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The Republicans' Cruz missile

Coal's dark future

Development tips from Moses

The Bibi–Barack bust-up

Lee Kuan Yew: his life and legacy

The whole world is going to university

Is it worth it? A SPECIAL REPORT

TO BREAK THE RULES, YOU MUST FIRST MASTER THEM.
THE VALLÉE DE JOUX. FOR MILLENNIA A HARSH, UNYIELDING ENVIRONMENT; AND SINCE 1875 THE HOME OF AUDEMARS PIGUET, IN THE VILLAGE OF LE BRASSUS. THE EARLY WATCHMAKERS WERE SHAPED HERE, IN AWE OF THE FORCE OF NATURE YET DRIVEN TO MASTER ITS MYSTERIES THROUGH THE COMPLEX MECHANICS OF THEIR CRAFT. STILL TODAY THIS PIONEERING SPIRIT INSPIRES US TO CONSTANTLY CHALLENGE THE CONVENTIONS OF FINE WATCHMAKING.
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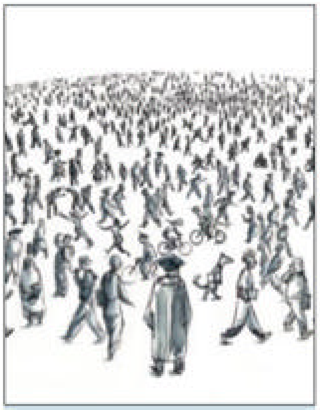
Contents



On the cover

More and more money is being spent on higher education. Nobody knows if it is worth it: leader, page 13. The American model of higher education is spreading. It is good at producing excellence, but needs to get better at providing access to decent education at a reasonable cost, says our special report, after page 48

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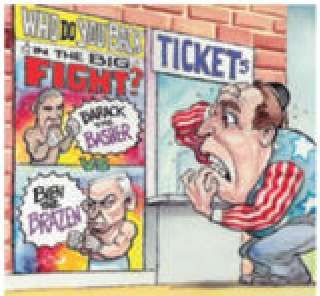
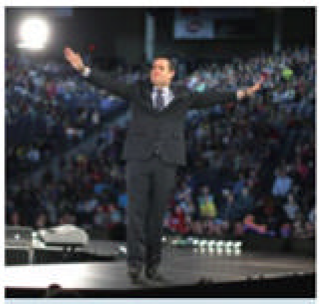


America, Israel and Iran
Barack Obama is right to chastise Binyamin Netanyahu. But on Iran, Israel's prime minister has a point: leader, page 15. The spat upsets America's Democratic Jewish voters: Lexington, page 38. Saudi Arabia intervenes in Yemen, page 51

The legacy of Lee Kuan Yew
The founder of Singapore turned the island into an economic success story while curbing democratic freedoms. Our obituary, pages 29-30. Authoritarians draw the wrong lessons: leader, page 18



Ted Cruz The first declared Republican presidential candidate is dangerous: leader, page 15. He will not be America's next president, but he could shape the race for the White House, page 31

Contents continues overleaf

Development goals The proposed sustainable development goals would be worse than useless: leader, page 14. Why 2015 could be a big year for global governance, page 63. Some targets do work, page 64

Coal's dark future As more countries shun coal, producers face a prolonged period of weak prices, page 65. America's coal states take on the Clean Air Act, page 35

Wang Qishan China's second most powerful leader is waging the widest-ranging campaign against corruption in the Communist Party's history, page 49

Drones and insects Small drones need to fly free of human operators. Engineers could learn from insects how that might be done, page 81

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Politics

In **Yemen** President Abd Rabbo Mansour Hadi was rumoured to have fled from the port of Aden to escape Houthi rebels. He had previously been held by the rebels under house arrest in the capital, Sana'a. Saudi Arabia launched military operations in Yemen, supported by other Arab countries, to halt the advance of the Iranian-backed Houthi militias. Adding to the chaos, an affiliate of Islamic State (IS) said it carried out the bombing of two mosques in Sana'a that killed at least 137 people.

