The Economist

DECEMBER 10TH–16TH 2016

Abe and Putin, two men in a tub

Oil: thrifty at fifty

The world's cleverest kids

Our books of the year

America's new business model

Contents

On the cover
Donald Trump is rewriting the rules that govern relations between the president and firms. Not for the better: leader, page 13. The president-elect wants to change the landscape of trade, page 22. He is part of a long tradition of elected officials intervening in business, page 24. America is not the only country where workers are angry; they are fuming in China, too, page 31

***The Economist* online**

Daily analysis and opinion to supplement the print edition, plus audio and video, and a daily chart
Economist.com

E-mail: newsletters and mobile edition
Economist.com/email

Print edition: available online by 7pm London time each Thursday
Economist.com/print

Audio edition: available online to download each Friday
Economist.com/audioedition

The Economist

Volume 421 Number 9019

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:
Atlanta, Beijing, Berlin, Brussels, Cairo, Chicago, Lima, Mexico City, Moscow, Mumbai, Nairobi, New Delhi, New York, Paris, San Francisco, São Paulo, Seoul, Shanghai, Singapore, Tokyo, Washington DC

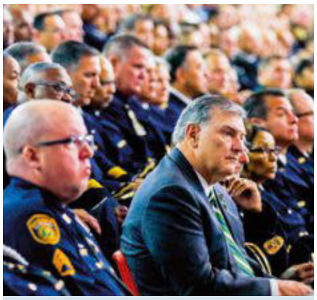
Italy Matteo Renzi recklessly led Italy into a poorly conceived referendum. How to pick up the pieces: leader, page 14. Mr Renzi may not keep his pledge to step down, page 47. A state rescue of the world's oldest bank looks probable, page 68

Clever kids Cynics should stop knocking the latest global education comparisons and start learning from them: leader, page 16. PISA shows that reforming education is slow and hard, but possible, page 56. Where migrants go to school is more important than where they came from, page 58

Two men in a tub Shinzo Abe has invited Vladimir Putin to a summit in which joint bathing in hot springs is on the agenda. The odds of a breakthrough in their countries' 70-year-old territorial dispute are long, page 27

Contents continues overleaf

Oil OPEC's intervention will not save a flabby industry from the lash of market forces: leader, page 18. Big oil firms are taking a new approach to finding and drilling for crude. Will it last? Page 59. Rosneft strikes a deal, page 60. Latin America is set to extend its lead in alternative energy: Bello, page 42



Pensions in Dallas The run on a retirement fund signals an unwelcome emergency for the fire and police services, page 69

Palaeontology New fossils illuminate the journey that led ultimately to human beings, page 72. A dinosaur's tail has a tale to tell, page 73

Books of the year China, language, microbes, hereditary power, inequality and medieval manuscripts provided the themes for the cream of the literary crop in 2016, page 76. What we wrote when we weren't in the office, page 79

Subscription service

For our full range of subscription offers, including digital only or print and digital combined visit
Economist.com/offers
You can subscribe or renew your subscription by mail, telephone or fax at the details below:

Telephone: +65 6534 5166
Facsimile: +65 6534 5066
Web: Economist.com/offers
E-mail: Asia@subscriptions.economist.com
Post: The Economist
Subscription Centre,
Tanjong Pagar Post Office
PO Box 671
Singapore 910817

Subscription for 1 year (51 issues)	Print only
Australia	A$425
China	CNY 2,300
Hong Kong & Macau	HK$2,300
India	INR 7,500
Japan	Yen 41,000
Korea	KRW 344,000
Malaysia	RM 780
New Zealand	NZ$460
Singapore & Brunei	S$425
Taiwan	NT$8,625
Thailand	US$288
Other countries	Contact us as above

Principal commercial offices:
25 St James's Street, London SW1A 1HG
Tel: +44 20 7830 7000

Rue de l'Athénée 32
1206 Geneva, Switzerland
Tel: +41 22 566 2470

750 3rd Avenue, 5th Floor, New York, NY 10017
Tel: +1 212 541 0500

1301 Cityplaza Four,
12 Taikoo Wan Road, Taikoo Shing, Hong Kong
Tel: +852 2585 3888

Other commercial offices:
Chicago, Dubai, Frankfurt, Los Angeles, Paris, San Francisco and Singapore

PEFC certified
This copy of *The Economist* is printed on paper sourced from sustainably managed forests, recycled and controlled sources certified by PEFC
www.pefc.org
PEFC/01-31-162

M.C.I. (P) No.030/09/2016 PPS 677/11/2012(022861)

Politics

In a referendum, **Italian** voters rejected constitutional reforms put forward by Matteo Renzi, the prime minister, which would have weakened the Senate in order to ease the passage of laws and given the federal government more power. "No" votes beat "Yes" by a decisive margin of 20 percentage points. Mr Renzi tendered his resignation.

Germany's Angela Merkel called for a ban on the burqa "wherever legally possible". Her statement was part of a speech on Western values in which the chancellor sought to address concerns about the influx of migrants as she prepares to run for re-election. She promised that *sharia* law would never supersede German principles of equality.

In **Austria's** presidential election, Alexander Van der Bellen, a former leader of the Green party who ran as an independent, beat Norbert Hofer, a candidate from the far-right Freedom Party. Turnout was high as mainstream voters rallied to avoid electing the European Union's first far-right head of state.

Britain's Supreme Court heard the government's appeal against a lower court's judgment that it must obtain parliamentary approval before triggering Article 50, the legal means for leaving the EU. The Supreme Court's verdict is due in January. Meanwhile, MPs voted to "respect" the government's timetable for Brexit, but demanded details on its negotiating stance. Adding to the pressure on Theresa May, the prime minister, the EU's Brexit negotiator said a deal should be completed by October 2018.

Zac Goldsmith, until recently a Conservative MP, was ousted from his Richmond constituency in London by the **Liberal Democrats**. The by-election had been forced by Mr Goldsmith as a protest against the government's plan for a third runway at Heathrow, but it was Brexit that dominated. Richmond was the 39th-most pro-Remain of the 650 parliamentary constituencies. The Lib Dems' 30.4 percentage-point increase in their share of the vote there has been surpassed only 31 times in 460 by-elections since 1945.

The prime minister of **France**, Manuel Valls, resigned to run for the Socialist nomination in next year's presidential election. A centrist reformer, he faces several rivals, mainly on the hard left. The current president, François Hollande, is not running for re-election.

A result

A month after election day, Pat McCrory, the Republican governor of **North Carolina**, conceded defeat to Roy Cooper, his Democratic rival. The race had attracted national attention because of Mr McCrory's support of a bill that forces transgender people to use public lavatories matching the sex noted on their birth certificates. Mr Cooper's margin of victory was less than 1%.

The trial got under way of Dylann Roof, the white supremacist accused of killing 15 parishioners at a black church in Charleston, **South Carolina**, in 2015. The prosecution is seeking the death penalty.

A fire swept through a warehouse in **Oakland**, California, where a musical event was being staged, killing 36 people. It was the deadliest fire in a building in the state since 1906.

Another crisis

Brazil's Supreme Court reversed a judge's ruling requiring the leader of the Senate, who has been charged with embezzlement, to step down while he awaits trial. However, it did remove him from the line of succession for the presidency.

Bolivian police arrested the head of the airline that operated an aeroplane which crashed in Colombia last month, killing 71 people, including most of the players of a Brazilian football club, Chapecoense. He has not been charged with a crime.

Lucky number seven

Voters in **Ghana** went to the polls in the country's seventh election since the restoration of democracy in 1992. The result was expected to be close between the incumbent, President John Mahama, and leader of the main opposition party, Nana Akufo-Addo.

The incoming government of **Gambia** said it may prosecute the outgoing president, Yahya Jammeh, for unspecified crimes and to have the country rejoin the International Criminal Court, just months after Mr Jammeh gave notice that he was withdrawing from the tribunal. Mr Jammeh, who has ruled the country for more than two decades, is soon to hand over power after losing an election.

The government in **Libya** said that it had completed the reconquest of Sirte, a town on the coast held by Islamic State since last year.

Reports suggested that **Syrian** rebels in east Aleppo are trying to negotiate a withdrawal from the city. Government troops have further shrunk the enclave, taking parts of the Old City. Russia and China vetoed a UN Security Council resolution demanding a truce.

China flexes its muscles

Hong Kong's government filed a case against four pro-democracy legislators who it said had improperly taken their oaths. If they are disbarred, it would bring to six the number of lawmakers who have been excluded from the recently elected Legislative Council on such grounds. The government in Beijing has objected to legislators who use the oath-taking as an opportunity to show their support for autonomy for Hong Kong.

America's president-elect, Donald Trump, angered **China** by accepting a congratulatory telephone call from **Taiwan's** president, Tsai Ing-wen. It was the first known contact at such a level since the United States severed its diplomatic ties with Taiwan in 1979 and recognised the government in Beijing.

John Key, the prime minister of **New Zealand**, resigned unexpectedly and endorsed Bill English, the finance minister, as his successor.

Voters in **Uzbekistan** elected Shavkat Mirziyoyev as president in an election dismissed by monitors as a sham. Mr Mirziyoyev served as prime minister to Islam Karimov, Uzbekistan's recently deceased strongman of 25 years.

Jayaram Jayalalithaa, the long-serving chief minister of the **Indian** state of Tamil Nadu, died of a heart attack. She was known as *Amma* ("mother") for the public subsidies dished out to the poor under her government. Crowds of mourners brought the state capital, Chennai, to a standstill. ▸▸

Business

Donald Trump promised to clamp down on American companies that move jobs overseas, suggesting he would impose a 35% tariff on goods they imported back to America. It was the latest broadside from the president-elect against a **global trade** regime that, in his view, hurts American workers. In another portent of what could be a testy relationship with American business, Mr Trump denounced the cost of the presidential plane being built by Boeing, after its boss criticised his trade policies.

Looking for a hand

Italian banks had a mixed week in the aftermath of the rejection by Italian voters of political reforms. Share prices fell initially, but then rose amid speculation that the government would arrange a rescue package for the banking system. The political uncertainty following the referendum raises particular questions about the ability of Monte dei Paschi di Siena, the most troubled of Italy's banks, to complete its capital-raising plan.

America's Public Company Accounting Oversight Board slapped an $8m fine, its biggest ever, on a Brazilian affiliate of **Deloitte** for issuing false audit reports and attempting a cover-up during an investigation. The PCAOB has the power to inspect any foreign accounting firm that audits a company listed on an American exchange. At issue were the accounts of a Brazilian airline that is listed in New York.

In a unanimous decision, America's Supreme Court upheld a broad definition of **insider trading**, finding that when prosecutors make their case they do not have to prove that someone benefited from the information. It was the court's first deliberation on the issue in two decades. Its ruling overturns a stricter interpretation of insider trading made by the federal appeals court in New York two years ago.

Oil prices surged following the deal announced by OPEC members to cut production, pushing Brent crude above $55 a barrel for the first time in more than a year. But prices pared some of their gains on reports that OPEC's output reached a record high last month. Oil-producing countries that are not part of OPEC, notably Russia, are due to hold talks with the oil cartel about what reductions to output they can contribute. The Russian government sold a 19.5% stake in **Rosneft**, a state-owned oil firm, to a joint venture between Glencore, a commodities trader, and Qatar's sovereign-wealth fund for $11.3bn.

Mexico conducted the first auction of rights to drill for oil and gas in its deepwater reserves in the Gulf of Mexico. Since opening up the domestic oil industry to competition in 2013 the government has sold off other assets, but this was the first auction to attract bids from big international energy companies.

Rupee slippers

India's central bank unexpectedly left its main interest rate on hold at 6.25%. A cut had been expected after the government withdrew 86% of banknotes from circulation in the cash-rich economy. But the bank is on alert against other causes of volatility, such as the rupee's recent low against the dollar and the prospect of monetary tightening in the US.

A political scandal that has engulfed the president of **South Korea** caused more discomfort for the country's biggest *chaebol*. Senior businessmen at Hyundai, Samsung and other firms, were hauled in front of a parliamentary committee to answer questions about donations to a foundation controlled by a friend of the president. Samsung's offices were recently searched by prosecutors investigating the allegations.

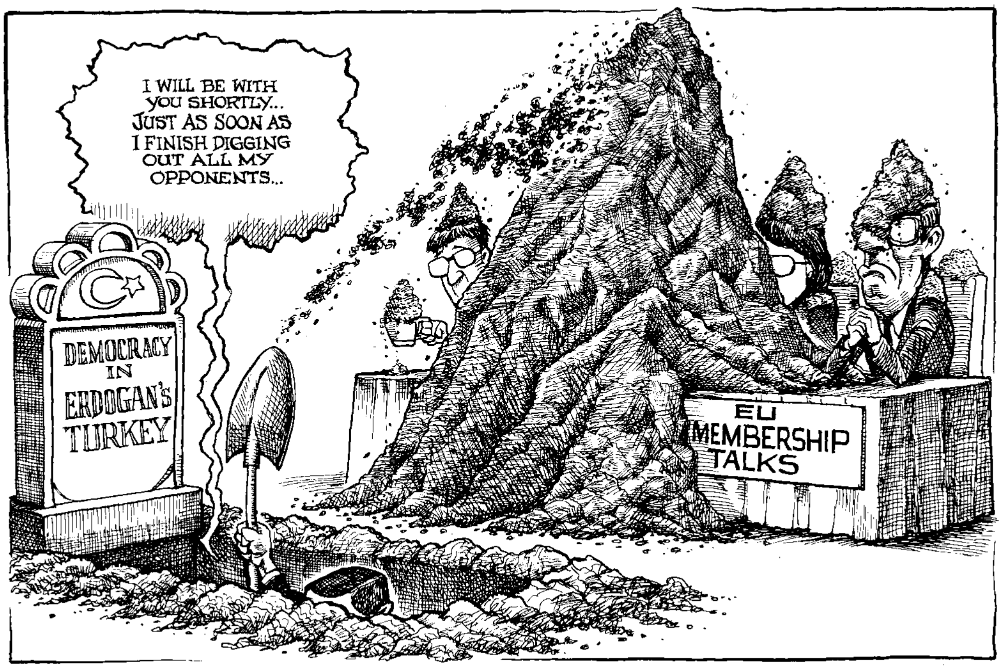
CRISPR crunch

A packed audience listened to a hearing at America's patent office about who owns the intellectual-property rights to the **CRISPR/Cas9** gene-editing technology. The stakes are high, potentially worth billions of dollars. A team from the University of California, Berkeley, claims that work carried out at the Broad Institute in Cambridge, Massachusetts, relies heavily on its research. The patent court could give a decision next year, or listen to further oral arguments.

A consortium of investors led by Macquarie, an Australian investment firm, Allianz, a German one, and including the sovereign-wealth funds of China and Qatar, agreed to buy a 61% stake in the gas-distribution network run by **National Grid** in Britain. The deal values the business at £13.8bn ($17.5bn).

Britain's oldest manufacturing firm put its business up for sale. Based in east London, **Whitechapel Bell Foundry** was established in 1570 and cast the original Liberty Bell in Philadelphia as well as Big Ben and bells for St Paul's Cathedral. Fewer churches mean fewer orders for large bells. But the success of "Downton Abbey" has wrought a new market: for handbells to ring for tea.

Other economic data and news can be found on pages 82-83



America's new business model

Donald Trump is rewriting the rules that govern relations between the president and firms. Not for the better

HIS inauguration is still six weeks away but Donald Trump has already sent shock waves through American business. Chief executives—and their companies' shareholders—are giddy at the president-elect's promises to slash burdensome regulation, cut taxes and boost the economy with infrastructure spending. Blue-collar workers are cock-a-hoop at his willingness to bully firms into saving their jobs.

In the past few weeks, Mr Trump has lambasted Apple for not producing more bits of its iPhone in America; harangued Ford about plans to move production of its Lincoln sports-utility vehicles; and lashed out at Boeing, not long after the firm's chief executive had mused publicly about the risks of a protectionist trade policy. Most dramatically, Mr Trump bribed and cajoled Carrier, a maker of air-conditioning units in Indiana, to change its plans and keep 800 jobs in the state rather than move them to Mexico. One poll suggests that six out of ten Americans view Mr Trump more favourably after the Carrier deal. This muscularity is proving popular.

Popular but problematic. The emerging Trump strategy towards business has some promising elements, but others that are deeply worrying. The promise lies in Mr Trump's enthusiasm for corporate-tax reform, his embrace of infrastructure investment and in some parts of his deregulatory agenda. The dangers stem, first, from the muddled mercantilism that lies behind his attitude to business, and, second, in the tactics—buying off and attacking individual companies—that he uses to achieve his goals. American capitalism has flourished thanks to the predictable application of rules. If, at the margin, that rules-based system is superseded by an ad hoc approach in which businessmen must take heed and pay homage to the whim of King Donald, the long-term damage to America's economy will be grave.

Helping the few at the expense of the many

Start with the confusions in Mr Trump's philosophy. The president-elect believes that America's workers are harmed when firms move production to cheaper locations offshore. That is why he wants to impose a 35% tariff on the products of any company that moves its production abroad. Such tariffs would be hugely disruptive. They would make goods more expensive for American consumers. By preventing American firms from maximising their efficiency using complex supply chains, they would reduce their competitiveness, deter new investment and, eventually, hurt workers' wages across the economy. They would also encourage a tit-for-tat response.

Precisely because tariffs would be so costly, many businessmen discount Mr Trump's protectionism as mere rhetoric. Plenty of them see the focus on individual firms as a politically canny (and thus sensible) substitute. If Mr Trump can convince American workers that he is on their side using only a barrage of tweets and a few back-room deals like the one with Carrier, there may be no need to resort to tariffs. To profit from a business-friendly bonanza, the logic goes, clever executives simply have to make sure they stay in the president's good books.

That looks like wishful thinking. Mr Trump's mercantilism is long-held and could prove fierce, particularly if the strong dollar pushes America's trade deficit higher (see page 22). Congress would have only limited powers to restrain the president's urge to impose tariffs. More important, even if rash protectionism is avoided, a strategy based on bribing and bullying individual companies will itself be a problem.

Mr Trump is not the first American politician to cajole firms. For all its reputation as the bastion of rule-based capitalism, America has a long history of ad hoc political interventions in business (see page 24). States routinely offer companies subsidies of the sort that Indiana gave to Carrier. From John Kennedy, who publicly shamed steel firms in the 1960s, to Barack Obama, who bailed out car companies in 2009, all presidents have meddled in markets.

And Mr Trump's actions so far are not exceptional relative to his predecessors or by international standards. Britain's prime minister recently made undisclosed promises to Nissan, a Japanese carmaker, to persuade the firm to stay in Britain despite Brexit. The French government is notorious for browbeating individual firms to keep jobs in France. The most egregious crony corporatists, from Russia to Venezuela, dish out favours to acolytes and punishments to opponents on a scale that would bring blushes even in Trump Tower.

Courting the king and currying favour

Nonetheless, Mr Trump's approach is worrying. Unlike the Depression, when Hoover and then Roosevelt got companies to act in what they (often wrongly) saw as the national interest; or 2009, when Mr Obama corralled the banks and bailed out Detroit, America today is not in crisis. Mr Trump's meddling is thus likely to be the new normal. Worse, his penchant for unpredictable and often vindictive bullying is likely to be more corrosive than the handouts most politicians favour.

If this is the tone of the Trump presidency, prudent businesses will make it their priority to curry favour with the president and avoid actions that might irk him. Signs of this are already evident in the enthusiasm with which top CEOs—many of them critics of Mr Trump during the campaign—have rushed to join his new advisory board. Helping the Trump Organisation or the Trump family might not go amiss either. The role of lobbyists will grow—an irony given that Mr Trump promised to drain the Washington swamp of special interests.

The costs from this shift may be imperceptible at first, exceeded by the boon from economic stimulus and regulatory reform. And as president of the world's largest economy, Mr Trump will be able to ride roughshod over firms for longer with impunity than politicians in smaller places ever could. But over time the damage will accumulate: misallocated capital, lower competitiveness and reduced faith in America's institutions. Those who will suffer most are the very workers Mr Trump is promising to help. That is why, if he really wants to make America great again, Mr Trump should lay off the protectionism and steer clear of the bullying right now. ■

Burqa bans

The freedom to dress modestly

The latest promise to ban the burqa is a mistake

ANGELA MERKEL, Germany's chancellor, is often seen as the West's last best defender of the liberal order against a tide of populism. She is likely to win re-election next autumn, but faces a challenge from the anti-immigrant Alternative for Germany. So Mrs Merkel needs to buck up her own party, the centre-right Christian Democratic Union, which is disillusioned with the "welcome culture" for refugees that she has promoted. Speaking to party delegates on December 6th, Mrs Merkel promised that the events of 2015, when 890,000 refugees claimed asylum in Germany, "can, shall and must not be repeated". She vaunted her government's European values of sexual equality and religious tolerance. And, in a line that drew long applause, she added that "the full veil is not appropriate for us, and should be banned wherever legally possible."

There is a contradiction in Mrs Merkel's embrace of liberal values and her vow to ban the full veil, known variously as the niqab or burqa. Wearing it is regarded by some Muslims as a religious duty for women when in public. A ban infringes the freedom of religion. It is also unenforceable, polarising and serves to pander to populists.

When to lift the veil

Like many other rights, religious freedom is not absolute. Sometimes the state has good reasons to require people to show their faces: at passport controls, for example, or if they are working as, say, social workers or teachers. For security reasons, Germany already bans ski masks and other facial coverings in public demonstrations. Yet Mrs Merkel did not speak in such limited terms. She proposed the ban as a means of preventing the development of "parallel societies" as Germany tries to assimilate its Muslim immigrants. Forbidding religious dress worn by only a tiny fraction of those immigrants is the wrong way to accomplish this.

Some argue that the niqab (as well as less concealing forms of Islamic dress) is a form of oppression. Muslim women, they say, are forced to wear the veil by family members—typically their husbands, fathers or brothers. That may be true in some cases. Yet a ban might simply prevent those niqab-wearing women from leaving the house at all. Other women may choose to cover their hair or faces out of piety, or because they dislike being ogled, or to affirm their Muslim identity. Governments concerned about the subjugation of Muslim immigrant women would do better to concentrate on integration and education schemes.

Europe's fad for such bans is driven chiefly not by principles, but politics. France introduced a burqa ban in 2010; some municipalities even tried to prevent Muslim women from wearing the body-covering "burqini" at the beach last summer. Such measures only invite extremists to paint France as an enemy of Islam. Last month the Netherlands adopted a ban on face-covering garb in education and health-care establishments, government buildings and public transport. In both cases, the real motive was to fend off the rise of anti-immigrant parties, such as Marine Le Pen's National Front in France and Geert Wilders' Party for Freedom in the Netherlands.

If centrists like Mrs Merkel now see burqa bans as minor concessions to hold off populists, they are fooling themselves. Those who want to ban veils are not worried about security but about immigration and integration. To them, limited bans confirm only that mainstream politicians are too timid to embrace the real thing. Some of them worry legitimately that Muslim immigrants do not share Europe's liberal norms. But the best way to preserve those freedoms is to let women dress as modestly as they please. ■

The aftermath of Italy's referendum

Salvaging the wreckage

Matteo Renzi recklessly led his country into a political crash. Now Italy must pick up the pieces

ITALY'S outgoing prime minister goes by the name of *Il Rottamatore*, or "Demolition Man". By gambling on a deeply flawed constitutional referendum, which he lost by a humiliating 20-point margin on December 4th, Matteo Renzi now risks wrecking Italy's fragile politics and economy.

Many see his defeat as yet another eruption of populism, after the Brexit vote and the election of Donald Trump. Granted, anti-establishment parties spearheaded the No camp. But many Italians rightly rejected Mr Renzi's amendment to protect existing democratic norms, not to smash them.

This newspaper supported a No vote. We thought Mr Renzi's attempt to emasculate the powerful Senate, combined with a lopsided electoral law for the Chamber of Deputies, would have concentrated too much power in the hands of the prime minister—who, coincidentally, is one Matteo Renzi. Now that Italians have rejected this scheme, the Italian president and parliament need to set Italy on a course to tackle its underlying problem: the need for deep reform of the country's long-stagnant economy. That, in turn, depends on two urgent tasks: maintaining economic stability in the aftermath of the No vote and rebuilding the legitimacy of Italian institutions.

Italy's finances are fragile. Public debt is above 130% of GDP ▸▸

and the banks are laden with festering loans. Whatever happens in politics over the coming months, Italy must above all avoid a financial crisis, which could spill over disastrously into the euro zone. This means that the government will have to keep its deficit under control even as it recapitalises Monte dei Paschi di Siena and other struggling banks—using the private sector if possible or with state funds if necessary (see page 68).

Financial stability is a condition for work to begin on the second task: sorting out the mess in Italy's politics (see page 47). The country has had 65 governments since the end of the second world war. It has had three prime ministers since Silvio Berlusconi's government in 2011—Mario Monti (he served 17 months), Enrico Letta (ten months) and Mr Renzi (33 months). All were put into office through presidential crisis-management or by political intrigue, not by voters.

Mr Renzi sold his reforms in the name of strong government. Before the referendum on the Senate, his government passed a separate electoral law for the lower chamber, called the "Italicum". It concocts a guaranteed majority for whichever party nudges ahead after two rounds of voting. Strong majorities make it easier for governments to withstand votes of no confidence. But long tenure is no guarantee of good government, as Mr Berlusconi proved. Although the consitutional amendment was defeated, the electoral law remains in force. The constitutional court will rule on its validity next month.

Mr Renzi could in theory stay on to manage the transition to fresh elections under the existing system. Sure enough, having firmly announced his resignation, he seems to be clinging on to the hope of running a caretaker government that would rush to elections in February under today's rules (perhaps amended by the court) or a unity government.

The president, Sergio Mattarella is wisely resisting a hasty election. The referendum was a stinging personal rebuke to Mr Renzi and, in effect, discredits the electoral law, too. If Mr Renzi thinks he can turn the 40% who voted Yes into a turbocharged parliamentary majority, it is just as likely that the 60% of No voters will instead propel the populist Five Star Movement to power. That is why its leader, Beppe Grillo, who once decried the electoral law, also wants early elections. Because Mr Renzi assumed the referendum would abolish Senate elections, right now the ballot for the upper chamber would have to be held under an old electoral law likely to produce a hung Senate, which would further hamper reform.

Rather than forming a new government on the basis of dubious rules, it is essential that the Italian parliament revise the electoral law, so that a credible vote can be held as soon as possible—ideally by next summer. All voting methods have drawbacks, particularly in the fragmented politics of Italy. The best option would be to revive the law devised in 1993 by the man who is now president, Mr Mattarella. The "Mattarellum" was modelled on British-style first-past-the-post contests, creating a clearer connection between voters and their representatives than the existing party-list system.

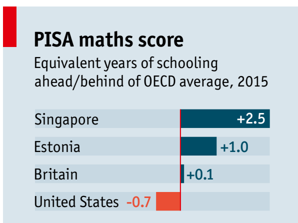
Basta casta

Until then Italy needs a caretaker government led by the likes of Pietro Grasso, a respected former anti-mafia magistrate, or Pier Carlo Padoan, the finance minister (who, if not prime minister, should stay in office to deal with euro-zone partners on tricky fiscal and regulatory matters). The much-feared financial meltdown after the No vote has been averted, but Italy cannot afford to dawdle. In the long run the only route to solving its mess is a popular vote that serves as a mandate for the arduous task of reform. ■

Global education

Homework for all

Cynics should stop knocking the latest PISA tests and start learning from them



IT IS easy to be cynical about school-test results, particularly when you are grading the performance of something as complex as a country's education system. Undaunted, every three years the Programme for International Student Assessment (PISA), which is run by the OECD club of mainly rich countries, tests more than half a million 15-year-olds in three subjects—maths, reading and science—to give a snapshot of national school-policies.

The latest results were published on December 6th and again show stellar achievement in East Asia. Singaporean pupils are roughly three years ahead of American ones in maths (see page 56). Some argue that differences in national scores are a result of parenting and innate culture, and therefore that policymakers can do little to improve pupils' performance. Last week one wag argued that the lesson from PISA is that the rest of the world should use chopsticks. In fact, PISA offers invaluable guidance on how to help children learn.

Culture matters, but it is not as if success in PISA is the preserve of East Asia. Estonia, where chopping sticks is an outdoor pursuit, scores highly enough to beat the rest of Europe and achieves similar results to Japan.

PISA teaches what does not work. Spending more money, for example, is associated with higher scores, but only in poorer countries. Among those that already spend more than $50,000 per pupil throughout their time in school, money alone brings no improvement. Private schools are no exception, at least when it comes to PISA.

The exercise also tells you what does work, and its most important insight is that what matters most is what happens in the classroom. The successful children are those who are exposed to good teaching more often. Having pupils turn up is a start. In poor countries this often means expanding access for girls. In richer countries it means cutting dropout rates and truancy; Italian pupils do poorly partly because more than half of them skip school at least once a fortnight. Having teachers turn up also helps. One reason why Buenos Aires saw the biggest rise in PISA scores of any area is because the city curbed teachers' strikes by offering them a deal: it would treat teachers as professionals if they behaved as such. The city improved training and pay. Teachers agreed that merit, not their unions, ▸▸

would determine promotion. Improving the quality of teaching is harder. Who becomes a teacher makes a difference. Australia's decline in PISA coincides with a fall in the exam results of teacher-training applicants. And what teachers learn about the job is at least as important. Evidence-based methods of instruction, practice, coaching from experienced teachers and feedback are all part of making good teachers.

Poor students tend to do less well in PISA. But the effects of poverty can be overcome. The influence of family background on test scores fell by more in America than in any other OECD country over the past decade. This partly reflects the growth of excellent autonomous but publicly funded charter schools in big cities. Successive presidents' efforts to hold schools accountable have had some impact, too. In Estonia nearly half the poorest children achieve results that would place them in the top quarter across the OECD. A reason for this is a lack of selection by ability. Many of the top-performing school systems delay the start of formal education until the age of six or seven, focusing instead on play-based education. But they then make students learn academic subjects until about 16. Even in Singapore, where pupils can opt earlier for a vocational track, schools insist on academic rigour as well as practical work.

Concentrate there at the back

Like spoilt children who have failed an exam, some policymakers claim the PISA tests are unfair. Certainly, PISA does not capture all of what matters in education. It offers clues rather than guarantees of what works. It is the fair, rigorous and useful work of technocrats. Yet politicians who ignore it are turning their back on powerful truths. ■

Big oil

Shape up

OPEC's intervention will not save a flabby industry from the lash of market forces

A MOOD of excitement has gripped the oil industry since OPEC, a cartel of producers, resorted last month to its old trick of rigging the market to shore up prices. After two years of crisis, firms at last scent an end to cheap oil. Bankers are again throwing money at North American oil companies to drill in onshore shale beds, pushing junk-bond yields to their lowest levels since 2014. On December 5th and 7th respectively, Mexico and Iran struck potential deals with some of the world's biggest oil firms to develop vast prospective oilfields.

The animal spirits are understandable. During most of the industry's history, from the days of the Rockefellers, to the post-war dominance of the Seven Sisters, to OPEC since the 1960s, cartel-like behaviour has always ended up underpinning oil prices. This has encouraged a flabby complacency that other industries cannot afford. Oil firms have routinely squandered returns in pursuit of big projects with distant payouts, in the expectation that sooner or later high prices would bail them out. OPEC's intervention seems to hint at a return to this pampered normality. In fact, to control the oil market is harder than ever. And that means Big Oil must shape up to survive.

For sure, OPEC is not dead yet. Its agreement on November 30th to lop 1.2m barrels a day (b/d), or over 1%, off global production, had a dizzying effect on oil prices, lifting them by about 15%. If it can secure from Russia and other non-OPEC producers a pledge to cut a further 600,000 b/d at a meeting scheduled for December 10th, OPEC will have more leeway to cope with the habitual cheating that undermines all such deals. Yet the cartel is riven with rivalries. Saudi Arabia was only able to rope its foes like Iran into a deal because the alternative—a further collapse in oil prices—was unpalatable. Even by OPEC standards, jealousies and suspicions are intense. That will make it harder to police the accord.

In the meantime, the surge in oil prices has set off a game of chicken between the old guard, as represented by Saudi Arabia, Russia and the like, and American shale producers, who can swiftly ramp their activity up and down. Since the OPEC deal, shale firms have used liquid financial markets to lock in future oil sales at prices above $50 a barrel, giving them some scope to raise production and potentially offsetting the cartel's cut. These firms are egged on by Wall Street, which sees shale as a growth industry—especially under a Trump presidency—even if only the best wells make a profit at $50 a barrel, and the rest barely break even.

Bigger changes loom. Competition for hydrocarbons from wind and solar energy and batteries is intensifying. On December 6th Google, an internet firm, said its data centres and offices would become fully powered by renewable energy next year. Even without American leadership, measures to mitigate climate change will put extra pressure on oil demand. The prospect of "peak demand" means that decades-long projects such as those in the Gulf of Mexico or Iran have to be profitable even if oil prices stay low. Hence the industry must learn to prioritise higher returns over extra barrels of output.

Refine your model

The good news is that this can be done. The industry can raise profitability by drilling in areas it knows well, rather than remote provinces that lack infrastructure, and by drawing down existing reserves rather than constantly trying to replenish them. It can learn from lean manufacturing and logistics processes in other industries (see page 59). BP, which is trying to change its habits, admits to having $3bn of inventory, such as drillbits and steel pipes, in 270 warehouses; no automotive company would tolerate such waste. Oil firms can use even more data and technology to keep tabs on their wells, rather than high-priced engineers in hard hats.

The bad news is that mindsets have yet to change, from the top of a hidebound industry to the bottom. The majors are not used to focusing on profitability. Even as oil prices soared in 2009-14, Big Oil's returns trailed those of the broader stockmarket by an average of more than ten percentage points a year. Now firms must learn to thrive even when the backdrop is less favourable. OPEC can distort market forces, but it cannot hold them back. ■

Hong Kong at a crossroads

Make no mistake. The battle going on in Hong Kong's courts is not a dry legal issue about whether two young lawmakers took their oaths properly and should therefore be permitted to take their seats in the Legislative Council ("Nipped in the bud", November 19th). The opportunistic attempt to try to ban legislators by judicial means, supported by a lightning-quick interpretation of the Basic Law, was taken by Hong Kong's chief executive and the people he answers to.

We are at a dangerous moment. A drive may be on to rid Hong Kong of independence advocates. When that goal has been achieved, probably through more court judgments and interpretations, the focus will switch to other inconvenient viewpoints. Perhaps it will be issue-specific, such as opposition to national education, or resistance to security legislation, or maybe it will be a more general antipathy towards democratic and liberal ideas.

Hong Kong could go down the authoritarian-lite route, with a democratic façade but where you risk being sued for expressing contrarian views, leading to self-censorship, or it may be headed towards full-blown suppression. Whichever route the government takes, polarisation has already set in, between those in Hong Kong who hold themselves out as loyalists, or think it is expedient to do so, and those who hold liberal, democratic values. It is as palpable as it is disturbing. People do not discuss this at home or with colleagues unless they know it is safe to do so.

I wonder if peaceful street demonstrations would now be enough to stop a government which appears so determined to eliminate dissent. Perhaps the time has come to find out, so that people can make up their minds about whether they will continue to invest their lives in this wonderful place or head to sunnier or snowier climes elsewhere.

CHARLES ALLEN
Hong Kong

Indians in America

Your review of a book on how the Indian diaspora has thrived in America presented Indian immigration as a win-win for both countries ("A model minority", November 26th). The vast majority of those who hold a H1-B visa in America come from India. For employers, it is a cheaper and easier alternative to hiring American workers. But although the H1-B category is often listed as being for speciality technology workers, most of the visaholders are ordinary people doing ordinary work. Any American high-school graduate with a few months of training could do the same work as those with a H1-B visa.

This distorts the labour market because companies would have otherwise invested in American workers. The other distortion is in federal contracts earmarked for small businesses with ethnic-minority owners. The idea was to open contracts to groups who have been historically discriminated against, but Indian-Americans are also eligible.

NIRAJ SHRESTHA
Ashburn, Virginia

Peru's president

Bello states that Carlos Moreno was my former doctor (November 12th). He was never my doctor.

PEDRO PABLO KUCZYNSKI
President of Peru
Lima

A liberal nationalism

The distinction you made between civic and ethnic nationalism was a bit simplistic ("The new nationalism", November 19th). Proactive civic nationalism unfortunately shares some of the iniquitous elements traditionally associated with ethnic nationalism, namely the framing of something within society as malign and foreign, and then rallying patriots against that presence or influence.

In the case of Scottish nationalism, Tories and Westminster serve as the existential threat. Similarly, many Brexiteer Conservatives would claim to be civic nationalists even as they go about manipulating patriotism to rally people against the European Union and immigration. Energetic civic nationalists also have a tendency to conflate an attack on their politics as an attack on the nation.

A modern, liberal approach should be accepting of multi-layered sovereignty, identity and nationhood, and should at most advance a type of soft cosmopolitan patriotism which never goes as far as nationalism. If we are to alter where the lines are drawn at all we should be looking to reach out instead of retreating in. For me that means I can identify as a Scottish Borderer, a Scot, a Brit and a European. Civic nationalism demands that I elevate only one of those in political and identity terms.

JOHN FERRY
Chair
Midlothian South, Tweeddale and Lauderdale Liberal Democrats
Scottish Borders

I do not think that "German support for the home team as hosts of the 2006 World Cup" can be extended as an example of good nationalism. People generally do not support national teams because it "appeals to universal values, such as freedom and equality." By definition, nationalism cannot appeal to anything universal.

Nationalism appeals to our innate sense of being part of a group with shared values and shared culture. Nor can it be "forward-looking" in the way you describe it, as shared values and culture are necessarily largely based on the past. That culture can progress, but only with the consent of the group. Nor is nationalism new or been recently revived. Since the second world war, we have seen nationalism everywhere, in the dismemberment of colonial empires, the break-up of the Soviet Union and Yugoslavia and the continued pressure from Scottish, Basque, Catalan and other nationalists for independence.

In addition, elites have embraced some nationalists while demonising others. A simple example is the derisory treatment meted out to the English "white-van man" bearing his flag of the cross of St George, compared with the encouragement given to aggressive Scottish nationalists flying the Saltire. It is this hypocrisy and moralising that drives so much division, not nationalism per se.

TIM HAMMOND
London

In an essay published in 1939, "The Economic Conditions of Interstate Federalism", Friedrich Hayek envisaged a European federation that looks remarkably like today's EU, and warned that nationalism would be the force with the power to destroy it.

HANNAH COPELAND
London

Regarding your cover on the new nationalism, any seasoned drummer over the age of 60 will tell you that Donald Trump and Nigel Farage are holding their drumsticks backwards; that is, each holds his right stick with a left-handed grip, and his left stick with the right-handed grip (please feel free to check with Charlie Watts for verification).

Regardless of whether or not this juxtaposition was intentional, it does indicate the direction in which these politicians want to march their respective countries.

DONALD FREY
Omaha, Nebraska

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

Dealing with Donald

The president-elect wants to change the landscape of American business. The first of two pieces looks at his trade proposals

IN A YouTube video released on November 22nd, Donald Trump—seated in front of an American flag and a leonine statue—confirmed his plan to put America first, "whether it's producing steel, building cars or curing disease". Mr Trump has already arm-twisted Carrier, a maker of airconditioning units in Indiana, to keep 800 jobs in the state rather than move them to Mexico. His transition team is preparing a list of "executive actions we can take on day one to restore our laws and bring back our jobs". Implicit in the video was Mr Trump's view of international trade: a patriotic contest in which countries strive to take each other's jobs—or seize them back.

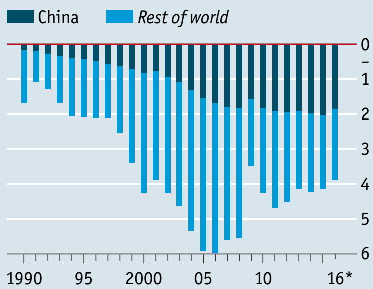
In Mr Trump's view of the world, trade deals are adversarial and zero-sum. Other countries are rivals competing for the same spoils, not trading partners enjoying mutually beneficial exchange. His plans to scupper the Trans-Pacific Partnership (TPP), a deal painstakingly negotiated over ten years with 11 other countries around the Pacific Rim, tally with Mr Trump's reading of history. Too often, he thinks, bad deals, like the North American Free-Trade Agreement (NAFTA) and China's accession to the World Trade Organisation (WTO), have destroyed American jobs and created American losers.

For Mr Trump, evidence of this pilfering lies in America's trade deficit, which is most dramatic for goods (see chart 1). "China is both the biggest trade cheater in the world and [the] country with which the US runs its largest trade deficit," wrote Wilbur Ross, Mr Trump's pick as commerce secretary, and Peter Navarro, a senior adviser to his campaign, in September in a description of the next president's economic plan. Mr Ross has said he wants to "spread the trade-deficit issue around the globe".

The trade misery that Mr Trump laments is recognisable to Nate LaMar, a sales manager at Draper Inc, which makes window shades, projector screens and gym equipment. He remembers his home state of Indiana being hit hard by job losses as the car and steel industries collapsed 15-20 years ago. Even in his own company, it "felt like we were floating down a river towards a waterfall". Chinese competition

More in than out 1

United States, merchandise-trade deficit, % of GDP



Sources: US Census Bureau; US Bureau of Economic Analysis
*January-September

encroached on their export orders first, and then their domestic customers, flooding the bottom end of the market with cheap imports.

No one knows exactly what President Trump's trade policy will look like—perhaps not even Mr Trump himself. His alarm about foreign competition, and his suspicion of trade deals, runs deep in his rhetoric, permeating his stump speeches. But even many of his supporters hope that he will stop short of some of his more radical campaign pledges. Mr LaMar is one of them. "I'm hoping cooler heads will prevail," he says, naming Mike Pence, the vice-president-elect and a free-trade advocate.

