she worried all her life that taking the exam under her real name had led to her family's arrest. "I found myself thrown into a universe of death, humiliation and barbarism," she wrote. "I am still haunted by the images, the odours, the screams, the humiliation, the blows and the sky, ashen with the smoke from the crematoriums." On liberation, a British soldier thought the emaciated young woman was 40. For a month, she could sleep only on the floor.

She returned home fired by a "rage to live", and also infuriated by selective amnesia. Reconciliation trumped justice. Members of the anti-Nazi resistance were honoured, but in what she called "Gaullo-Communist France" nobody seemed willing to believe that the Germans—and their local accomplices—had persecuted people simply for being Jewish. The silence was mixed with mockery. At a diplomatic reception, a senior French official jokingly likened the tattoo on her arm to a cloakroom ticket. She wept, and thereafter favoured long sleeves.

Optimist, without illusions

The Holocaust was unique in its scale and its senselessness, she used to say. Her father had raised his four children to be proud above all else of their Frenchness; in the secular Jewish tradition, he told them, being "people of the book", meant special attention to reading and thinking.

She will be interred alongside Victor Hugo, Voltaire and Émile Zola in the Paris Panthéon. Her previous great honour was to become a member—one of five women among 40—of the Académie Française, guardian of the language's purity and precision. On appointment, each "immortal" is given a ceremonial sword. Hers bore two mottos: the French Republic's *Liberté, Égalité, Fraternité* and the European Union's *Unie dans la diversité*. The third engraving was the number from her arm: 78651. ■



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