Relations between the White House and the government of **Israel** grew frostier. Senior officials leaked claims that Israel has spied on talks with Iran over a nuclear deal; and Barack Obama spoke of a "policy difference" with Israel regarding the establishment of a Palestinian state.

Reports emerged from **Nigeria** that as many as 500 children have been abducted by jihadists from Boko Haram in areas they had overrun and which have recently been liberated by Nigerian or allied forces.

Taking the fight to IS

Canada's prime minister, Stephen Harper, announced that he would extend a campaign of air strikes against IS from Iraq into Syria. He said the campaign would go on for another year, beyond October's election in which security is expected to be a theme.

In the latest sign of a thaw with the West, **Cuba** hosted a visit by the European Union's foreign minister, Federica Mogherini. On the agenda were trade, democracy and investment, all currently in short supply on the island.

Ten people were killed in **Mexico** when gangsters ambushed a police convoy outside the city of Guadalajara. At least ten vehicles took part in the attack, in which five policemen, two bystanders and three suspected mobsters died. The police were members of a new gendarmerie, launched by President Enrique Peña Nieto in an attempt to pacify drug-trafficking gangs.

Floods in the Atacama Desert in **Chile**, one of the world's driest regions, killed at least two people and left thousands without electricity and running water. In the country's south, forest fires, caused in part by severe drought, raged in three national parks.

Less than 600 days to go!

The race to be America's next president semi-officially got under way when **Ted Cruz** became the first candidate to announce formally that he is running. A Republican senator from Texas, Mr Cruz is a darling of the Tea Party. It will be a crowded field on the Republican side, with a dozen candidates throwing their hats in the ring. Less so on the Democratic side, where few seem willing to challenge Hillary Clinton's expected campaign.

At a meeting at the White House with the Afghan president, Ashraf Ghani, Barack Obama announced that he would keep nearly 10,000 **American troops** in Afghanistan until the end of the year, rather than reduce their number by half. They will provide training and support drone strikes in anticipation of another offensive by the Taliban.

The founding father

Singapore observed a week-long period of mourning after the death of its former leader, **Lee Kuan Yew**. Tens of thousands of people queued to see his body lying in state at the city-state's parliament. One of the visitors was the Taiwanese president, Ma Ying-jeou.

In **Myanmar** 65 people were charged with involvement in student-led protests. They could be jailed for several years if convicted. The demonstrations included calls for less central-government control over universities and the right to form student unions. Earlier this month police stopped participants from marching on Yangon, the largest city.

The foreign ministers of **China**, **Japan** and **South Korea** met in Seoul for their first trilateral talks at such a level in three years. Ties have been strained because of a territorial dispute between China and Japan in the East China Sea and objections in both China and South Korea to Japan's stance on its occupation of the two countries during the second world war.

Three men were executed in **China** for mass stabbings at a railway station in the south-western city of Kunming in March last year, which left 31 people dead and which China's media have described as the country's "9/11". Officials accused the men of being militant separatists from the western province of Xinjiang.

Tragedy in the mountains

An Airbus A320 operated by Germanwings, a budget airline, crashed in the **French Alps**, killing all 150 people on board. The plane had been on its way from Barcelona to Düsseldorf, and most of the passengers were either German or Spanish.

Petro Poroshenko, the president of **Ukraine**, dismissed Ihor Kolomoisky, a billionaire oligarch, as governor of Dnipropetrovsk. Mr Kolomoisky recently sent armed men into the headquarters of a state-owned oil company in which he owns shares, after parliament passed a law that would have ended his effective control over it. His confrontation with Mr Poroshenko is seen as a crucial test of the president's power.