Many of Mr Trump's picks suggest radicalism, however. According to a transition-team press release, Mr Trump's cabinet choices "signal a seismic and transformative shift in trade policy". His personnel hint at an aggressive stance against Chinese steel in particular. The transition team includes Dan DiMicco, former boss of Nucor Steel, and Robert Lighthizer, a trade lawyer who has built a career arguing for higher steel tariffs, and is known in trade-policy circles as "the most protectionist guy in Washington".

If hotter heads do win out, how far might Mr Trump go? Protectionism around the world is creeping up (see chart 2 on next page). But if Mr Trump follows through on his promises, that trend will be turbocharged. He has threatened to with- ▸▸

draw from NAFTA ("the worst trade deal maybe ever signed anywhere", he insists). On December 4th he tweeted that there would be a tax of 35% on firms that fired employees, built a factory in another country and then tried to sell their products back across the border. He plans to label China as a currency manipulator on his first day in office and has threatened tariffs of 45% on its products.

Many foreigners blithely assume that America's system of checks and balances will stymie Mr Trump's more radical tendencies. But for trade, those checks and balances are weak. The president would have huge power to carry out his threats, at least in the short term. Under the Trade Act of 1974 he could impose quotas or a tariff of up to 15% for up to 150 days against countries with large balance-of-payments surpluses (which modern courts would probably interpret as the current-account surplus). And if Mr Trump were to declare a state of national emergency, the scope of his presidential power would extend to all forms of international trade.

Never settle

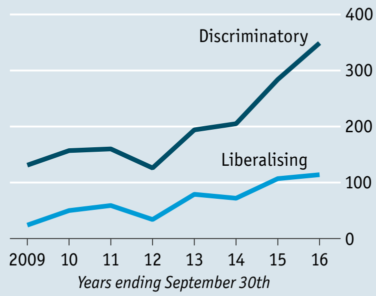
Mr Trump's actions could eventually be challenged in American courts. Plaintiffs might claim that he was violating constitutional freedoms or defying the original intention of the laws he would invoke. But Mr Trump may have the legal upper hand. American courts may not intervene to stop a trade war. America's multilateral trade agreements are also more fragile than they appear. To renegotiate NAFTA, Mr Trump would require approval from Congress. To withdraw from it altogether, he would simply have to give the other partners six months' notice.

After America's formal departure, its NAFTA commitments would live on, enshrined in the domestic legislation that implemented them. But those commitments need not restrain a determined president. After merely "consulting" Congress, he could abandon NAFTA's (mostly) zero duties and instead impose the WTO's "most favoured nation" tariff rates on Mexican imports, according to Gary Hufbauer of the Peterson Institute for International Economics, a think-tank. For clothing and footwear, these tariffs are high. But on average, they are low: only 3.5%—not very satisfying for a budding trade warrior. He could avail himself of much tougher tariffs by accusing Mexico (or indeed China) of various kinds of cheating: such as subsidising their exports illegally or dumping products on the American markets below cost. Mexico or China could appeal to the WTO, but that would take time. The WTO's dispute-settlement mechanism is weighed down by a backlog of cases.

If Mr Trump did impose tariffs of 35-45%, the Mexican and Chinese governments would not wait for the WTO's courts to intervene. They would retaliate. China could cancel contracts with the likes of Boeing, an American plane manufacturer, or disrupt Apple's supply chain. China is a big customer for some American products. It accounted for roughly 60% of America's soyabean exports between 2013 and 2015. In a trade war, it could cut these purchases.

Unfreeing trade 2

G20 trade-policy measures implemented



Source: Centre for Economic Policy Research

After economists at the Peterson Institute highlighted this possibility, team Trump dismissed the analysis as "project fear". "If China cuts off American farmers, Chinese people will go hungry," they scoffed. But other countries, such as Argentina or Brazil, produce soyabeans. Switching could be relatively straightforward.

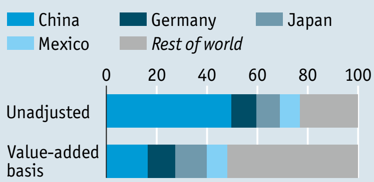
As well as blocking American goods at its borders, China could squeeze the many American firms operating within them. General Motors and its affiliates, for example, sold 372,000 cars in China in November, compared with just 253,000 in its domestic market. In Mr Trump's own words: "leverage: don't make deals without it."

Imposing a punitive tariff on American firms operating in Mexico would be even more disruptive. Under NAFTA, companies have sprawled across the border. "We make things together in North America," says John Weekes, Canada's original NAFTA negotiator. Every dollar of Mexican exports to America contains around 40 cents of American output embedded within it. Tariffs of the level that Mr Trump suggests would be so disruptive that Luis de la Calle, a Mexican economist, doubts that they are credible. When it comes to car production, "you cannot run a plant in Michigan without Mexican imports," he says.

Negative feedback 3

United States, merchandise-trade deficit, 2015

% of total



Source: Deutsche Bank

If Mr Trump were to press ahead with his tariffs, the Mexican authorities would first try to find a smart response. They have had some practice. After years of the Americans failing to allow Mexican lorries to cross the border as easily as NAFTA stipulated, in 2009 the Mexicans imposed duties on, among other things, Christmas trees from Oregon. Not coincidentally, the state's congressional delegation includes a member of the transportation committee. But in an escalating trade war it would be hard to pick a duty that would not backfire. If Mexico stopped importing American car parts, for example, it would hurt its own assembly lines. Retaliation might take unconventional forms. Turning a blind eye to outgoing migrants could rile Mr Trump more than duties on American goods.

Most tariffs backfire, hurting the country that imposes them by raising prices, blunting competition and depriving consumers of choice. In September the Peterson Institute predicted that a symmetric trade war, in which Mexican and Chinese imposed equal tariffs on American exports as America did on their exports, would ripple through the American economy, lowering private-sector employment by nearly 4.8m, or more than 4% by 2019.

Despite domestic and international restraints, Mr Trump would, then, be fully able to start a ruinous trade war. But would he be willing to do so? It could be that his threats to tear up trade agreements and raise tariffs are simply bargaining chips, designed to force governments to the negotiating table. In his book, "The Art of the Deal", Mr Trump explained that his style of dealmaking is quite simple. "I aim very high, and then I just keep pushing and pushing and pushing to get what I'm after."

Volunteer, or else

What, then, is he after? In his approach to trade dealmaking, Mr Trump might take inspiration from history. When Ronald Reagan was faced with a big trade deficit with Japan, he browbeat Japan's carmakers (among others) into restraining their exports "voluntarily" (see next article). But life was simpler under Reagan. He could negotiate with a handful of Japanese firms that made their goods in Japan and sold them in America. Today, parts and components criss-cross borders and a great deal of trade happens within firms. "The information you need to have to be able to act strategically seems to me to be daunting," says Chad Bown, a trade expert. Reagan's tactics also had unintended consequences. With only a fixed number of cars to sell, Japanese producers innovated and moved into more profitable higher-end products.

Mr Trump is keen to increase exports and not just block imports. Indeed, his team may see the threat of import tariffs as a means to prise open foreign markets. Mr Ross believes that China, Japan and Ger-

The deal with steel 4

United States, steel imports, by weight

June 2009=100

Source: US Census Bureau

many should import more liquefied natural gas from America, rather than the Gulf. He also believes that China should relax its import quotas for cotton (although why China would add more imports to its mountain of surplus cotton is not clear).

The Trump team's approach also seems distinctively granular, hands-on and micro-managerial. They are happy to pursue specific commercial outcomes, rather than creating fruitful commercial frameworks. Instead of writing the rules of the game, within which companies are free to make choices, they seem keen to negotiate the outcome of the game: additional cotton exports to China, greater LNG sales to Japan, more Carrier jobs in Indiana.

In their view, the success of these deals is measured by the trade balance that results. Trade deficits are intrinsically bad, they seem to think—a sign the country is losing. Part of the issue is the way trade figures are calculated. Mr Trump is right to point out that Chinese exports account for a large and rising share of America's total trade deficit in goods. But China's status as the world's factory means that much of the value embedded in those exports is in fact coming from America itself. An iPhone shipped from China to America contributes to the Chinese trade surplus, but also Apple shareholders' bank balances. According to Deutsche Bank, on a value-added basis, China accounts for only around 16.4% of America's trade deficit in goods (see chart 3 on previous page).

Whether trade deficits are good or bad, trade deals are best seen as a way of raising trade flows in both directions, rather than an instrument for turning deficits into surpluses. According to mainstream economics, a country's overall balance of trade is more powerfully influenced by macroeconomic forces, such as the strength of demand and the currency. Targeting a bilateral deficit using bilateral tariffs is "a terrible idea", says Douglas Irwin, author of "Free Trade Under Fire". But more targeted options exist. A tough stance on Chinese steel is more justifiable than a general crackdown on imports, for example. "It's crystal clear that China is subsidising their steel industry," says Mr Irwin.

The Obama administration has already been cracking down: between 2013 and 2015 it initiated 74 anti-dumping investigations into metal products from a variety of countries. On November 7th it found China guilty of dumping certain types of plate steel at more than 68% below cost. On December 11th tension could increase further, as on that day China will claim that their transition to a "market economy" will be complete under WTO rules, reducing their exposure to anti-dumping duties. These investigations are already having a chilling effect on steel imports from China (see chart 4), which fell by 70% in the first half of 2016, compared with a year earlier. Mr Trump may even find himself behind the curve—or claim the credit.

There are some sensible things Mr Trump could do. If his team did want to boost American exports, he could lift some ideas from the US Trade Representative's annual document outlining barriers around the world. He could focus on lowering barriers to American exports of raw milk to Mexico and chicken to China, both of which have imposed health-related import restrictions. On services, where America boasts a trade surplus, a deal to tackle burdensome licensing and discriminatory regulatory process could boost exports.

In theory, renegotiating NAFTA would also be no bad thing. The Mexicans would welcome new rules on logistics and e-commerce, which did not exist when NAFTA was first negotiated. Although he cautions that any renegotiation would take time, Mr Weekes says that the evolution of global supply chains warrants an update to the agreement's rules-of-origin regulations.

Mr LaMar would certainly prefer a more constructive approach. His job, after all, is to sell his firm's products around the world. Those small and medium-sized firms that survived the onslaught of Chinese competition did so by diversifying and expanding abroad. He can take comfort from the words of Robert Zoellick, an American trade negotiator under George W. Bush. "Unusually for a US president, Trump's words may or may not convey policy. We'll have to watch what he does, not what he says." ■

American corporatism

Chairman president

NEW YORK

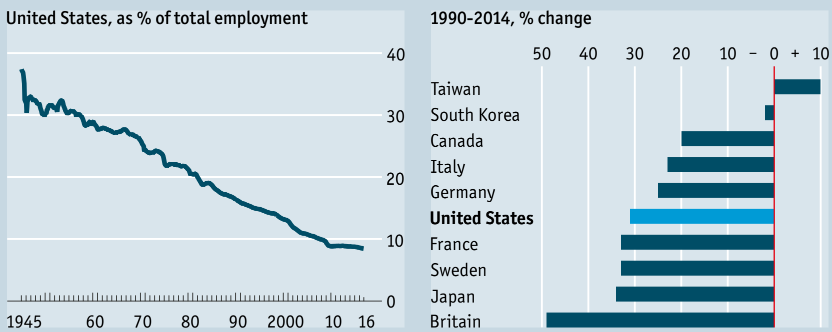
Donald Trump is set to follow a tradition of elected officials intervening in business

A MAN with a background in business, running on a platform of lower taxes and protective tariffs, is elected president of America. He views this as a mandate to intervene in corporate affairs. Bosses are told what their priorities ought to be: more jobs and higher wages. This may sound like Donald Trump, already successful in persuading Ford, a carmaker, and Carrier, an air-conditioning company to keep jobs in America even before his inauguration. It also describes Herbert Hoover. In 1929, soon after he was sworn in, Hoover called executives to the White House for some "jawboning". For intervening in business from a position of authority has a long tradition in American politics.

The desire to meddle dates as far back as 1791. Alexander Hamilton then set out arguments for nurturing and protecting "infant industries". Any restraint was in part because the federal government lacked the resources and authority to do so. Individual states, however, took on the role with

The fall of the makers

Manufacturing employment



Sources: Bureau of Labour Statistics; The Conference Board gusto. By 1840 they had lent and invested themselves into the red, prompting laws preventing future intervention. Almost all, says Naomi Lamoreaux of Yale University, were rescinded in the 20th century as the memories of failures faded while the desire to intervene remained.

States now compete furiously for business. Firms shop around for the most favourable subsidies when deciding where to locate headquarters, factories or sports teams. Carrier's decision to stay in Indiana was assisted by the promise of hefty tax exemptions. New York has allocated billions of dollars to encourage tech firms to set up in depressed areas of the state.

Presidents have also long attempted to shape corporate activity using any means at their disposal. Carrots are dangled and sticks wielded. Shame and praise, broad rules and one-off deals, startup funds and nationalisation have all played a part. The result has been an often-fractious relationship between business and government. Mr Trump's interventionist instincts may differ only by degree.

The federal government's largesse towards business began in the latter half of the 19th century with the railways, which cut across state boundaries. Early intercontinental lines received federal loans and large land grants in the West. The irresistible urge to oversee parts of the economy meant that in the 20th century handouts turned to direct management. In part this was driven by national emergency. Woodrow Wilson, under laws passed to support involvement in the first world war, nationalised railways, canals, telegraph lines and arms production, and expropriated American subsidiaries of German firms. Franklin Roosevelt used the same law to shut banks briefly upon his assumption of the presidency in 1933.

Roosevelt had previously observed Hoover's hands-on approach to business with disdain but his reservations were transient. Intrusiveness is popular because it yields immediate results. Hoover's jawboning had persuaded Henry Ford to raise salaries at his car plants, utilities to invest, and companies not to cut jobs. To boost wages, Hoover curtailed immigration. To protect businesses he signed the Smoot-Hawley Act, increasing duties on thousands of imports from beverages and wool to tungsten and clocks.

Train of thought

After unseating Hoover, Roosevelt busily issued regulations and told businessmen how to conduct their affairs, pausing only when the Supreme Court ruled that there were limits to federal power over intrastate commerce in a case that challenged the administrations' power to block customers from buying the chicken of their choice.

The enthusiasm for meddling survived other presidential transitions. Roosevelt's successor, Harry Truman, seized 28 enterprises, including meat packing, railways and oil refiners, often in response to labour disputes. This behaviour only ended in 1952 when nationalisation of the steel industry to preclude a strike was blocked by the Supreme Court, which said Truman needed congressional support.

Direct control is not the only way to use the power of the presidency. The bully pulpit can be even more effective. The era of explicit bullying began with Teddy Roosevelt, who lambasted the men behind large corporations as "malefactors of great wealth" and launched antitrust prosecutions. But the most famous use of the presidency to berate firms came in 1962.

Stung by an announcement of steel-price increases, John Kennedy sermonised

rather than nationalised. He blamed "a tiny handful of steel executives whose pursuit of private power and profit exceeds their sense of public responsibility…[and] …shows such utter contempt for the interests of 185m Americans". Facing a public backlash and after visits from the FBI, to check of their expenses, the steel bosses caved in. A decade later Richard Nixon went further. In response to a "real and pressing problem of higher prices", he froze all wages and prices.

American presidents can hand out favours as well as harsh words. In 1962, when France and Germany imposed duties on American goods, including chickens, Lyndon Johnson responded by imposing a tax on imported pickup trucks. This resulted in a lucrative part of America's vehicle market being produced almost entirely domestically. Carmakers sought favours again in the early 1980s, from Ronald Reagan. He imposed "voluntary" export restraints on Japanese carmakers. They responded by building factories in America.

The arrangements between government and business have become more complex in recent years, as broader policy replaced specific interventions. Bill Clinton, for instance, was adept at using arcane incentives, often in the form of obscure tax benefits, or threats, such as restrictions on operations or acquisitions. Disastrously, banks were encouraged to issue more subprime loans to advance the administration's interest in home ownership by poorer people. More recently Barack Obama has pursued this technocratic approach, issuing vast numbers of rules that give discretion to arms of the executive branch. The finance and energy sectors have been particularly affected.

Is it working?

As Mr Trump prepares to follow in, and perhaps embellish, this tradition of presidential activism, the most important question is whether it works. Mr Trump's goal of boosting manufacturing employment would require reversing a 70-year trend (see chart on previous page). The consequences of presidential action, intended and unintended, can be hidden, indirect or long delayed. But there are many reasons to believe politicians would do better by focusing their attentions elsewhere.

Direct investments seem particularly fraught. The Obama administration lost $535m in public guarantees for Solyndra, a manufacturer of solar panels that filed for bankruptcy in 2011. Johnson's subsidy for pickup trucks provides an explanation for why America's big carmakers were so uncompetitive that they came close to perishing in the financial crisis, surviving only after a bail-out by Mr Obama. It skewed production and left them unable to respond when high fuel prices shifted buyers towards more fuel-efficient cars.

Similarly, enthusiasm for forcing down prices through persuasion or law has faded. Kennedy's anger at the steel industry is now seen as rage misdirected at a symptom, inflation, rather than the problem itself—onerous labour contracts and a lack of investment. Nixon's wage and price controls, initially greeted with applause, were disastrous. Production slowed and shop shelves emptied. Hoover's jawboning to preserve wages and employment undermined firms' ability to adjust to an economic slowdown and his endorsement of Smoot-Hawley partly caused a worldwide depression by undermining trade.

However important those lessons may be, Mr Trump is likely to draw others, notably that there is plenty of precedent for presidents to meddle with business. If Mr Trump differs from his predecessors, it is in the pleasure he takes in doing deals. Many presidents were fond of the occasional anti-business rant but none has shown the same delight in one-off negotiations that produce winners (Mr Trump) and losers (anyone on the other side of the table). For that reason alone, his brand of interventionism may be more heavy-handed than any in the recent past. ■

Also in this section

For daily analysis and debate on Asia, visit
Economist.com/asia

Japan and Russia

Two men in a tub

NEMURO

Shinzo Abe has invited Vladimir Putin to a steamy summit, but the odds of a breakthrough in their countries' 70-year-old territorial dispute are long

HIROSHI TOKUNO still remembers the stomp of army boots on the wooden floor of his classroom. When 600 Soviet troops arrived on the Japanese island of Shikotan on September 1st, 1945, he recalls, "We thought we'd be killed." As the fear receded, he befriended the invaders and learned to speak Russian. Three years later, they herded him and his family onto a boat across choppy seas to mainland Japan.

Mr Tokuno, now 82, is one of about 17,000 Japanese expelled from what Japan calls its Northern Territories, four islands at the bottom of the Kurile chain (*Chishima* in Japanese), between Japan's northernmost island of Hokkaido and the snowy wastes of Kamchatka (see map). In the 19th century Russia recognised Japanese sovereignty over the four islands, and in 1875 it ceded all the Kuriles to Japan. But a few days before Japan's surrender to the Allies in 1945, the Soviet Union, which had not been fighting Japan, abruptly declared war. Soviet troops swiftly occupied the entire chain, setting off a 70-year dispute. Japan demands the four southernmost islands back. The Soviet Union offered to hand over the two smallest of them, Habomai and Shikotan, if Japan gave up its claim to the others. But Japan refused to do so. The impasse endures to this day.

On December 15th Vladimir Putin, Russia's president, will make his first official visit to Japan in a decade. Shinzo Abe, Japan's prime minister and grandson of a wartime minister and post-war prime minister, has made no secret of his personal interest in resolving the issue. He has invited Mr Putin to bathe with him in hot springs in his home town of Nagato, in southern Japan—an occasion for man-to-man negotiations. The time is right for a solution, says Muneo Suzuki, an unofficial adviser to the prime minister on Russian affairs.

In Nemuro, the rusting Hokkaido port where many of the evacuees have been stranded since the 1940s, there is guarded hope for a breakthrough. It is unthinkable that Mr Putin would come empty-handed, says Shunsuke Hasegawa, the town's mayor. The Russian president is a "strongman" who will face down opposition to a deal at home, he insists.

Mr Hasegawa laments that just 6,641 former residents of the islands are still alive, all elderly. Moreover, the waters around the islands used to provide fishing grounds for boats from Nemuro. It has lost half its population since the war. "It's our last chance to solve this problem," he says.

More is at stake than fishing rights. The row has prevented a formal end to hostilities between Russia and Japan. The continued standoff, Japanese diplomats fret, pushes Russia closer to China.

Among the possible enticements for Russia is the revival of a mothballed proposal to build a $5.3bn gas pipeline between Russia's Sakhalin Island and Tokyo. Japan is also dangling billions in soft loans for the development of Russia's impoverished Far East, as well as a boost to private investment. Russia, meanwhile, is wary of becoming a junior partner to China in Asia. "We can't put all our eggs in one basket," says Alexander Panov, a former Russian ambassador to Japan.

But the obstacles to a deal are forbidding. A recent poll found that 78% of Russians are opposed to ceding all four islands; 71% object to handing over Shikotan and Habomai. "In Russia, if any president, even Putin, gives away two of our islands to Japan, he'll bring down his ratings catastrophically," Dmitry Kiselev, Russia's propagandist-in-chief, said last month. "The Japanese like to talk about saving face, but they forget that Russians have faces too," says Anatoli Koshkin of the Oriental University in Moscow. The islands guard the passage from the Sea of Okhotsk to the Pacific, "a life or death issue" for the Russian navy, says Shigeru Ishiba, a former Japanese defence minister.

Small wonder, then, that Mr Putin said flatly in September: "We do not trade territories." Valentina Matvienko, speaker of the upper chamber of the Russian parliament, said on a visit to Tokyo in November: "Russia's sovereignty over the Kuriles is indisputable and is not up for revision." Further reinforcing the message, the Russian armed forces announced the placement of missile-defence systems on Etorofu and Kunashiri last month.

"The Abe government has allowed expectations to get out of hand, even hinting at a snap election based on the success of the summit," says James Brown of Temple University Japan. The fading prospects of a territorial deal may help explain Mr Abe's surprise announcement on December 5th that he will visit Pearl Harbour, the site of the Japanese attack that dragged America into the second world war in 1941. The prime minister is looking for an event to boost his popularity and distract from the summit with Mr Putin, to preserve his hopes of a snap election in January, claims *Nikkei*, a Japanese newspaper.

But Russia is unlikely to dash Japanese hopes altogether. "The Russian side does not want this to end," Mr Brown says; instead, it will find ways to foster Japanese investment without ceding sovereignty, he predicts. One possible step forward at the summit might be a relaxation of visa rules and the creation of a special economic zone, allowing Japanese businesses easier access to the Kuriles. After all, Mr Putin himself has said it should be possible to find a solution whereby neither party "would feel like a loser".

Mr Tokuno's hopes of returning home have been raised and dashed many times over the years. From the tip of the Shiretoko peninsula, a few miles from Nemuro, he can see Habomai, just offshore. A decade ago he was allowed to visit Shikotan for a pilgrimage to the graves of his ancestors. He could still remember the Russian he learned as a boy. His home was gone but he bears no bitterness. It was war, Mr Tokuno says; the best way to honour the suffering is to make sure it never happens again. A peace treaty would be a start. ■

An election in Uzbekistan

Cloning Karimov

SAMARKAND

Central Asia's most populous country replaces one strongman with another

NEAR the turquoise domes of Samarkand on the Silk Road, well-wishers stream past an elaborate grave covered in fresh flowers. They bow their heads reverently as a grey-bearded mullah dressed in a traditional Uzbek robe and skullcap intones a prayer, before placing chrysanthemums on the tomb and filing out solemnly. The person buried here is no holy man or khan (even if he sometimes behaved like one): it is Islam Karimov, the strongman who ran Uzbekistan for 27 years until his death from a stroke in September.

To his numerous critics, Mr Karimov was a brutal despot who presided over rife human-rights abuses, including the slaughter of protesters by security forces in the city of Andijan in 2005. But for many of his 30m citizens, his death has left a gaping hole. "He was our grandfather," sighs Abdumajit, a petrol-station attendant in the capital, Tashkent (nervous of speaking about politics, he gave only his first name). "Now he's gone," laments the young man who, at 25, is the same age as his country and has never known another leader.

And yet the death of the 78-year-old president does not feel like the end of an era. This week voters elected a successor, Shavkat Mirziyoyev, who, though 20 years younger, is cut from the same cloth. He was Mr Karimov's prime minister for the past 13 years, and is considered as repressive as his former boss, if not more so. Optimists had hoped that Mr Karimov's death would bring change, but all the signs suggest the regime he built is as entrenched as ever.

Mr Mirziyoyev romped home with 88.6% of the vote, not far off the 90% victories Mr Karimov used to enjoy. That was no great feat: with no genuine opposition permitted, he trounced the three stooges included on the ballot to put a democratic gloss on the vote. Far from promising a new start, Mr Mirziyoyev presented himself as the candidate of continuity—the rightful heir to Mr Karimov, who is now being touted to the public as the father of the nation. And far from wishing to vote for change, many Uzbeks were happy to vote for the status quo. Mr Karimov was a strongman, Abdumajit concedes, "but sometimes you have to be tough to hold it all together".

Hurrah for the green, white and blue

Uzbekistan has no free press, and the government's propaganda machine cranks out the message that the only alternative to autocratic rule is political chaos or Islamic radicalism. Many voters accept this notion. "Opposition's bad," mutters Shodir, a middle-aged man from Samarkand, who dismisses the regime's foes as "maniacs". The government agrees: it has locked up thousands of critics on spurious charges. Last month the authorities freed Samandar Kukanov, a dissident who had spent 23 years behind bars—but it was his detention, rather than his release, that is typical.

With so little at stake, the election had the air of a fair. Polling stations blared out Uzbek pop music and flew balloons in the blue, white and green of Uzbekistan's flag. "Everyone to the polls!" proclaimed psychedelic billboards strung over Tashkent's broad boulevards, but not everyone heeded the call. "They'll vote him in without us," grumbled one elderly man. The vote was marred by irregularities, including the stuffing of ballot boxes and suspect proxy voting, according to election monitors from the Organisation for Security and Co-operation in Europe. They stressed the absence of "a genuine choice".

Rumours provided the only excitement. One claimed that Mr Karimov's disgraced daughter, Gulnara Karimova, had been poisoned and buried in a clandestine grave. Once a powerful politician and rich businesswoman, she has not been seen since 2014, when she was placed under house arrest after becoming enmeshed in international graft probes and a Shakespearean feud with her mother and sister. Her son, another Islam Karimov, who lives in Britain, says he does not think she is dead yet, but that he fears for her life.

Mr Mirziyoyev has made noises about reforming Uzbekistan's basket-case economy. He may loosen currency controls, thus undermining the black market in which the well-connected few make huge profits. But the rampant corruption, rent-seeking and asset-grabbing for which Uzbekistan is known are unlikely to disappear. Nor are the shortages of electricity, gas, petrol and jobs (some 2m Uzbeks have moved to Russia to find work) that blight the lives of ordinary people. It is not even clear how much power the new president has: the real clout may rest with the shadowy security chief, Rustam Inoyatov. ■

Politics in New Zealand

Lost Key

WELLINGTON

A popular prime minister bows out

THE shock announcement by New Zealand's prime minister, John Key, that he will step down on December 12th has caught the country on the hop. First elected in 2008, he remained popular and was widely expected to win a rare fourth term in office in a general election next year.

The 55-year-old Mr Key, who said he was standing down for the sake of his family, announced that he will back Bill English, the deputy prime minister and finance minister, when the MPs from his centre-right National Party pick a new leader next week. The opinion polls all say that Mr Key and his government are popular, with a wide lead over the opposition Labour Party.

It is not hard to see why. On a long list of yardsticks his country of only 4.7m people—"the last bus stop on the planet", as Mr Key puts it—has been a striking success. The World Bank recently rated it the easiest place on Earth to do business. The Legatum Insitute, a think-tank in London, judged it—by crunching nine different criteria—the world's most prosperous spot. Transparency International, a Berlin-based anti-corruption monitor, reckons it to be the world's fourth most honest. A clutch of other league tables puts it in the top ranks for happiness, health, democracy and freedom, among others. Bloomberg recently reported that a growing band of magnates from America, Russia and China (among them Jack Ma of Alibaba, reckoned to be China's richest man) have bought, or want to buy, hideaway homes in safe and beautiful New Zealand.

The figures testify to New Zealand's perkiness. The city of Christchurch, near the epicentre of a devastating earthquake in 2011, in which 185 people perished, is bouncing back. The national economy grew by a healthy 3.6% in the year to July; unemployment is under 5%. The workforce-participation rate is one of the highest in the world. Wages have risen by 9% in real terms since 2008. All this is because the Kiwi economy has grown much faster over the past decade than those of most rich countries. Australia, its closest neighbour, is a galling exception (see chart on next page).

Even so, the once steady flow of New Zealanders seeking a better living in Australia, which is 28 times bigger in area and home to five times as many people, is now reversing. Newcomers are coming in thick and fast from elsewhere, including China, India and other parts of Asia. A quarter of the residents of Auckland, the commercial capital, where a third of New Zealanders live, were born abroad, mostly in Asia. Ethnic Chinese, a fast-growing group, make up 4% of the country's population.

A flexible visa regime brings in immigrants with desirable skills. The mega-rich can win residence double-quick by depositing a suitably large dollop of investment. While dairy products and meat are still the country's main exports, tourism, especially from China, is booming, up 18% in the past year. Services are growing fast too. After Donald Trump's election victory, New Zealand's immigration department received a surge of inquiries from America.

New Zealand's economic upswing began in the mid-1980s under an audaciously reforming Labour government that was, in the words of Mr Key, "amazingly right-wing". Subsidies that, among other things, fattened farmers were wiped out, tariffs dropped and investment opened up.

Since then, New Zealand has eagerly fostered free-trade agreements around the world, most notably with China in 2008—the first among the rich countries of the OECD to do so. "If you can't do a high-quality FTA with New Zealand quickly, you can't do it with anyone," says the trade minister, Todd McClay. The only recent hiccup on this drive to free trade is the rejection by Donald Trump of the 12-country Trans-Pacific Partnership, which New Zealand has keenly encouraged. Asked if China, which has hitherto not taken part, could replace America to rescue the agree-

Jayaram Jayalalithaa

After the storm

The death of a titan of Tamil politics leaves a vacuum

IN HER convent-school English, she described her life as "tempestuous". The word was as precise as Jayaram Jayalalithaa's stage-trained elocution. But it does not do justice to a woman who, as an actress, rivalled Elizabeth Taylor in looks and glamour and, as a politician, outshone a host of caudillos, dictators and presidents-for-life in grit, capriciousness, generosity, vindictiveness, charisma and greed.

When she died of a heart attack on December 5th at the age of 68, Ms Jayalalithaa was in her 15th year as chief minister of the Indian state of Tamil Nadu. To supporters among its 78m people she was known simply as *Amma*, meaning "mother". Many were beneficiaries of such schemes as Amma canteens and pharmacies, which sell subsidised meals and medicine, or of her government's handouts of blenders, fans and other goodies, adorned with her picture.

Idol, criminal, mother, chief minister

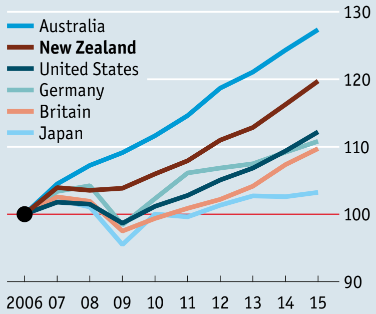
In one of her first lead roles, in 1965, she appeared in a pink sari that grew clingy under a waterfall. That earned it an adult rating, meaning that the 17-year-old starlet could not watch it. She went on to make 88 more films in Tamil, 28 in Telugu, five in Kannada and one in Malayalam—all South Indian languages. She was also fluent in Hindi, which proved useful when, after the death in 1987 of her favoured co-star, alleged lover and political mentor, M.G. Ramachandran, Ms Jayalalithaa took over his party, led it to victory in Tamil Nadu and made it a sought-after partner in national coalitions.

India's provincial politics are a bruising affair, and Ms Jayalalithaa took some knocks—once quite literally when she was manhandled on the floor of the state assembly. The courts jailed her twice for corruption; both times a placeholder, O. Panneerselvam, stood in until she could return. He is now chief minister again.

Ms Jayalalithaa, in short, broke all the rules. A light-skinned, high-caste and religious woman, she ran a secular party championing lower-caste Tamils, whose mustachioed cadres fell to the floor in devotion when she passed. In May the party pulled off a rare feat, winning a second consecutive term in a state where voters tend to boot out incumbents. But it is now bereft of a strong leader and a winning story. Its rivals are circling.

Up under

GDP, 2006=100, $ terms



Source: Haver Analytics

ment, Mr McClay says, "It's certainly something America should be thinking about."

Mr Key, a former currency trader in Singapore and London whose own wealth has been reckoned at more than $35m, has applied what he calls a policy of "radical incrementalism". He has lowered income-tax rates (to 33% at the top), trimmed the national debt to 25% of GDP and partially privatised a batch of state utilities. At the same time he has raised the goods and services tax from 12.5% to 15%, reformed health care and increased various benefits (for instance, by making prescriptions and visits to the doctor free for children under 13).

The opposition Labour Party laments that house prices are rising fast (by 13% in the past year), as is homelessness, especially in Auckland, where the opposition recently won a parliamentary by-election handsomely. Mr Key has admitted that his biggest worry, apart from drought or a global crash, is a housing bubble, which is why he says house-building is a priority.

Mr English, who is less chirpy than Mr Key and led his party to a resounding defeat in 2002, was briefly challenged for the ruling party's leadership by two colleagues in the cabinet. But they have withdrawn, paving the way for his coronation. Labour, on its fourth leader since Helen Clark was beaten by Mr Key in 2008, has won a measure of stability since 2014 under Andrew Little, a steady former trade unionist who calls for greater fairness, focusing on the rise of homelessness. His lot has agreed to co-operate with the Green Party—a tactic that helped it to its by-election victory in Auckland. Meanwhile Winston Peters, who leads the populist New Zealand First party, is calling for curbs on immigration and the free market. Although his party only polls around 10%, it could end up holding the balance of power in a close election.

Whether or not the National Party retains power next year, Mr Key must go down as one of New Zealand's most successful leaders. Under his stewardship, the country can claim to be one of the world's most successful, too. ■

Indonesia's economy

Back in business

JAKARTA

The return of a reformist minister signals a renewed push for change

WHEN campaigning for president in 2014, Joko Widodo said that he could make the Indonesian economy grow by 7% a year—a rate it regularly attained in the 1980s and 1990s but has not reached since (see chart). Alas, Mr Joko, known to all as Jokowi, has not met his target. This year the economy looks set to grow by about 5%, just as it did in 2014.

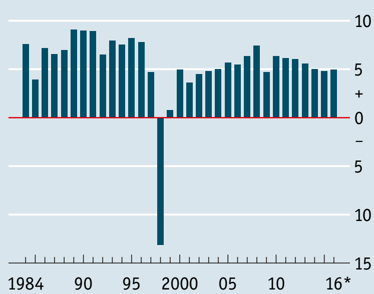
There is no doubting the potential of Indonesia, an archipelago of 13,500 islands that stretches 3,330 miles (5,360km) along the equator—the distance from London to Afghanistan. Its economy is the biggest in South-East Asia by far, bigger than those of Britain or France on a purchasing-power-parity basis. It is home to 261m people, half of whom are younger than 30. Yet realising this potential has proved tricky of late.

China's hunger for Indonesian coal and other commodities has abated in recent years. But Indonesia has struggled to find alternative sources of growth. Thanks to its clogged roads, congested ports, greasy-palmed customs officers and onerous local-content rules, investments in manufacturing that might, in another era, have gone to Indonesia are instead being made in places like Vietnam. Tom Lembong, Indonesia's investment chief, notes ruefully that Vietnam's exports, excluding oil and gas, exceeded those of Indonesia for the first time last year—even though its economy is much smaller.

Jokowi's answer is to improve infrastructure and deregulate, in order to attract investment and speed job creation. Early last year he scrapped expensive petrol subsidies, to allow greater spending on health and education as well as big investments in infrastructure. He has also produced more than a dozen packages of reforms intended to trim red tape and raise competitiveness. Critics say they are too scattergun—street vendors, the postal service, customs procedures and the minimum wage are but a few of the topics dealt with—but there is a lot that needs fixing. Indonesia was among the world's ten most-improved economies in the World Bank's latest "Ease of doing business" rankings, released in October, rising 15 places in a year. That still left it 91st out of 190 economies.

Not what it was

Indonesia, GDP, % change on a year earlier



Source: IMF *Forecast

Jokowi's reforms have not been as bold as many hoped. Earlier this year, while revising the "negative investment list" of 350 industries that are completely or partially closed to foreign investors, he eased limits on 35 but increased them on 20. Stiff tariffs imposed on imported consumer goods in 2015 remain in place, even though the minister responsible for them has been sacked. Non-tariff barriers to trade proliferate: the latest to have foreign firms fretting is a law requiring all food, beverages, cosmetics and medicines sold in the country, along with the machines used to make them, to satisfy stringent *halal*-certification rules set by the ministry of religious affairs.

Optimists point to the appointment in July of Sri Mulyani Indrawati as finance minister. The 54-year-old economist earned a reputation as a committed reformer during a previous stint as finance minister under Susilo Bambang Yudhoyono, Jokowi's predecessor, in 2005-10. She says she wants strong public finances to be the "backbone" of the president's reform drive. The government had to announce $10bn in spending cuts in August to prevent the deficit from breaching the legal limit of 3% of GDP. Yet decreasing government spending is one of the reasons the economy is slowing. She has vowed to follow a tax amnesty, which has raised a useful $7.5bn so far, with a relentless campaign against tax evaders—a policy she pursued with gusto the last time she was in the job.

Ms Mulyani's previous tenure ended in defeat, however, when she appeared to be chased from office because of a feud with Aburizal Bakrie, a tycoon-turned-politician. She insists that Jokowi is determined to combat corruption, reduce poverty and spread prosperity beyond the main island of Java, but she says she is not "naive" about the political difficulties involved. That Jokowi appointed her, given the feathers she has ruffled, is heartening. But her return is also a reminder of how reform efforts in Indonesia sometimes end. ■

Also in this section

For daily analysis and debate on China, visit
Economist.com/china

Popular discontent

In China, too

HANGZHOU

China has been a huge beneficiary of globalisation. But many workers are anxious

LI DONGSHENG, who is 35, says he is too old to learn new skills and too old to get married. Construction and factory work used to be plentiful, he says, as he eats his lunch from a yellow plastic container while sitting on a wall outside a job centre in Hangzhou, a city on China's wealthy eastern seaboard. But these days he can rarely find even odd jobs. He sleeps rough and has not visited his parents, who live hundreds of kilometres inland, for two years. Millions of people like Mr Li have powered China's rise over the past three decades, working in the boom-towns that have prospered thanks to China's enthusiastic embrace of globalisation. Yet many are anxious and angry.

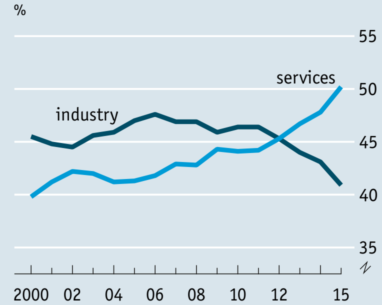
Factory workers in America and Europe often blame China for stealing their jobs. There is no doubt that China has benefited enormously from its vast pool of people, like Mr Li, who are willing to work for a fraction of what Western counterparts might earn. Since 1979 China's transformation into the workshop of the world has helped lift hundreds of millions of Chinese out of poverty.

Yet many of the worries that have recently animated Western voters are common in China, too. Working-class Chinese, as well as members of the new middle class, fret about rising inequality, the impact of mass migration from the countryside into cities and job losses. "China will not shut the door to the outside world but open more," said the president, Xi Jinping, in November. But even globalisation is occasionally attacked. On December 6th *Global Times*, a jingoistic newspaper published in Beijing, ran an opinion piece blaming globalisation for China's income inequality, housing bubbles and the ravaging of its environment.

China's own policy failures are much to blame, too. But the government has sensed the danger of rising public anger created by the divide between rich and poor (in the 1980s China was among the most equal societies in the world; now it is one of the least so). A decade ago it switched its "chief task" from "economic construction" to establishing a "harmonious society"—ie, one with a more even distribution of wealth (as well as a beefed-up police force to keep malcontents in check). China is now becoming slightly fairer overall: thanks to a dwindling supply of cheap labour and government efforts to boost the minimum wage, blue-collar salaries are rising faster than white-collar ones.

Adjustments needed

China, share of GDP from:



Source: Wind Info

But many people feel that inequality and social mobility are getting worse in other respects. For example, members of the fast-growing middle class complain about the emergence of a new plutocracy. They say that the wealthiest owe their fortunes to corruption and personal relationships, not hard work. Mr Xi's waging of the longest and most intense campaign against graft since the party came to power in 1949 is partly (as he admits) a sign of fear that anger over widespread and egregious corruption might imperil the party's rule.

Among blue-collar workers, a structural shift in China's economy, from labour-intensive manufacturing to higher-tech industries and services, is fuelling job insecurity. In 2013, for the first time, the contribution to GDP from services, such as transport, shops, restaurants and finance, pulled ahead of industry, including manufacturing, mining and construction (see chart). In the past couple of years, jobs in manufacturing have been declining, partly because globalisation is beginning to play the same sort of role in China as it does in developed countries. Some factories have been moving to cheaper locations abroad.

The impact is pronounced in many of the hundreds of towns that specialise in making certain products. Datang, China's "sock city" near Hangzhou, is a good example: in 2014 it made 26bn pairs of socks, some 70% of China's production, but many factories are closing as garment-making moves to cheaper countries in Asia. As a local boss explains, "People simply won't pay more for a pair of socks." ▸▸

Millions more jobs are threatened by efforts to reduce overcapacity in bloated and heavily indebted state-owned enterprises (SOEs), such as steelmakers and mining companies. Nervous officials often prefer to prop up such businesses rather than risk an explosion of unrest among laid-off urban-born workers. The government worries more about such people than it does about unemployed migrants from rural areas: they stay in the cities rather than return to the countryside.

The official unemployment rate in urban areas has remained remarkably steady at around 4% for years, even during the worst of the global financial crisis. But those figures are highly misleading. For one thing they exclude migrants from the countryside, who often suffer the worst labour abuses, such as long periods of unpaid leave as well as of unpaid work: bosses often hold back wages for months. About 40 construction workers in Beijing protested last month to demand unpaid wages from a project three years ago (see picture on previous page).

Many of those who used to work in factories, such as Mr Li in Hangzhou, are ill-equipped to find new jobs in service industries. Official data show that more than two-thirds of workers laid off in recent years were poorly educated and around half were aged 40 or older. Those are big handicaps. The government has assigned 100bn yuan ($14.5bn) to pay for the resettling and retraining of workers laid off in the steel and coal industries. But the scheme's details are unclear. Migrants, usually first out of the door, often cannot afford to stay in a city without a job. Those who do find work in service industries are not necessarily happier. In the third quarter of 2016, for the first time, labour unrest in such firms was more common than in manufacturing, according to China Labour Bulletin. The Hong Kong-based NGO recorded 2,271 protests by workers in all industries between January and November (see map). That is more than 14 times as many as in the same period of 2011.

Drawbridge up

As anxieties grow, migrants are likely to suffer. Like those in the West who resent foreign immigrants, Chinese urbanites often blame their cities' problems on outsiders, albeit on people from other parts of the country (who often speak very different dialects and lack "civilised" city ways). The 280m such migrants in urban China feel marginalised and resented. Weibo, a microblogging site, has accounts dedicated to subjects such as "Beijingers safeguarding the city of Beijing". In May, 12 city and provincial governments tried to broaden their pool of university entrants by reducing quotas for local students. Parents in three cities staged demonstrations, worried their children would lose a precious advantage (pictured is one such protest in the eastern city of Nanjing).

More often, migrants are subjected to a kind of apartheid, in effect excluded from subsidised urban health care and other public services because they have no urban *hukou*, or residence permit. Urban schools commonly (and illegally) require that parents of migrant children pay extra fees and produce documents such as rental or job contracts that few of them can supply. Children who do get places are sometimes taught separately from those of urban-born parents. The central government is making it easier for migrants to obtain *hukou* in small towns and cities where apartment blocks often lie empty but jobs are scarce. But it is getting harder for people from the countryside to settle in megacities such as Beijing and Shanghai, owing to measures such as the demolition of ramshackle housing where many of them live and stricter qualifications for local *hukou*.

The Communist Party has treated the presidential election in America and Britain's vote to leave the European Union as propaganda victories. *People's Daily*, the party's mouthpiece, gleefully reported on the "dark, chaotic and negative" election campaign that had revealed the "ill" state of America's "so-called democracy". *China Daily* called the Brexit vote a "political earthquake". Its message was clear: giving people the freedom to make such momentous decisions can have dangerous consequences. With the West plunged into uncertainty, China has seized the chance to present itself as a beacon of stability.

Yet the party knows that in China, too, the rise of inequality and loss of manufacturing jobs present big challenges. Mr Xi may talk confidently of keeping China open, but the case for doing so is not clear to many of China's citizens, nor even to the government (ask foreign businesses in China about the difficulties they face). Since the country first launched its "reform and opening" policy in the late 1970s, arguments have never ceased over how far to go. In the 1990s, when the party launched its first wave of SOE closures, resulting in millions of lay-offs, some angry workers even began to embrace a neo-Maoist movement that harked back to the days of guaranteed jobs (and far firmer controls on internal migration). As he prepared to take over in 2012, Mr Xi engaged in a fierce struggle with another leader, Bo Xilai, who had gained huge popularity partly thanks to his Maoist rhetoric. Mr Bo is now in jail, but Mr Xi has adopted his Mao-loving style and has lashed out at Mao's critics.

Anti-elite sentiment, such as Britain and America are experiencing, is the party's worst fear. Mr Xi is a member of the party's upper class: his father was Mao's deputy prime minister until he was purged. Many of his closest allies are also "princelings", as offspring of the party's grandees are often called. That is why he has tried hard to portray himself as a "common man", highlighting his experiences of living in a cave and working in the fields during Mao's Cultural Revolution. He is appealing to popular nationalism, too, with talk of the country's "great rejuvenation" and the "Chinese dream" (shades of Mr Trump's "Make America Great Again").

China does not have the complication of free elections, much less referendums. But the party feels that it needs to appear responsive to popular opinion in order to stay in power. That is becoming more difficult as economic growth slows and the main public demand—for greater wealth—becomes harder to satisfy. Even with strong institutions, rule of law and freedom of the press, Britain and America are struggling to contain popular rage. China is dealing with many of these same forces with fewer outlets for discontent. Mr Xi is trying to keep anger from spilling over by locking up dissidents with greater resolve than any Chinese leader has shown in years. He knows that global elites are under attack. That is making him all the more determined to protect China's. ■

Parents want to take back control

Banyan | Calm before the storm?

The shortcomings in the president-elect's backing of an admirable but neglected country

WHEN President-elect Donald Trump tweeted last week that he had spoken to Taiwan's leader, Tsai Ing-wen—"The President of Taiwan CALLED ME"—almost all of Washington's Asia hands suffered palpitations. It was the first presidential-level contact between America and Taiwan since "normalisation" in 1979, when Jimmy Carter broke off diplomatic relations with "Free China", as Taiwan was then often known, and recognised the Communist government in Beijing instead.

At the time Congress tried to reassure Taiwan by making provisions for continued weapons sales and hinting that America would step in should the island be attacked. But, under immense Chinese pressure, America has always kept Taiwan at diplomatic arm's length. China regards Taiwan as one of its provinces, and refuses even to honour Ms Tsai with her title of president. It has long been assumed in Washington that any American move to alter the status quo would so infuriate China that it might wage war on the island, probably dragging in America. Didn't Mr Trump know he was playing with fire? To Washington's Asia experts neither possible answer to that question seemed encouraging.

But then, something strange happened: nothing. No explosion of rage issued from Beijing, as many expected. The foreign minister, Wang Yi, dismissed Ms Tsai's call as a "small step", or "petty" as it might also be translated—a mild response by Chinese standards. In the lull, some Asia hands allowed themselves to breathe out. Perhaps, even, the breach was not wholly without precedent—Ronald Reagan had invited senior Taiwanese officials to his inauguration, after all, and got away with it.

Perhaps, even, Mr Trump gets grudging admiration for reminding the world that Taiwan deserves more recognition as a peaceful, prosperous democracy. For too long China has controlled the narrative over the island. Far from being a renegade part of China, it has in its entire history been ruled directly from the Chinese capital for not much more than a decade: briefly in the second half of the 19th century, and from 1945-49. Never have the Communists ruled Taiwan, so shouldn't their bullying be decried more often? As for the "one China" idea that the Communist Party insists upon, America has never agreed to it; formally, it merely "acknowledges" that both China and Taiwan hold to the principle that there is but one China. That acknowledgment was made in the 1970s, with dictatorships in Beijing and Taipei both claiming to rule all of China. Today, a democratic Taiwan has no such pretensions. Why should American policy be set in stone?

For now, many Taiwanese are basking in Mr Trump's attention. They hope for further gestures when he is president—a free-trade deal, perhaps, which Mr Trump's advisers say they are keen on striking with Taiwan, and more American weapons. There have been rumours that Mr Trump is mulling another possible flourish before then: a meeting in New York in January with Ms Tsai, who will be travelling to Guatemala, one of a handful of countries that officially recognise Taiwan. Ms Tsai's office dismisses talk of this as "excessive speculation". But were such an encounter to happen, it would cause rapture in Taiwan. It would also trigger even greater palpitations in Washington.

China would still play things cool. For a country that craves predictability in its external environment, a Trumpian America has suddenly become the wild card. But, Chinese officials remind themselves, using an old saying, the way to deal with 10,000 changes is not yourself to change. Some Chinese policymakers are pessimistic about relations with America under Mr Trump, noting his staunchly protectionist views and his inclination to improve ties with Russia in ways that might leave China isolated. (Anti-China tweets from Mr Trump reinforce the downbeat view.) Others are more hopeful, seeing a transactional president minded to cut deals with China, America's essential counterpart on everything from trade to security. The appointment of the China-friendly governor of Iowa, Terry Branstad, as ambassador to Beijing is a fillip. For now, the regime will bide its time.

Yet, far from diminishing, the risks will grow. One, in the near term, lies in the nature of Mr Trump's team. Almost the entire Republican establishment of seasoned Asia experts has refused to serve under him. So those handling policy towards Asia are notable for their inexperience or for their ideological inclination to favour Taiwan over those once disparaged as "ChiComs".

For all Taiwan's virtues, this should be a worry. America's relationship with China is broader, more complex and far, far more vital than its one with Taiwan. Making the running on Taiwan implies disregard for the bigger relationship. China's help on many global issues, including counter-terrorism, is essential. And there is an urgent need for agreement over North Korea's nuclear-weapons programme, which is developing dangerously fast. Only China can make North Korea change course. Finding the means to cajole or coerce China to act should be an American priority, from which much of the rest of Asia policy should flow. Yet Mr Trump's team appears to be giving little thought to this.

Stop that tiger, I wanna get off

And then comes the risk of increased Chinese neuralgia over Taiwan during a Trump presidency. Years of propaganda and "patriotic education" have fuelled an irrational nationalism over Taiwan among ordinary Chinese. President Xi Jinping himself has said that the Taiwan "problem" can no longer be left to future generations. For now, the nationalism is in check. After all, officials claim that, for all the mischief by Taiwan's splittist politicians, ordinary folk are true Chinese patriots. But should Mr Trump stir things up, it may dawn on the Chinese that the claim is not true, and that Taiwanese politicians promote de facto independence because that is what people want. If public anger grows, Mr Xi will be riding a tiger from which he will struggle to dismount. By then, it will no longer be possible to wait and see. ■

Also in this section

For daily analysis and debate on America, visit
Economist.com/unitedstates
Economist.com/blogs/democracyinamerica

Deporting undocumented migrants

Hamilton's heirs

LOS ANGELES

The president-elect could deport millions of people who arrived illegally, using a system perfected under the outgoing president

WHEN she was seven Greisa Martinez moved illegally from Hidalgo, in Mexico, to Dallas with her parents. Now aged 28, Ms Martinez works for United We Dream, an immigration advocacy group. Following the election of Donald Trump she has been busy. In case of an immigration raid, she instructs her charges not to open their doors to immigration officials unless they have a court-ordered warrant, and to remain silent until speaking with a lawyer. Ms Martinez is one of around 740,000 beneficiaries of the Deferred Action for Childhood Arrivals (DACA) policy that Barack Obama implemented in 2012 by executive action. In his 100-day plan published in October, Mr Trump vowed to reverse every one of Mr Obama's executive actions. He could kill DACA on his first day in the Oval Office.

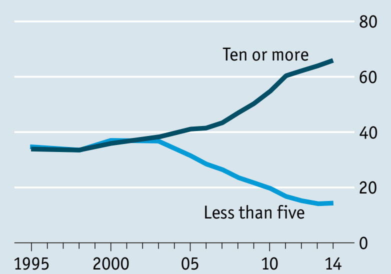
He could also opt to let it die a slower, gentler death by refusing to renew DACA permits, which expire every two years. Either way DACA's beneficiaries would lose their right to work legally. DACA grants undocumented immigrants who arrived in America before the age of 16, and who meet several other requirements, temporary amnesty from deportation, and eligibility to work. Applicants must not have criminal histories and they must either be enrolled in or have finished high school or have been honourably discharged from the armed forces.

In his earlier stump speeches, Mr Trump repeatedly pledged to rid the country of all 11m unauthorised undocumented migrants living within its borders, the bulk of whom arrived before 2004 (see chart). He has picked the Senate's most enthusiastic deporter, Jeff Sessions, as his attorney-general. This has alarmed DACA recipients. "When we applied for DACA, we identified ourselves as undocumented. We gave our addresses. The government now has this information and can come after us or our families," says Perla Salgado from Arizona, who arrived to America at age six and has not once returned to Mexico.

Since winning the election, Mr Trump has said he will focus on illegal immigrants

The 9/11 effect

United States, adult unauthorised immigrants
Years of residence, %



Source: Pew Research Centre

with criminal records—not unlike President Obama, whose administration has deported more people than any other president's. He has also made some sympathetic noises about those who arrived in the country as children. In an interview on "60 Minutes", a television programme, Mr Trump estimated the number of criminal immigrants to be between 2m and 3m. The Migration Policy Institute, a think-tank, says it is closer to 820,000.

Even if Mr Trump's administration aims for the top end of the range, it will be hard for him to keep all his campaign promises related to immigration. To gather funding for his proposed wall along America's border with Mexico, for example, Mr Trump would need congressional approval. The president requires no such authorisation to change the Department of Homeland Security's (DHS) deportation priorities, though. From his first day in the White House, Mr Trump will have discretion over what groups should be targeted for removal. "He could easily expand the definition for what constitutes criminality to meet the 2m to 3m goal he set," says Ms Martinez, the activist.

Two factors will limit the size of the deportation dragnet. The first is capacity. The federal government already spends more on enforcing immigration laws than on the FBI, Drug Enforcement Agency, US Marshals service and Bureau of Alcohol, Tobacco and Firearms combined. Finding people to deport is also getting ever harder. That is partly because the number of border apprehensions has declined markedly in recent years as the flow of Mexicans into the United States has also ebbed. Immigrants captured within two weeks and 100 miles of the border are the easiest to deport because they do not have to be granted a court hearing. Those further from the ►►

country's edges do get a hearing and so are much harder to remove. Deportation hearings can take years to complete; in July, the backlog of cases in immigration court surpassed 500,000.

The second variable is co-operation from cities and states. California has been the busiest state in preparing for the Trump administration's immigration policies. Over 3m undocumented immigrants reside in the Golden State; Texas, the second most popular home for undocumented foreigners, hosts half that number. A 2014 study by the University of Southern California estimated that workers who are in the state illegally make up 10% of the workforce and contribute $130bn of California's $2.5trn gross domestic product.

On December 5th, California lawmakers introduced a package of bills to obstruct mass deportation. These measures include a state programme to fund legal representation for immigrants in deportation hearings; a ban on immigration enforcement in public schools, hospitals and on courthouse premises. "California will be your wall of justice," declared the president of the state senate in a statement. "We will not stand by and let the federal government use our state and local agencies to separate mothers from their children." According to a study by the University of Pennsylvania in 2015, only 37% of immigrants and 14% of detained immigrants in deportation proceedings secured lawyers to defend them in court. The same study found that immigrants with representation had five-and-a half times better odds of avoiding deportation than their peers who represented themselves.

Some place to hide

The policies of so-called "sanctuary cities" such as Los Angeles, New York, San Francisco and Chicago will further hinder any plans Mr Trump might have for a huge increase in the rate of deportation. There is no specific legal definition for what constitutes a sanctuary jurisdiction, but it is widely used to refer to areas that limit co-operation with federal immigration authorities. The Immigrant Legal Resource Centre counted four states, 39 cities and 364 counties that qualify as sanctuary jurisdictions. Some prohibit local police from asking people they arrest about their immigration status. Others refuse to obey immigration officers unless they have a warrant. Such policies can be mandated expressly by law or merely become customary. Supporters of these approaches say they help guarantee that fear of deportation does not dissuade undocumented immigrants from reporting crimes, visiting hospitals or enrolling in schools.

Scrutiny of sanctuary cities ramped up in July this year after a young American woman was killed in a touristy area of San Francisco by a man who was in the country illegally, had seven previous felony convictions, and had already been deported five times. Mr Trump has since vowed to block federal funding to areas deemed unco-operative. Such cuts would be painful, but several mayors have cast doubt on whether they will actually happen, reasoning that it would be counterproductive to hurt the economies of America's biggest cities. Jayashri Srikantiah of Stanford Law School argues that there is case law that validates sanctuary policies and there are constitutional problems with coercing states into action with financial threats.

Even so, between 2009 and 2015 the Obama administration deported an average of about 360,000 people a year. Muzaffar Chishti, a lawyer at the Migration Policy Institute, believes that unless ample resources are poured into recruiting and training new immigration officers and expanding the pool of immigration courts, the Trump administration will struggle to remove more than half a million people a year. Over eight years that would still add up to 4m people. ■

Standing Rock

Water, life and oil

CHICAGO

A pyrrhic victory against the developers of the Dakota Access pipeline

THE images of the protest camp at Standing Rock were reminiscent of scenes in the 19th century of proud native Americans wearing beautiful feathered headdresses opposing settlers on horseback. For months tribespeople, environmental activists and veterans endured often freezing temperatures at the Oceti Sakowin and two other camps around 40 miles south of Bismarck, North Dakota, to protest against the construction of the last part of the Dakota Access pipeline, which they say threatens the Standing Rock Sioux's water supply and their sacred sites. On December 4th, they scored an unexpected victory when the Army Corps of Engineers, a federal agency, announced that it would deny Energy Transfer Partners (ETP), the developer of the pipeline, a permit to cross the Missouri river. Thousands of protesters cheered and chanted to cries of *Mni Wiconi*, or water is life.

ETP is furious about the corps's decision, which it claims was "just the latest in a series of overt and transparent political actions by an administration which has abandoned the rule of law in favour of currying favour with a narrow and extreme political constituency". The construction of the pipeline aiming to transport around half a million barrels of oil each day from the Bakken formation in western North Dakota to a terminal in Illinois is around 90% complete. ETP and its three partners have already sunk $3 billion into the pipeline, which was supposed to be finished by January 1st next year. It mostly traverses privately owned land, but the government must sign off on permission to drill under Lake Oahe, which dams the Missouri river. Its refusal to do so requires a new environmental impact statement that looks at al-

Still standing in North Dakota

ternative routes. This will take months.

Republicans attacked the Obama administration for blocking the pipeline construction. On December 4th Paul Ryan, the Speaker of the House, tweeted it was "big-government decision-making at its worst" and that he was looking forward "to putting this anti-energy presidency behind us". Kevin Cramer, a congressman from North Dakota who is under consideration for the post of energy secretary in the incoming administration, called President Obama "lawless" and vowed to fight for the pipeline. Jack Dalrymple, the Republican governor of North Dakota, said the decision was a "serious mistake" that makes the life of the local police more difficult. A spokesman for Mr Trump said he supports construction of the pipeline but would review the situation once in the White House. The president-elect was an investor in ETP and has received campaign donations of more than $100,000 from the chief executive of ETP.

Oil tanks

The developers are rushing to finish the construction of the controversial pipeline because they are under financial pressure, not because of a need for increased local pipeline capacity, argues Clark Williams-Derry of the Sightline Institute, an environmental-research institution. According to court documents oil drillers have the right to void their contracts with ETP if the pipeline is not finished by January 1st, which could result in steep losses for the developers. The contracts were signed when the Bakken formation's oil production was thriving, but in the autumn of 2014 the oil price collapsed and has not recovered since. Bakken oil production has fallen by more than 20% since its peak, according to the Energy Information Administration.

Mr Williams-Derry argues that the pipeline is a superfluous project being built to preserve the favourable contract terms negotiated by its developers before the oil price tanked. He thinks existing infrastructure can easily handle the transport of Bakken oil. Vicki Granado, a spokesperson for ETP, says January 1st was the original in-service date and denies the company has any contractual obligation tied to the date. The company could sue the corps for violating due process, but it is likely to hold off until Mr Trump moves into the White House.

Hardly anyone on either side of the political divide doubts that the president-elect will approve the easement. But it might take time to settle the matter, which means that ETP and its partners will take a painful financial hit. The delay will cost the company $83m a month, or $2.7m a day, according to court documents. That is a powerful financial incentive for protesters to stay put in the new year, as many have promised to do. ■

Hate crimes

By the numbers

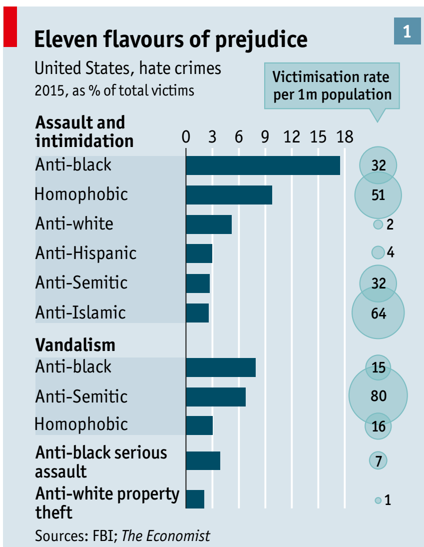
NEW YORK

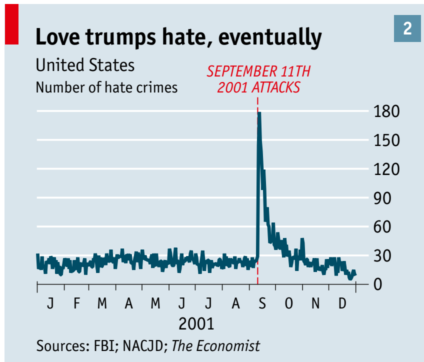
The apparent rise in hate-crime since the election is likely to be short-lived

ON THE morning of November 18th, two swastikas and the words "Go Trump" were found daubed in a children's playground in Brooklyn. This is one of 350 hate crimes being investigated by New York's police department in 2016, an increase of 35% over 2015. Andrew Cuomo, the governor of New York, has set up a special unit to tackle the "explosion" of such crimes in the state. In the Senate last month, Harry Reid, the minority leader, said that Donald Trump's election had "sparked a wave of hate crimes across America. This is a simple statement of fact." But look more closely and the facts become more difficult to establish.

Hate crime is defined by a 1990 law which classifies crimes against individuals or property that are in some part motivated by race, religion, ethnicity or sexuality. The law was tweaked in 2009 to include crimes against a person on account of their gender, gender identity or disability. While not all states recognise all these types of hate crime, in 2015 a total of 5,850 of them were recorded by the FBI. Hatred itself is not a crime, but crimes motivated by hate result in longer sentences. The vast majority of hate crime is comprised of racist intimidation and assaults, and vandalism of religious buildings (the Brooklyn playground was named after a Jewish rapper). Successful convictions are rare: just 26 individuals received stiffer sentences in 2015.

The FBI probably undercounts this kind of crime, because police departments are only required to submit numbers on a voluntary basis. An alternative measure can be derived from an annual 250,000-sample survey administered by the Bureau of Justice Statistics. Only 43 respondents thought they had been the victim of a hate-related crime in 2015. Extrapolated to the nation as whole, though, that tallies to 210,000 hate crimes—40 times the rate reported by the FBI.





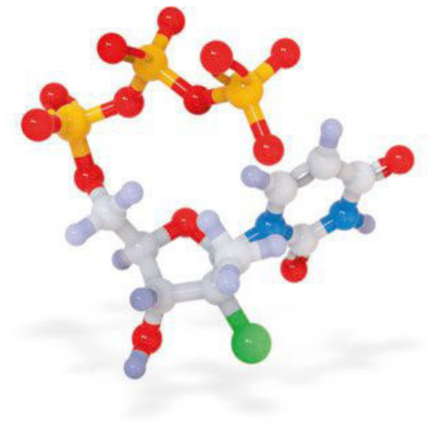
The true number is likely to be somewhere between these two figures according to Jack Levin of the Brudnick Centre on Violence and Conflict at Northeastern University. Mr Levin distinguishes between hate crimes that are perpetrated by thrill-seekers and those committed by people who feel threatened by outsiders. The first sort tend to rise and fall with the violent crime rate among youngsters. In a 2015 study, Mr Levin calculated that since the terrorist attacks of September 11th, hate crimes motivated predominantly by fear of outsiders have predominated.

Corroborating this theory, data released by the Southern Poverty Law Centre (SPLC), an advocacy group, recorded a total of 867 "hate incidents" in the ten days following Mr Trump's election victory in what it called a "national outbreak of hate". But it is unclear whether this tally is driven by increased awareness of hate crime at the time. In Phoenix, the police department reckoned that much of the uptick in hate crime in 2015 was because of better reporting by victims and investigators. Most hate crime will remain unreported: just 40% of respondents to the BJS survey reported their incident to police.

Any official change will not be unearthed until 2016 statistics are released by the FBI and BJS in November 2017. Encouragingly, reports to the SPLC have declined recently. That may be because some people have heeded Mr Trump's call to "stop it". If so, that would follow a typical pattern. And if the past is any guide to the future, they should now fade. In the wake of the September 11th terrorist attacks, hate crimes surged but quickly fell back again (see chart 2). Perhaps this was thanks to George W. Bush's fine speech at a mosque six days after. It is hard to imagine the next president making a similar gesture were Islamic terrorists to strike again. ■

Health care

Drug money



Yours for $9bn

High price tags for new medicines are about to come under renewed pressure

THE past year has brought a steady infusion of grim news about the price of drugs. Much outrage has been caused by a price-gouging scheme for an AIDS medicine. Other scandals have included the cost of the allergy medicine EpiPen, the excessive cost of insulin, an expensive cure for Hepatitis C and enormous price increases in the cost of two heart drugs. New data on federal spending on programmes for the poor and the elderly show that last year $9.2bn was spent on a single medicine—Harvoni, which cures Hepatitis C. More such tales can be expected from the ongoing antitrust investigation by the Department of Justice into possible price fixing in generic drugs.

It is little wonder, then, that a new survey by Kaiser Family Foundation Health Tracking Polls says 77% of people think drug costs are unreasonable (a five percenntage-point increase on the previous year). Ron Cohen, boss of Acorda Therapeutics, a drug firm, and chairman of BIO, a trade group, says the sense of outrage among patients is "understandable". Ever since the Affordable Care Act changed the way the health-insurance industry was regulated, many patients have been asked to stump up more of the cost of their medicines through cash payments and high deductibles. Equally, Mr Cohen says, it is "difficult to defend" the relentless double-digit price increases for drugs that some firms have charged. Broadly people want more transparency on pricing; more scope for the federal government to negotiate on prices; and a limit on the amount that drug companies can charge for high-cost drugs.

All this is keeping the industry lobby group, PHRMA, very busy. It has done its best to distance itself from the worst corporate offenders, such as troubled Valeant Pharmaceuticals, a firm which PHRMA describes as having a strategy "more reflective of a hedge fund". It is now gearing up to convince legislators that the drugs made by its members bring value to the health-care system and the economy more broadly. It will also fight attempts to control drug prices through legislation. Pharmaceutical firms spent heavily in order to defeat a ballot initiative, this November, to limit the amount that California's state government pays for prescription drugs.

The pharma industry was thrilled at first that Donald Trump, rather than Hillary Clinton, had been elected president. (Shares in biotech companies swooned every time she tweeted about the cost of medicines.) Firms hoped for beneficial changes to the tax code, the prospect of being able to bring offshore cash home at bargain tax rates and even regulatory changes to make it easier for drugs to get approval. Since his election victory, Mr Trump has told *Time* magazine that he too plans to bring down drug prices. And in recent years health insurers, their intermediaries, and hospitals have become increasingly combative about the price of drugs and the value they deliver. Nor will the clamour to appraise medicines more critically go away, which is good news for consumers.

Added to this is the unexpected progress of the 21st Century Cures Act, a $6.3bn omnibus bill covering medical innovation and legislation, which has passed through Congress and which the president has said he will sign. The act allocates money for research spending on diseases such as cancer, and would give the Food and Drug Administration powers (and money) to approve drugs more quickly. More rapid approvals, though, will not necessarily translate into lower drug prices. Drugs that have already had approval fast-tracked continue to command high prices even when they are later shown to have no significant benefit, according to new research.

Despite the cost of drugs, almost three-quarters of those taking medicines can afford to pay for their prescription. That still leaves millions struggling to afford them, and means that drug pricing will remain contested. The industry says its products save money for the health-care system, and that profits are the source of investment for creating the drugs of the future. Both points are sometimes true. But with many pharma firms buying in drugs, rather than developing them in-house, there is a strong case that drug prices currently have more to do with the cost of dealmaking than the cost of innovation. ■

Lawyers

Libidos and don'ts

LOS ANGELES

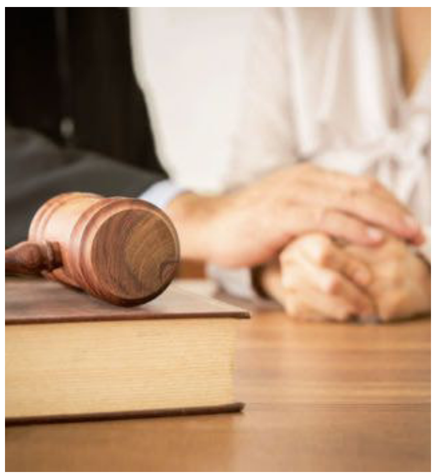
California considers banning lawyer-client sex

THE misadventures of Arnie Becker, a slick-haired divorce lawyer with piercing blue eyes and a penchant for seducing his clients, kept viewers of "LA Law" entertained for nearly a decade. If Mr Becker were real, he would be nervous. California's bar association, the largest in the country, is considering a crackdown on sexual relationships between lawyers and their clients.

In 1992 California became the first state to implement a formal rule about client-lawyer sexual conduct. Rule 3-120 barred lawyers from using their position of power to coerce their clients into sleeping with them. At the time, recalls Larry Doyle, who served as chief legislative counsel for the State Bar of California when the rule was enacted, other states mocked California for creating what they saw as a superfluous guideline. Forcing anyone to have sex—client or otherwise—was already expressly illegal. "There was a fair amount of tittering and states saying, "This is so California," Mr Doyle remembers.

Today California has some of the laxest rules on the subject in the country. In 2000 the national American Bar Association updated its model rules to include a ban on lawyer-client sex, consensual or not. The only exception was in cases where the sexual relationship preceded the professional one. Most states now follow some version of this edict.

The amendment under consideration would bring California's rule up to speed with such states. It was proposed along with 68 other rule changes—the biggest overhaul to California's bar-association ▸▸



Bill you later, honey

ethics rules since 1987. Supporters of the new measure say the ban on sex with clients will make the rules enforceable. Daniel Eaton, a lawyer who serves on the rules revision commission, says the old dispensation was not working. Between 1992 and 2010 the state bar examined 205 reports of sexual misconduct, but imposed a penalty in only one case. Pressure, or lack thereof, is difficult to prove. "There are too many hurdles for state bar prosecutors," Mr Eaton says. "It's time for California, once the leader, now the laggard, to join the majority of jurisdictions in implementing a bright line rule," he adds.

Critics say the proposed change infringes on the right of free association, and that lawyers can make their own decisions about appropriate behaviour. It will be up to the California Supreme Court to judge what happens when the entire batch of new rules come before it in March. ■

Trump appointments

A fox for the henhouse

WASHINGTON, DC

Donald Trump's environment tsar may not believe in climate change

IT BRIEFLY looked as if Donald Trump, having denounced global warming as a hoax and sworn to dismantle Barack Obama's environmental legacy, might have had a rethink. Now it seems he has not. As *The Economist* went to press, Mr Trump was reported to be about to nominate Scott Pruitt, Oklahoma's attorney-general, to head the Environmental Protection Agency. He would be hard-pushed to find anyone more hostile to that department or committed to tearing up the environmental rules that are perhaps the main achievement of Mr Obama's second term.

To get around an obstructive Republican-controlled Congress, Mr Obama's environmental policies were almost all promulgated as regulations, mostly by the EPA. His marquee rule, issued last year, is a scheme known as the Clean Power Plan (CPP), designed to force the states to curb greenhouse-gas emissions from coal- and gas-fired power stations. On the trail, Mr Trump denounced the Plan as a "war on coal" and promised to scrap it. Mr Pruitt, who has sued the EPA unsuccessfully several times, is leading a legal challenge to the CPP by 27 states and some firms in the federal appeals court in Washington, DC. The challengers say it infringes states' rights.

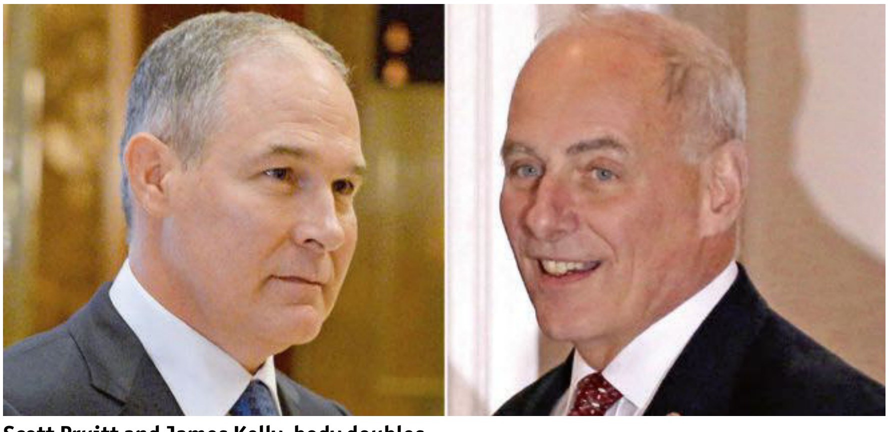
Mr Pruitt, who has close ties to coal and gas companies and related lobbyists, some of whom have made donations to his political campaigns, is a climate change obfuscator, and perhaps an outright denier. In an interview with *The Economist* last year, he insisted his attack on the CPP had nothing to do with his views on global warming, which he would not divulge. But in a subsequent article for the *National Review*, co-authored with a fellow attorney-general of a coal-rich state, Luther Strange of Alabama, he seemed to present disagreement over the details of climate science as disagreement over the fundamentals in a way that climate-change deniers often do. "Scientists continue to disagree about the degree and extent of global warming and its connection to the actions of mankind," he wrote. "That debate should be encouraged—in classrooms, public forums and the halls of Congress." If Mr Pruitt has his way—and the Republican-controlled Senate would smile on his appointment—the EPA and much environmental regulation could be ravaged.

Because the CPP is still locked in litigation, it should be fairly easy to kill. That would make it hard for America to meet the emissions-cutting targets it set for itself at the UN climate summit in Paris last year. (Mr Trump has vowed to "cancel" the Paris agreement.) But older regulations, for example, one to reduce mercury emissions from power plants, will be harder to scrap. Having been mandated by law, any withdrawn rule would need replacing with a new one. If Mr Pruitt offered a weaker alternative, he would be sued by environmental groups, as previous Republican EPAs were. Even before the news of his expected nomination, well-funded greens were consulting their lawyers; presented with Mr Pruitt as a probable adversary, their resistance to Mr Trump has been supercharged. "He could have done a lot more harm if he'd picked a more elegant thug than this cartoon villain," said a leading environmental campaigner.

It is also contrary to recent hints that Mr Trump might be taking a more serious view of the environment. In a meeting with the *New York Times*, he acknowledged some "connectivity" between human activity and climate change. On December 5th he discussed the issue with Al Gore, who was said to have been invited to Trump Tower, in Manhattan, by the president-elect's daughter, Ivanka. One of Mr Trump's most trusted advisers, she has let it be known that climate change is an issue she cares about. If that is really true, she cannot be thrilled by Mr Pruitt's nomination: it is a reminder of how limited any adviser's hold on Mr Trump is. He makes his own decisions, often unpredictably—even if his nominations appear more consistently conservative than some had expected.

After much delay, he nominated a former rival, Ben Carson, on December 5th to head the department of housing and urban development—though Mr Carson, not unlike Mr Pruitt, is opposed to the schemes he would be tasked with administering. To his national security adviser, Michael Flynn, a retired lieutenant-general accused of harbouring anti-Muslim views, Mr Trump has added two more retired generals: James "Mad Dog" Mattis, as secretary of defence and, it was reported on December 8th, John Kelly, who is known for his tough views on immigration, to lead the department of homeland security.

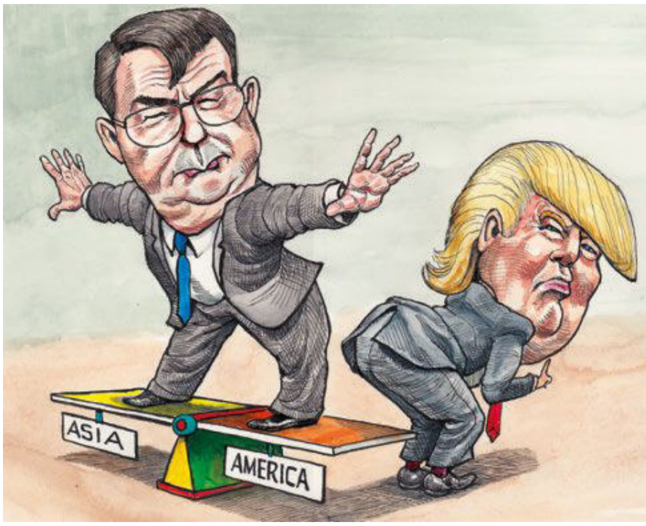
With Mr Trump believed to be considering two more servicemen—David Petraeus, a retired general, for secretary of state, and Michael Rogers, a retired admiral, for director of national intelligence—he could end up with quite a military cabinet. That is also a bit surprising, because Mr Trump disparaged America's generals ahead of the election, suggesting he knew more about Islamic State than they did. Then again, if he really believes that, maybe it is why he keeps hiring them. ■



Scott Pruitt and James Kelly, body doubles

Lexington | Farewell to all that

Our columnist accompanies the outgoing defence secretary on his final world tour



HIGH on the flight deck of a warship docked in Tokyo Bay, America's outgoing defence secretary, Ashton Carter, offered a tribute to Asian allies on December 6th that was at once heartfelt and possibly redundant after Donald Trump takes office next month. For eight years an "Asia rebalance" has seen generals, diplomats and trade envoys commanded by Barack Obama, devote more energy and time to the Asia-Pacific. Bluntly, this pivot was intended to shift American attention away from thankless wars in the Middle East and from a moribund Europe, towards a region deemed likely to dominate the 21st century.

With the great grey bulk of the USS *Ronald Reagan*, an aircraft-carrier, looming behind him, Mr Carter hailed the Asia rebalance as vital to both regional security and America's national interests. Our military alliance with Japan is not only stronger than ever, he declared, but offers "equal benefits for both countries."

That is not likely to convince Mr Trump, who won office declaring that America is being robbed, cheated and taken for granted by foreigners. He grumbles that feckless allies should cover more of the costs of maintaining American bases overseas. He has sounded especially indignant about Japan, which is protected by a defence treaty with America but barred by its pacifist post-war constitution from joining conflicts sparked by a strike on American territory—or as Mr Trump put it, "If we're attacked [the Japanese]...can sit at home and watch Sony television."

Mr Trump does not merely find foreigners ungrateful. He is scornful of multinational compacts and regional alliances, preferring bilateral negotiations and one-on-one tests of strength and guile. That is one reason why he has promised to pull out of the Trans-Pacific Partnership (TPP), a trade deal between 12 Pacific Rim nations, including Japan.

Small wonder that Mr Carter began his 25,000-mile farewell trip with stops in Asia and repeated paeans to the rebalance. Back home in America conservatives wonder whether there is much rebalance to save. Such folk consider the "pivot to Asia" little more than a clever slogan, aimed at diverting attention from chaos in the Middle East and the spread of Islamist terrorism, which they blame on Mr Obama.

The critics are being too glib. The ship aboard which Mr Carter spoke is proof that, when it comes to military power, the Asia rebalance had real-world effects. Commissioned in 2015 the *Izumo* is the largest warship launched by Japan since the second world war (also the cleanest ship that Lexington has ever visited, scrubbed and buffed to a near-hospital shine). In part its construction reflects the hawkishness of the prime minister, Shinzo Abe, who has challenged the post-war pacifist traditions that so provoke Mr Trump. Japan still has a "Maritime Self-Defence Force", not a navy. Officers of the *Izumo* may insist that their ship is a destroyer that happens to carry helicopters, and talk of how handy it will be for humanitarian missions such as earthquake relief. But in truth Japan has built a lethally capable helicopter-carrier.

The *Izumo* represents a 20,000-tonne bet on the Asia rebalance. Everything from its command-and-control systems to its helicopter fleet is designed for combat alongside allies, starting with the Americans. The US Marine Corps has already landed Ospreys, thunderous flying troop-carriers that would be vital in an amphibious war with China or North Korea, on the *Izumo*. The ship lies across an inlet at Yokosuka from some of the most advanced vessels in the American navy—part of a Pentagon push to send the newest ships and warplanes to Asia, alongside tens of thousands of extra troops. Mr Carter calls America a "catalyst" for co-operation in Asia. Officers note that South Korean, Japanese and American ships held anti-ballistic missile exercises in June 2016, as fears of North Korean aggression mounted—their first such trilateral exercise. Japan has also joined what were bilateral American exercises with India. Despite the election in the Philippines of a violently populist, often Yankee-bashing president, Rodrigo Duterte, his generals still support deeper co-operation with America, as set out in an agreement signed in 2014.

Pivot, then pirouette

Perhaps Mr Trump will be persuaded to keep advanced kit in Asia by his pick for defence secretary, James Mattis, a much-respected former marine general. Several realist arguments may be tried on the next president. American officers talk of the "tyranny of distance", and the incalculable benefits of having bases in the region. They also note that Japan pays $4bn a year towards the direct and indirect costs of its American bases. Mr Obama left Mr Trump visibly shaken, shortly after his victory, with an Oval Office briefing about dangers he will face, starting with North Korea's nuclear programme. Yet Mr Trump is hard to predict. He made a combative start to his Asia policy when he agreed to speak directly on the telephone to the Taiwanese president, Tsai Ing-wen, in defiance of decades of Chinese pressure to isolate Taiwan (see Banyan). It remains unclear whether Mr Trump has a clear goal in mind, beyond showing China his toughness.

In the end the Asia rebalance will not live or die because of where ships are moored. The larger threat involves Mr Trump's "America First" mistrust of multilateral alliances and pacts, including TPP. Fitfully, and with many false starts, a greater American presence has prompted new co-operation between Asian nations united by fears of Chinese bullying and North Korean brinkmanship, and by a desire to build a more open and inclusive economic order. Trumpian appeals to nationalism could unravel fragile new alliances. If that happens, China would be the big winner: it has always loathed the Asia rebalance and prefers to pick off countries one by one. Admirals, officials and lines of Japanese sailors heard Mr Carter's farewell argument on the deck of the *Izumo*. He is set to repeat it in India, his next stop. But the audience that counts is one man, high in Trump Tower. ■

Also in this section

Colombia's peace agreement

A tumultuous final chapter

BOGOTÁ

The deal to end a half-century of violence is now in effect. But without a direct blessing from voters, the country may remain divided

THE announcement that Juan Manuel Santos, Colombia's president, had won the 2016 Nobel peace prize came just as his effort to end the country's long-standing conflict faced an unexpected test. In a referendum five days earlier, voters had rejected—by a margin of just 0.4 percentage points—the peace accord he had signed with the Revolutionary Armed Forces of Colombia (FARC), the country's strongest leftist guerrilla group. The surprise result caught both sides off guard, leaving them scrambling to salvage the agreement.

Mr Santos and the FARC quickly hammered out a revised deal. On November 24th the president and the guerrillas' leader, Rodrigo "Timochenko" Londoño, signed it in a sombre ceremony at a small theatre in Bogotá. Congress ratified the new terms six days later. On December 6th the FARC's nearly 6,000 troops began moving from their jungle camps to demobilisation zones, where they will disarm and prepare for life as civilians (although some of the designated areas were not yet equipped to receive them). So when Mr Santos takes the stage in Oslo to receive the peace prize on December 10th, he will be feted for officially bringing the longest-lasting conflict in the Americas to an end.

Nonetheless, the mood is likely to be far less festive than it was at the signing of the first settlement in September. The president had promised time and again that Colombian voters would have the last say in any agreement with the FARC. But after his defeat at the polls in October, Mr Santos was forced to choose between unpalatable options. Putting the updated terms to a new referendum risked a devastating second rejection. Instead, he settled for legislative passage. That eliminated the risk of a return to war, but also meant the pact will lack the democratic reinforcement of a formal seal of approval from voters.

Mr Santos hoped to close the book for good on Colombia's 52 years of strife. Mercifully, the fighting chapter now seems to be over. The denouement, however, may still prove long and contentious.

The more things change

Mr Santos and the FARC say they listened closely to the No campaign's message, and made substantial alterations to over 50 points in response. No longer will the pact be incorporated into the constitution, which would have burdened that document with ephemeral policy choices. A tribunal dispensing "transitional justice" will not include foreign magistrates, as the earlier version permitted. And the new text clarifies that the agreement will not affect private-property rights.

However, the FARC refused to accept the core demands of the No side, including stiffer penalties and a ban on political participation for guerrilla leaders responsible for war crimes. As a result, those deal-breaking proposals remain absent from the accord. Meanwhile, the government's modest concessions on social legislation, such as a scheme to distribute and develop rural land, survived the revision. That rankles with voters who saw the FARC as a defeated terrorist group, with whom negotiations should have focused on the terms of surrender, not public policy.

The accord's most extreme opponents may be trying to undermine it by force. In a grim reprise of the terror wrought by right-wing paramilitary organisations in the 1980s and 1990s, 13 leaders of grassroots activist groups were killed between the day the first settlement was signed on September 26th and November 30th, according to the UN High Commissioner for Human Rights. However, this rate is only slightly higher than it was during the year's first quarter, when the talks had still not produced an agreement. Nonetheless, the continuing murders demonstrate the limits of the peace deal. Far more victims have suffered injuries and death threats.

Marcos Calarcá, a FARC spokesman, says that these reprisals aim to "derail the peace process". So far, no evidence has emerged of any systematic plan to sink the accord through violence. However, José Félix Lafaurie, the head of Colombia's association of cattle ranchers—many of whom financed reactionary paramilitaries in the past—has warned pointedly that his group will act as a "bulwark against the FARC's aim of having territorial control".

In order to forestall any potential return to broader fighting, Mr Santos needs to show quickly that the pact will bring peace on the ground. The FARC are scheduled to hand over their last batch of arms to a UN commission by April 30th. But the state has to begin implementing the accord first, which requires Congress to pass dozens of bills and constitutional amendments.

Opponents of the deal, who are out- ▸▸

numbered in the legislature, are now likely to focus on prolonging this process. Their leader, the senator Álvaro Uribe, was Mr Santos's predecessor as president and former political patron, but split with him over the peace talks. His party walked out in protest when the pact came to a vote, letting it pass unanimously in both houses.

Under normal legislative rules, it could take up to a year to approve an amnesty for rank-and-file guerrillas. That would push the debate into the campaign for the 2018 presidential election, in which parties will be tempted to pander to hardline voters and Mr Santos's coalition could splinter. Already, members of the centrist Radical Change party, led by the vice-president, Germán Vargas Lleras, say that they may try to modify the necessary laws.

However, the judiciary may come to Mr Santos's aid. His allies in Congress hope to use a "fast-track" mechanism, which shortens the deliberation required before voting and would allow the majority to implement the settlement in short order. The constitutional court is expected to rule on this effort by December 12th.

Even if the accord does get fast-tracked, there is a strong risk that the election becomes a de facto second referendum. Mr Santos and Mr Uribe have both served two terms and cannot run. Mr Londoño has called on parties who support the deal to rally around one candidate who would ensure its implementation. The most likely choice would be Humberto de la Calle, who negotiated the pact for the government. Conversely, Mr Uribe's party will probably field a candidate promising to dismantle as much as possible. The more progress is made in the coming months to convert a paper agreement into facts on the ground, the harder it will be to reverse—and the likelier voters will be to choose a president who promises to preserve it. ■

Bello | The power of the Andean sun

Latin America is set to extend its lead in alternative energy

BESIDE the Pan-American Highway, almost 600km (375 miles) north of Santiago, Chile's capital, lies El Romero, the largest solar-energy plant in Latin America and among the dozen biggest in the world. Its 775,000 grey solar panels spread out across the undulating plateau of the Atacama desert as if they were sheets of water. Built at a cost of \$343m by Acciona Energía, a Spanish company, last month El Romero started to be hooked up to the national grid. By April it should reach full strength, generating 196MW of electricity—enough to power a city of a million people. A third of its output will be bought directly by Google's Chilean subsidiary, and the rest fed into the grid.

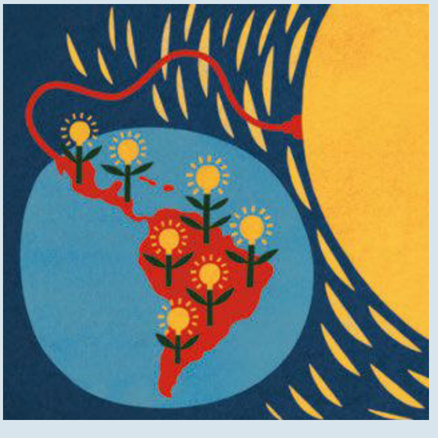
El Romero is evidence of an energy revolution that is spreading across Latin America. The region already leads the world in clean energy. For almost seven months this year, Costa Rica ran purely on renewable power. Uruguay has come close to that, too. In 2014, the latest year for which comparable data exist, Latin America as a whole produced 53% of its electricity from renewable sources, compared with a world average of 22%, according to the International Energy Agency.

The region's impressive clean-energy production is boosted by an abundance of hydropower. Big dams are increasingly controversial: in recent years, Brazil and Chile have blocked hydro-electric projects in environmentally sensitive areas. Alternative energy sources, such as wind, solar and geothermal, still only account for around 2% of Latin America's output, compared with a world average of 6%. Nonetheless, there are several reasons to think this share will grow quickly.

One is the region's natural endowment. El Romero, for example, enjoys 320 days of sunshine a year. On the horizon, amid the Andean mountaintops, sit two astronomical observatories, testament to the clarity of the air. Much of Latin America is well suited to solar and wind power; volcanic Central America and the Caribbean have geothermal potential.

Worldwide, technological progress and economies of scale have slashed the cost of green energy. Once built, solar plants are much cheaper than thermal power stations to operate. "El Romero is a symbol that alternative energy is no longer alternative. It's the most commercial now," says José Ignacio Escobar, Acciona Energía's boss in Chile.

Countries such as Chile, Brazil, Mexico and recently Argentina have tweaked their regulations to encourage alternative energy without having to offer subsidies. Some have held auctions for generation contracts purely for renewables, points out Lisa Viscidi, an energy specialist at the Inter-American Dialogue, a think-tank in Washington. Chile's regulatory framework is trusted by investors; it has encouraged renewable generation by auctioning smaller contracts. It has set a target of producing 20% of its electricity from non-hydro renewable sources by 2025. Argentina and Mexico have similar goals.

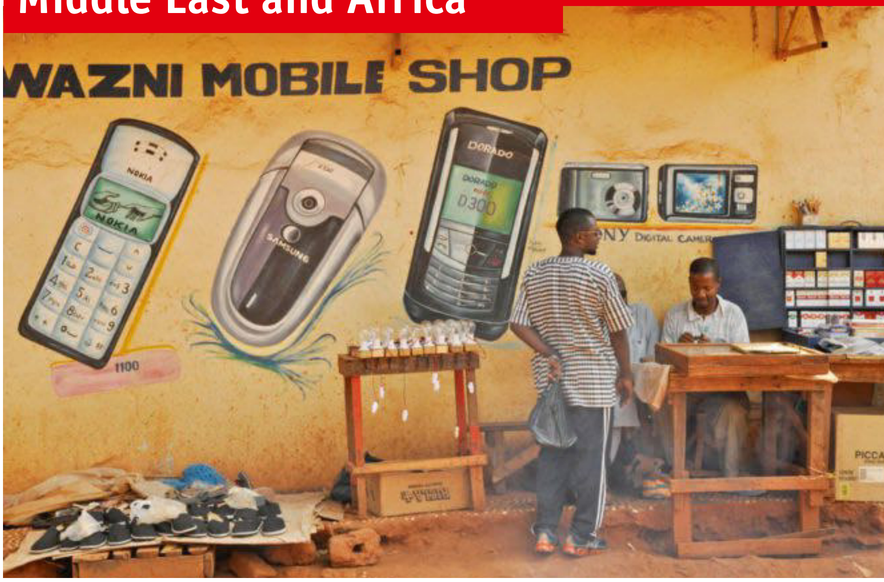


There are two pitfalls. In Chile, the penalty for failing to fulfil contracts is low, which means the winners of auctions may pull out later if they do not raise financing. Moreover, both solar and wind power are intermittent. That means they need to be paired with baseload generation. In many Latin American countries this tends to come from natural gas, which emits less carbon than oil, though in Chile it is coal. Greater efforts to connect grids between countries might reduce the need for fossil fuels as a backup.

Renewable energy offers big benefits to the region. Chile is short of domestic fossil fuels. As a result of its latest auction of energy contracts, by 2025 prices should be a third lower than they are now, reckons Andrés Velasco, a former finance minister. By promoting renewables, Latin America is helping to curb carbon emissions globally—though it also needs to do more to stop deforestation and encourage public transport.

That matters for political as well as altruistic reasons. Latin Americans worry more than anybody else about climate change, according to polling by the Pew Research Centre, a think-tank. They have good reason. The region is prone to natural disasters and extreme weather. To take one current example, Bolivia last month imposed water rationing in La Paz, the capital. The three reservoirs that serve the city are almost dry. Lake Poopó, once a large freshwater body in the altiplano, has all but dried up, seemingly permanently.

Outside Chile and Colombia, coal deposits are scarce in Latin America. That is one reason why industrialisation came late to the region. In the 21st century, it may turn out to be an advantage in helping Latin America move swiftly to a post-carbon economy.



For daily analysis and debate on the Middle East and Africa, visit
Economist.com/world/middle-east-africa

Telecommunications in Africa

Continental disconnect

ACCRA AND CAPE TOWN

Mobile phones are transforming Africa, where they can get a signal

DRIVE a few miles from the centre of Accra, the capital of Ghana, into the neat rows of houses that surround it and the paved roads disappear almost as quickly as the phone lines. Yet this has not dented the ambitions of Kwami Williams, a graduate of the Massachusetts Institute of Technology (MIT) who is building a business processing moringa trees and exporting the resulting tea and cosmetic oils. Before mobile-phone usage exploded across Africa, starting a venture such as this on a shoestring would have been impossible—the costs of communicating with the thousands of smallholders who grow the trees would have been prohibitive. Now this business supports some 1,500 farmers.

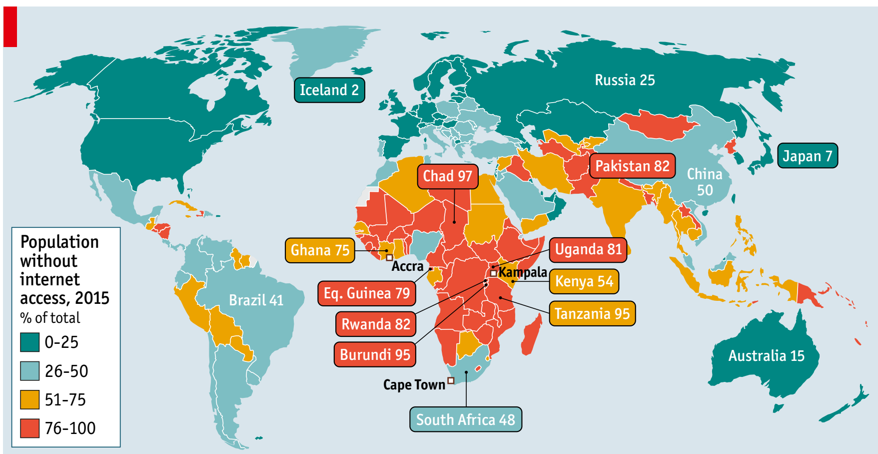
Across Africa, similar magic is being wrought as phones spur innovation and boost incomes: farmers use them to check market prices before selling to middlemen, and market traders can accept payments in mobile money. A study by academics from MIT, published this week, found that simply by gaining access to M-Pesa, Kenya's mobile-money service, 2% of Kenyan households were lifted out of poverty between 2008 and 2014.

The precise impact of phones on economic growth is notoriously difficult to measure (although that does not stop trade bodies and consultants from issuing gushing reports filled with unnervingly exact numbers). The GSMA, an international trade body, argues that for every 10% increase in phone penetration in poor countries, productivity improves by more than four percentage points, and that a doubling in mobile-data usage increases annual growth in GDP per person by half a percentage point. Yet more may be in store as Africa stands on the cusp of a second mobile-phone revolution.

A decade ago there were only 129m mobile-phone subscriptions in the whole of Africa, though even that was already ten times more than the number of fixed-line phones. But since then the number of active subscriptions has jumped to almost 1bn. At first blush that would suggest that just about every African (there are 1.2bn of them, with north Africa included) now has a phone. In fact, a large number of Africans have are consummate *arbitrageurs* of tariffs, switching SIM cards in and out of their phones depending on whom they are calling. Dig a little deeper into the data and it turns out that fewer than half of Africans have phones. Those who do tend to live in cities and are richer and better educated than the half who do not. The latter risk being left even further behind.

This divide is even more extreme when it comes to gaining access to the internet. Although mobile phones have revolutionised the way Africans get online—most have jumped to cyberspace directly on their phones rather than on computers connected through fixed lines—many are still not connected to the world. The International Telecommunication Union (ITU) reckons that three-quarters of Africans do not use the internet, compared with just 21% of Europeans (see map).

There are two main reasons why so many Africans lack even simple phones. The first is that Africa is a very large continent in which the majority of people are scattered among farms and small villages. Powering phone masts in remote areas is a challenge: phone companies typically rely on expensive diesel generators that need regular refuelling. And the masts also need ▸▸



Source: The International Telecommunication Union a way to transmit calls and data to and from the broader network, so phone companies spend another fortune laying cables or buying bandwidth on satellites to do so. Little wonder, then, that only around 43% of Africans can get a 3G data signal, and just 16% can get one offering fast (4G) mobile broadband.

The costs of downloading data are also higher in Africa than in most other parts of the world, in part because the bytes have to get there on long submarine cables and then snake their way inland over thousands of miles of rough terrain. Of the ten countries with the highest fixed-broadband costs in the world, seven are in Africa. They include landlocked Uganda, Rwanda and Burundi; Chad tops the list at $501 a month for a connection. Poverty compounds the problem, particularly in sub-Saharan Africa where about 40% of people live on less than $1.90 a day. Phone companies have little reason to expand their coverage into villages if people there cannot pay enough to make it profitable.

Yet several technological changes may soon lead to another sudden shift in phone and internet use in Africa. The first is a rapid fall in the cost of connecting Africa to the rest of the internet. New cables gird the continent and reach inland, increasing competition and driving down costs. Firms such as Google are installing fibre networks in cities such as Accra and Kampala in a bid to drive down the costs of data. Satellites are improving, too. Michel Azibert of Eutelsat, a satellite firm, says advances in technology mean that the cost of transmission capacity will fall to a fiftieth (about $1m per gigabyte) by 2020 compared with older satellites.

The last, and perhaps most important, changes include innovations that dramatically lower the cost of serving remote villages. Firms such as Nuran Wireless and Vanu are working on small, solar-powered mobile masts, which can be erected and operated for less than a quarter of the cost of conventional ones. The masts beam low-power signals that do not travel far, but they do away with the need for a generator. Such improvements may allow firms to make a profit from villagers spending as little as $2 a month to talk on their phones. Others, including Eutelsat, are looking at ways of beaming satellite internet down to base stations that then distribute it across a village using cheap Wi-Fi equipment.

Unfortunately, in many countries mobile-phone companies are an easy source of tax. In Tanzania, for instance, phone companies pay almost half their revenues to the government. In Ghana the cost of handsets is inflated by taxes of almost 38%. A second mobile-phone revolution in Africa would do much to boost its economies and transform the lives of its people. But it will not happen if governments keep standing in its way. ■

Gambia's election

Strongman down

An old-style African despot does the right thing and goes

ALTHOUGH widely believed to have consulted fortune-tellers, President Yahya Jammeh surely foresaw little chance of an upset in the elections in Gambia on December 1st. Ahead of the polls, the man who once vowed to rule for "a billion years" had already boasted that he was Allah's preferred candidate. Just to make sure, he had the main opposition candidate arrested in April for the crime of holding an unauthorised protest. His new rival was an estate agent called Adama Barrow (pictured), whose less-than-glamorous biography included a stint as a security guard at Argos, a discount store, on London's Holloway Road. On polling day Mr Jammeh cut off the internet.

Yet despite government ministers poking fun at his modest past, Mr Barrow pulled off a big political upset in results announced on December 2nd, winning by 45.5% to Mr Jammeh's 36.7%. Even more surprisingly—and to his great credit—Mr Jammeh quickly conceded defeat. By the evening, streets that many had feared could become a battleground were full of partying crowds tearing down posters of their outgoing president.

The vote ends the rule of one of the last of Africa's old-school strongmen. Mr Jammeh had clung to power since a coup in 1994 and often seemed to combine some of African leaders' worst traits. From his dire human-rights record to his long personal title of "Excellency Sheikh Professor Doctor President", Mr Jammeh was every inch the eccentric Big Man, even adding a few new quirks of his own to the genre. There was his huge six-wheeler Hummer, for example, that sped him along Gambia's bush roads, and his practice of witchcraft, notably his claim to have invented a herbal cure for HIV.

Against all this, Mr Barrow's victory is all the more remarkable. A diffident figure, he lacks his predecessor's showmanship, and indeed would not have been running at all had his United Democratic Party's chosen candidate, Ousainou Darboe, not been jailed. But what Mr Jammeh intended as a pre-emptive strike against the opposition backfired spectacularly. For while Mr Darboe was in his late 60s and considered a little past his prime, his replacement, Mr Barrow, was only 51 years old and more of a consensus candidate. Though hardly a compelling orator, he speaks most of Gambia's ethnic languages, which may help him heal the tensions that have simmered between Mr Jammeh's minority Jola tribe and the bigger Mandinka group.

Mr Barrow was very much the underdog. For a start, Mr Jammeh hogged most of the media airtime—many Gambian newspapers were wary of even covering opposition rallies. And as with most strongmen, he enjoyed a bedrock of support, thanks to the ease with which he could get things done. Under his stern stewardship, Gambia's roads, electricity, schools and hospitals improved. The country also avoided the wars, plagues, famine and terrorism that have hit the rest of West Africa during his 22-year rule.

But Mr Jammeh's isolated progressive acts—like last year's ban on female circumcision—were overshadowed by his feverish anti-Western posturing. In the past three years Mr Jammeh has withdrawn Gambia from the "colonialist" Commonwealth, scrapped English as an official language and, in October, quit the International Criminal Court (ICC), which he denounced as the "International Caucasian Court". With the West threatening sanctions over his human rights record, many feared the country was becoming a pariah state. Emigration was increasingly attractive. According to the Migration Policy Institute, Gambia's net migration rate in 2013 was 2.3 departures per 1,000 people, the tenth highest in Africa. UN figures show that Gambians make the sixth-most-common national group of migrants crossing the Mediterranean by boat this year—a remarkable number given that the country's population is just 1.9m.

A court has now freed Mr Darboe and other political prisoners, while Mr Barrow has said that among his first acts will be to rejoin both the Commonwealth and the ICC. There remains the question, though, of what to do with Mr Jammeh himself. One option is that he seeks exile in Saudi Arabia, already a sanctuary to other ousted strongmen like Tunisia's Zine el-Abidine Ben Ali. But many in the opposition want Mr Jammeh prosecuted over hundreds of cases of "disappeared" comrades, a demand that might see him withdraw his offer to retire quietly, or even risk a coup. At a time when African democracy has often seemed to be in reverse, Gambia's swift transfer of power is a sign of hope. However, Mr Barrow, who once watched out for miscreants at Argos, will need to keep his eyes peeled once again. ■

South Sudan

Genocide or mere atrocity?

JUBA

South Sudan's war expands

AT AN orphanage at the edge of Juba, South Sudan's battered capital, there are no longer any children. Yellowing toothbrushes sit in a tin hanging in the sun; muddied exercise books litter the floor. The only occupants now are a few soldiers who lounge around in the shaded huts listening to the radio. The orphanage, which is run by an Austrian NGO, had to move to a more secure part of town after fighting broke out nearby in July. It is now considering moving back—but only if the security lasts, a tough call in a country beset by economic crisis and dire warnings of a possible impending genocide.

The fighting in July was between the forces of Salva Kiir, the president, and Riek Machar, the former vice-president, after a peace deal, never properly respected in the first place, broke down. In the fighting, which lasted several days, Mr Machar's forces were chased out of Juba. Since then the city has returned to an uneasy calm. But the rest of South Sudan has not. A war that had previously been concentrated in the swampy north of the country has spread to southern areas, which had been peaceful. Worse, the fighting has fomented violence between ethnic groups. Diplomats are proving slow to respond.

The new battlefields are in the Equatoria region, along the borders with Uganda and the Democratic Republic of Congo. Equatorians have a reputation for being educated professionals, who have largely stayed out of politics. But the spread of Dinka cattle herders into their territory, together with a sense of exclusion from the Dinka-dominated government (Mr Kiir is a Dinka), has fuelled resentment. In July, when Mr Machar fled from Juba, walking to Congo over a period of 40 days, he exploited this effectively, militarising Equatorians as he went along, explains Alfred Taban, the editor of the *Juba Monitor*, a newspaper.

In South Sudan, the violence typically follows a pattern, of attacks launched by Mr Machar's opposition that are punished by government reprisals, which often target civilians. And indeed as the government has lost its grip in Equatoria, its soldiers—from the predominantly Dinka armed forces—have been harming civilians on ethnic lines. Entire towns, such as Yei, a city near the border once known for its cultural life, have reportedly been denuded of people. Since July the number of South Sudanese refugees in Uganda has increased from 250,000 to almost 600,000. New arrivals cross the border at a rate of 25,000 a week.

This has sparked a furious debate about what to call the violence. On November 11th Adam Dieng, the UN's special adviser on the prevention of genocide, said that there was a "strong risk of violence…with a potential for genocide". In Juba, many analysts fiercely dispute the term—they say it is a desperate attempt to get attention for a conflict that has been largely ignored by the international community. But few deny that ethnic violence has spread.

What happens now may depend on the world's response. After Mr Dieng's comments, America seems more likely to embrace a proposed UN arms embargo that it has hitherto been uncertain about (not least because Russia might veto it).

The South Sudanese government, in an attempt to avert this pressure—and perhaps to attract aid that would slow an economic crisis that has produced an inflation rate of 830%—has embraced the idea of a "regional protection force" of soldiers from neighbouring countries. But whether it would actually let them stop the violence is uncertain. South Sudan already has 12,000 UN soldiers on its territory. Some 210,000 people languish in UN protection camps, unable to go home. And outside, the conflict goes on. ■

Saudi Arabian diplomacy

Outpaced by Iran

RIYADH

After a year of boldness, Saudi Arabia is in retreat

IN JANUARY this year Muhammad bin Salman, the young deputy crown prince who in effect runs Saudi Arabia, declared an end to his country's "comatose" foreign policy and a determination to push back against Iran. The Syrian rebels he supported looked unbeatable in Aleppo. His generals spoke of the imminent capture of Sana'a, Yemen's capital, from the Houthi rebels who had seized it. He kept Iran and its client militia, Hizbullah, from imposing their choice of president in Lebanon. Officials spoke of bankrupting Iran by saturating the market with oil, regardless of the wishes of OPEC partners. A Saudi ambassador even went back to Baghdad, for the first time in 25 years.

But at the end of the year the kingdom finds itself in retreat on all fronts. Its ambassador has pulled out of Iraq, fleeing a torrent of abuse from Shia politicians who look towards Iran. Pounded by Iranian, Russian and Syrian government forces, the rebels in Aleppo are on the verge of defeat. The Saudis have bowed to Iran's preference for Lebanon's president. And at an OPEC meeting on November 30th, they agreed to shoulder the largest share of a production cut in a bid to restore prices, while letting Iran raise its production to pre-sanctions levels.

In Yemen, Saudi Arabia's Houthi foes seem bent on denying Prince Muhammad a dignified exit, launching repeated cross-border raids and last week declaring their own new government, rather than agree-

Nothing but bad news

ing to form one including the exiled president as the prince wants. "Yemen will be Saudi Arabia's Vietnam," says a contemptuous Iranian official. "It is bleeding the Saudis' military and diplomatic prestige." If Saudi Arabia agrees to leave the rest of the region, he says, Iran will let it keep Bahrain, the little island state linked by a causeway to Saudi's eastern coast.

This reversal of fortune owes much to the successes of Iran's military support for the Arab world's Shia and allied forces—Syria's President Bashar al-Assad, Iraq's army and paramilitary forces, and Lebanon's militia-cum-political party, Hizbullah. "They are surrounding us with militias," protests General Ahmad Asiri, who advises the deputy crown prince on the Yemen campaign. But Saudi Arabia is also losing soft power, cutting its funding to traditional Sunni allies, who have begun looking elsewhere. With his construction firm in Saudi Arabia in trouble because of government cuts, Saad Hariri, who heads Lebanon's Sunni bloc, has accepted the post of prime minister under Hizbullah's choice for president. Egypt's President, Abdel-Fattah al-Sisi, is making overtures to Syria, Russia and even Iran after Saudi Arabia cut back shipments of free oil.

As relations fray in the broader region, the prince is trying to strengthen ties with the principalities in his back yard. King Salman, his father, made a rare foreign trip to four Gulf states in early December. A summit in Bahrain's capital, Manama, which ended on December 7th, aimed to advance plans to turn the Gulf Cooperation Council into a Gulf Union with tighter defence co-ordination. But there, too, not all are convinced. "There's a latent fear of Saudi hegemony," says Becca Wasser, who monitors the Gulf for RAND Corporation, an American think-tank. Oman, in particular, prefers to be semi-detached.

Still, the OPEC agreement defied expectations, indicating that both Iran and Saudi Arabia can prioritise economics over regional confrontation. Both are failing to cover domestic spending, let alone foreign adventures. Iran's government needs oil at $55 per barrel to break even, says the IMF; Saudi Arabia's needs $80. "The oil producers can't sustain the external and proxy wars they once could when oil was a $120 a barrel," says a former World Bank economist in Beirut. "They realise they need to change." Greater stability and more open borders, too, says an Iranian official, would help Iran find new markets for other exports, such as of cars and cement.

The coming of Donald Trump in America is a further reason for restraint. "Both countries are playing a waiting game," says Adnan Tabataei, the head of CARPO, a Bonn-based think-tank which is running "track 2" (non-official) talks between Saudis and Iranians. Both fear Mr Trump's reputation for impulsive action—even a senior Saudi prince has urged him not to break off the global deal that has limited Iran's nuclear programme. Both sides seem uncertain whether he will tighten sanctions on Iran or ratchet up JASTA, the new law that allows Americans to sue Saudi Arabia for losses on September 11th 2001. Above all, and despite the influence of hardliners in both camps, neither side wants anything resembling a direct war.

But tensions are not abating; quite the reverse. Saudi Arabia severed diplomatic relations with Iran in January because of an attack on its embassy in Tehran that followed the execution of a prominent Shia cleric and three other Shias. This week came the news that 15 more Shias have been sentenced to death in Saudi Arabia on charges of spying for Iran. ■

Israel's army

Welcome to Tank Girl

JERUSALEM

A backlash from the rabbis

REPORTS that the Israeli army's general staff is considering allowing women to serve in tank crews have caused shock waves to ripple through the ranks, and also within Israel's religious establishment, which opposes mixed-gender service in combat units.

Religious Israelis have been making up a growing number of the soldiers in the Israel Defence Forces' (IDF) elite units for years now. But under the current chief of staff, Lieutenant-General Gadi Eizenkot, there has been a deliberate attempt to curb the rabbis' power.

Over the past year this has included transferring some of the roles of the Military Rabbinate to the largely secular IDF Education Corps, and enforcing various regulations on religious soldiers, such as forbidding them to grow beards without a senior officer's approval. Many on the religious side see allowing more female combat troops as simply the latest attempt at secularising the IDF.

The rabbis have been warning that if more combat units are mixed, their students who abide by strict Jewish-orthodox codes of gender segregation will refuse to serve in them. The official position is that religious soldiers can always serve in their own separate formations, and that decisions to allow women to serve in combat are made according to strictly operational considerations. However, both sides are fighting a wider battle for control of the army.

Historically, the IDF was seen as a pioneer in women's military service, enlisting them from 1948; it has always seen the need to draw from as wide a pool as possible. But even so, it limited women to non-combat roles.

Only gradually over the past two decades, partly in response to legal and political pressure, has it opened up units such as the artillery corps, as well as pilots' and naval officers' courses, to female candidates. While a small number of light-infantry battalions now have men and women serving side-by-side, the armoured corps and the elite infantry brigades, which contain a high proportion of religious soldiers and officers, have remained closed to them.

Many of the army's field officers now feel that they are being used as political footballs. As one put it this week, "Our job is to be an efficient fighting force, not a lab for social experiments or a battleground in this country's cultural wars."

Also in this section

For daily analysis and debate on Europe, visit
Economist.com/europe

Post-referendum Italy

Grim non-resignation

ROME

Matteo Renzi may not keep his pledge to step down

SHORTLY after midnight on December 5th, Matteo Renzi, Italy's prime minister, faced the media for an emotional farewell strikingly reminiscent of that of David Cameron following the Brexit vote. It appeared that the anti-elite torrent sweeping the West had claimed yet another victim. The day before, Italians had resoundingly defeated Mr Renzi's proposals for constitutional reform. Flanked by his wife, he announced he would resign: "My experience in government ends here."

Mr Renzi had always said he was different from other Italian politicians, who hang on to their posts and privileges with the tenacity of pit bulls. If he failed to convince voters to back his vision, he said, he would leave office, and maybe politics. During the referendum campaign, he said repeatedly that he did not intend just to "stay afloat" if defeated. Apparently true to his word, he later tendered his resignation to the president, Sergio Mattarella, who asked him to stay for long enough to secure the passage of next year's budget.

Yet even before the finance bill was approved in parliament on December 7th, it became clear that Mr Renzi had either changed his mind or had been play-acting. Despite his formal resignation he now seems determined to continue to play a decisive role in Italy's affairs. At a meeting of the executive of his party, the centre-left Democratic Party (PD), at which no debate was allowed, he spelled out the options he was prepared to countenance: a broad-based government of national unity, led or dominated by his party; or an election as soon as possible after a Constitutional Court ruling on the electoral law on January 24th, in which he would be the PD's candidate. "The Democratic Party is not afraid of democracy," he said.

But many PD lawmakers are. They would lose their parliamentary pensions if the session ends before September. Obliquely, Mr Mattarella signalled that he too was appalled by the idea of a snap election—though for different reasons. It would mean the two houses of parliament being elected under flawed and radically different rules, with the likelihood of one chamber lacking a clear majority, and the possibility of each being controlled by different parties or alliances.

Electoral collage

This mess stems from Mr Renzi's botched constitutional reform. It envisaged turning the Senate into an indirectly elected revising chamber of regional officials. So last year an electoral law was passed that applied only to the lower house, the Chamber of Deputies. It is this law, known in Italian political jargon as the Italicum, that is being examined by the Constitutional Court. Elections for the upper house remain governed by an earlier law that the same court has modified into an extreme form of proportional representation.

In the consultations the president began on December 8th, Mr Mattarella is expected to insist that the next government frame a new set of electoral rules that apply to both houses. But that could take a year or more, and Mr Mattarella faces a challenging task imposing his will.

The prime minister, whose party and its allies have a majority in both houses, is not the only figure saying he would be happy with an early election. Italy's second-largest party, the Five Star Movement (M5S), is pressing for one, as are two of the three parties on the right. The exception is Forza Italia, or rather its leader, Silvio Berlusconi. He needs time to heal splits in his movement and try to wrest back the leadership of the right from Matteo Salvini, the populist, Eurosceptic head of the Northern League. But the 80-year-old Mr Berlusconi, who had open-heart surgery earlier this year, may be struggling with the stress: shortly before Mr Renzi resigned he was taken to hospital, suffering from "slight palpitations".

Mr Renzi's manoeuvring since the referendum helps explain why he is seen by much of the electorate as the epitome of a mainstream politician, and why the referendum, which he turned into a vote of confidence by threatening resignation if he lost, was such a fiasco. The 20-point margin of defeat—60% to 40%—was almost double what pollsters had foreseen. The highest No margins were among 30- to 40-year-olds and in Italy's poorest regions, where dissatisfaction with the government's disappointing economic record is strongest.

Not only Mr Renzi's opponents, but also some in his own party openly celebrated ▸▸

the outcome. "I didn't know they hated me so much," he was reported as telling an aide. That was disingenuous. Mr Renzi styled himself the "Demolition Man"; he took an axe to the PD's old guard and then ousted his predecessor as prime minister, the gentlemanly Enrico Letta, after publicly assuring him he had no plan to do so.

Right-wing populists such as Nigel Farage in Britain and Marine Le Pen in France hailed the referendum result as a victory for Euroscepticism. But though Mr Salvini is a shrill critic of the EU and the M5S wants a referendum on the euro, European issues played little part in the campaign.

Even so, Italians may have unintentionally lit one, or perhaps two, fuses under Europe. One is financial. Political uncertainty has returned at a time when several Italian banks, laden with bad loans, are trying to strengthen their balance-sheets with injections of cash. The jitters have reportedly already threatened a private-sector recapitalisation of Italy's third-largest and weakest lender, Monte dei Paschi di Siena (see page 68). If a government rescue proves necessary, the hope is that it will be enough to prevent a chain reaction that could spread to other cash-strapped lenders.

The second fuse may lead through the early election that Mr Renzi backs. These could end in a victory for the M5S and its founder, Beppe Grillo, an anti-establishment political comedian in the mould of Michael Moore, an American film-maker. The mainstream parties will strive to keep his maverick movement out of power, but they may be forced to form unnatural and fractious coalitions of right and left that become paralysed by the incompatibility of their component parts. And with an economy that has scarcely grown since the turn of the century, paralysis is the last thing that Italy needs. ■

Russia's active measures

The motherland calls

Russian propaganda is state-of-the-art again

FOR much of post-Soviet history Russia was seen as an outlier whose politics would inevitably move towards those of the West. After the Brexit vote and the election of Donald Trump in America, it appears the opposite is taking place: the style of politics practised by Vladimir Putin's regime is working its way westward.

From the Mediterranean to the Pacific, Mr Putin is hailed as an example by nationalists, populists and dictators. "My favourite hero is Putin," said Rodrigo Duterte, the brutal president of the Philippines. Mr Trump called Mr Putin "a leader far more than our president." In Italy Beppe Grillo's Five Star Movement took Mr Putin's side against the West, and the anti-immigrant Northern League, led by Matteo Salvini, has enthused about his Russia. "No clandestine immigrants, no squeegee merchants and no Roma encampments [in Moscow]," tweeted Mr Salvini during a visit in 2014.

In France Marine Le Pen, whose National Front received a loan from a Russian bank, attacks the European Union and America for being too aggressive towards Russia. In the words of Dimitar Bechev, the author of a forthcoming book on Russia in the Balkans, "Putin enjoys a cult status with all holding a grudge against the West." Nowhere is that status greater than with the nationalists of America's "alt-right". Matthew Heimbach, the founder of the Traditionalist Worker Party and a crusader against "anti-Christian degeneracy", told the *New York Times* he sees Mr Putin as "the leader of the free world." He called for the creation of a "Traditionalist International"—a reference to the Communist International founded in 1919.

The last time Russia had such a role in crystallising anti-establishment ideas was in the 1920s and 1930s, after the Bolshevik revolution. When Stalin wrote that the Soviet Union had become an "open centre of the world revolutionary movement", it was not just propaganda. In her book, "Moscow, the Fourth Rome", Katerina Clark, a historian, writes that Moscow aspired to form the centre of a new civilisation, attracting Western intellectuals and claiming to be the only legitimate heir to the world's greatest artists. "Moscow as a concept is the concentration of the socialist future of the entire world," wrote the Soviet film-maker Sergei Eisenstein in 1933.

Today, 25 years after the Soviet collapse, Russia is again seen as an emblem—this time of a nationalist imperial order. And just as in the 1930s, its isolationism does not prevent it from being involved in the global populist, anti-establishment trend. The Kremlin's bet on marginal right-wing parties has paid off as they have moved into the mainstream. It has pumped out disinformation and propaganda both through its official media channels, such as the RT and Sputnik news networks, and through thousands of paid internet trolls. Its cyber-attacks against Western countries produced troves of emails and documents which it dumped into the hands of foreign media, disrupting America's presidential elections to the benefit of Mr Trump.

According to Bruno Kahl, the boss of Germany's internal intelligence agency, the BND, "Europe is the focus" of Russia's cyberattacks and disinformation—especially Germany, which will hold a federal election next autumn. France's spooks say Russian backers may interfere in its presidential elections, too. Such activity recalls the Soviet Union's so-called "active measures", which aimed to disrupt and discredit Western democracies. In West Germany, says Anton Shekhovtsov, an expert on European far-right movements, the KGB propped up not only Communist parties and militants such as the Red Brigades, but also extreme right-wing groups.

Unlike the Socialists of the 1930s, the Kremlin and its friends today are driven not so much by ideology as by opportunism (and, in Russia's case, corruption). Mr Putin's primary goal is not to present an alternative political model but to undermine Western democracies whose models present an existential threat to his rule at home. Having lived through the Soviet collapse, he is well aware that the attraction of the prosperous, value-based West helped defeat communism. The retreat of that liberal democratic idea allows Russian propagandists to claim a victory.

Mr Putin has been careful not to endorse his admirers, whether Ms Le Pen, Mr Trump or radical nationalist activists. The president proclaims himself "the biggest nationalist in Russia," but the nationalism he propounds is imperial rather than ethnically-based. Russia has nearly 20m ethnic Muslims, which makes official expressions of religious or racial chauvinism dangerous. Alexander Verkhovsky, an expert on Russian nationalism, observes that while the Kremlin fans and manipulates anti-Western nationalism, it has put grassroots ultra-nationalist groups within Russia under unprecedented pressure. In August a Russian court sentenced Alexander Belov, a leader of the banned Movement Against Illegal Immigrants (DPNI), to seven and a half years in jail. The DPNI's slogan is "Russia for [ethnic] Russians". Last month, a nationalist demonstration was confined to the far outskirts of Moscow. A dozen marchers were arrested.

The Kremlin "counters ethnic nationalism with its own version of state nationalism," Mr Verkhovsky writes—one based on wars and other state achievements, not on ethnic identity. In Mr Putin's view the nation must consolidate around events, figures and ideas provided by the Kremlin. The regime was spooked by the violent, spontaneous rally staged by radicals and football hooligans in Moscow in 2010, and by long-running anti-Putin protests in 2011-2012 that brought liberals and nationalists together. In response, it came up with an imperial state nationalism that manifested itself in the annexation of Crimea and the war in Ukraine.

By doing so it successfully split the nationalists. Many nationalist protesters rallied to the imperialist cause. Liberal protesters were demoralised. Some of the radicals went to fight in Donbass, and later resurfaced in Syria. Russia's actions abroad allowed Mr Putin to channel nationalist protest of any kind away from his own corrupt elite. And yet, while Mr Putin recognises the potential of nationalist populism in America and Europe to discredit democracies, he knows that it is a dangerous substance. After all, Mr Trump's victory could serve as an inspiration to Mr Putin's opponents, who see him as the epitome of the corrupt establishment. ■

Spain's minority government

Short-handed

MADRID

Mariano Rajoy's quest for governability in a fractured parliament

"AS BAD as having no government is having a government that can't govern," the Spanish prime minister, Mariano Rajoy, told parliament in October, just before the vote that gave him a mandate to form a new administration. Spain had grown rather used to the former situation: it spent ten months in a state of limbo, as two elections delivered parliaments so fragmented that no party could broker a coalition. It is a step forward that Mr Rajoy has been able to form a minority government. But as he foresaw, governing is not going to be easy.

The parliamentary arithmetic is unforgiving. Mr Rajoy's conservative People's Party (PP) has 137 of the 350 seats in the Cortes (parliament). It has the support of the 32 legislators of Ciudadanos, a liberal party. To pass laws, it must either scrape together seven further votes from Basque nationalists and Canarian regionalists (who want more autonomy for the Canary Islands), or hope the opposition Socialists abstain.

The first big test is next year's budget. The government faces contrasting pressures. It has promised the European Commission that it will cut the fiscal deficit from 4.6% this year to 3.1% in 2017. But the PP agreed with Ciudadanos to increase spending on job training and reverse some cuts. It also faces pressure from cash-strapped (and often spendthrift) regional governments. The answer, in the draft budget approved by the cabinet, has been to close loopholes in corporate tax, which officials hope will provide most of the extra €4.8bn ($5.1bn) in needed revenue in 2017. To win the acquiescence of the Socialists, the government set a slightly less strict deficit target for the regions and approved a rise in the monthly minimum wage from €655 to €708, the biggest in 30 years.

The underlying question is whether such a weak government can take the measures needed to sustain the country's economic recovery. Political uncertainty has already damaged investment, business and consumer confidence, and growth, says Rafael Domenech, an economist at BBVA, a bank. He expects a tighter fiscal policy, Brexit and further uncertainty to trim growth from 3% this year to 2.5% next. With Spain's public debt at 100% of GDP, he worries that the country will be hit by an increase in international interest rates before it has the deficit under control.

Pablo Casado, a PP official, reels off a list of measures on the government's agenda, including laws to boost competitiveness and to make all levels of the state more efficient, as well as seeking cross-party pacts on education and the financing of regional governments. But he admits that the government will have a fight on its hands just to prevent malcontents from repealing its past reforms of the labour market and education. Already it has been forced by the Cortes to drop new school tests that were part of its educational reform of 2013.

For Mr Rajoy, who enjoyed an absolute majority in 2011-15, the need to negotiate ▶▶

with opponents is a big change. But he is not under threat of eviction from the Moncloa, the prime-ministerial compound. To topple a government, the constitution requires a majority vote for an alternative one, something a divided opposition is unlikely to muster. And many opposition motions will be deflected into the long grass of parliamentary subcommittees.

Some in Madrid think the prime minister will be happy to trundle on like this through the remainder of this parliament's term. "He is not a great reformist," says Lorenzo Bernaldo de Quirós of Freemarket, a consultancy. "He is a conservative in the strict sense of the word, who favours the status quo." Others think Mr Rajoy will seize the right moment in the next year or two to call a fresh election at which he can hope to come closer to a majority. Either way, the prime minister's position is less weak than it looks. Indeed, compared to most countries in western Europe, Spain is starting to look like an island of relative political stability. ■

Austria's presidential election

Left hook

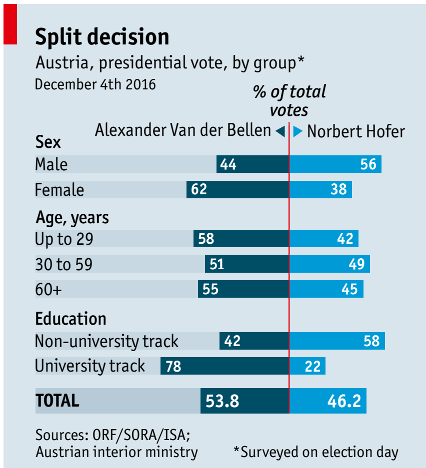
VIENNA

As populists win, the Freedom Party bucks the trend

AUSTRIA'S far-right Freedom Party (FPÖ) is finding it hard to come to terms with defeat. On December 4th its candidate, Norbert Hofer, lost to Alexander van der Bellen (pictured), an ex-leader of the Green party, in a rerun of the country's presidential election. Two days later the FPÖ's leader, Heinz-Christian Strache, blamed the loss on "overwhelming media power", which painted Mr Hofer as "the devil incarnate". On social media, Mr Hofer's supporters alleged massive voter fraud.

Their disappointment was understandable. Mr Hofer drew a respectable 46.7% of the votes, but he had expected to win, after falling just 31,000 votes short in the initial election in May. (That vote was annulled by the country's constitutional court because of irregularities.) Instead, Mr Van der Bellen's lead grew. Every other big party, as well as business leaders, artists, intellectuals and the mainstream media rallied behind him, hoping to avoid the embarrassment of being the first country in Western Europe to elect a far-right head of state since the second world war. The result suggested that most Austrians remain committed to European integration, the main theme of Mr Van der Bellen's campaign.

The demography of the vote resembled that of the Brexit ballot in Britain and Donald Trump's election in America (see chart). The populist Mr Hofer won majorities among men, those with less education and residents of rural areas. Women, those with higher education and city-dwellers backed Mr Van der Bellen.



The outcome is welcome news for Austria's embattled coalition of Social Democrats and the conservative People's Party, which had shown signs of falling apart. A day after the election the Social Democratic chancellor, Christian Kern, and Reinhold Mitterlehner, the People's Party chief, vowed to stick it out until the end of the parliamentary term in 2018. Austria's federal presidency is a mostly ceremonial post, but Mr Hofer could have used the office to put pressure on the government to step down. Poll after poll shows the FPÖ ahead of the two governing parties. But Mr Van der Bellen has said repeatedly that he would not appoint Mr Strache as chancellor, even if the FPÖ finishes first, because of its anti-European views.

Before the run-off, several senior officials in the People's Party defied Mr Mitterlehner by openly supporting Mr Hofer, a possible step toward forming a coalition with the FPÖ. The two parties governed together in the 2000s, when the FPÖ was led by Jörg Haider, a charismatic rabble-rouser. That government faced massive protests, and was briefly shunned by other European states. But with the rise of far-right parties in other European countries, a government that included the FPÖ would probably not face such ostracism. Even some regional Social Democratic leaders are calling for an end to the decade-old policy of ruling out coalitions with the FPÖ. This only forces the party into a permanent grand coalition with the People's Party, they say, feeding voters' frustration and strengthening the populists.

If elections were held today, polls show that the coalition would fall short of a majority in parliament, giving Mr Strache a chance to become chancellor. But thanks to Mr Hofer's defeat, the government has gained some time to improve its dismal popularity rating. The refugee crisis that began in 2015, in which Austria received over 100,000 asylum-seekers from Syria, Afghanistan and Iraq, stoked anti-Muslim sentiment and boosted the FPÖ. A mediocre economy has also hurt the government. GDP grew by less than 1% a year in 2014 and 2015, though it has picked up since. Unemployment was at 5.9% in October, a high rate for Austria, though few other European countries would complain.

Most damaging to the government are the constant disputes between the two parties. If Mr Kern and Mr Mitterlehner cannot turn things around, the FPÖ will quickly recover from the latest setback. If it wins the next general election, even Mr Van der Bellen may not be able to stop Mr Strache. In the rise of Europe's populist parties, Austria was once far ahead of the pack. It has fallen behind, but may not stay there for long. ■

Winner of the youth vote

Charlemagne | Unlikely candidates

The last place you would look for liberals: France

NO WESTERN democracy seems immune to today's backlash against globalisation and economic liberalism. Since the financial crisis of 2008, distrust of markets and a renewed faith in the state has challenged the old orthodoxy and emerged as a resurgent political force. America has elected the protectionist Donald Trump. Britain entrusted leadership of the Labour Party to a far-left veteran, Jeremy Corbyn. Greece brought Syriza to power. Italy's Five Star Movement helped to defeat Matteo Renzi. Yet, in one unlikely corner of Europe, mainstream politicians are defying the anti-market trend: France.

France? At first glance, there could scarcely be a more improbable recruit for liberal economics. This is a country which romanticises a muscular anti-capitalist struggle, and whose people are more distrustful of globalisation than those anywhere else. Its public sector consumes 57% of GDP, six points above even that stripped-pine model of Scandinavian solidarity, Sweden. France teaches school pupils to answer such philosophy questions as "What do we owe the state?" One candidate for next spring's presidential election uses the hammer and sickle as her logo—but is not even in the Communist Party, which she regards as too soft.

And yet, while attention on France focuses on the protectionist populism of Marine Le Pen, something strange is taking hold in the political mainstream. The old guardians of statist intervention are packing their bags, by choice (the unpopular Socialist president, François Hollande, has decided not to seek re-election) or eviction (the veteran Alain Juppé lost the centre-right Republican primary). Into their place have stepped leading presidential aspirants who are remarkably liberal and reformist.

Exhibit A is François Fillon, the Republican nominee. An unapologetic admirer of Margaret Thatcher, the ex-prime minister vows to shrink the state and cut the labour code to 150 crisp pages, from over 3,000 today. "If I had to sum up my project in one word," wrote Mr Fillon in a book, "I would choose: liberty." Exhibit B is Manuel Valls, who this week resigned as prime minister to run in the Socialist primary next month. He is a disciple of Michel Rocard, prime minister in 1988-91, whose moderate social democracy differed markedly from the orthodox socialism of his president, François Mitterrand. As Mr Valls seeks to broaden his vote, he may sound a less reformist note. Yet he shares more with Tony Blair (including a tough line on law-and-order) than with Mr Corbyn. He once accused the Socialists of being "haunted by a Marxist super-ego", and wrote that there is "no longer a global alternative to the capitalist system and the market economy".

Then there is Emmanuel Macron, the young ex-economy minister, who is running for president as an independent. Operating out of offices strewn with take-away food boxes and filled with young people with laptops, he hopes to draw voters from both left and right with a cross-party pitch for a pro-European, innovation-friendly form of "progressive" politics, to take on conservative populist nationalism.

Put these three rival candidates together in a Paris salon and they would vigorously deny common ground. Yet their thinking shares an underpinning: that France needs to tame the state and free the individual if its economy is to grow and create jobs. Polls suggest that, together, the trio enjoy majority support —51%—in French public opinion. In a country that dignifies *l'État* with a capital letter, this is quite breathtaking.

This shift may hint at Gallic contrariness. The French like to take a hard look at global trends, then wilfully strike off in a different direction. In the 1980s, when Thatcher and Reagan preached laissez-faire economics, Mitterrand nationalised banks and factories, and shortened working hours. In the early 2000s, when Germany deregulated labour markets, France brought in the 35-hour week. But the underlying explanation is empirical observation. French politicians, raised on theoretical principles, are responding to evidence. Decades of above-average state spending have brought fast trains, well-stocked municipal flower beds and high-quality health care—but above-average unemployment and below-average growth. Facts are taking their revenge.

Such a dose of realism does not mean, however, that the battle of ideas has been won. *Au contraire.* Mr Valls, who secured less than 6% of the vote when he ran in the Socialist primary in 2011, faces sundry far-left rivals at the primary (including Arnaud Montebourg, author of a book on "deglobalisation"), as well as Communist-backed left-wingers outside the party (among them a strong candidate, Jean-Luc Mélenchon). The Socialist Party could yet fluff this historic choice and condemn itself, Corbyn-style, to irrelevance or even extinction.

What's French for laissez-faire?

The greatest risk of all, though, is not to the party, but the country. It is that these liberal-minded candidates, with all the right instincts, fail to find a way to speak to those left behind by the market forces they endorse. For there is one French political leader who does, and with chilling success: Ms Le Pen. As the Socialist Party retreats into its narrow world of public-sector employees and cosmopolitan parquet-floored folk, the French blue-collar vote has turned to her. Thanks in part to its protectionism, her National Front is now the favourite party of working-class voters.

What lies ahead in France is not just a fight over identity and sovereignty. It is also about how the country can create and defend jobs, incomes, services and pensions. Unfashionable policy prescriptions will be up against populist sloganeering. Ms Le Pen will lose no time accusing her rivals of a plot to strip out the French social safety-net and demolish workers' rights. She is well placed to beat Mr Valls into a run-off against Mr Fillon next May; her victory cannot be ruled out. France's election will be a momentous test of the capacity of liberal-democratic candidates to fashion an alternative to populism. They can't afford to fail. ■

Also in this section

For daily analysis and debate on Britain, visit **Economist.com/britain**

University admissions

A foot in the door

OXFORD

One of the world's best universities has long struggled to attract students from the poorest parts of Britain. That may be about to change

WHILE at school, the idea of going to Oxford University "might as well have been like going to Mars," says Varaidzo Kativhu, an 18-year-old from Brierley Hill, a town in the West Midlands. Yet now she is on a foundation year at Lady Margaret Hall, one of the university's 38 colleges. The scheme, introduced this year, offers smart pupils from tough backgrounds who don't have the requisite grades a free, year-long course before they go through the regular application process for entry the following year. After the political revolts of 2016, "I think all institutions have to ask what we're doing to include black, Muslim and white working-class people," says Alan Rusbridger, a former editor of the *Guardian* who became principal of Lady Margaret Hall last year.

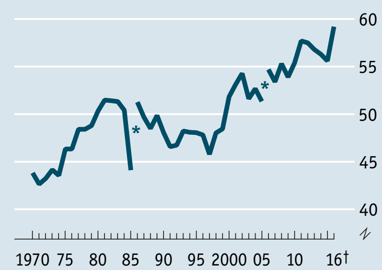
Access is a problem in nearly all good universities, but Oxford, which is the world's best according to a recent ranking by *Times Higher Education* magazine, and the alma mater of seven of the past ten British prime ministers, gets criticised for it more often than most. Defenders of the university say the problem lies beyond its ramparts: schools do not send it enough poor, bright candidates. Its critics argue that the admissions process is prejudiced against such children. As a new round of interviews gets under way this month, fresh initiatives are aiming to bring some diversity to its quads.

Around 59% of Oxford's students arrived from state schools this year. That is much lower than the 93% of pupils who are educated by the state nationwide. Yet it is not so far below the 67% of students achieving three "A" grades in A-level exams, the minimum for entrance to Oxford, who come from state schools. And it is far more than in the past (see chart).

But the increasing share of students from state schools disguises the fact that there are parts of the country from which almost no one gets into Oxford, despite having the grades required. Figures seen by *The Economist* show that between 2010 and 2015, 156 of the UK's parliamentary constituencies—a quarter of the total—got on average less than one pupil a year into Oxford, despite being home to 12% of all those who got at least three "A" grades in their A-levels and supplying 7% of all applicants to the university. By contrast, the 20 top-performing constituencies accounted for 16% of all successful applicants, despite having just 9% of the students who got three "A" grades.

Coming up

Britain, Oxford University undergraduates from state schools, % of total



Sources: House of Commons Library; Oxford University

*Different methodologies †Provisional

Many poor, bright pupils choose not to apply. Doing so is needlessly tricky, particularly for those whose school sends few people to university, says Sir Peter Lampl of the Sutton Trust, an education charity. Whereas most universities accept applications until January, Oxford (like Cambridge and most medical schools) demands them by October. It sets extra tests, which schools must invigilate. Its interviews are a stomach-lurching prospect.

Even those poor students who do apply have lower offer-rates than average. Last year one in six candidates from a poor locality was offered a place, compared with one in five of all applicants. That is partly because poor pupils are disproportionately likely to apply for the most sought-after courses, such as law and medicine. They are also less likely to get the top "A*" grades that a place may depend on.

The university uses increasingly sophisticated data analysis to put applicants' academic records into perspective, upgrading the results in GCSEs (the exams taken at 16) of candidates from bad schools. It has tried to make interviews as transparent as possible, publishing sample questions online ("Should interviews be used for selection?" is one). And it has pumped cash into sending outreach officers around the country in an attempt to change perceptions. Yet poorer children remain less likely to apply, slightly less likely to be made an offer and to get the necessary grades. "We haven't been able to fix that with conventional forms of outreach," says Andrew Bell, the senior tutor at University College. ▶▶

So some colleges are trying new approaches. One advantage of the college system, says Samina Khan, the university's director of admissions, is that it encourages innovation. As one don puts it: "The only way to get Oxford colleges to change is to make them compete." The Lady Margaret Hall foundation year was based on a scheme at Trinity College Dublin, which found that students from tough backgrounds with low grades did as well as their peers after a year's catch-up. It is low-risk, says Mr Rusbridger, since the college is not accepting anyone it would not otherwise have let in. Participants are nervous about reapplying, but hopeful. "I've learnt more in the past seven weeks than I did in the previous two years," says Ms Kativhu.

University College will take a different approach. Next year it plans to add 10% more places, reserved for those who would previously have just missed out on a spot, and who come from a bad school in an area that sends few children to university. A one-month summer school will hone their skills. Tutors at other colleges are paying close attention.

Meanwhile, outreach efforts are increasingly focused on raising attainment in school, rather than merely awareness of the university. Pembroke College has developed five specialist subject centres in sixth-form colleges in London and north-west England to familiarise pupils with the style of learning at university. Since 2009, Oxford has put on summer schools for sixth-formers. It works with Target Oxbridge, a charity which aims to get black pupils into Oxford and Cambridge, and Into University, which runs "learning centres" for 900 children from poor families.

Critics say Oxford has been slow to put in place the long-term programmes working with young children which research suggests are the best way to increase participation. Several universities even run schools. But there are signs that Oxford appreciates the scale of the task. In a couple of decades, it may no longer be seen as symptomatic of social immobility if a prime minister passes through Oxford on her way to Westminster. ■

The Brexit process

Red, white, blue or grey?

The government softens its Brexit stance—just as the Europeans harden theirs

IT IS always hard to read runes. That applies especially to the daunting process of leaving the European Union. Yet some recent events point to a softer version of Brexit than some had predicted.

The latest came after Theresa May had called patriotically for a "red, white and blue" Brexit on December 6th. The prime minister subsequently accepted the broad terms of an opposition motion calling on her government to publish its negotiating plans before invoking Article 50 of the EU treaty, the legal route to Brexit. Mrs May had previously resisted such demands, arguing that disclosing too much would weaken her bargaining position. But she gave way in the face of a rebellion by pro-EU Tory backbenchers. Even so, she is unlikely to publish much more than a broad outline of her goals.

Also this week, the Supreme Court heard the government's appeal against a High Court judgment that invoking Article 50 requires parliamentary approval. Brexiteers have complained loudly about Remainer judges opposing the voters who backed Leave in June. In fact the case is about a separate issue: can the government rely on prerogative powers to invoke Article 50 or, because that could in effect scrap the 1972 European Communities Act, does it need parliamentary authority?

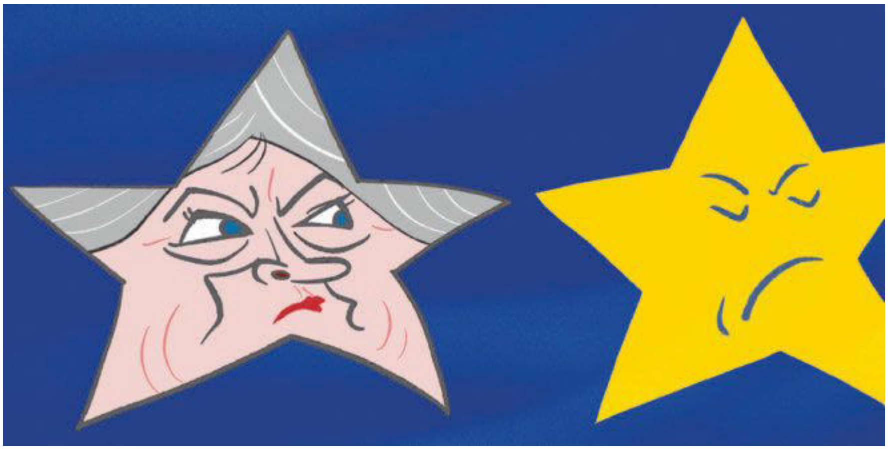
The justices' questions revealed little, yet most observers think they are unlikely to overrule the High Court, because the arguments before them were largely the same. The government did not try to deploy the promising new line that, because Article 50 could be revoked at any time, its invocation might not automatically lead to Brexit, for fear that this would trigger a referral to the European Court of Justice. The Supreme Court is, however, likely to rule against Scottish demands for their own parliamentary vote on Article 50.

Parliament will not block Article 50. But even a short act may be amended, possibly delaying the article's invocation beyond Mrs May's planned deadline of the end of March. MPs could demand not just a published plan but a greater say over Brexit. The Liberal Democrats' victory in the Richmond by-election on December 1st has cheered up Remainers.

There have been other signs of softening. David Davis, the Brexit secretary, has said Britain could keep paying into the EU budget to secure fuller access to the single market. Greg Hands, a trade minister, has mused about some industries staying in the customs union to minimise disruption. And, although news that net immigration in the year to June ran near record levels was greeted by some as justifying a hard Brexit, several ministers have promised businesses that new controls will not be so tight as to wreak serious damage.

The main developments in the other direction have been in the EU. Brexiteers often behave as if the terms of Britain's departure will be decided at home, when in fact they will be set by the other 27. And here there are signs of hardening. When Mrs May suggested a mutual agreement to let both EU citizens resident in Britain and Britons resident in the EU stay put, she was told firmly that nothing could be negotiated before Article 50 was invoked. And European leaders' insistence that the four freedoms of the single market are indivisible, and that there can be no cherry-picking, are getting louder.

On December 6th Michel Barnier, the European Commission's point man on Brexit, said a deal for Britain would not be as good as membership. He added that the Article 50 talks must finish in the 18 months to October 2018, and that a final free-trade deal would accordingly have to be negotiated afterwards and not in parallel. That suggests a transition may be needed, but he said this could be useful only as a pathway to a final arrangement. The British may be softening their earlier hardness, but Brussels is going the other way. ■



Bagehot | Different votes for different folks

The fragmentation afflicting Britain's left is part of a bigger story

BLAME George Dangerfield. It was the Anglo-American journalist who first pathologised the end of Britain's two-party system in "The Strange Death of Liberal England", a commanding tale of the Liberal Party's fall in the early part of the 20th century. To future generations he bequeathed an establishment too ready to see each political twist as proof of a new realignment. In 1993 the opposition's fourth successive defeat inspired a tome called "The Strange Death of Labour England?". Twelve years and two Labour landslides later came "The Strange Death of Tory England". The Conservative-Liberal Democrat coalition of 2010 brought a flurry of fresh predictions of an end to the two-party order, before the 2015 election went off-script and produced a Tory majority. Such times bring out an epochal chauvinism in commentators: a belief that this moment, the writer's own era, is pivotal. Most "strange deaths" since Dangerfield have met a strange death of their own: fatal collision with the next big political event.

So your columnist takes his credibility into his hands when he hereby declares the strange impending death of the two-party order. The pollsters at ICM now put Theresa May's Conservative Party on 44%, one point below its highest-ever showing. Brexit has pushed the sort of red-trousered UK Independence Party (UKIP) supporters who quit the Tories under David Cameron back into the fold. And with the Lib Dems ejected from power, the governing party can now confidently span the spectrum from liberal conservatism to right-wing populism. On the right this feels like anything but a time of fragmentation.

But on the left the story is different. Labour has not yet grasped the crushing electoral toxicity of Jeremy Corbyn. New debates over Brexit and immigration are scratching at scabs formed after last year's election. The announcement on December 6th of an early re-election campaign by Len McCluskey, the Corbynite chief of Unite, Britain's biggest union, could be the latest shot in a cold war that later turns hot and pulls Labour apart. Then there is the election, on November 28th, of Paul Nuttall as the new UKIP leader, on a platform to challenge Labour in its post-industrial heartlands. And lastly comes the resurgence of the Lib Dems in metro-liberal Britain; their new appeal was revealed at the Richmond Park by-election on December 1st, when Labour's vote fell from 12.3% to 3.7%. All of which points towards a future in which the left-of-centre vote in England splits between Labour, UKIP and the Lib Dems, with each party taking some 15%. To the north, the Scottish National Party competes on similar leftish ground.

The underlying trends are, however, not exclusive to the left. They transcend Labour's suicidal enthusiasm for Mr Corbyn. The vote share of the two main parties has fallen from 96.8% in 1951 to 67.3% in 2015. Like electorates elsewhere, today's Britons are less deferential and tribal than they once were. Meanwhile, where once class differences motivated a politics of left v right, now educational differences motivate a politics of open v closed. In the long term that will affect the Tories as much as Labour. For while Mrs May's all-things-to-all-people stance on Brexit unites her coalition of London merchant bankers, Rutland farmers and Essex entrepreneurs, the details of the coming negotiation will drive wedges between them. Just as the initial vote to leave the EU has split Labour's coalition of Manchester students, Teesside steel workers and Hackney nurses, the realities of Brexit politicise and prioritise the differences between various sorts of Conservatives.

At this point people usually cite the reason why British politics is not an efficient market: the first-past-the-post electoral system by which the country trades responsiveness for stability. As Maurice Duverger, a French sociologist, first observed, such a plurality-based system tends to produce two monolithic parties through elimination (small parties with wide support cannot win individual constituencies) and fusion (they merge to obtain the critical mass needed). Yet "Duverger's Law" is a product of the 1950s. Back then, seats were fairly uniform, their politics overwhelmingly a function of the ratio of white-collar workers to blue-collar ones. Britain was a country of many accents but was one political universe.

Layered on top of this left-right politics, the new open-closed sort makes for a more complicated map: multiple political universes, each with its own law of physics. Wealthy university towns, fading big-city suburbs, poor working-class towns with good connections, decaying seaside resorts; each falls differently on a two-dimensional spectrum combining class (economics) and education (culture). For the Tories and Labour, used to the simple left-right spectrum, this makes life harder. It loosens voters' allegiances. It creates openings for parties that can adapt to specific sorts of seat. In a system designed for generalists it encourages specialisation. Seen in this light, Richmond Park's lurch into Lib Dem hands hints at how British politics will now evolve.

Que PR será

And the process could prove self-reinforcing. One critic of Duverger's Law is Josep Colomer of Georgetown University. He argues that the causality runs in the opposite direction: party systems dictate electoral systems and thus, when two-party systems start to fragment, the pressure for proportional representation (PR) grows. Early signs of this may be visible in Britain: the Lib Dems and UKIP—both confident in a new period of open v closed—both campaign vocally for PR. If they succeed, the result will be a further explosion of political diversity and competition.

Nothing in this unpredictable age is certain. Yet most fundamentals say Britain is shifting away from Duverger's two-party world to the fragmenting landscape described by Mr Colomer. This may become clear in the time it takes Britain to quit the EU. Or the process may take longer, the big two parties losing their monolithic status only slowly and haltingly. Either way, Britain is set for the strange death of the strange deaths of strange deaths. ■

Education

Must try harder

The latest PISA tests suggest that reforming education is slow and hard, but eminently possible

FOOTBALL fans must wait four years between World Cups. Education nerds get their fill of global competition every three. The sixth Programme for International Student Assessment (PISA), a test of the science, maths and reading skills of 15-year-olds from across the world, was published by the OECD club of mainly rich countries on December 6th. Its results have telling lessons for policymakers worldwide.

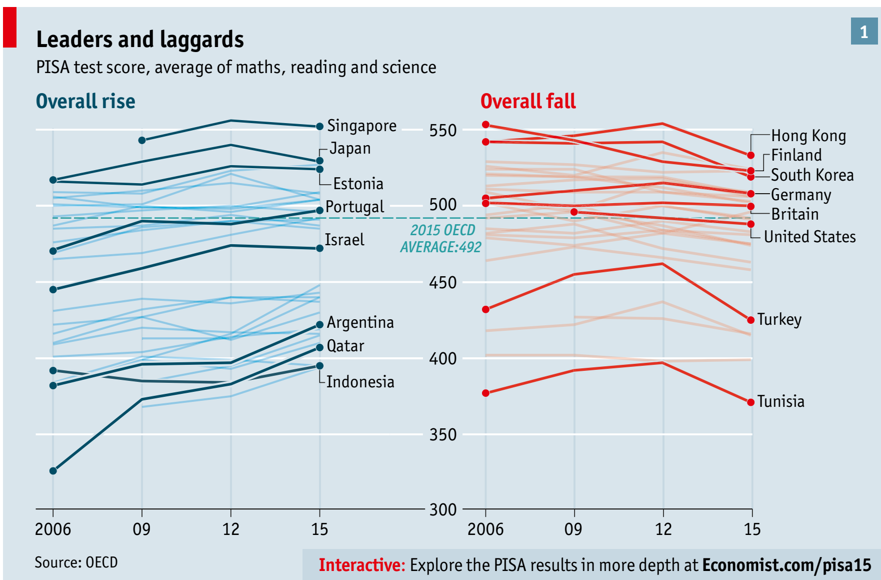
Some 540,000 pupils in 72 countries or regions—each of whom had finished at least six years of school—sat similar tests last year. The OECD then crunched the results into a standardised scale (see chart 1). In the OECD the average result for each subject is about 490 points. Scoring 30 points above that is roughly akin to completing an extra year of schooling.

Singapore, the consistently high-achiever in PISA, does even better: it is now the top-performing country in each subject area. The average pupil's maths score of 564 suggests Singaporean teens are roughly three years ahead of their American peers, with a tally of 470.

Other East Asian countries also score highly across most domains, as they have done since PISA was launched 15 years ago. Japan and South Korea have above-average results in science and maths, as do cities such as Hong Kong and Macau, both autonomous territories of China, and Taipei, the capital of Taiwan.

Elsewhere, Canada and Finland have reading scores as high as Hong Kong's. Then there is Estonia: its science results are indistinguishable from Japan's and its maths scores are akin to South Korea's. It is now equal with Finland as the top performer in Europe. In turn Finland, which topped the first PISA, is still an above-average performer, but its scores have fallen since at least 2006.

Opponents of PISA argue that trying to make sense of all this is like trying to hear oneself over the noise of an obstreperous classroom. They note that education is about more than doing well in tests. And besides, some critics add, there is little useful to learn from the results, since it is parents alone that encourage swots. John Jerrim of University College London suggests that the only way some countries could catch up with the East Asian powerhouses is through more "tiger mothers" and ▸▸



Leaders and laggards

PISA test score, average of maths, reading and science

Source: OECD

Interactive: Explore the PISA results in more depth at Economist.com/pisa15 "widespread cultural change".

PISA has flaws. It is one of many standardised tests, and tests are not all there is to learning. But it matters. It is the most influential research report in education for good reason. It offers informed guidance on what policymakers should do to fix their school systems. Just as importantly, it tells them what not to do.

It points out that among poorer countries the amount of public spending per pupil is associated with higher test scores. But in richer states that spend more than about $50,000 per pupil in total between 6 and 15 this link falls away (see chart 2). The pupils of Poland and Denmark have, in effect, the same average results in the science tests even though Denmark spends about 50% more per pupil.

Another potential waste of money, if only from the perspective of PISA results, may be sending children to private school. Across the OECD pupils in public schools score lower in science than students in private schools do. But this is not the case once you account for the economic and social background of pupils.

And while poverty is strongly associated with low scores, it is not destiny. In the OECD poor pupils are nearly three times more likely than their rich peers to have less than the basic level of proficiency in science. Those pupils with foreign-born parents tend to do even worse. Nevertheless, 29% of poor pupils score among the top quarter of children across the OECD. In Singapore, Japan and Estonia nearly half of the poorest pupils do.

Money isn't everything

That hints at another finding: achievement and greater equality are not mutually exclusive. In Canada, Denmark, Estonia, Hong Kong and Macau pupils have high average scores, with only a weak link between results and children's backgrounds.

One reason for Estonia's gain is demographic loss. Over the past 20 years the population of young people has declined faster than the number of teachers. There is now one teacher for every 12 pupils, down from closer to 20 two decades ago. Although in general reducing class sizes is not the most cost-effective response, Estonian pupils have benefited from the demographic shift, which has made it easier to give pupils, especially laggards, extra help.

But Estonia has also taken a deliberately inclusive approach, argues Mart Laidmets, a senior official at its ministry of education. It tries to avoid at all costs having pupils repeat years of school. Holding pupils back can help. But too often it is used as an excuse not to teach difficult kids. It may also reflect bias or discrimination. In countries such as Russia, Slovakia and the Czech Republic, poor boys are especially prone to being kept back a year, despite decent academic achievements.

Estonia, like Finland and Canada, also tries to keep selection by ability to a minimum. It delays "tracking" children into academic or vocational routes until they are 15 or 16 years old. Mr Laidmets argues that it helps pupils find jobs later in life, since better maths and literacy make it easier for them to adapt to changes in the labour market and to earn new skills.

By contrast, where pupils are diverted from an academic track at an early age, whether towards a vocational school or a less rigorous class in the same school, the gap between rich and poor children tends to be wider. In the Netherlands pupils at vocational schools have results equivalent to about three years less of schooling than their peers at general schools. "The more academically selective you are the more socially selective you become", says Andreas Schleicher, the head of education at the OECD.

All of which suggests what countries should not do. But are there any sure-fire tips from the best performers? Or is their success just down to pushy parents and tuition after school?

Culture matters but so, too, does policy, says Lucy Crehan, author of "Cleverlands", a new book on PISA-besting countries. She points out that most of these states delay formal schooling until children are six or seven. Instead they use early-years education to prepare children for school through play-based learning and by focusing on social skills. Then they keep pupils in academic courses until the age of 16. Even Singapore, which does divert some pupils to a vocational track at the age of 13, ensures that pupils in those schools keep up high standards in reading and maths.

Top performers also focus their time and effort on what goes on in the classroom, rather than the structure of the school system. For while test scores and pupils' economic background are linked across the OECD, so too are specific things that the best schools and teachers do (see chart 3 on next page).

The top performers treat teachers as professionals and teachers act that way as well. They have time to prepare lessons and learn from their peers. They tend to direct classroom instruction rather than be led by their pupils. Their advancement is determined by results, not by teachers' unions. There are high expectations of nearly every student and high standards, too.

A keener Argentina

The teenagers who took the PISA tests in 2015 were influenced by many years' worth of policies. And focusing on the consistently high performers means that lessons from those that have made recent improvements are neglected.

The city of Buenos Aires had the largest jump in overall scores from three years ago. On average its pupils scored 475 in science (up 51 points), 475 in reading (46 points) and 456 points (38 points) in maths.

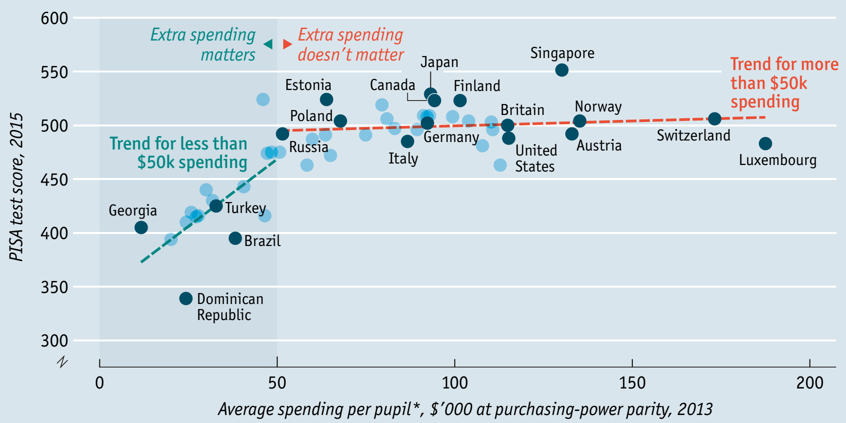
For Esteban Bullrich, the minister in charge of education from 2010 to 2015, the initial aim was to make sure that pupils were being taught. Teachers were spending 12-15 days per year on strike, or about 7% of the time they should be in class, according to his calculations. To try to reduce those absences he first made his mobile-phone number public and began fielding calls directly from angry teachers. He extended the school day.

Then he offered teachers something of a deal: higher salaries in exchange for taking their job more seriously. The grip of unions in deciding on promotions was loosened. And he made teacher training more rigorous and practical.

Another impressive mover, albeit more of a tortoise than a hare, is Portugal. Since 2006 it has steadily improved its scores across each subject by about a year of schooling, overtaking the United States as it went from a middling to an above-aver- ▸▸

Dollars and sense 2

Spending per pupil* and PISA test score†



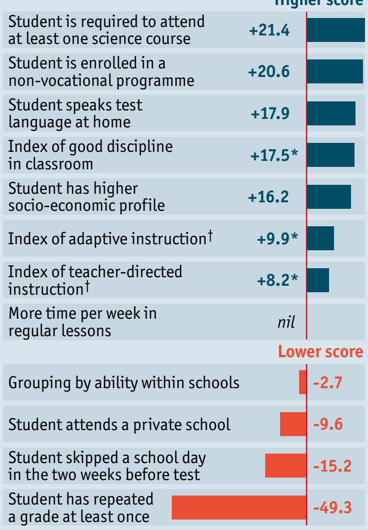
Source: OECD

*From the age of 6 to 15 years †Average of maths, reading and science

How to excel

3

Factors linked to a change in PISA science-test scores, OECD countries, 2015, points



Source: OECD

*Per one standard-deviation increase
†Particular styles of teaching

age performer.

There are three reasons for Portugal's steady progress, says Nuno Crato, the country's former education minister. First, it began to care about results, introducing new standardised tests. Second, a new curriculum with higher standards was introduced from 2011. Third, it has reduced the amount of streaming by ability, keeping its use "temporary and partial". Struggling pupils may get extra tuition but teachers will try to keep them in the same classes as their peers.

For Portugal to become an educational powerhouse, argues Mr Crato, it also needs "better-prepared teachers". This is hard when some teaching unions oppose their members having to pass exams before they are allowed into classrooms. What better education does not necessarily need is bigger budgets, he says. Portugal's improvements have come despite severe cuts to public spending. "Money matters but it is not decisive," adds Mr Crato.

Progress can also be spotted even among countries whose overall scores have remained flat. The economic background of the average American pupil matters much less to their overall test scores than in earlier editions of PISA. Mr Schleicher puts this down to reforms such as President George W. Bush's No Child Left Behind Act, which made local governments more accountable for the results of poorer pupils.

The PISA results are not all happy tales of plucky reform. Australia is one of several countries whose results have dipped. Its average score in maths has fallen from 524 to 494 since 2003, equivalent to a year of schooling. Australia is one of the few rich countries where pupils do not have to take maths in their leaving exams. (Malcolm Turnbull, the prime minister, is trying to make states change this.) It is also a result of a declining quality of teaching, suggests John Hattie of the University of Melbourne. Successful applicants to teacher-training courses have lower results in their school exams than in the 1980s and 1990s.

Nevertheless, while some countries rise and others fall, many are just like England. Its results have barely budged since 2006. (Scotland's have plummeted.) The average result for OECD countries has similarly hardly changed since the tests began. This may reflect well on the test-setters: it would be worrying if the results swung wildly from edition to edition.

Yet it still reflects poorly on many policymakers. Mr Bullrich says PISA is like an x-ray of a country's education policy. It is not a full picture of your health but it can help you spot where things are sickly. Sadly, too many countries are dodging essential therapy. ■

Educating migrants

Geography lessons

Where migrants go to school is more important than where they came from

IF YOU think starting a new school is scary stuff—try doing it in a new country. Migrants can face a twin disadvantage. They are often concentrated in struggling schools. And, at least at first, they may suffer from having to toggle between languages at home and in class. Two-thirds of pupils born outside their host country use another tongue at home. Nearly one in two second-generation immigrants does so.

It is little wonder that many migrants struggle on the latest Programme for International Student Assessment (PISA) tests. The children of foreign-born parents are on average about a year behind their peers, even after accounting for parental income.

This finding hides a lot of variation (see chart). In Australia and Canada pupils whose parents were born abroad do better on science tests than similar teenagers with native-born parents.

Meanwhile immigrants in European countries are often far behind. In Germany first-generation and second-generation migrants are respectively about 2.5 and 1.5 years behind teenagers with German-born parents, even after accounting for their different economic backgrounds. There are similar results in Finland, a country often lauded for its record of equality in education.

For sure, migrants' origins matter a lot. Second-generation East Asian pupils in Australia are roughly 2.5 years ahead of those with native-born parents. They do even better than pupils in Singapore, the highest-performing country in PISA, even as results in Australia as a whole have fallen.

Yet the country in which the immigrant attends school is more important than the one he comes from, says the OECD's Andreas Schleicher. Turkish-born pupils in Germany are nearly two years behind in science tests compared with those in the Netherlands, after adjusting for different economic backgrounds.

Policy makes a difference. Attending nursery or extra language tuition helps migrants catch up. Limiting selection by academic ability gives them more time to make up ground. Not making them repeat a year has the same effect.

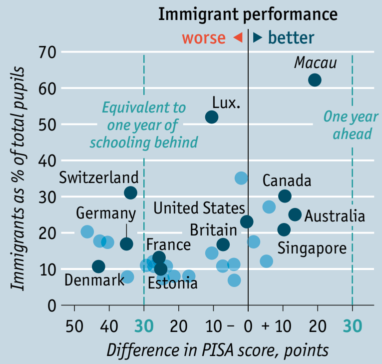
Admissions policies matter, too. Avoiding high concentrations of migrants in particular schools would help their academic achievement. It would probably also help poorer native children.

The task of educating migrants better is urgent, especially in Europe. The share of children of foreign-born parents in the OECD that took PISA increased from 9.4% in 2006 to 12.5% in 2015. It could rise further in light of the numbers of migrants settling in Europe in 2015 and 2016.

A survey last year by the OECD found that about 80% of second-generation immigrants feel at home at school. But outliers should cause concern. In France, for example, just 40% of second-generation immigrants say they feel as if they belong in school. That is a figure to make everyone in the country sit up straight.

Pick your destination

PISA test score* 2015, difference between immigrants and non-immigrants, after accounting for socio-economic status



Source: OECD

*Average of maths, reading and science

For daily coverage of business, visit
Economist.com/business-finance

Oil companies

Fit at fifty—or less

The oil industry is taking a new approach to finding crude. Will it last?

PROUDLY, they call themselves elephant hunters. They are the geologists who scour the treacherous depths of the Arctic, or Brazil's Atlantic pre-salt fields, or offshore west Africa, or the deep waters of the Gulf of Mexico, hoping to bag giant oil discoveries that can generate billions of dollars of cash for their firms over a span of decades. In some cases, they get naming rights. The Gulf of Mexico is peppered with fields named after geologists' wives (risky if they are duds), or their favourite albums, bands, stars and football chants. They are part of the industry's folklore. The question is, are they a dying breed?

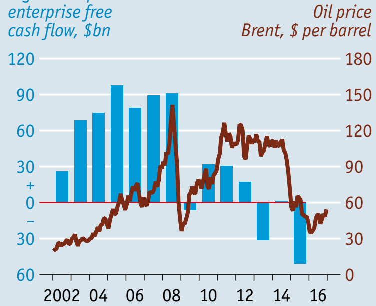
Several prospective deals announced this month, from the deep waters of the Gulf of Mexico to onshore Iran, suggest that the industry may be shying away from expensive forays into uncharted territory, and taking a more cost-conscious approach to exploration and production. It remains to be seen whether they can maintain their discipline if oil prices recover. But, for now, "they've all gone back to the drawing boards," says Andy Brogan, an oil-and-gas specialist at EY, a consultancy.

On December 1st BP, a British oil major, approved a $9bn investment to install a second drilling platform in its Mad Dog field in American waters of the Gulf of Mexico (it put in the first in 2005). The field was discovered in 1998 and contains up to 4bn barrels of oil and gas. When BP first proposed the new project earlier this decade, the projected cost was $20bn.

Days later some of the world's largest oil companies, including BP, bid generously for exploration and production blocks in Mexican waters of the Gulf, which Mexico hopes could realise up to $40bn in deepwater investment from companies. Until 2014, private investment in Mexican oil had been banned since the 1930s, so there is a pioneer's excitement about exploring for oil there. But it is also familiar territory, with some blocks lying just across the maritime border from America.

Adding to the sense of action, on December 7th Royal Dutch Shell, an Anglo-Dutch firm, signed a preliminary memorandum of understanding to develop oil in Iran, despite Donald Trump's hostility to Barack Obama's nuclear deal and the possibility of renewed sanctions. It followed a similar deal between Iran and France's Total last month.

What lies beneath



Source: BCG

Such forays show that, for the first time since oil prices plunged in 2014, Big Oil is putting its head above the parapet to seek substantial new sources of crude that will tide it through the 2020s. It comes days after OPEC, a producers' cartel, struck an agreement to rescue oil prices, which executives say has bolstered confidence that the market is stabilising.

Yet these bullish signals have not brought cheer to the elephant hunters. For years the industry has struggled to cover its investment needs and dividend payments (see chart). It barely broke even in 2012-14, though oil prices at times exceeded $100 a barrel. Now, at half that price, it is having to scrape the barrel to satisfy shareholders who rely on its dividends. The result has been a historic plunge in oil-and-gas investment. It was a record $780bn in 2014. Since then it has fallen by about $340bn.

Oil executives say they are trying to embark on a new investment cycle without squandering money. Tim Callahan of BHP Billiton, an Australian oil-and-mining firm that won the bidding on December 5th for an $11bn project to develop the Trion field in Mexico with Pemex, the state oil company, says the aim is to be "fit at 50", ie, able to make plenty of money at $50 a barrel—or less.

The 60% cut in the proposed cost of BP's Mad Dog Two project suggests that there is plenty of fat to trim. Initially the company intended to install a state-of-the-art floating "spar" tailored, in the words of one official, like a "Savile Row suit". That project was shelved in 2013. The alternative is a standard "off-the-peg" version, though BP promises not to have compromised on safety. It will be the company's first new platform since its Deepwater Horizon oil spill, also in the Gulf, in 2010. Aware that OPEC's control over the oil price may diminish, and that longer-term pressures on oil come from climate change and "peak demand", BP is aiming to ensure that three- ▸▸

quarters of such cost-savings are structural, and that only a quarter of them are subject to cyclical upswings.

There is scepticism about the industry's ability to keep its belt tight. Share prices of oil-service companies, including offshore-focused ones like Schlumberger, have jumped since the OPEC deal, suggesting investors expect them to be able to raise the prices they charge their paymasters.

BP executives discuss several ways of keeping costs under control, though they admit they are only "scratching the surface" on these. The firm has pulled out of potentially expensive greenfield projects, such as the Great Australian Bight, and opted for better-known territories instead. (Shell, meanwhile, has given up on the Arctic.) BP may not add to its 45bn barrel stock of resources, which at current rates of production could last 52 years. It may replace uneconomic barrels with cheaper ones, but will also draw 15bn of them by 2030.

Executives have been scouring other industries—from Silicon Valley to carmakers—for examples of how to become leaner. That will involve streamlining inventories and manpower. For instance, in parts of America, BP has cut the number of people monitoring wells by three-quarters, using mobile apps instead. It plans to run fibre optics down its wells to "listen to" problems, such as the seepage of sand, far below the surface, thereby forestalling the need for expensive work.

Andrew Latham of Wood Mackenzie, a consultancy, says that as well as cost-cutting, Big Oil's best bet on a more economically-sustainable future is gas, which can be cheaper to produce and easier to find than oil. There may be still plenty more gas elephants to bag. They won't, however, have quite the cachet of the oily ones. ■

Privatising Rosneft

An Ivan for an Igor

MOSCOW

Glencore stuns the oil-trading business with a deal to take a big stake in Rosneft

Wild celebrations between Putin and Sechin

GLENCORE, a Swiss-based commodities company, and its biggest shareholder, the Qatar Investment Authority, are set to take a €10.2bn ($11bn) stake in the Russian oil giant Rosneft, giving them 19.5% of a business targeted by Western sanctions since Russia fuelled a war in eastern Ukraine in 2014. The unexpected deal, the largest in an ambitious Russian privatisation plan, delivers Vladimir Putin and Igor Sechin, Rosneft's boss, a victory. The Russian state will keep control of the company, while filling a gap in the 2016 budget.

The transaction will also stir up old jealousies in the oil-trading business, which, as one industry participant puts it, is in "a pissing match to be top dog with Rosneft", the world's second-biggest crude producer. Last year Glencore was forced by the commodities slump to suspend its dividend, sell assets and issue $2.5bn of new shares. Its acquisitive boss, Ivan Glasenberg, had not been expected to make such an expansive move so soon.

In a statement Glencore said it will put only €300m of its own equity into the deal. The rest of the funding will come from the Qatari sovereign-wealth fund and non-recourse bank lending, which Mr Sechin said was arranged through "one of the largest European banks". Glencore did not mention the sanctions. The firm was founded by the late Marc Rich, a billionaire trader infamous for breaking American sanctions with Iran in the 1980s. But its lawyers are expected to have made sure there was no risk of sanction-busting penalties. BP, a British oil company, has had a 19.75% stake in Rosneft since 2013.

The sanctions' penumbra has made Western investors cautious about doing further business with targeted firms and individuals, and Rosneft had been expected to tap Chinese and Indian partners, if any. When Russia issued sovereign bonds earlier this year, Washington and Brussels recommended that American and European banks steer clear. Glencore's willingness to sign on to the Rosneft deal suggests investors may reconsider Russia amid the prospect of a Trump-led rapprochement with Moscow. Some American officials were blindsided by the news. One said: "We're looking at this now, on a fast track."

The deal will give Glencore a five-year contract to take an extra 220,000 barrels a day (b/d) of crude, which will significantly boost its business. But it will also have to take account of a tentative agreement between Russia and OPEC, the oil cartel, to cut Russia's production by 300,000 b/d.

Glencore's investment in Rosneft will infuriate Geneva-based Trafigura, its arch-rival, founded by other former employees of Mr Rich. Trafigura had achieved the closest relationship with Rosneft in recent years, and this year joined it in buying Essar, a big Indian refinery.

Mr Sechin can add the sale to a string of recent victories that include the purchase of Bashneft, a midsized Russian oil firm, from the government last month. Officials had indicated that Rosneft might buy the stake in itself back from Rosneftegaz, its parent firm, in order to meet a deadline to close the deal and transfer funds into the budget by year's end. "They got it done to the surprise of all," says Andrey Polischuk of Raiffeisen Bank in Moscow. ■

Auditors

Bother in Brazil

SÃO PAULO

The Brazilian arm of the world's largest accounting firm is in big trouble

ACCOUNTING scandals are nothing new in Brazil. Its former president, Dilma Rousseff, was impeached in August for cooking her government's books. The bosses of its biggest building firms have landed behind bars for padding contracts with Petrobras, the state-run oil company. At least, governance gurus joke, all the imbroglios—and a three-year-old law against bribery—have prompted companies to replace what people used to call corruption departments with compliance offices. How ironic, then, that Brazil's latest affair involves a firm that is meant to ensure that firms stay on the straight and narrow.

On December 5th it emerged that America's Public Company Accounting Oversight Board (PCAOB) fined the Brazilian arm of Deloitte, the biggest of the "Big

Four" accounting networks, $8m, for what Claudius Modesti, the watchdog's director of enforcement, called "the most serious misconduct we've uncovered". Deloitte is the first of the Big Four to be accused of failing to co-operate with a probe by the PCAOB, created by the Sarbanes-Oxley act of 2002, itself a response to a massive accounting scandal at Enron, an energy giant. The firm will also have to pay 5.4m reais ($1.6m) to Brazil's securities regulator.

The bulk of the problems centre on Deloitte's auditing of Gol, a troubled Brazilian low-cost airline with shares listed in New York. It was in 2012 that the PCAOB examined the firm's audit papers during a routine review. Its inspectors found that a year before, Deloitte's senior auditors had signed off on the carrier's books despite knowing that its staff were still reviewing these for mis-statements, in particular related to reserves set aside to cover aircraft-maintenance costs. A subsequent probe unearthed systematic attempts by managers and partners to doctor paperwork, conceal evidence and withhold information from inspectors. Similar shenanigans apparently marred Deloitte's audits of Oi, a Brazilian telecoms firm which filed for bankruptcy protection in June.

Relative to the scale of fines that regulators have been doling out to banks in recent years, Deloitte's bill looks tiny. But it is a record for the PCAOB. A dozen (now former) partners and auditors have been banned from working at any of the accounting firms the PCAOB oversees, all but one of them for life. As part of its settlement with the agency, Deloitte Brazil also faces the humiliating presence of an independent monitor until at least mid-2017.

Critics of auditors will cite the Deloitte case as further evidence that the world is suffering from an outbreak of accounting fraud. The PCAOB has just fined Deloitte Mexico $750,000 for tampering with documents in an audit there. In August PWC settled a case in which a plaintiff was seeking $5.5bn after Colonial BancGroup, an American lender it audited, went bust. Last year EY, another Big Four firm, failed to flag problems at Toshiba that forced the Japanese firm to restate its accounts by $1.9bn.

Still, the overall trend around the world has been for accounting to get cleaner. In America one good measure of this is the size of the biggest accounting restatement in a given year. It has plummeted over the past decade, from over $6bn to under $1bn. The scale of all restatements was only $2.7bn, or just 0.3% of all corporate profits, in 2015. Standards outside America have improved, too, partly because Europe and many emerging economies, including those of Latin America, have adopted common international accounting standards. Deloitte's Brazilian fiasco is depressing, but at least skulduggery is being uncovered and punished. ■

Motorcycle manufacturing

Digital rider

A high-tech way to enter the market for motorbikes

WHEN the covers come off the Vanguard Roadster at the New York Motorcycle show on December 9th the moment will mark the launch not only of a brawny new bike but also of a new brand with big ambitions. Vanguard is an audacious startup that reckons it can use the increasing digitisation of manufacturing to ride with the pack of long-established bike companies, such as Honda, Yamaha, Harley-Davidson, BMW and others, who are together set to sell some 500,000 motorcycles and scooters in America this year.

That might sound laughable. So far, Vanguard has built a grand total of one machine. At around $30,000, complete with a thumping 1.9 litre V-twin engine, it is priced at the premium end of the market (though well below the price of some superbikes, which can cost three times as much). But if Vanguard has its way, within a few years it will be selling several thousand motorcycles annually from a range of several different models.

What enables a startup to aim so high is the way digital technologies are lowering the cost of entry to manufacturing businesses that were once seen as the preserve of giants. That is especially so in the costly and long-drawn-out process of product development. From sketches, to clay models, component engineering and testing, it used to take a carmaker five years or more to bring a new vehicle to market. It is similarly slow going for bike manufacturers.

Some carmakers can now do the job in just two, with the help of three-dimensional computer-aided design, engineering and simulation systems. In effect, the product—a car, motorcycle or even an aircraft—exists in a digital form where it can be sculpted and tested long before anything physical is built. It is also possible to simulate production methods. ▸▸

South Korea's chaebol bosses face parliament

FOR the South Korean public, the sight of nine of their most powerful business chiefs, who are rarely seen, submitting to a day-long grilling by South Korean MPs on December 6th was remarkable (eight of them are pictured). During the hearing, broadcast live on television, the heads of CJ, LG, Hanwha, SK, Samsung, Lotte, Hanjin, GS Group and Hyundai, all family-owned conglomerates, or *chaebol*, denied they had sought favours in return for the billions of won they paid into two foundations controlled by Choi Soon-sil, a former confidante of President Park Geun-hye. (As *The Economist* went to press, Ms Park faced an impeachment motion by parliament over her ties to Ms Choi.) Samsung's Lee Jae-yong, whose 20.4bn won ($17.6m) grant was the biggest, was the most intensively interrogated. On many minds was the last time big bosses were thus summoned, during an inquiry in 1988 into the corporate funding of a foundation run by then-dictator Chun Doo-hwan. Six of those tycoons' sons were among those testifying this week.

This is the approach taken by Vanguard, which was set up in 2013 by Francois-Xavier Terny, a former management consultant, and Edward Jacobs, a motorcycle designer. Despite lacking the resources of the big producers—for now, the firm has just a handful of employees—it used software (in this case Solidworks from Dassault Systèmes, a French company) to design a digital motorcycle before turning it into a real one. Such systems are benefiting from the falling price and increasing performance of computing power. "We now have the same level of design and engineering tools as the big boys, which would have been impossible ten years ago," says Mr Terny.

Engine of progress

The digital designs also make it easier for the company to gain access to global suppliers who will quote the best prices for parts they need. Design files can simply be e-mailed to a vast network of engineering firms that offer their services online.

Once road-testing and further development is complete, production of the Roadster is scheduled to begin at some point in 2018 at a refurbished industrial unit in the Brooklyn Navy Yard in New York, which is now home to a number of manufacturing companies. That is another feature of the way factories are quickly changing: with digital engineering, cheaper automation and new production techniques such as 3D printing, it may be possible to rev up inner-city manufacturing. ■

Sika and Saint-Gobain

Swiss roiled

PARIS

Two years on, a bitter takeover battle is no nearer to a resolution

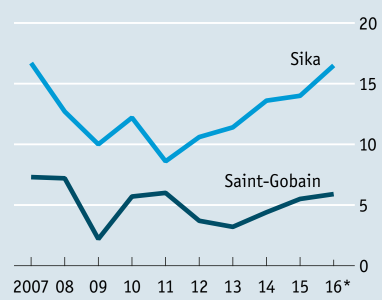
THE life of a predator can be fraught. Expend too much energy on hunting your prey and even success can be costly. Saint-Gobain, a French maker of glass and other building materials, might be learning that lesson. It mostly grows by snapping up smaller fry, but an attempt to buy a mid-sized Swiss rival, Sika, has gone on for two years. It could take as long again for Swiss courts to resolve the most intractable corporate struggle in Europe.

Pierre-André de Chalendar, Saint-Gobain's CEO since 2007, was doubtless impressed by Sika's high returns on its business selling industrial adhesives, mortar and construction chemicals. Its annual return on capital over the past decade has been an attractive 12.6%, more than double Saint-Gobain's 5.1% (see chart). So when in 2014 the current, fourth generation of the Burkard family, which founded Sika in 1910, offered to sell 52.4% of the voting rights in their firm, Mr de Chalendar bit.

The family investment is kept in a body called Schenker-Winkler Holding (SWH) which, following the death of the matriarch in 2013, the dynasty agreed to sell to the French firm for SFr2.75bn ($2.85bn). Although SWH accounted for a majority of the voting rights, it had only 16% of the economic-ownership rights. Sika's top managers and its other investors came out against the deal and in October a Swiss court ruled that its rules of incorporation mean that board approval is required before the family's stake can go to a new owner. The local press cheered—copies of the purchasing deal for SWH, leaked to newspapers, made no explicit mention of Mr de Chalendar's public promises to protect jobs at Sika and to keep it listed in Switzerland, raising suspicions that the firm from over the Alps might behave ruthlessly if it got control.

Rent-Sika

Return on capital, %



Source: Bloomberg *January-June

In strict financial terms, it is easy to see why the Swiss are underwhelmed by the French deal. Sika is an example of European industrial excellence. Factories adjust product design and output rapidly according to fluctuations in local demand. It is forward-looking and particularly focused on new materials, especially glue, which will increasingly replace welding in housebuilding. Its share price has roughly doubled in a decade, whereas that of Saint-Gobain has halved.

The stately French firm, which is over 350 years old, still has a much bigger market capitalisation, of €23.6bn ($25.5bn), against Sika's €9.8bn. But its own investors do not appear overly keen on its strategy: Wendel, a shareholder, cut its stake in the French firm in May, from 12% to just over 6%, accepting a €220m loss.

As well as worrying that the two firms compete with each other in some markets, especially for sales of mortar, Sika's other investors grumble that Mr de Chalendar should be looking much further afield. Saint-Gobain still earns two-thirds of sales in slow-growth Europe, and buying the zippier Sika would not really solve that problem. Its acquisition record is also questionable. Critics say it destroyed value after buying British Plaster Board, a FTSE 100 firm, for $6.7bn in 2005.

Guillaume Texier, chief financial officer of Saint-Gobain, says bad market conditions after that acquisition were chiefly to blame. A combined firm would share savings worth €180m a year, he says, adding that they complement each other in most markets. He dismisses the idea that his firm would try to hobble or exploit a rival.

The outcome now depends on a series of courts. The Burkard family has appealed against the October judgment. Saint-Gobain, although not a direct party in the case, says the ruling undermines property rights in Switzerland. It is likely to bide its time. The agreement with the Burkard family can be extended until late 2018, time enough for the matter to go before the very highest judges.

The question is whether it is wise for Saint-Gobain to keep chasing Sika. Mr Texier denies the contest means Saint-Gobain is being distracted or risks having capital tied up. He says that other smallish acquisitions—some 20 this year, worth roughly €400m in all—are proof that life goes on.

There are risks, however. If Saint-Gobain's bid eventually succeeds but at the cost of bad blood, it might lose its target's best managers. In the meantime, win or lose, it may be neglecting other paths to growth. The firm would be better off attending to two urgent priorities, analysts say: expansion in Asia and North America, and a round of cost-cutting in France, its largest market. If these tasks are put off for much longer, Saint-Gobain could even find itself prey instead of hunter. ■

Alt-right media

Looking on the Breitbart side

Breitbart News is taking the business of outrage to Europe. It may succeed

A NOTABLE American commentator, Charles Krauthammer, once explained Rupert Murdoch's success in founding Fox News, a cable channel, by pointing out that he had found a niche market—half the country. The same may be true of Breitbart News, a conservative website whose fortunes have risen with those of Donald Trump, and whose chairman, Stephen Bannon (pictured), is Mr Trump's chief strategist.

Milo Yiannopoulos, an editor at Breitbart, explained after Mr Trump's victory that half of voters are "repulsed by the Lena Dunham, Black Lives Matter, third-wave feminist, communist, 'kill-all-white-men' politics of the progressive left." Breitbart saw it coming a while ago, he added. The company's expansion plans suggest it sees something coming in Europe, too. It already has a website in Britain and in January it will launch French and German sites.

Founded by Andrew Breitbart, a conservative journalist who died in 2012, the site is just nine years old. Its formula—outraging and fascinating readers with "click bait", occasional fake news, polemics and attacks on mainstream media—has taken off. Ten days after the election it said it had received 45m unique visitors in 31 days—modest compared with mainstream outlets. But its profile is rising rapidly. In some time periods—for example, between May 13th and June 13th this year—it has boasted the highest number of social-media interactions for political content in English, beating outlets like CNN, the *Guardian* and the *Wall Street Journal*. During that time its closest rival, the liberal Huffington Post, lagged by nearly 2m clicks and shares.

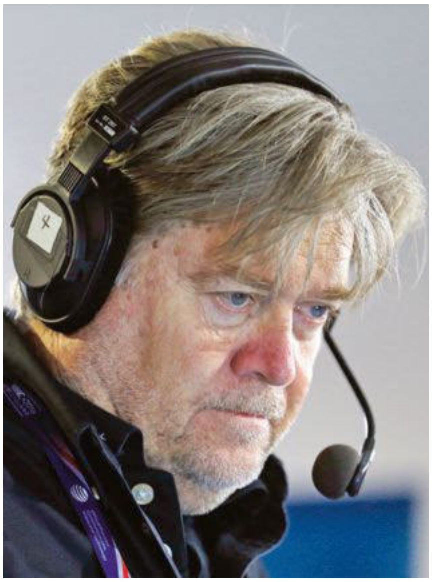
So far the company's political achievements have been more transparent than its commercial ones. Breitbart refuses to release revenue figures, although pundits suspect that its advertising streams are not big enough to sustain its current operations in America and Britain. It is financed by private backers, notably Robert Mercer, a hedge-fund billionaire and a big donor to Mr Trump's campaign, who reportedly invested $10m in the site a few years ago. Yet compared with traditional media, its overheads are small: a few opinionated journalists, some interns and readers who fill up the comments page at no extra cost.

Breitbart's ad revenues, such as they are, could prove volatile. Its content is frequently toxic: its comment section is a platform for members of far-right hate groups to rail against immigration and Jews. On November 29th Kellogg's, an American maker of breakfast cereal, announced it was pulling its ads from the site. Kellogg's is not alone. Allstate, an insurer, Warby Parker, which sells spectacles, EarthLink, an internet provider, and SoFi, a fintech firm, have blacklisted Breitbart. This week, some German companies, including BMW, a carmaker, joined the boycott.

As Breitbart's reach climbs, however, many firms will feel torn. The site has said that the departure of Kellogg's will not harm it financially. (Indeed, the cereal maker's share price has fallen since the site began urging consumers to "#DumpKelloggs".) Many advertisers, such as Nissan, a Japanese carmaker, have opted to stay.

The push deeper into Europe may seem an oddly international approach for a brand that scorns the ideals of a global order. Yet Breitbart has a clear operational model: moving into markets where it can win an audience by appealing to anti-globalisation and anti-immigrant sentiment and by aligning itself with an existing opposition party. A connection to a political entity lends it credibility and also allows Breitbart to draw fragmented online communities together into an organised platform, says Angelo Carusone of Media Matters for America, which monitors conservative media in Washington, DC.

In Britain, where it launched in 2014, Breitbart loudly promoted the campaign of the UK Independence Party (UKIP) to leave the European Union. The Leave team used its content, and UKIP's Nigel Farage became a columnist. Raheem Kassam, an editor on the site, went to work as Mr Farage's aide. He has since returned and is leading Breitbart's push to expand further.



He stoops to conquer

Conditions are similarly ripe in France and Germany, media observers say. Elections are due in both countries next year and far-right candidates—Marine Le Pen of the National Front in France and Frauke Petry of Alternative for Germany—hope to do well. Breitbart will cheer on their respective parties.

Incumbents do exist. In France, for example, conservative publications such as *Valeurs actuelles* have been flourishing as Ms Le Pen's popularity has surged, notes Paul Ackermann, editor-in-chief of Huffington Post France. But they have no professional internet presence. Supporters of the National Front, many of whom are young, do not have a media outlet where they can meet and exchange ideas. "The door is wide open" for a site like Breitbart, Mr Ackermann says. François Godard, a media analyst, sees a gap between the country's mainstream media and an increasingly populist readership. The online comments on the websites of *Le Monde* or *Le Figaro* are often more attuned to the Breitbart point of view than to the papers' own content, he says.

"America first"—European edition

In Germany, where most outlets lean left, the right-wing media scene is particularly underdeveloped—a cultural aversion born of the country's fascist past. Breitbart will have to contend with strict laws governing hate speech and anti-Semitism. *Junge Freiheit* is one of a tiny number of conservative papers. It has had a surge in readers since Angela Merkel, Germany's chancellor, opened the country's borders to migrants in 2015. But its circulation is still less than 30,000, perhaps due to a weak online presence. Breitbart could address that by bringing right-wing media consumers together on a single platform.

If Breitbart recruits well-known figures in local markets, as the Huffington Post has done, its path may be smoother. In Britain, alongside Mr Kassam, it appointed James Delingpole, a conservative journalist who writes in the *Spectator*, a 180-year-old right-of-centre magazine. Things are going well: the site's audience has grown by 135% year on year, to 15m monthly page views in July, meaning it has a bigger reach than the *Spectator's* own site. Not bad for a firm recently called a "bunch of nuts" by a spokesman for Mitt Romney, a former presidential candidate. The business of outrage, led in the early days by Rush Limbaugh, a right-wing talk-show host, and then perfected by Fox News, may well become another ubiquitous American export. ■

Schumpeter | The tycoon as intellectual

Charles Koch is a rare thing, a businessman besotted by ideas

CHARLES KOCH may well be the most demonised businessman in America, with his younger brother, David, a close second. Journalists argue that he is the mastermind of the country's vast right-wing conspiracy. Lunatics have made death threats. The ultra-rich, particularly those who made their original fortunes in oil and gas, are supposed to make amends by giving their money to liberal causes. The Kochs have instead spent hundreds of millions backing conservative political causes (though Charles Koch has no love for Donald Trump), lobbying for lower taxes and attacking the idea of man-made global warming.

Mr Koch doesn't come across as Dr Evil. True, the headquarters of Koch Industries is a collection of black boxes outside Wichita, Kansas; the security screening is rigorous. But its CEO has more of the air of a university professor. Despite his $40bn fortune, he lives in a nondescript neighbourhood in one of America's most boring cities, puts in nine or more hours a day in the office and lunches in the company canteen. He doesn't seem that interested in his surroundings: complimented on the firm's art collection, he says his wife takes care of that sort of thing. What he is really interested in is books and ideas.

It was as an engineering student at the Massachusetts Institute of Technology in the 1950s that he first fell in love with ideas. There he hit on the subject that has preoccupied him since: why some human organisations flourish while others stagnate. He gorged on the Austrian school of economics—F.A. Hayek, Joseph Schumpeter and, his personal favourite, Ludwig von Mises, Hayek's mentor. He devoured American polemicists such as F.A. "Baldy" Harper, whose treatise of 1957, "Why Wages Rise" (because of productivity improvements by workers, not union action), he describes as "life-changing".

Since then his reading has taken him far and wide. The bookshelves in his office are stuffed with works of history, biographies and the latest titles with big ideas. He is surprisingly keen on Howard Gardner, a quintessential Harvard-Yard liberal, and his theory of multiple intelligences (linguistic, musical and interpersonal among them). But Mr Koch found the answer to his question about how organisations prosper by reading the classical liberals: he regards the "spontaneous order" of the free market—the notion that systems are best left to correct naturally, free of human intervention, with the price mechanism allocating resources to the most efficient use—with the same awe with which he regards the natural order of the universe.

Mr Koch has used his reading to forge a theory of management which the Charles Koch Institute, his think-tank-cum-philanthropic outfit, has trademarked as market-based management or MBM. The main idea is that market signals should operate just as vigorously within organisations as between them. Workers should be paid according to the value they add rather than their position in the hierarchy. Koch Industries keeps base pay low (it is regarded as just a down-payment on the year's value-added reward) and workers are often paid more than their bosses. Companies should grant "decision rights" to those employees who have records of making choices that boost profits.

As Mr Koch's philosophy took shape, so his company boomed. When he took over as chief executive from his father in the late 1960s Koch Industries was a small company centred on oil and gas with $200m in yearly sales and 650 employees. Today it is the second-largest private firm in America, with $100bn in annual revenues and more than 100,000 employees. It is one of the world's largest commodities traders, operates three ranches covering more than 460,000 acres, processes some 600,000 barrels of crude oil a day and produces a wide range of materials such as paper towels, nylon and spandex. Koch Industries estimates that its value has increased over 4,500 times since 1960, outperforming the S&P 500 index by a factor of nearly 30.

Yet MBM has attracted remarkably few imitators. Mr Koch says that Morning Star, a California-based tomato producer, has also experimented, independently, with an internal-market system, but that hardly suggests a fashion. One reason may be that Koch Industries is based in the Midwest, away from the great business-theory factories such as Harvard or Stanford. Another is that it is easy to imagine MBM degenerating into a time-consuming bureaucracy. In any case, the firm's success probably owes as much to Mr Koch's managerial drive as to MBM (insiders joke that Koch stands for "keep old Charlie happy)", and to two big insights: that its core competence in processing, transporting and trading can be applied to a wide range of commodities; and that the Midwest is full of first-class engineers and technicians educated in places like Murray State University and the University of Tulsa.

The wizard of Kansas

Even if MBM is not quite the magic formula that Mr Koch claims, however, it serves two clear purposes. It provides a diverse and rapidly growing company with a glue. Koch employees speak of MBM with the same enthusiasm that General Electric's employees once talked about Six Sigma. Unsurprisingly, many have read Mr Koch's books on MBM, "The Science of Success" (2007) and "Good Profit" (2015). For the less scholarly, MBM is funnelled into ten "guiding principles" (such as "principled entrepreneurship") printed on coffee cups and posters throughout the group.

His philosophy also keeps the firm focused on Schumpeter's idea of creative destruction. Mr Koch is good at spotting opportunities (buying Georgia Pacific, a pulp and paper firm, in 2005 for $21bn, produced a spell of fast growth). Less obviously, he is always pruning businesses that start to fade. Koch Industries could easily have been a low-growth energy company stuck in the middle of the Great Plains. That it has instead succeeded in doubling its earnings every six years or so since the 1960s is thanks in large part to Mr Koch's unconventional and scholarly mind. ■

Also in this section

For daily analysis and debate on economics, visit
Economist.com/economics

The American economy

Full speed a-Fed

WASHINGTON, DC

The Federal Reserve spent 2016 deferring rate rises. It might now speed them up

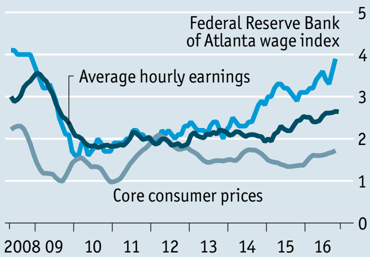
AMERICA'S central bank tries to be predictable. When in December 2015 it raised interest rates for the first time since 2006, nobody was much surprised. The central bank had telegraphed its intentions to a tee. Similarly, if the overwhelming consensus in financial markets is to be believed, on December 14th—almost exactly a year later—rates will rise again, to a target range of 0.5-0.75%. Donald Trump's tweets and phone calls may upend trade, fiscal and foreign policy in a matter of minutes, but Janet Yellen, the Federal Reserve's chairwoman (pictured), is tweaking monetary policy at only a cautious annual pace.

Yet in another sense, the Fed has confounded predictions—at least, those it made itself. A year ago the median rate-setter foresaw four rate rises in 2016. None has happened yet. This might seem like a straightforward reaction to events. At the start of the year, stockmarkets sagged on worries about Chinese growth. Then, in June, Britain voted to leave the European Union, sending markets spinning again for a while. But the delay also resulted from a gradual acceptance by Fed officials that low rates have become a longer-lasting feature of the economy. In September most rate-setters expected rates eventually to settle below 3%. This is down from 3.5% at the time of "lift-off" a year ago. Since June Ms Yellen has been saying that low rates are only "modestly" juicing the economy.

The big shortfall 1

United States, wages and prices

Three-month moving average, % increase on a year earlier



Sources: Bureau of Labour Statistics; Federal Reserve Bank of Atlanta; *The Economist*

Now, though, the Fed is ready to move again. A look at the labour market reveals why. A year ago unemployment was already low at 5%. Since then the economy has created an average of 188,000 jobs per month. At first this helped the labour-force participation of prime-age workers, which fell worryingly after the crisis, to surge. It rose from a trough of 80.6% in September 2015 to 81.6% by October 2016, a spurt faster than any since 1985. Swelling numbers of jobseekers kept unemployment roughly steady despite robust job growth.

In November, however, participation fell slightly. As a result, job creation is once again pushing unemployment down. It now stands at 4.6%, the lowest rate recorded since August 2007. That is below its long-run sustainable level, according to at least 13 of 16 Fed rate-setters who penned forecasts in September.

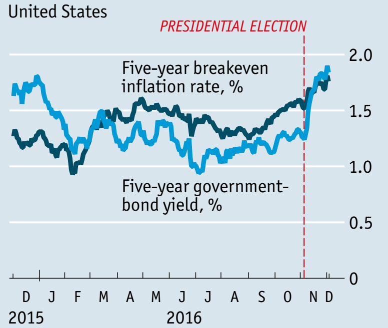
Hawks argue that participation has reached its limit, so little slack remains in the labour market. Other thermometers are popping. It now takes 28 days to fill a vacancy, up from 23 days in 2006, notes Torsten Slok of Deutsche Bank. Firms small and large list hiring difficulties among their top concerns. For all the fanfare over Mr Trump's agenda to protect jobs from outsourcing, fewer workers were laid off or fired in September than in any month since data started being collected in 2000.

Doves reckon this is mostly a mirage. Prime-age participation has climbed only a third of the way back to its pre-recession level. Even among those in work, there are still an unusually high number of part-timers who want full-time work.

The ultimate arbiter of this debate is wage and price inflation. If the economy is running hot, both should pick up. As it is, hourly wages are only about 2.5% higher than a year ago. But researchers at the San ▸▸

Trump bump 2

United States



Source: Federal Reserve Bank of St. Louis

Francisco Fed have suggested that a slew of retirements by baby-boomers on fat salaries is dragging this average down. Measures purged of this problem show the median hourly pay rise running at fully 3.9%, almost as generous as in 2007 (see chart 1 on previous page).

As for inflation, it is not yet back at the Fed's 2% target. But it is getting closer. Excluding food and energy, prices are 1.7% higher than a year ago, according to the Fed's preferred measure, up from 1.4% at the end of last year. Doves console themselves that even after rates rise, monetary policy will remain unusually loose for this point in the economic cycle. That partly reflects the asymmetry of risks before the Fed. Should an some unforeseen shock rattle the economy, there will be little room to cut rates to offset it. This, as Ms Yellen often acknowledges, justifies keeping rates lower than they otherwise would be.

Inflation risk, though, is starting to tilt upwards. Congress will probably cut taxes next year. Higher rates may be needed to stop any fiscal stimulus becoming inflationary. Since the election, markets' inflation expectations have continued on an upward trend that began in September. But Treasury-bond yields, which in large part reflect traders' expectations for Fed policy, have risen dramatically (see chart 2). Rising oil prices and the prospect of Mr Trump's imposing import tariffs also play a role. Both would crimp growth, but would do so in part by pushing prices up.

Surging bond yields and a stronger dollar are already squeezing the economy. So carefully has Ms Yellen managed expectations that a rate rise now will not exacerbate those trends. What would do so would be any hint that the Fed may bring subsequent rate rises forward, not push them back. For the first time in years, that does not look out of the question. ■

Buttonwood | First blast of the Trumpettes

The winners and losers in the post-election rally

SELL on the rumour, buy on the news runs one version of a hoary stockmarket adage. And it certainly applied to last month's presidential election. Before the poll, many investors were concerned about the risk that Donald Trump might become the 45th president. But as soon as the result was confirmed, they piled into shares. American equity mutual funds enjoyed four consecutive weeks of inflows, the longest streak since 2014, according to EPFR Global, a data provider.

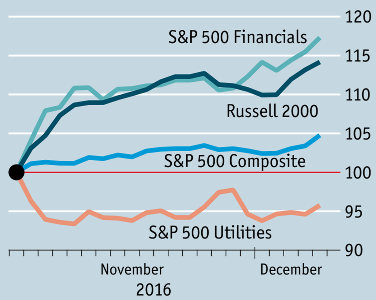
One driver of the rally was Mr Trump's planned fiscal stimulus. Investors believe this will lead to bigger deficits; hence the rise in bond yields since the election. But they also hope it will boost the American economy. That may explain why the Russell 2000 index of smaller companies, which tend to have a domestic focus, has outperformed the S&P 500 since the election (see chart). If this goes on, such stocks may become known as the Trumpettes.

Another factor was the planned cut in corporate-tax rates. The official American corporate income-tax rate is 35% (rising to 39% when state taxes are added). Standard & Poor's, a ratings agency, reckons that the effective rate paid by companies is 29%—largely because profits earned abroad are not repatriated and so are not taxed. Tobias Levkovich of Citigroup reckons that a cut in corporation tax from 35% to 20% would boost earnings per share for S&P 500 companies by 7%, even allowing for the offsetting impact of a stronger dollar and higher interest rates (both of which seem likely in 2017).

Investors may also be smacking their lips at the prospect of companies' repatriating their overseas cash piles. A repatriation tax "holiday" in 2004 saw companies bring back around $600bn, much of which was used to buy back shares or pay dividends. Mr Levkovich estimates that

Populism's boost for Wall Street

Share prices, November 8th 2016=100



Source: Thomson Reuters

investors may receive cash worth around 3% of the American stockmarket's total current value. A lot of this money may be ploughed back into equities.

But the effect on the American market has not been uniform. The best-performing bit of the stockmarket since the election has been financial firms. In terms of individual sectors, banks and life-insurance companies have both managed double-digit percentage gains. Investors clearly hope that the repeal of financial-services regulation, as well as a steepening of the yield curve, will boost Wall Street's profits—something voters in the rustbelt might not have realised would be one striking consequence of a Trump victory.

More broadly, the election has prompted a shift out of stocks such as power utilities and consumer-goods producers, which are less tightly linked to the overall strength of the economy, and into more cyclical shares such as miners and construction companies. The poor old utility stocks have suffered a double whammy since the election. Such firms pay high dividends and are often treated as alternatives to government bonds by income-seeking investors; as a result, they have been caught up in the bond sell-off since November 8th.

All this has had some perverse effects. One popular investor strategy has been to buy shares with low volatility (those that tend to rise and fall less rapidly than the overall market); exchange-traded funds (ETFS) have been set up specifically to own low-vol shares. According to BNP Paribas, a French bank, low-vol ETFS outperformed the rest of the American market in the first seven months of the year. But in the aftermath of the election, low-vol ETFS fell in price and actually became more volatile than the overall market.

The danger in all this is that the market gets ahead of itself. By the middle of 2017 investors expect the earnings of S&P 500 companies to have risen at an annual rate of 12.3%. Some of this reflects a recovery in the energy sector after last year's falls in oil prices. But even if energy stocks are excluded, profits are expected to be 7.9% higher, according to Société Générale, another French bank.

In recent years analysts have regularly forecast that companies would produce double-digit percentage growth in profits, only to be disappointed. It may well happen again. Even if Mr Trump's proposals get through Congress unscathed, they may take time to have an impact on the economy, and thus on corporate profits.

In the meantime, equities trade on a cyclically adjusted price-earnings ratio (which averages profits over the past ten years) of 27.3, according to Robert Shiller of Yale University. That valuation is 63% above the long-term average. And interest rates look poised to rise, a development that has in the past upset equity markets. The first blast of the Trumpettes may yet be followed by a loud raspberry.

Economist.com/blogs/buttonwood

Italian banks

A monte to climb

MILAN

A state rescue of the world's oldest bank looks probable

THE first casualty was Matteo Renzi's hold on office. As he had promised, Italy's prime minister resigned on December 7th, three days after voters rejected his proposals to overhaul the constitution. The second is likely to be a planned private-sector recapitalisation of Banca Monte dei Paschi di Siena, the country's third-biggest bank and the world's oldest. As *The Economist* went to press, the scheme's chances looked slim. A government rescue was reportedly being prepared.

Monte dei Paschi has been in trouble for years. It has already had two state bail-outs and frittered away €8bn ($10bn) raised in share sales in 2014 and 2015. Its stockmarket value has dwindled to €600m, having fallen by 85% this year (see chart). Its non-performing loans (NPLs), even after provisions, are 21.5% of its total; the gross figure is 35.5%. In July it fell ignominiously short in European stress tests, ranking 51st of 51 lenders. The European Central Bank, its supervisor, asked it to raise more capital by the end of the year. This week the bank asked for more time.

Pre-empting the test results, Monte dei Paschi devised a plan with two investment banks, J.P.Morgan and Mediobanca. It would dispose of €27.7bn-worth (gross) of bad loans. The beautified bank would be injected with €5bn of equity: some from a voluntary debt-for-shares swap which has already raised €1bn; the rest from a share issue, with an "anchor" investor, likely to be Qatar's sovereign-wealth fund, providing the bulk. In October, Monte dei Paschi also unveiled a new business plan.

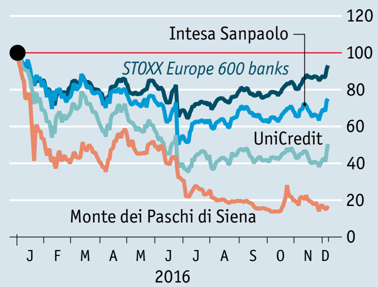
Alas, investors' interest may well have been contingent on political stability. The hope is that the swift nomination of a new government could yet persuade them to part with their cash. But if, as seems likely, they demur and the state steps in, how might it do so?

Awkwardly, Italy is constrained by European Union "resolution" rules, which came fully into force this year, aimed at avoiding repeats of the bail-outs in several countries that followed the financial crisis of 2008. If banks receive state aid, they are in effect deemed bust; bondholders as well as shareholders must accept losses. In Italy, however, small investors—who are usually depositors, too—account for a large share of junior bonds. A "bail-in" of bondholders in four small banks late in 2015 caused uproar (at least one investor took his own life). The authorities have been desperate to ensure the same does not happen at Monte dei Paschi, where 40,000 households own €2bn-worth of its bonds.

Burnt Siena

Italian banks' share prices, € terms

January 1st 2016=100



Source: Thomson Reuters

There may be room for manoeuvre. The rules allow the "precautionary and temporary" recapitalisation of a bank to "preserve financial stability". The bank must be solvent; the injection must be on market terms; and the capital must be needed to make up a shortfall identified in a stress test, or similar exercise—like the one Monte dei Paschi failed in July. That may open the way for the Italian treasury—which, with 4% of Monte dei Paschi, is already the biggest shareholder—to supply equity, with a view to selling when all is calmer.

Even with a precautionary recapitalisation, bondholders have to bear some of the burden. But with some nifty legal footwork they could be compensated without falling foul of state-aid rules. Many who bought bank bonds were under the false impression that they were as safe as deposits. Even so, sorting out compensation for mis-selling could be a messy affair.

Although Monte dei Paschi is the biggest cloud over Italy's banking system, other lenders are also seeking capital. UniCredit, the country's biggest bank, intends to sell its asset-management arm to Amundi, a French firm, and this week agreed to sell its stake in a Polish bank. It is due to unveil a strategic review on December 13th and plans a share issue in 2017.

Much-needed consolidation is also on the way. A merger agreed in October between Banco Popolare and Banca Popolare di Milano will create a lender bigger than Monte dei Paschi. Popolare di Vicenza and Veneto Banca, two banks held by Atlante, a private fund set up at the government's behest, are also likely to unite. UBI Banca may acquire three of the four small banks put into resolution a year ago.

In a country where bank branches outnumber pizzerias, that should help. Sales of NPLs have picked up in 2016. But in an economy that has scarcely grown since the birth of the euro, is likely to expand by just 0.8% this year and faces political limbo, nothing can be taken for granted. Least of all at Monte dei Paschi. ■

The euro zone

General anaesthetic

Financial markets took Italy's No vote in their stride. Will they remain calm?

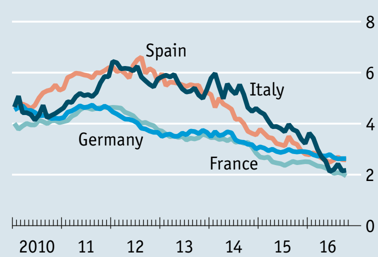
THE response of bond, stock and currency markets to the result of Italy's referendum, and the resignation of its prime minister, Matteo Renzi, was a jaw-breaking yawn. The euro fell a bit against the dollar, and then rallied. The yield on Italy's ten-year bonds ticked up a few basis points and then fell to 1.89%. The markets had expected a No vote and priced it in, is one view. The calm probably also owed much to a belief that the European Central Bank (ECB) would act to stem any panic.

As *The Economist* went to press, the ECB's governing council was widely expected to extend its monthly purchases of government and other bonds ("quantitative easing", or QE) beyond March 2017. These purchases (which began at a monthly rate of €60bn and then increased to €80bn), plus the ECB's myriad schemes to provide long-term liquidity to banks, have worked like a charm. Financing costs in the euro zone's periphery have converged on those of core countries (see chart). All governments, apart from Greece, can borrow in bond markets at tolerable rates. A nagging worry is that the ECB cannot keep up this support forever. Yet most observers think it can soldier on for a while yet.

The ostensible reason for QE is not to calm markets but to meet the ECB's inflation goal. The headline rate rose to 0.6% in November, up from 0.1% a year earlier, but it is still well below the ECB's target of close to 2%. Strip out volatile prices of food, energy, booze and tobacco, and "core" inflation has been stuck at 0.8% for months. Yet the economy has been doing rather well by the shrunken expectations of euro land. GDP growth was steady at an annual rate of 1.7% in the first three quarters of 2016. A closely watched index of activity based on sur- ▸▸

The Draghi convergence

Bank interest rates on new loans to non-financial firms*, %



Source: European Central Bank

*Up to €1m, 1-5 years fixed rate

veys of purchasing managers suggests that growth has picked up a bit more recently.

Unemployment has fallen from 10.6% to 9.8% in the past year, with some of the biggest declines in the former crisis countries of Spain, Portugal and Ireland. Even Greece's economy is improving. Still, the ECB cannot afford to rest on its laurels. Economic tailwinds, such as a weaker euro and cheaper bank credit, will not always have the same puff.

The ECB does face some constraints. One is politics. It is more independent than its peer central banks, but even it requires political cover for contentious policies. That is why its president, Mario Draghi, got himself invited to the Bundestag in October 2012. He sought to defend from German criticism his famous pledge to do "whatever it takes", including unlimited bond purchases, to save the euro. To some German ears, this sounded like the monetary financing of governments, which is barred by the treaty governing the EU. It helps that Angela Merkel, Germany's chancellor, blessed the scheme, dubbed Outright Monetary Transactions, or OMTs, and that the ECB has not yet been called upon to use it. Germany still suffers frequent bouts of grumpiness at ECB policy. The finance minister, Wolfgang Schäuble, said in April that the ECB is half to blame for the rise of the populist Alternative for Germany (AFD) party. Yet if the ECB were forced to act in unorthodox ways to stem a financial crisis, leading German politicians would be unlikely to make a fuss.

Some constraints are likely soon to be relaxed. To abide by the prohibition on monetary financing, the ECB has set a limit, of 33% of the total, on the purchase of any one country's public debt, as well as on each individual bond issue, under its QE programme. It also tailors its purchases to the economic weight of each euro-zone country (the so-called "capital key"). If purchases continue at a monthly rate of €80bn, eventually the ECB will hit its self-imposed limits. Bonds will become particularly scarce in Germany, which is supposed to supply 26% of total purchases, but is running a budget surplus and so has a shrinking public-debt pile.

Two ways out suggest themselves. First, the ECB could buy fewer bonds each month. But any hint that QE might taper off could cause bond yields in peripheral countries to jump. A likelier course, then, is to raise the limit to, say, 50% for each country and for most bond issues.

Even a looser limit will pinch at some point. Economists at Goldman Sachs reckon the ECB will eventually have to ditch the capital key and buy proportionately more Italian bonds and fewer German ones. "Whatever it takes", is the pledge. No one believes endless bond purchases will solve the euro zone's deep-seated problems. But no one wants another crisis. ■

Pensions in America

Stampede in Dallas

A different sort of emergency for the fire and police services

BANK runs, with depositors queuing round the block to get their cash, are a familiar occurrence in history. A run on a pension fund is virtually unprecedented. But that is what is happening in Dallas, where policemen and firefighters are pulling money out of their city's chronically underfunded plan, and Mike Rawlings, the mayor, is suing to stop them.

At the start of the year the fire and police pension fund had \$2.8bn in assets. Since then nearly \$600m has been withdrawn from the plan, of which almost \$500m has been taken out since August 13th. That is an alarming acceleration; in 2015 total withdrawals were just \$81m.

Even at the start of 2016, the plan was just 45% funded, and was expected to become insolvent within 15 years. When some workers take out their money, they get the full value of their benefits; leaving a smaller pot to be shared among the remaining members. (The city estimates that the funded ratio has fallen to 36% after the withdrawals.) As in a bank run, it seems rational to withdraw your money if you worry that all the benefits won't be paid.

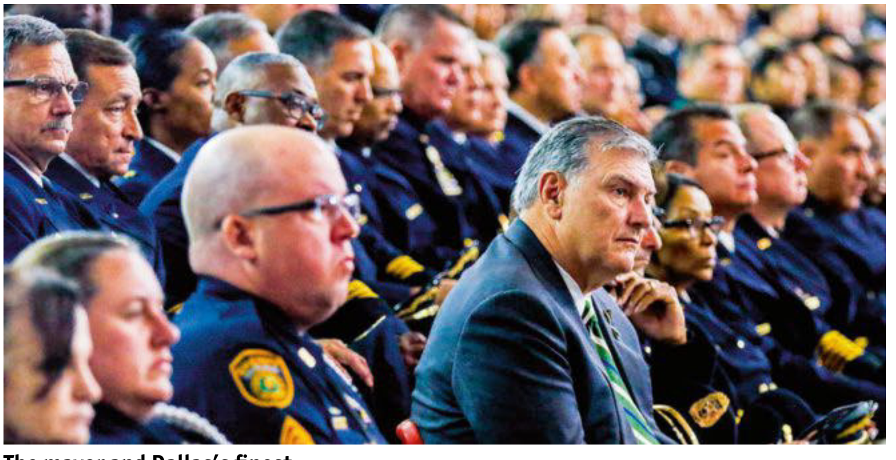
The crisis is the result of three linked issues: overgenerous pension promises; the flawed nature of public-sector pension accounting in America; and some bad investment decisions. In order to pay the generous benefits, the scheme counted on an investment return of 8.5% a year, absurdly high in a world where the yield on ten-year Treasury bonds has been hovering in a range of 1.5-3%. So the scheme opted for riskier assets in private equity and property. But the strategy did not work; the value of its investments declined by \$263m in 2014 and \$396m in 2015, thanks largely to write-downs of those risky assets.

It is not unusual for state and local-government pension schemes in America to be underfunded; the average scheme was 73.6% funded at the end of 2015, according to the Centre for Retirement Research at Boston College. A more conservative accounting approach, as is required of private-sector pension plans, would bring the ratio down further, to 45%.

But the Dallas fund has a particularly big problem. It operates a deferred-retirement option plan (DROP) which allows police and firemen who have qualified for retirement to keep working, while their benefits are kept in a separate account earning an interest rate that has been 8-10% a year. More than 500 Dallas DROP accounts are worth more than \$1m; the average account is worth nearly \$600,000.

In addition, since 1989, retirement benefits have been upgraded using an annual cost-of-living adjustment of 4%. The city estimates that benefits are now 15-20% higher than they would have been had they been upgraded in line with the consumer-price index. Together, the DROP plan and cost-of-living increases make up around half of the scheme's total liabilities.

There are only two possible solutions to the shortfall: put more money into the fund or cut the benefits. A 1984 referendum limits the maximum amount of city contributions—a limit that the city has reached this year. The 2015 scheme report suggested that total annual contributions to the pension fund would need nearly to double, from 37.6% to 72.7% of payroll, in order to close the deficit, and even that would take ▸▸



The mayor and Dallas's finest

40 years. The pension scheme has asked that the city make a one-off payment of \$1.1bn in 2018, which the city says would require it to more than double property taxes. Both Fitch and Moody's, two ratings agencies, downgraded Dallas bonds in October, citing the pension issue.

Instead, the city has proposed a plan that involves rolling back some of the accrued cost-of-living increases and interest payments on the DROP accounts. But Sam Friar, the pension board's chairman, has called the proposal a "non-starter"; any attempt to reduce past benefits will almost certainly end up in the courts. As *The Economist* went to press, Mr Rawlings's suit was on hold while the pension fund's board was to consider whether to block withdrawals itself. But that would be a short-term solution to a crisis that has been building for decades and that is not confined to Dallas alone. ■

Insurance litigation

Insurance's Jarndyce v Jarndyce

A property-damage claim spawns a long and important legal battle

FOUNDED by former African American slaves, the west African country of Liberia has produced an insurance case that has bounced between the courts of several countries for a quarter of a century, condemning the claimants and their opponent to a generation of legal bondage. At long last, the saga might just be drawing towards a conclusion. It may also leave a legacy: to shift the calculus when third-party litigation funders assess the risks they face.

In the early 1990s, Liberia's biggest importer, Lebanese-owned AJA, sued Cigna, an American insurer, in the federal court in Philadelphia for refusing to pay out over property damage incurred during Liberia's civil war. AJA won, but a district-court judge overturned the verdict with a "judgment notwithstanding the verdict"—a rare device that can be employed when a jury is deemed to have deviated far from the law (in this case by failing to acknowledge a war-risk exclusion). The judge's move was upheld by a higher appeal court.

Livid, AJA applied to Liberian courts and in 1998 won a judgment for \$66.5m (now worth double that with interest). Cigna counter-sued, and in 2001 won an injunction in America barring any attempt to enforce that judgment anywhere in world. A Liberian judge later ruled that injunction itself to be unenforceable.

The next twist was that AJA assigned its interest to Samuel Lohman, an American lawyer, and Martin Kenney, a Canadian fraud-hunter based in the British Virgin Islands. They secured \$3m in funding from Garrett Kelleher, an Irish property developer. Third-party funding is increasingly popular in commercial cases, and particularly attractive to entrepreneurs looking to invest some of their wealth in speculative bets with potentially high returns.

They then brought in 22 other Liberian firms with claims against Cigna. They also worked with Liberian officials, who appointed the country's insurance commissioner as receiver, to go after Cigna's former Liberian arm. In 2007 the receiver sued ACE, an offshore insurance giant that had bought and indemnified Cigna's property-and-casualty business in the late 1990s, in the Cayman Islands. Plenty more tit-for-tat has ensued, involving arguments about jurisdiction, sovereign immunity and much else. But the most recent developments are the most intriguing.

ACE (now trading as Chubb, following a subsequent merger) went back to the Philadelphia courts to enforce the 2001 injunction. In July Judge Paul Diamond obliged, calling the other side's behaviour an "affront" to American courts, declaring Messrs Kelleher, Kenney and Lohman in civil contempt, and calling a hearing for December 14th to determine damages payable to Chubb (which is seeking \$14m). If the trio fail to show up, he ruled, they could be prosecuted for criminal contempt.

They say the court has overstepped its authority. "The long arm of American courts has been stretched to unprecedented lengths to throttle us," says Mr Kenney. The judge, he argues, has become Chubb's pawn in what is "essentially an offshore case". The externally funded Cayman case was necessary to resolve a conflict between America's legal system and Liberia's, he says; American law is not inherently superior. As for the original war-risk exception, he notes that Cigna settled (for an undisclosed sum) with a much bigger claimant, Firestone, a rubber giant, over damage sustained in the same conflict.

Mr Kenney and his colleagues are, however, loth to explain this to Judge Diamond in person. That, they say, could undermine their jurisdictional objections to his rulings. They have launched an emergency appeal against the order to appear.

Evan Greenberg, Chubb's boss (and son of "Hank", a former CEO of AIG, once the world's biggest insurer), says he is "incensed" by what he considers an attempt to wring "hold-up money" from his firm, and will spend whatever it takes to win. He sees evidence of a shakedown in the timing of the Cayman suit, which came just as the firm was dealing with regulators over the planned move of its headquarters to Switzerland—and therefore more likely to pay to make the suit go away. He rejects the idea that this is about a clash of legal systems that needs resolving in a neutral venue. "AJA yielded to American jurisdiction at the start and received full justice."

Chubb's lawyers say the case is a milestone in litigation finance: it shows that third-party funders can be identified (determining Mr Kelleher's involvement was a long slog) and, in frivolous cases, held liable for costs over and above their original investment. "Now, they can lose more than their bet," says one. A recent case in Britain extended funders' liability there.

Mr Greenberg scents victory, and reckons the case is "near the end". Don't bet on it, says Mr Kenney, who vows to appeal against an unfavourable verdict all the way to the Supreme Court. Still, what's another couple of years in a case this long? ■

Free exchange | You had to be there

Labour mobility and cultural mixing are fundamental components of economic integration

"WHAT'S the model? Have cake and eat it." So read handwritten notes, snapped in the hands of an official of Britain's ruling Conservative Party, as she left a meeting in Downing Street on Brexit strategy in late November. Britons seem keen to pick and choose from a menu of ties with Europe—in particular, to retain access to the single market while gaining more control over migration. Angela Merkel, the chancellor of Germany, is unwavering. In a speech in Berlin on December 6th she reiterated that Europe's "four freedoms" are inseparable and inviolable. Countries hoping to share in the free movement of goods, services and capital must accept the free movement of labour as well.

The European project was meant above all to be a process of economic integration (intended, in the words of the Schuman declaration in 1950, "to make war [within Europe] not merely unthinkable but materially impossible"). Dissatisfaction with the EU often boils down to the suspicion that its original mission of economic integration has morphed into a misguided push for political union. Which one of these agendas does the free movement of people advance?

Some economists argue that though the free movement of people is essential to Europe's political project, it is not necessary to accomplish the sort of deep economic integration that reduces wage inequality across countries. In the simplest trade models, such as the one developed by Bertil Ohlin and Eli Heckscher in the early 20th century, this is certainly true. Such models suppose that countries' comparative advantages are determined by their relative abundance of resources. Countries with lots of low-wage labour, for instance, tend to export goods that use a lot of low-wage labour in production. Building on this theory, Paul Samuelson pointed out that opening trade between two countries ought to cause the price of traded goods to equalise across markets. That, in turn, should cause the return to the factors used in production, including the wages paid to labour, to converge, even if those factors could not move across borders. Free trade alone is enough to generate convergence.

Yet this is an impoverished view of integration. New models of trade do not imply that close economic integration should cause incomes to converge. Firms and places are often subject to economies of scale: they become more productive as they grow larger. As freer trade expands the size of the market, producers with initial size advantages outcompete rivals. In an integrated market one country might specialise in a high-wage industry with increasing returns to scale (like skilled manufacturing or finance) and others in areas in which wages are lower. In fact, the conditions needed to bring about convergence go well beyond what free trade alone is likely to achieve. For incomes to equalise, different countries must use similar sorts of technology, for instance. Yet achieving comparable levels of technological capability across countries may require more than just free trade: supranational standards, for example, and the flow of knowledge in other ways—such as through the movement of individuals.

In 1961, in his book, "The Theory of Economic Integration", Bela Balassa, a Hungarian economist, offered a more satisfying definition of his subject. He suggested it was an "absence of various forms of discrimination" between economic units in different countries. A free-trade agreement, he noted, is a step towards economic integration, but just a step. Harmonising external tariffs is a further leap, and setting common internal standards and regulations is yet another move along the continuum.

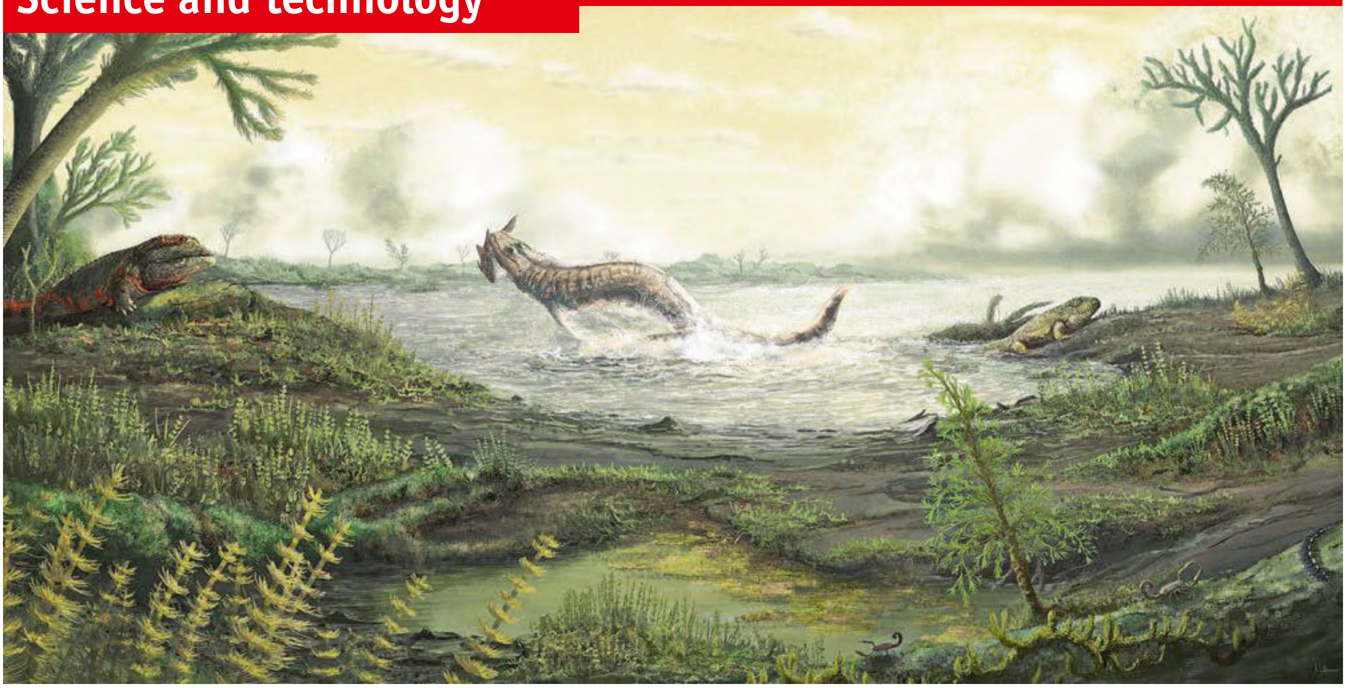
Using discrimination as a metric strongly implies that limits on movement of labour inhibit economic integration. Such limits directly prevent competition among providers of in-person services from different countries; Polish doctors cannot easily treat British patients from surgeries in Poland. And constraints on labour mobility undermine the formation of social ties across borders: relationships that play an important economic role. A paper published in 2013 examined the fortunes of different regions in West Germany after the fall of the Berlin Wall, and found that where households maintained close social ties to East Germany, the fall of the wall led to more cross-border investment and a higher return to entrepreneurial activity. It is costly to gain valuable economic information about unfamiliar places. Social ties reduce that cost. Borders, which frustrate the creation of those ties, necessarily mean that firms on one side of the line will be at a disadvantage when investing or operating on the other.

Now you're talking

Indeed, it may be the very logic of economic integration, with its attendant erosion of discriminatory barriers, that truly irks Eurosceptics. Cultural differences of all sorts, from language barriers to tastes and habits, make it harder for people and firms from one country to do business in others: for French-language newspapers to sell in Frankfurt or for Spaniards to network with Czechs. Complete economic integration implies the smoothing away of these differences, and the formation of something closer to a European identity. Pro-Brexit voters were not wrong to fear that European economic integration threatened the primacy of their unique culture, or to worry that in the big, cosmopolitan cities—where people from many countries mix to build ties and share knowledge—a broader, post-national identity is being forged.

The goal of ending war within Europe through deep economic integration is not so different from that of ending war by eliminating the pesky nationalism of individual states. As enthusiasts and critics of the European project should know, closer economic, political and cultural ties are indivisible. Putting up barriers to labour mobility is not just a political choice. It implies a halt to—and perhaps even the reversal of—economic integration. ■

Economist.com/blogs/freeexchange



Palaeontology (1)

Bridging the gap

Also in this section

Some new fossils illuminate two evolutionary forks that led ultimately to humans

ONE of the most important steps on the journey to *Homo sapiens* was that made by the first fish to crawl onto dry land. It was both a metaphorical and a literal step, but knowing exactly when it happened is tricky. It depends, for one thing, on the definition of "dry land". Scrambling over the mud from one pool to another, assisted by fins that had evolved to walk along the seabed in the way modern coelacanths do, was probably going on by 385m years ago.

By 375m years ago, the descendants of these first-footers had evolved four limbs clearly recognisable as legs. They were no longer fish, but "tetrapods". Their legs, though, could have as many as eight digits each, and do not look capable of supporting an animal properly when it was out of the water. Some might thus argue that even by this stage, the step onto dry land had not been truly made.

All of these events occurred during a period called the Devonian when, though the oceans teamed with organisms no less varied than today's, life on the continents was just getting going. Vascular plants (those bigger than mosses and liverworts) had evolved only recently. Insects were evolving fast, too. But there were no large land animals. Occupying the new habitat thus looked like an evolutionary open goal for the tetrapods. But then, 359m years ago, in a mass extinction as big as that which did for the dinosaurs, the Devonian came crashing to an end. For 25m years after this the tetrapods more or less disappear from the fossil record. When they re-emerge, in what is called the Lower Carboniferous period, they do, indeed, live up to their potential. They are now proper terrestrial animals, possessing five-digit limbs powerful enough to support them without the assistance of water's buoyancy. But how they got there has been a mystery.

Walking and eggshells

This 25m-year dark age is known as Romer's gap, after Alfred Romer, an American paleontologist of the 20th century, who was the first to notice it. But it is dark no longer. A team of fossil hunters led by Jennifer Clack of Cambridge University has been collecting and analysing material from Lower Carboniferous outcrops in Scotland. As they report in *Nature Ecology and Evolution*, Dr Clack and her colleagues have identified and named five hitherto-unknown species of tetrapod from the gap, and gathered material from seven other, as-yet-unnamed ones. This suggests the gap is a product of incomplete collecting in the past rather than an actual hiatus in animal history brought about by the Devonian mass extinction.

The team's discoveries range from species the size of newts to ones the size of crocodiles (pictured in the artist's impression above). Crucially, some were clearly adapted to be able to walk for long periods on land in a way their Devonian ancestors had not been. Romer's gap thus seems to be the time when tetrapods became unequivocally terrestrial.

But that is not all. One of the team's most intriguing findings came as a result of an analysis of the fossils' anatomies, to determine how they were related to each other and to earlier and later animals. This concluded that a great evolutionary split, between the amphibians and what are known as the amniotes, probably happened during the gap. The amniotes are those animals (including modern reptiles, birds and mammals) that have complex eggs surrounded by a membrane which cushions and protects the developing embryo. It was amniotes that evolved the eggshell, a development which let them sever all connection with the water by laying their eggs on land.

Romer's gap, in other words, now seems bridged—and this, in turn, bridges not only the gap in understanding of when tetrapods became terrestrial, but also that concerning when the amniotes evolved. And since, as mammals, human beings are also amniotes, that, from a human point of view, is an evolutionary twofer. ■

Palaeontology (2)

Feathered find

A dinosaur's tail has a tale to tell

TWO decades ago palaeontologists were astonished to discover impressions of feathers in rock around the petrified bones of dinosaurs that had clearly, from the anatomy those bones displayed, been unable to fly when they were alive. Astonishment turned to delight with the subsequent discovery of exquisitely preserved examples of these feathers in the petrified tree resin known as amber. Now, a team led by Xing Lida at the China University of Geosciences, in Beijing, and Ryan McKellar at the Royal Saskatchewan Museum, in Regina, has uncovered something even more impressive. As they report in *Current Biology*, they have found, again preserved in amber, part of a dinosaur's feathered tail.

Their fossil comes from the Hukawng valley amber mines in northern Myanmar, already famous for many spectacular specimens of life dating from 99m years ago, during the mid-Cretaceous period. The tail in question was once attached to a carnivorous dinosaur from a group known as the coelurosaurs, the most famous member of which is *Tyrannosaurus*. The coelurosaur here, though, was no tyrannical giant. Its tail bones are only two millimetres wide, suggesting it was not much larger than a modern sparrow. Whether it was fully grown or still a juvenile remains unknown.

The animal's feathers appear to have been darkish brown on the top. Underneath, they seem either to have lacked colour altogether or to have been coloured by bright pigments known as carotenoids that degrade quickly after death. As for their structure, their central

Who was a pretty boy, then?

shafts and the paired barbs branching from these shafts resemble those of ornamental feathers in many bird species alive today. In particular, the bending of some of the barbs within their amber matrix suggests they were flexible in life in a way that flight-feather barbs are not.

Why feathers first evolved has been debated for years. Some suggest for insulation, rather like the hair of mammals. Some argue they were, from the beginning, a way of generating lift—perhaps helping the predatory dinosaurs that sported them to get a better kick with the razor-sharp claws on their hind legs. Others still theorise that they were evolutionary fashion statements, as many still are today. If the feathers on the newly reported specimen did sport carotenoids, it would suggest that the fashionistas are on to something.

Solar energy

Shine on

Do solar cells save more carbon dioxide than is used to create them?

THAT solar panels do not emit greenhouse gases such as carbon dioxide when they are generating electricity is without question. This is why they are beloved of many who worry about the climate-altering potential of such gases. Sceptics, though, observe that a lot of energy is needed to make a solar panel in the first place. In particular, melting and purifying the silicon that these panels employ to capture and transduce sunlight needs a lot of heat. Silicon's melting point, 1,414°C, is only 124°C less than that of iron.

Silicon is melted in electric furnaces and, at the moment, most electricity is produced by burning fossil fuels. That does emit carbon dioxide. So, when a new solar panel is put to work it starts with a "carbon debt" that, from a greenhouse-gas-saving point of view, has to be paid back before that panel becomes part of the solution, rather than part of the problem. Observing this, some sceptics have gone so far as to suggest that if the motive for installing solar panels is environmental (which is often, though not always, the case), they are pretty-much useless.

Wilfried van Sark, of Utrecht University in the Netherlands, and his colleagues have therefore tried to put some numbers into the argument. As they report in *Nature Communications*, they have calculated the energy required to make all of the solar panels installed around the world between 1975 and 2015, and the carbon-dioxide emissions associated with producing that energy. They also looked at the energy these panels have produced since their installation and the corresponding amount of carbon dioxide they have prevented from being spewed into the atmosphere. Others have done life-cycle assessments for solar power in the past. None, though, has accounted for the fact that the process of making the panels has become more efficient over the course of time. Dr Van Sark's study factors this in.

Panel games

To estimate the number of solar panels installed around the world, Dr Van Sark and his team used data from the International Energy Agency, an autonomous intergovernmental body. They gleaned information on the amount of energy required to make panels from dozens of published studies. Exactly how much carbon dioxide was emitted during the manufacture of a panel will depend on where it was made, as well as when. How much emitted gas it has saved will depend on where it is installed. A panel made in China, for example, costs nearly double the greenhouse-gas emissions of one made in Europe. That is because China relies more on fossil fuels for generating power. Conversely, the environmental benefits of installing solar panels will be greater in China than in Europe, as the clean power they produce replaces electricity that would otherwise be generated largely by burning coal or gas.

Once the team accounted for all this, they found that solar panels made today are responsible, on average, for around 20 grams of carbon dioxide per kilowatt-hour of energy they produce over their lifetime (estimated as 30 years, regardless of when a panel was manufactured). That is down from 400-500 grams in 1975. Likewise, the amount of time needed for a solar panel to produce as much energy as was involved in its creation has fallen from about 20 years to two years or less. As more panels are made, the manufacturing process becomes more efficient. The team found that for every doubling of the world's solar capacity, the energy required to make a panel fell by around 12% and associated carbon-dioxide emissions by 17-24%.

The consequence of all this number-crunching is not as clear-cut as environmentalists might hope. Depending on the numbers fed into the model, global break-even could have come as early as 1997, or might still not have arrived. But if it has not, then under even the most pessimistic assumptions possible it will do so in 2018. After that, solar energy's environmental credentials really will be spotless. ■

Molecular biology

Body of knowledge

An atlas of where proteins are found in cells will help work out what they do

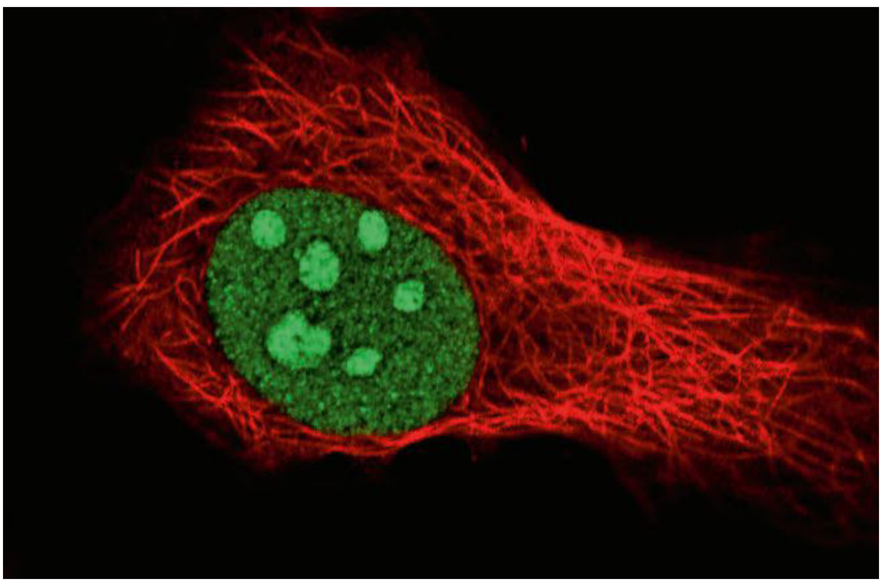
ONE of the most important concepts in biology is compartmentalisation. Different organs do different jobs within bodies. Different tissues do different jobs within organs. Different cells within tissues, likewise. And within cells, different organelles—as subcellular components such as nuclei, mitochondria and Golgi bodies are known—are also specialised for particular functions. Each of these levels of organisation has, over the years, been catalogued in what have come to be known as atlases, beginning in 1543 with Andreas Vesalius's "De Humani Corporis Fabrica" (On the Fabric of the Human Body), the founding text of modern anatomy.

The latest level of detail is to look at different proteins within organelles. Proteins are the molecules that do most of the work within a cell. They range from things like actin and myosin, which collaborate to flex muscle cells—and thus the muscles of which those cells are part—to the enzymes of the Krebs cycle, which disassemble glucose to release the energy therein. The Cell Atlas, a database launched on December 4th at a meeting of the American Society of Cell Biology, records which proteins are found in which organelles. The result, like "De Humani Corporis Fabrica", is both pleasing to the eye and important to the field. Proteins located together are likely to work together, so knowing a protein's whereabouts within a cell will help researchers to determine its job.

The authors of the Cell Atlas, led by Mathias Uhlen of the Royal Institute of Technology, in Stockholm, have pinned 12,051 proteins down in this way using immunofluorescence. This technique employs specially created antibodies (protein molecules, produced by immune-system cells, that bind specifically to a particular target protein) to hunt down that target within a cell. The antibodies themselves have fluorescent tags attached to them, so that they will glow when exposed to ultraviolet light. By applying these tagged antibodies to cells from 22 human-cell lines derived from a range of original tissues, the atlas's authors gave themselves the best possible chance of detecting a particular protein in cells of at least one line. That done, each sample was examined microscopically to determine which of the 13 generally recognised organelles each protein appeared in. This, being quite a task (and not one easily delegated to automatic optical-recognition systems), was carried out in part by a bunch of 120,000 enthusiastic amateurs.

The example in the picture is of the distribution of a protein (tagged green) called ZNF554. This belongs to a group, the zinc-finger transcription factors, whose job is to activate and regulate genes. As the picture shows, ZNF554 is restricted to the cell's nucleus. Within that nucleus there are several places which glow particularly brightly, and where it is therefore particularly abundant. These are the nucleoli—zones where genes are especially active. (The red areas are the cell's microtubules. These act as its skeleton and are tagged in all Cell Atlas pictures, in order to outline a cell's limits.)

What fraction of human proteins the Cell Atlas currently covers is open to debate. The number of protein-coding genes in the human genome is currently reckoned at 19,628. Some genes, however, can yield more than one protein—either because they may be read in more than one way, or because their messages to the protein-manufacturing parts of a cell may end up edited in different ways. This means the actual number of proteins that can exist from time to time in the body exceeds the number of genes, probably by at least 50%. The Cell Atlas, then, is by no means the last word on the matter of where proteins are found. But it is a good start. ■



Spot the nucleoli

The Breakthrough prizes

Move over, Alfred

Yuri Milner, a technology billionaire, wants to upstage the Nobels

IN 2012 science was stirred by an announcement that nine physicists would each receive the eye-popping sum of $3m for their work in such arcane fields as string theory and inflationary cosmology. They were the first winners of Breakthrough prizes—a set of now-annual awards to the brains behind important recent advances in basic research. The Breakthroughs are both inspired by, and intended to outdo, those willed into existence at the beginning of the 20th century by Alfred Nobel.

Like Nobel, Yuri Milner, the prizes' creator, is a scientist-turned-businessman (he is a former physicist who has made his fortune as a venture capitalist). Unlike Nobel, however, he has not created an exclusive brand. Anyone with a few million dollars to spare can join in. The initial awards for physics, for example, were followed by equally munificent prizes in life sciences and mathematics. These were paid for in part by Anne Wojcicki, the head of 23andMe, a personal genomics company, and Mark Zuckerberg, Facebook's boss. On December 4th a fresh set of winners (see table overleaf), divided a further $25.4m.

Dr Milner is open about his aim, which is to raise the profile of science and scientists. As he puts it, "for better or worse, we are living in a world of celebrity. Intellectual achievement gets less and less recognition in the eyes of the public." He therefore intends to introduce this disrespectful world to the "Oscars of science".

He plans to grab the world's attention in two ways. First, with the size of the prizes, which are worth three times as much as a Nobel. Second, with the way they are announced and awarded—at a glitzy, Oscar-like ceremony held at NASA's Ames Research Centre, near Mountain View, California. That is a concept rather different from the formal congratulations of the King of Sweden in Stockholm's concert hall followed by a white-tie dinner. This year's Breakthrough festivities were hosted by Morgan Freeman, a film actor. Just as the Nobel ceremony (to be held on December 10th) will be, they were broadcast live on television. Who will get the larger audience remains to be seen.

Whether all this razzamatazz will actually be enough to turn scientists into celebrities is moot. A crucial difference from the real Oscars is that most Oscar winners in the categories anybody cares about—actors, actresses, directors and so on—are celebrities already. This is hardly surprising. Their job descriptions require it. Miffing though it may be to the winners of Oscars for things like best engineering effects (which are, in many films, also the stars of the show), those people are rarely heard of again by the general public, and for the obverse reason, which is that their job descriptions do not require it. Sadly for Mr Milner's quest, the job descriptions of most scientists do not require it either, and only a few researchers are natural showmen of the sort who can force their way into the headlines regardless.

From the point of view of scientists, however, the Breakthrough prizes do offer a new route to recognition—and one that has, in an important way, caught up with changes since Nobel's day in how science is practised. Though the subject has always required teamwork, that is far more true now than it was then. This year, therefore, the myriad researchers who collaborated with Ronald Drever, Kip Thorne and Rainer Weiss (the main prizewinners) to discover gravity waves are explicitly acknowledged. Drs Drever, Thorne and Weiss had to make do with sharing $1m. The remaining $2m was divided, 1,012 ways, among the little platoons. True, the resulting dividend is only the price of a nice holiday. But it is considerably more than many deserving understrappers of Nobel laureates have ever seen. ■

Boffins' bonanza

Breakthrough prizewinners, 2017

Category	Winner	Prize
Life sciences	Stephen Elledge	$3m
	Harry Noller	$3m
	Roeland Nusse	$3m
	Yoshinori Ohsumi	$3m
	Huda Zoghbi	$3m
Fundamental physics	Joseph Polchinski	
	Andrew Strominger	Share $3m
	Cumrun Vafa	
Special prize *(Fundamental Physics)* For the observation of gravitational waves		
	Ronald Drever	
	Kip Thorne	Share $1m
	Rainer Weiss	
	1,012 team members	Share $2m
Mathematics	Jean Bourgain	$3m
Minor awards	eg, best science video	Total $1.4m

Source: Breakthrough prize

Astronomy

The remains of the day

Ancient eclipses show how days have shortened through history

AS THE well-known Australian philosopher, Kylie Minogue, once pointed out, it can be a source of comfort to remember that, no matter what else is happening, the world still turns. Unfortunately, things are not quite so simple. Thanks to the moon's gravitational tug, the speed at which Earth spins has been slowing since the satellite's birth about 4.5bn years ago. Physicists can calculate from first principles how big the effect should be. It turns out that the moon should be adding about 2.3 milliseconds to the length of the day with each century that passes. This means, for instance, that 100m years ago, when dinosaurs ruled Earth, a day was nearer 23 than 24 hours.

But that 2.3 milliseconds is only an average. Geological events within Earth can speed the process up, or slow it down. Tracking changes in day length over time is thus of interest. And that requires data. Thanks to the development of super-accurate atomic clocks in the 1950s, and to laser range-finding equipment left on the moon by the Apollo astronauts, researchers have plenty of such data from the past half-century. But more information is always welcome. And extra data are exactly what a team led by Leslie Morrison, a retired professional astronomer, have just provided. In a study just published in the *Proceedings of the Royal Society* they use observations made by ancient Chinese, Babylonian, Greek and Arab astronomers to reconstruct the history of Earth's rotation over the past two and a half millennia.

Plenty of ancient cultures were keen on astronomy, for the patterns of the heavens were the basis of their calendars and timekeeping systems (not to mention their systems of astrology). But Dr Morrison and his colleagues were interested in two particular phenomena: eclipses of the sun and of the moon. A solar eclipse happens when the moon moves in front of the sun, as seen from a particular spot on Earth, and blocks out its light. A lunar eclipse happens when the moon moves behind Earth in such a way that Earth blocks the sunlight that, when reflected from the lunar surface, renders the moon visible.

Eclipses were often viewed as portents (usually bad ones), or as battles between moon or sun gods and the forces that sought to overthrow them. For that reason, records of hundreds of historical eclipses survive to the present. Building on work begun in the 1990s, Dr Morrison and his colleagues collated 424 such observations of 250 eclipses that happened between 720BC and 1600AD. The records were scattered across Babylonian clay tablets preserved at the British Museum, translations of histories of Chinese dynasties and Japanese emperors, records from ancient Greece preserved in works like the "Almagest", and observations made by Arab astronomers during what was, in Europe, the Dark Ages. (The researchers note that no record survives of an eclipse seen in Europe for almost a thousand years following one recorded in 364AD.)

The idea was to combine those observations with modern computer models of the solar system. These are sophisticated enough to let researchers reconstruct the positions of Earth, moon and sun at any given date in the past, and therefore to work out when and from where any past eclipses should have been visible. That means such models can be used to confirm recorded sightings. But because ancient astronomers reckoned the passage of time by the motion of the heavens, and modern models are based on the unvarying output of atomic clocks, the gradual slowing of Earth's rotation will produce a disagreement in timing between the two.

Many a mickle makes a muckle

Given the tiny differences in day length involved (a few dozen milliseconds at most) and the primitive equipment (such as water clocks) available to ancient researchers, it might be thought that any difference in timing would be too small to detect. But Dr Morrison points out that this is not actually a problem. The error introduced by Earth's deceleration is cumulative. Today may be only fractionally shorter than a day was 2,700 years ago, when the earliest records that the team looked at were collected, but between then and now almost a million days have elapsed. Each passing day adds any daily discrepancy to the total discrepancy, and those repeated daily discrepancies add up to significant fractions of an hour—periods well within the accuracy available to ancient astronomers.

After crunching the numbers, the team found that the actual rate at which days have been shortening over the past couple of millennia is 1.8 milliseconds per century, considerably slower than the 2.3 milliseconds predicted. The main reason for the difference, they reckon, is the lingering effect of the most recent ice age, during which the mass of ice at the planet's poles was sufficient to deform its shape and thus alter its rate of spin. That is not, though, the only thing which is happening. The researchers also found small but cyclical patterns in the rate of change that repeat themselves over decades—as well as intriguing hints of longer cycles with time periods of thousands of years. Exactly what geophysical goings-on such cycles represent is one for the geologists to work out. ■

Books of the Year 2016

High fliers

The best books this year are about China, language, microbes, hereditary power, inequality and medieval manuscripts

Politics and current affairs

China's Future. By David Shambaugh. *Polity; 195 pages; $19.95 and £14.99*
No country has modernised its economy without also becoming a democracy. A respected American political scientist asks whether China can break the mould.

Black Wind, White Snow: The Rise of Russia's New Nationalism. By Charles Clover. *Yale University Press; 360 pages; $35 and £25*
A veteran *Financial Times* correspondent analyses what really motivates the regime in Moscow by tracing the rise of Eurasianism: the belief (crudely put) that Russia's national identity is determined by ethnicity, geography and destiny.

The Euro and the Battle of Ideas. By Markus Brunnermeier, Harold James and Jean-Pierre Landau. *Princeton University Press; 440 pages; $35 and £24.95*
Three authors focus on France and Germany to tease out the clashing economic ideas that make up the euro project. The Germans like rules and discipline, and fret about excessive debt and the moral hazard created by bail-outs. The French prefer flexibility and discretion, and worry about the lack of a mutualised debt instrument. German policymakers are often lawyers, French ones more frequently economists. Not a happy marriage.

CEO, China: The Rise of Xi Jinping. By Kerry Brown. *I.B. Tauris; 288 pages; $28 and £20*
What sort of leader is Xi Jinping? There are few political questions to which the answer will have greater bearing on people as this. By an expert British China-watcher.

China's Crony Capitalism: The Dynamics of Regime Decay. By Minxin Pei. *Harvard University Press; 365 pages; $35 and £25.95*
How decentralising the rights of control over state property, without clarifying the rules of ownership, offered those who rule China the greatest chance in history to grow rich, by a professor of government now based in California.

The Egyptians: A Radical Story. By Jack Shenker. *Allen Lane; 528 pages; £15.99*
A refreshing account, by a young reporter on the *Guardian*, of the movement that overthrew Hosni Mubarak in 2011. What distinguishes his writing from others' is his presence in the slums, factories and homes where Egyptians first began questioning their relations with their rulers. Mr Shenker evokes despair at the economy of this badly run country, but also surprising hope for its future, thanks to a young generation that says it is "no longer prepared to put up with the old crap".

Trials: On Death Row in Pakistan. By Isabel Buchanan. *Jonathan Cape; 264 pages; £16.99*
Two young lawyers, one Pakistani and one British (the author), launch themselves into the dark world of Pakistan's death row, where 8,000 people await execution. A remarkable first book written with verve and an eye for telling detail.

Hillbilly Elegy: A Memoir of a Family and Culture in Crisis. By J.D. Vance. *Harper; 264 pages; $27.99. William Collins; £14.99*
Why so many people want to believe that Donald Trump will bring back manufacturing jobs and keep immigrants out. Possibly the most important recent book about America.

The Art of Charlie Chan Hock Chye. *By Sonny Liew. Pantheon; 320 pages; $30 and £25*
A brilliantly inventive graphic novel, which took several years to complete, weighs up the costs and benefits of life in the small, authoritarian, model city-state that Lee Kwan Yu founded half a century ago. By a Malaysian-born comic artist and illustrator, now based in Singapore.

The Way to the Spring: Life and Death in Palestine. By Ben Ehrenreich. *Penguin Press; 428 pages; $28. Granta; £14.99*
An elegant and moving account of the trials of one family, a tale that is symbolic of the daily lives of many Palestinians.

Biography and memoir

The Return: Fathers, Sons and the Land In Between. By Hisham Matar. *Random House; 256 pages; $26. Viking; £14.99*
A beautifully written memoir that deals with the nature of family, the emotions of exile and the ties that link the present with the past—in particular, the son with his father, Jaballa Matar, who disappeared in a notorious Libyan prison.

Elizabeth: The Forgotten Years. By John Guy. *Viking; 490 pages; $35 and £25*
Most historians focus on the early decades, with Elizabeth's last years acting as a postscript to the beheading of Mary Queen of Scots and the defeat of the Spanish Armada. An Australian-born historian, now a fellow at Cambridge, argues that this period is crucial to understanding a more human side of the smart redhead.

Half-Lion: How P.V. Narasimha Rao Transformed India. By Vinay Sitapati. *Penguin India; 391 pages; 699 rupees*
The real father of India's economic reforms deserves a place alongside Nehru as India's most important prime minister. Instead he was cast into ignominy and obscurity. An important book, by a young doctoral student at Princeton, that deserves wider circulation.

When Breath Becomes Air. By Paul Kalanithi. *Random House; 238 pages; $25. Bodley Head; £12.99*
A young neurosurgeon, dying of cancer, examines his life, especially the gift of language, the parts of the brain that control it and its centrality to what makes us human. A powerful and compelling read.

Karl Marx: Greatness and Illusion. By Gareth Stedman Jones. *Belknap; 768 pages; $35. Allen Lane; £35*
A British historian re-evaluates Marx in the 21st century. There is no better guide than this professor of the history of ideas at the University of London.

Negroland: A Memoir. By Margo Jefferson. *Vintage; 248 pages; $16. Granta; £12.99*
Growing up an African-American of privilege and wealth might seem cushy. But this penetrating memoir shows how those who were spared the brutality of southern segregation nevertheless had to learn to navigate a much subtler set of tacit rules and assumptions: excel, but don't show off; be comfortable anywhere, but be aware that prejudice can rear its ugly head at any moment.

Kenneth Clark: Life, Art and "Civilisation". By James Stourton. *Knopf; 478 pages; $35. William Collins; £30*
At once cold and grand, Kenneth Clark would be easy to mock. A carefully researched and thoughtful biography of a conflicted and curiously unknowable man who became the most brilliant cultural populist of the 20th century, by a former chairman of Sotheby's.

Born to Run. By Bruce Springsteen. *Simon & Schuster; 528 pages; $32.50 and £20*
The timely autobiography of the bard of American deindustrialisation, whose songs recognise and honour blue-collar woes. His stories have never aged; years after they were written they remain a lesson in empathy for the white-collar fans he has always attracted.

But You Did Not Come Back. By Marceline Loridan-Ivens. Translated by Sandra Smith. *Atlantic Monthly Press; 112 pages; $22. Faber; £12.99*
In 1944, when she was 15, the author and her father were captured and deported; he to Auschwitz, she to Birkenau. She returned; he never did. It took her 70 years to write her story. In tight, unsparing prose, she confronts the delusions her father held, and the lies she told herself. A small book with a big voice.

The Civil Wars of Julia Ward Howe. A Biography. By Elaine Showalter. *Simon & Schuster; 243 pages; $28*
A delightful life, by a spirited academic, of a 19th-century American woman who wrote poetry, plays and books, became a tireless speaker for feminist causes, notably women's right to vote. Her life intersected with Longfellow, the Brownings, Louisa May Alcott and Henry James. But she is best known for writing the words to "The Battle Hymn of the Republic".

Outlandish Knight: The Byzantine Life of Steven Runciman. By Minoo Dinshaw. *Allen Lane; 767 pages; £30*
By the time he died, in 2000 at the age of 97, Sir Steven Runciman had become convinced that he was a relic of a past age and the embodiment of a nearly mythical era. A lively life of a colourful British historian who was best known for his work on the Crusades, by a promising young author. A debut to be proud of.

History

The Water Kingdom: A Secret History of China. By Philip Ball. *Bodley Head; 316 pages; £25. To be published in America by University of Chicago Press in March 2017*
How two great rivers—the Yellow river and the Yangzi—shaped China's history. By a British science writer who for 20 years was an editor at *Nature*.

The Romanovs: 1613-1918. By Simon Sebag Montefiore. *Knopf; 784 pages; $35. Weidenfeld & Nicolson; £25*
A cruel history of hereditary power, by a master storyteller who lifts this unfamiliar narrative with vivid, amusing and surprising details.

The Pursuit of Power: Europe 1815-1914. By Richard Evans. *Viking; 928 pages; $40. Allen Lane; £35*
A distinguished scholar of Germany tots up the winners and losers in the century after the Battle of Waterloo, which could rightly be described as the first age of globalisation.

Heart of Europe: A History of the Holy Roman Empire. By Peter Wilson. *Belknap; 941 pages; $39.95. Allen Lane; £35*
The Holy Roman Empire, on paper, looked more like a Jackson Pollock painting than a

blueprint for modern Europe—and yet it worked well, nonetheless. A masterly retelling, by an Oxford historian.

Lenin on the Train. By Catherine Merridale. *Allen Lane; 353 pages; £25. To be published in America by Metropolitan in March 2017*
How Vladimir Lenin's railway journey from Switzerland to Russia led to the revolution and changed his country—and the world—for ever. An insightful and sympathetic account, by one of the foremost historians of Russia.

East West Street: On the Origins of Genocide and Crimes Against Humanity. By Philippe Sands. *Knopf; 448 pages; $32.50 Weidenfeld & Nicolson; £20*
A distinguished Franco-British advocate traces how a single important word entered the legal canon, while examining the lives of those who brought it into being and the wartime experiences of his own Jewish relatives in Europe. An un-put-downable winner of the Baillie Gifford prize for non-fiction.

Economics and business

The Rise and Fall of American Growth: The US Standard of Living since the Civil War. By Robert Gordon. *Princeton University Press; 762 pages; $39.95 and £29.95*
Why economic growth soared in America in the early 20th century, and why it won't be soaring again any time soon, by an outspoken economist who teaches at Northwestern University.

Global Inequality: A New Approach for the Age of Globalisation. By Branko Milanovic. *Belknap; 299 pages; $29.95. Harvard University Press; £23.95*
Surprisingly little is known about what causes inequality. An economist at the Luxembourg Income Study Centre and the City University of New York proposes a bold and interesting new theory.

The Great Convergence: Information Technology and the New Globalization. By Richard Baldwin. *Belknap; 329 pages; $29.95 and £22.95*
Globalisation has changed fundamentally since the internet revolution in the 1990s. Whereas 20th-century trade involved competition between countries, 21st-century trade is fuzzier, with supply chains crossing borders. An American academic, working in Geneva, argues that, while it might be difficult to help the losers, reversing the trend is even harder.

The Man Who Knew: The Life and Times of Alan Greenspan. By Sebastian Mallaby. *Penguin Press; 781 pages; $40. Bloomsbury; £25*
Once a hero, the former chairman of the Federal Reserve is now being called a villain. Sebastian Mallaby, who used to write for *The Economist* and is married to our editor-in-chief, Zanny Minton Beddoes, examines whether Alan Greenspan was to blame for the financial crisis. Winner of the *Financial Times* and McKinsey Business Book of the Year award 2016.

Alibaba: The House That Jack Ma Built. By Duncan Clark. *Ecco; 287 pages; $27.99 and £18.99*
An intriguing insider's account of how Jack Ma conquered China's internet, by an early adviser to the company

Eccentric Orbits: The Iridium Story. By John Bloom. *Atlantic Monthly Press; 537 pages; $27.50. Grove Press; £16.99*
The exhaustive (and exhausting) tale of the Iridium communications project and how it was brought back from the dead.

Culture, society and travel

Cleverlands: The Secrets Behind the Success of the World's Education Superpowers. By Lucy Crehan. *Unbound; 304 pages; £16.99*
Too much writing about education is polemical and ill-informed. Lucy Crehan's book is refreshingly fair-minded and makes a case that there is a lot to learn about how other countries learn.

Free Speech: Ten Principles for a Connected World. By Timothy Garton Ash. *Yale University Press; 491 pages; $30. Atlantic; £20*
How urbanisation and the spread of the internet has increased the possibilities of freedom of expression, but also the consequences that stem from it. A distillation of a lifetime's research and writing, by the Oxford academic who also created freespeechdebate.com.

Another Day in the Death of America: A Chronicle of Ten Short Lives. By Gary Younge. *Nation Books; 267 pages; $25.99. Guardian Faber; £16.99*
The stories of ten young people who were shot and killed on the arbitrarily selected date of Saturday November 23rd 2013. A "long, doleful, piercing cry", by a journalist on the *Guardian*, in a country so overwhelmed by gun violence that it has almost given up trying to stop it.

The Life Project: The Extraordinary Story of Our Ordinary Lives. By Helen Pearson. *Soft Skull; 256 pages; $17.95 Penguin; £9.99*
How a random, nationwide sample of people linked only by their birth in 1946 has been followed by researchers and data-gatherers, and helped shape public policy across the country. A jewel in the crown of British social science.

Meetings with Remarkable Manuscripts. By Christopher de Hamel. *Allen Lane; 632 pages; £30*
The politics and meaning of medieval manuscripts. A delightful and surprising book, by the man who has examined more manuscripts than anyone before him.

Progress: Ten Reasons to Look Forward to the Future. By Johan Norberg. *Oneworld; 246 pages; $24.99 and £16.99*
A Swedish economic historian studies the many, and often surprising, ways in which human life has improved.

The End of Karma: Hope and Fury Among India's Young. By Somini Sengupta. *Norton; 244 pages; $26.95 and £18.99*
How India's youth are trading fatalism and karma for free will and higher expectations, by a former *New York Times* New Delhi bureau chief who interweaves data, first-hand accounts and archival research to great effect.

City of Thorns: Nine Lives in the World's Largest Refugee Camp. By Ben Rawlence. *Picador; 384 pages; $26. Portobello; £14.99*
A chronicle of life in Dadaab refugee camp in northern Kenya, which was supposed to close in November, but hasn't because its inhabitants have nowhere to go.

Beethoven for a Later Age: Living with the String Quartets. By Edward Dusinberre. *University of Chicago Press; 232 pages; $30. Faber & Faber; £18.99*
The lead violinist of the Takacs Quartet recounts its members' musical lives, interweaving into the group's autobiography the story of Beethoven's 16 string quartets, which are now regarded as the apogee of the chamber-music repertoire.

How to Listen to Jazz. By Ted Gioia. *Basic Books; 272 pages; $24.99 and £16.99*
Why jazz is unique, and how to distinguish good jazz from bad. No author could have done a better job.

Fiction

The Vegetarian. By Han Kang. Translated by Deborah Smith. *Hogarth; 192 pages; $21. Portobello; £8.99*
This slim novella from South Korea is one of the most erotic literary novels of the season. Winner of the 2016 Man Booker International prize.

War and Turpentine. By Stefan Hertmans. Translated by David McKay. *Pantheon; 304 pages; $26.95. Harvill Secker; £16.99*
A lovingly reimagined life of an ordinary man whose life was for ever marked by the first world war. Fine prose from a Flemish-Belgian poet and essayist.

The Mandibles: A Family, 2029-2047. By Lionel Shriver. *Harper; 400 pages; $27.99. Borough Press; £16.99*
A hilarious, and often brutal, tale of how one family fares when America's economy collapses. In God they trusted. By the irrepressible author of "We Need to Talk About Kevin".

Swing Time. By Zadie Smith. *Penguin Press; 453 pages; $27. Hamish Hamilton; £18.99*
A powerful story of lives marred by secrets, unfulfilled potential and the unjustness of the world. This may well be Zadie Smith's finest novel.

Science and technology

I Contain Multitudes: The Microbes Within Us and a Grander View of Life. By Ed Yong. *Ecco; 368 pages; $27.99. Bodley Head; £20*
A science writer and blogger turns an enthusiastic naturalist's eye on the bacteria, viruses and other minuscule organisms that cohabit the bodies of humans and other animals. Get to know some little-known villains—and many heroes.

The Gene: An Intimate History. By Siddhartha Mukherjee. *Scribner; 592 pages; $32. Bodley Head; £25*
The world is wholly unprepared for the birth of the first human with a genome that has been permanently modified in a lab. By a Pulitzer-winning writer and physician.

Patient HM: A Story of Memory, Madness, and Family Secrets. By Luke Dittrich. *Random House; 440 pages; $28. Chatto & Windus; £18.99*
Patient HM became famous in the history of science when a surgeon treated his epilepsy by removing the medial temporal lobes in his brain, causing him to lose most of his memory. A remarkable examination of how neuroscience works, by the surgeon's grandson.

Cure: A Journey into the Science of Mind over Body. By Jo Marchant. *Crown; 320 pages; $26. Canongate; £16.99*
A thought-provoking exploration of how the mind affects the body and can be harnessed to help treat physical illness, by an award-winning science journalist.

The Glass Universe: How the Ladies of the Harvard Observatory Took the Measure of the Stars. By Dava Sobel. *Viking; 336 pages; $30. To be published in Britain by Fourth Estate in January 2017*
The hidden history of the remarkable women whose contribution to astronomy changed our understanding of the stars and man's place in the universe, by the prize-winning author of "Longitude" and "Galileo's Daughter". ■

Books by Economist writers in 2016

What we wrote...

...when we weren't in the office

The Wealth of Humans: Work, Power and Status in the Twenty-First Century. By Ryan Avent. *St Martin's Press; 288 pages; $26.99. Allen Lane; £25*
The world of work is changing fast and in unexpected ways, by our economics columnist.

The Birthday Book. Edited by Malminderjit Singh. *Ethos Books; 252 pages; S$25*
Farah Cheah, one of our data analysts, contributes to a collection of essays celebrating Singapore's 51st independence anniversary.

The Poisoned Well: Empire and its Legacy in the Middle East. By Roger Hardy. *Oxford University Press; 272 pages; $27.95. Hurst; £20*
How the Middle East came to be the way it is, by a frequent reviewer of books on the Arab world.

Pariah. By Donald Hounam. *Corgi; 394 pages; £7.99*
A 15-year-old forensic sorcerer, on the run from the Inquisition, tries to make sense of a dead body that refuses to act dead, by one of our visual-data developers.

The Reykjavik Assignment. By Adam LeBor. *Harper; 464 pages; $15.99. Head of Zeus; £7.99*
A The final thriller in a trilogy featuring Yael Azoulay, a covert negotiator for the United Nations, by a regular freelance contributor.

The Earth and I. By James Lovelock et al. *Taschen; 168 pages; $29.99 and £24.99*
A compact illustrated guide to planet Earth and humankind's relationship to it, with an essay on the "society of cells" by Oliver Morton, our briefings editor.

The Invention of Russia: From Gorbachev's Freedom to Putin's War. By Arkady Ostrovsky. *Viking; 374 pages; $30. Atlantic; £20*
How Russia was made by its history, by our Russia and eastern Europe editor. Winner of the 2016 Orwell prize.

Holy Lands: Reviving Pluralism in the Middle East. By Nicolas Pelham. *Columbia Global Reports; 183 pages; $13.99 and £9.99*
How one of the world's most tolerant regions became the least harmonious place on the planet, by our Middle East correspondent.

The Secret Lives of Colour. By Kassia St Clair. *John Murray; 320 pages; £20. To be published in America by Penguin in October 2017*
A biography of the 75 most fascinating shades, dyes and hues, by our former assistant books and arts editor.

Go Figure: Things You Didn't Know You Didn't Know. Edited by Tom Standage. *Economist Books; 256 pages; $17.99 and £8.99*
A compendium of our explainers and daily charts, assembled by our deputy editor.

Narconomics: How to Run a Drug Cartel. By Tom Wainwright. *PublicAffairs; 278 pages; $26.99. Ebury Press; £20*
Everything drug cartels do to survive and prosper they've learnt from big business, by our Britain editor and former Mexico City bureau chief.

Six Facets of Light. By Ann Wroe. *Jonathan Cape; 305 pages; £25*
A meditation on the transitory and frustrating essence of light, as studied by poets, painters and scientists, by our obituaries editor.

Economic data

% change on year ago

	Gross domestic product			Industrial production	Consumer prices		Unemployment	Current-account balance		Budget balance	Interest rates, %	Currency units, per $	
	latest	qtr*	2016†	latest	latest	2016†	rate, %	latest 12 months, $bn	% of GDP 2016†	% of GDP 2016†	10-year gov't bonds, latest	Dec 7th	year ago
United States	+1.6 Q3	+3.2	+1.6	-0.9 Oct	+1.6 Oct	+1.3	4.6 Nov	-488.2 Q2	-2.6	-3.2	2.40	-	-
China	+6.7 Q3	+7.4	+6.7	+6.1 Oct	+2.1 Oct	+2.0	4.0 Q3§	+266.6 Q3	+2.5	-3.8	2.91§§	6.89	6.41
Japan	+1.1 Q3	+1.3	+0.7	-1.3 Oct	+0.2 Oct	-0.2	3.0 Oct	+184.2 Oct	+3.7	-5.1	0.04	114	123
Britain	+2.3 Q3	+2.0	+2.0	-1.2 Oct	+0.9 Oct	+0.6	4.8 Aug††	-146.9 Q2	-5.7	-3.9	1.44	0.79	0.66
Canada	+1.3 Q3	+3.5	+1.2	+2.8 Sep	+1.5 Oct	+1.5	6.8 Nov	-53.6 Q3	-3.5	-2.7	1.60	1.32	1.35
Euro area	+1.7 Q3	+1.4	+1.6	+1.2 Sep	+0.6 Nov	+0.2	9.8 Oct	+376.3 Sep	+3.2	-1.7	0.35	0.93	0.92
Austria	+1.2 Q3	+2.4	+1.5	+2.6 Sep	+1.3 Oct	+1.1	5.9 Oct	+8.2 Q2	+2.1	-1.4	0.59	0.93	0.92
Belgium	+1.3 Q3	+0.7	+1.2	+4.4 Sep	+1.8 Nov	+1.9	7.9 Oct	+4.8 Jun	+0.7	-2.8	0.73	0.93	0.92
France	+1.1 Q3	+1.0	+1.2	-1.1 Sep	+0.5 Nov	+0.3	9.7 Oct	-40.0 Oct‡	-1.1	-3.3	0.81	0.93	0.92
Germany	+1.7 Q3	+0.8	+1.8	+1.2 Oct	+0.8 Nov	+0.4	6.0 Nov	+300.3 Sep	+8.8	+1.0	0.35	0.93	0.92
Greece	+1.6 Q3	+3.1	+0.2	+0.1 Sep	-0.5 Oct	nil	23.4 Aug	-0.2 Sep	nil	-5.1	6.59	0.93	0.92
Italy	+1.0 Q3	+1.0	+0.8	+1.8 Sep	+0.1 Nov	-0.1	11.6 Oct	+47.8 Sep	+2.4	-2.6	1.90	0.93	0.92
Netherlands	+2.4 Q3	+3.0	+2.0	+2.4 Sep	+0.6 Nov	+0.2	6.8 Oct	+59.7 Q2	+8.5	-1.1	0.50	0.93	0.92
Spain	+3.2 Q3	+2.9	+3.2	-2.1 Oct	+0.6 Nov	-0.4	19.2 Oct	+23.5 Sep	+1.6	-4.6	1.51	0.93	0.92
Czech Republic	+1.6 Q3	+0.9	+2.4	-1.7 Oct	+0.8 Oct	+0.6	5.0 Oct§	+3.7 Q2	+1.5	nil	0.56	25.1	24.9
Denmark	+1.1 Q3	+1.7	+0.9	-0.3 Oct	+0.3 Oct	+0.3	4.2 Oct	+23.6 Sep	+5.9	-1.0	0.46	6.91	6.87
Norway	-0.9 Q3	-1.9	+0.7	nil Oct	+3.7 Oct	+3.5	4.8 Sep‡‡	+18.0 Q3	+4.9	+3.0	1.83	8.36	8.66
Poland	+2.0 Q3	+0.8	+3.0	-1.3 Oct	nil Nov	-0.8	8.2 Nov§	-3.1 Sep	-0.4	-2.7	3.54	4.12	3.98
Russia	-0.4 Q3	na	-0.5	-0.3 Oct	+5.7 Nov	+7.0	5.4 Oct§	+30.2 Q3	+2.4	-3.7	8.63	63.8	68.9
Sweden	+2.8 Q3	+2.0	+3.1	-0.5 Oct	+1.2 Oct	+0.9	6.4 Oct§	+22.2 Q3	+5.0	-0.3	0.62	9.07	8.53
Switzerland	+1.3 Q3	+0.2	+1.4	+0.4 Q3	-0.3 Nov	-0.4	3.3 Oct	+66.1 Q2	+9.4	+0.2	-0.05	1.01	1.00
Turkey	+3.1 Q2	na	+2.9	+0.2 Oct	+7.0 Nov	+7.8	11.3 Aug§	-32.4 Sep	-4.8	-1.8	11.09	3.39	2.91
Australia	+1.8 Q3	-1.9	+2.9	-0.2 Q3	+1.3 Q3	+1.3	5.6 Oct	-47.9 Q3	-3.5	-2.1	2.75	1.34	1.37
Hong Kong	+1.9 Q3	+2.5	+1.6	-0.4 Q2	+1.2 Oct	+2.8	3.4 Oct‡‡	+13.6 Q2	+2.6	+0.6	1.45	7.76	7.75
India	+7.3 Q3	+8.3	+7.2	+0.7 Sep	+4.2 Oct	+4.9	5.0 2015	-16.2 Q2	-0.9	-3.8	6.41	67.7	66.7
Indonesia	+5.0 Q3	na	+5.0	+0.5 Sep	+3.6 Nov	+3.5	5.6 Q3§	-19.2 Q3	-2.1	-2.6	7.85	13,328	13,843
Malaysia	+4.3 Q3	na	+4.3	+3.2 Sep	+1.4 Oct	+1.9	3.5 Sep§	+5.6 Q3	+1.0	-3.4	4.21	4.43	4.22
Pakistan	+5.7 2016**	na	+5.7	+1.9 Sep	+3.8 Nov	+3.9	5.9 2015	-4.1 Q3	-0.9	-4.6	8.03†††	105	105
Philippines	+7.1 Q3	+4.9	+6.4	+9.9 Sep	+2.5 Nov	+1.7	5.4 Q3§	+3.2 Jun	+0.7	-1.0	5.03	49.7	47.1
Singapore	+1.1 Q3	-2.0	+1.3	+1.2 Oct	-0.1 Oct	-0.6	2.1 Q3	+63.0 Q3	+21.5	+0.7	2.34	1.42	1.40
South Korea	+2.6 Q3	+2.5	+2.7	-1.6 Oct	+1.3 Nov	+0.9	3.4 Oct§	+99.9 Oct	+7.2	-1.3	2.20	1,168	1,168
Taiwan	+2.0 Q3	+3.9	+1.0	+3.7 Oct	+2.0 Nov	+1.3	3.9 Oct	+74.7 Q3	+13.7	-0.5	1.08	31.9	32.7
Thailand	+3.2 Q3	+2.2	+3.0	+0.1 Oct	+0.6 Nov	+0.2	1.2 Oct§	+47.4 Q3	+5.9	-2.5	2.51	35.6	35.9
Argentina	-3.4 Q2	-8.0	-2.0	-2.5 Oct	— ***	—	8.5 Q3§	-15.4 Q2	-2.5	-5.0	na	16.0	9.71
Brazil	-2.9 Q3	-3.3	-3.4	-7.3 Oct	+7.9 Oct	+8.3	11.8 Oct§	-22.3 Oct	-1.1	-6.4	11.91	3.40	3.77
Chile	+1.6 Q3	+2.5	+1.8	-7.4 Oct	+2.9 Nov	+3.7	6.4 Oct§‡‡	-4.8 Q3	-1.9	-2.7	4.44	656	707
Colombia	+1.2 Q3	+1.3	+2.0	+4.0 Sep	+6.0 Nov	+7.6	8.3 Oct§	-15.7 Q2	-5.1	-3.7	7.25	2,989	3,297
Mexico	+2.0 Q3	+4.0	+2.1	-1.3 Sep	+3.1 Oct	+2.8	3.6 Oct	-30.6 Q3	-2.8	-3.0	7.23	20.3	16.9
Venezuela	-8.8 Q4~	-6.2	-13.7	na	na	+424	7.3 Apr§	-17.8 Q3~	-2.8	-24.3	10.57	10.0	6.31
Egypt	+4.5 Q2	na	+4.3	-11.7 Sep	+13.6 Oct	+13.1	12.6 Q3§	-18.7 Q2	-7.0	-12.4	na	18.1	7.83
Israel	+5.0 Q3	+3.2	+3.2	+2.6 Sep	-0.3 Oct	-0.5	4.5 Oct	+12.1 Q2	+2.9	-2.4	2.17	3.80	3.88
Saudi Arabia	+3.5 2015	na	+1.1	na	+2.6 Oct	+3.8	5.6 2015	-61.5 Q2	-5.6	-11.7	na	3.75	3.75
South Africa	+0.7 Q3	+0.2	+0.4	-0.1 Sep	+6.4 Oct	+6.3	27.1 Q3§	-12.9 Q2	-4.0	-3.4	8.83	13.5	14.6

Source: Haver Analytics. *% change on previous quarter, annual rate. †*The Economist* poll or Economist Intelligence Unit estimate/forecast. §Not seasonally adjusted. ‡New series. ~2014 **Year ending June. ††Latest 3 months. ‡‡3-month moving average. §§5-year yield. ***Official number not yet proved to be reliable; The State Street PriceStats Inflation Index, Nov 35.38%; year ago 25.30% †††Dollar-denominated bonds.

Markets

	Index Dec 7th	% change on one week	Dec 31st 2015 in local currency	Dec 31st 2015 in $ terms
United States (DJIA)	19,549.6	+2.2	+12.2	+12.2
China (SSEA)	3,373.9	-0.9	-8.9	-14.1
Japan (Nikkei 225)	18,496.7	+1.0	-2.8	+2.9
Britain (FTSE 100)	6,902.2	+1.7	+10.6	-5.4
Canada (S&P TSX)	15,237.8	+1.0	+17.1	+22.8
Euro area (FTSE Euro 100)	1,064.3	+2.8	-2.8	-3.6
Euro area (EURO STOXX 50)	3,142.2	+3.0	-3.8	-4.7
Austria (ATX)	2,592.9	+2.9	+8.2	+7.2
Belgium (Bel 20)	3,531.8	+1.5	-4.6	-5.4
France (CAC 40)	4,694.7	+2.5	+1.2	+0.3
Germany (DAX)*	10,986.7	+3.3	+2.3	+1.4
Greece (Athex Comp)	640.1	+1.8	+1.4	+0.5
Italy (FTSE/MIB)	18,130.7	+7.1	-15.3	-16.1
Netherlands (AEX)	462.1	+1.1	+4.6	+3.7
Spain (Madrid SE)	901.5	+3.1	-6.6	-7.4
Czech Republic (PX)	894.2	+1.5	-6.5	-7.4
Denmark (OMXCB)	754.5	-0.4	-16.8	-17.3
Hungary (BUX)	30,152.0	+0.5	+26.1	+25.7
Norway (OSEAX)	742.0	+1.9	+14.3	+21.1
Poland (WIG)	50,380.4	+3.6	+8.4	+3.8
Russia (RTS, $ terms)	1,066.8	+3.7	+23.0	+40.9
Sweden (OMXS30)	1,504.0	+1.5	+3.9	-3.3
Switzerland (SMI)	7,930.3	+0.7	-10.1	-10.6
Turkey (BIST)	76,030.8	+2.8	+6.0	-8.7
Australia (All Ord.)	5,535.4	+0.6	+3.6	+6.4
Hong Kong (Hang Seng)	22,800.9	nil	+4.0	+4.0
India (BSE)	26,236.9	-1.6	+0.5	-1.9
Indonesia (JSX)	5,265.4	+2.3	+14.6	+18.6
Malaysia (KLSE)	1,632.5	+0.8	-3.5	-6.6
Pakistan (KSE)	44,199.4	+3.7	+34.7	+34.7
Singapore (STI)	2,959.8	+1.9	+2.7	+2.7
South Korea (KOSPI)	1,991.9	+0.4	+1.6	+2.0
Taiwan (TWI)	9,263.9	+0.3	+11.1	+14.4
Thailand (SET)	1,520.5	+0.7	+18.1	+19.2
Argentina (MERV)	17,196.8	-1.4	+47.3	+19.4
Brazil (BVSP)	61,414.4	-0.8	+41.7	+64.9
Chile (IGPA)	21,075.9	+0.3	+16.1	+25.5
Colombia (IGBC)	9,798.0	+2.4	+14.6	+21.7
Mexico (IPC)	45,609.9	+0.6	+6.1	-9.8
Venezuela (IBC)	36,110.6	+8.8	+148	na
Egypt (EGX 30)	11,348.4	-0.9	+62.0	-30.0
Israel (TA-100)	1,259.2	-0.4	-4.2	-1.9
Saudi Arabia (Tadawul)	7,124.1	+1.8	+3.1	+3.2
South Africa (JSE AS)	49,476.1	-1.5	-2.4	+12.0

The Economist poll of forecasters, December averages (previous month's, if changed)

	Real GDP, % change: Low/high range 2016	Low/high range 2017	Average 2016	Average 2017	Consumer prices % change 2016	2017	Current account % of GDP 2016	2017
Australia	2.3/3.1	2.1/3.2	2.9 (2.8)	2.8	1.3	2.1	-3.5 (-3.7)	-3.0 (-3.2)
Brazil	-3.7/-3.1	0.5/1.5	-3.4 (-3.2)	0.9 (1.1)	8.3 (8.2)	5.3 (5.4)	-1.1	-1.3
Britain	1.8/2.1	0.6/1.4	2.0	1.1 (0.9)	0.6	2.5 (2.6)	-5.7	-4.4 (-4.3)
Canada	1.0/1.4	1.2/2.3	1.2	1.9	1.5 (1.6)	2.0	-3.5 (-3.4)	-2.9 (-3.0)
China	6.6/6.8	6.2/6.8	6.7	6.4	2.0	2.1 (2.0)	2.5 (2.7)	2.2 (2.6)
France	1.2/1.3	0.8/1.5	1.2 (1.3)	1.2	0.3	1.1	-1.1 (-0.6)	-1.1 (-0.6)
Germany	1.5/1.9	1.0/2.0	1.8 (1.7)	1.4 (1.3)	0.4	1.5	8.8 (8.6)	8.1 (7.9)
India	6.0/7.6	7.0/8.4	7.2 (7.6)	7.5	4.9 (5.0)	4.9 (5.2)	-0.9	-1.0 (-1.1)
Italy	0.7/1.0	0.3/1.3	0.8	0.8	-0.1 (nil)	0.9 (1.0)	2.4	2.2 (2.3)
Japan	0.5/0.8	0.5/1.4	0.7 (0.6)	1.0 (0.9)	-0.2	0.6 (0.5)	3.7 (3.6)	3.5 (3.2)
Russia	-1.0/nil	0.6/1.7	-0.5 (-0.8)	1.2 (1.3)	7.0	5.2	2.4 (2.7)	2.8 (3.3)
Spain	2.9/3.3	2.0/2.7	3.2 (3.1)	2.3 (2.1)	-0.4	1.4 (1.2)	1.6 (1.4)	1.4 (1.2)
United States	1.5/1.7	1.5/2.8	1.6 (1.5)	2.2 (2.1)	1.3	2.3	-2.6	-2.8 (-2.7)
Euro area	1.4/1.6	1.0/1.8	1.6 (1.5)	1.3	0.2	1.3	3.2	3.0

Sources: Bank of America, Barclays, BNP Paribas, Citigroup, Commerzbank, Credit Suisse, Decision Economics, Deutsche Bank, EIU, Goldman Sachs, HSBC Securities, ING, Itaú BBA, JPMorgan, Morgan Stanley, Nomura, RBS, Royal Bank of Canada, Schroders, Scotiabank, Société Générale, Standard Chartered, UBS. For more countries, go to: Economist.com/markets

Other markets

	Index Dec 7th	% change on one week	Dec 31st 2015 in local currency	Dec 31st 2015 in $ terms
United States (S&P 500)	2,241.4	+1.9	+9.7	+9.7
United States (NAScomp)	5,393.8	+1.3	+7.7	+7.7
China (SSEB, $ terms)	350.8	+0.7	-12.8	-17.7
Japan (Topix)	1,490.6	+1.4	-3.7	+2.0
Europe (FTSEurofirst 300)	1,373.6	+1.7	-4.4	-5.3
World, dev'd (MSCI)	1,749.3	+2.2	+5.2	+5.2
Emerging markets (MSCI)	867.6	+0.6	+9.3	+9.3
World, all (MSCI)	421.7	+2.0	+5.6	+5.6
World bonds (Citigroup)	895.5	+0.6	+2.9	+2.9
EMBI+ (JPMorgan)	769.9	+1.0	+9.3	+9.3
Hedge funds (HFRX)	1,196.3§	+0.3	+1.9	+1.9
Volatility, US (VIX)	12.2	+13.3	+18.2	(levels)
CDSs, Eur (iTRAXX)†	74.1	-7.2	-4.0	-4.8
CDSs, N Am (CDX)†	67.9	-7.6	-23.1	-23.1
Carbon trading (EU ETS) €	4.3	-3.6	-48.1	-48.6

Sources: Markit; Thomson Reuters. *Total return index.
†Credit-default-swap spreads, basis points. §Dec 6th.

Indicators for more countries and additional series, go to: **Economist.com/indicators**

The Economist commodity-price index

2005=100

	Nov 29th	Dec 6th*	% change on one month	% change on one year
Dollar Index				
All Items	145.8	144.3	+2.6	+14.3
Food	157.4	156.6	-0.9	+5.2
Industrials				
All	133.7	131.5	+7.3	+27.8
Nfa†	135.1	135.1	+5.3	+21.7
Metals	133.1	130.0	+8.2	+30.7
Sterling Index				
All items	213.6	206.6	+0.2	+34.7
Euro Index				
All items	171.3	167.3	+5.7	+15.8
Gold				
$ per oz	1,185.9	1,171.2	-8.6	+9.0
West Texas Intermediate				
$ per barrel	45.2	50.9	+13.2	+35.6

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

Half mast

Whitney Smith, the founder of vexillology, died on November 17th, aged 76

PEOPLE die for flags and kill for them. But until Whitney Smith, nobody studied them properly. He coined (aged 17) the name for the discipline, from *vexillum*, Latin for a military standard, and it consumed, fired and shaped his life. Flags, he wrote in one of his 27 vexillological books, "are employed to honour and dishonour, warn and encourage, threaten and promise, exalt and condemn, commemorate and deny". They "remind and incite and defy...the child in school, the soldier, the voter, the enemy, the ally and the stranger".

Flags of a kind date back at least 5,000 years—he liked to cite an ancient Iranian one, made from copper. But their modern significance, he argued (and who would contradict him?), started with the 16th-century Dutch revolt against Spain. For the first time it was not a state or monarch being symbolised, but a people, a language, a culture and a cause.

They mark landings (the moon) and victories, too. The American conquest of the Japanese island of Iwo Jima was a fine example. As he explained to *People* magazine: "Six guys putting their lives on the line to put a stick in the ground with a piece of cloth on top. The president didn't tell them to do that. They did it instinctively."

Dropping out of academic life at the age of 30 to become the world's first and only full-time vexillologist, Mr Smith became, he happily admitted, a "monomaniac". He took no holidays, worked seven days a week, eschewed television for a single radio, living alone after both his marriages ended in divorce. The Flag Research Centre, which he founded in 1962, was based in his 16-room house in Winchester, Massachusetts, crammed with 11,000 books on flags—more than in the Library of Congress, the New York Public Library, Harvard University and the British Museum combined, he reckoned. It also contained a huge card-catalogue and (in dehumidified storage), 4,000 flags. The *Corpus Vexillorum Mundi*, as he called it, involved the collection, presentation and description of every national flag that has ever flown.

He could never recall a time when he was not interested in the subject. As a six-year-old, he fumed about haphazard and inaccurate information, such as flag books which ignored small countries. At 11, he was trying to find out why giant Greenland was seemingly flagless. Other kids thought he was weird. But who cared about that when, at 13, you could feel yourself to be "literally the only person in the Western world who knew what the flag of Bhutan looked like".

His aim, abundantly achieved, was to know everything there was to know about flags, from design to provenance, and the rules about where, how, when and why they should be hoisted. His grasp of history, geography and foreign languages helped. Fluent in Latin, Russian and French, he cracked multilingual jokes which hopped between those and other tongues. In English, he created and standardised specialist vocabulary—such as "civil ensign" for the flag flown by a privately owned vessel. His books, with titles such as "Flags Through the Ages and Across the World", sold 300,000 copies. The hundreds of subscribers to his bi-monthly *Flag Bulletin* (which he founded as a 21-year-old) ranged from protocol chiefs in foreign ministries to an international network of fellow-obsessives.

Lore and law

He preferred studying flags to waving them. Though he revered the Stars and Stripes—America's "civil religion", he called it—he abhorred sentiment and fanaticism alike. A circle of just 13 stars in the "canton" (top left-hand corner) would be more elegant, easier to manufacture, and fairer on unstarred territories such as the District of Columbia and Puerto Rico. He thought the Pledge of Allegiance could do with rephrasing, too.

America's repeated attempts to criminalise flag desecration appalled him; they were selective (nobody cared about the flag's abuse for commercial purposes) and contradicted the freedom for which the star-spangled banner stood. Its significance was in Americans' hearts and spirits, not the fabric. The people owned it, not the state; however deplorably, they could do what they wished with their own property. He gave evidence in defence of a teenager sentenced to six months hard labour for sewing the American flag to the seat of his trousers (the prosecution finally failed in 1974).

From guardians of diplomatic protocol to citizens bemused by etiquette, people sought his expertise. Was it all right to embed the American flag in a cake of ice as a set-piece for a banquet? Not illegal, but also not really tasteful or proper, he replied. New flags, he said, were too often cliched, cluttered and meaningless. Americans, he complained, were literalists, who "don't know how to communicate in symbols except in the baldest of ways". Plain white designs, with a tiny, dull emblem like a town seal, aroused his particular ire.

Instead, flags should be attractive, memorable and politically significant. He was particularly proud of his design for the former British colony of Guyana, with its red diamond (for steadfastness), gold arrowhead (Amerindians and mineral wealth) and green background (verdure). There was, he said proudly, "none other like it". That was true of him, too. ■