Angela Merkel, **Germany's** chancellor, and Alexis Tsipras, the prime minister of **Greece**, held a cordial meeting in Berlin and vowed to work on keeping Greece in the euro zone. Mr Tsipras's far-left government has been slow to implement reforms promised in exchange for receiving bail-out funds from Europe and the IMF. Greece could run out of money to pay its creditors as early as mid-April.

France's National Front came second in departmental elections with 25% of the vote, a modest setback for the party, which had been widely expected to finish first. The centre-right UMP, led by Nicolas Sarkozy, took first place. The Socialists came third. Analysts think the vote shows that France is moving from a two-party political system to a three-party one.

David Cameron said that he would not seek a third term as **Britain's** prime minister, just weeks ahead of going to the polls in an election at which voters will decide whether to give him a second term. His comments, in a television interview, baffled Conservative Party strategists, who fear attention may turn away from the party's stewardship of the economy to speculation about potential successors.

Business

Kraft Foods and **Heinz** agreed to merge, creating the world's fifth-biggest food company. The $50 billion transaction has been orchestrated by Warren Buffett's Berkshire Hathaway and 3G Capital, a Brazilian investment firm with a voracious appetite for deals in the food and consumer-goods industries. Berkshire and 3G already own Heinz, which they bought in 2013.

Ringing in the changes

Hutchison Whampoa, Li Ka-shing's holding company in Hong Kong, agreed to buy **O2**, a British mobile-phone network owned by Telefónica of Spain, in a deal valued at £10.3 billion ($15.3 billion). Hutchison wants to combine O2 with Three, its existing wireless network in Britain, which would give it around 40% of the British market. With BT in the process of buying EE, the number of big operators in that market is shrinking, a potential concern for regulators.

In one of the biggest acquisitions by a Chinese state firm in recent years, **China National Chemical Corporation** bought a stake in **Pirelli**, an Italian tyre company which supplies the rubber for Formula One cars, with a view to taking full control. The agreement is worth €7 billion ($7.7 billion) and allows Pirelli to keep its headquarters in Milan.

An activist hedge fund stepped up its fight with **Vivendi** to return €9 billion ($10 billion) to shareholders. The French media conglomerate has sold off bits of its empire over the years, leaving it with a sizeable cash pile. But P. Schoenfeld Asset Management wants it to go further and divest all or part of Universal Music Group, a subsidiary of Vivendi.

Euro trash

Hennes & Mauritz, a fashion retailer based in Sweden, reported another healthy quarterly profit, of SKr3.6 billion ($449m). But it warned that the strong dollar "will affect our sourcing costs going forward".

More evidence emerged that the recovery in the **euro zone** may at last be gathering pace. A closely watched index of private-sector activity in the currency bloc compiled by Markit, a data-research firm, rose to its highest level in almost four years. The weaker euro has been a boon to exporters, especially in Germany, but job creation and the growth of new orders was strong throughout much of the euro zone in the survey.

Britain's annual **inflation rate** fell to zero in February. In contrast to other countries that are doing their utmost to battle a precipitous drop in consumer prices, mostly the result of falling oil prices, George Osborne, Britain's chancellor of the exchequer, was remarkably relaxed, pointing to the benefits to households from "good" low inflation, compared with "bad" deflation.

American regulators rejected the **"living wills"** of subsidiaries owned by three foreign banks. HSBC and Royal Bank of Scotland, two British banks, and BNP Paribas, a French one, were told to resubmit their plans about how they would unwind if faced with bankruptcy, after they were found to contain "shortcomings", including "unrealistic" assumptions about customer behaviour. The three join 11 other banks who were told to rewrite their living wills in August last year.

Schlumberger, the world's biggest oilfield-services company, agreed to plead guilty and pay $233m in a deal with America's Justice Department for violating **sanctions** by providing drilling equipment to Sudan and Iran between 2004 and 2010. The penalty comes at a bad time for the firm, which has had to retrench as the global oil glut reduces the demand for its services.

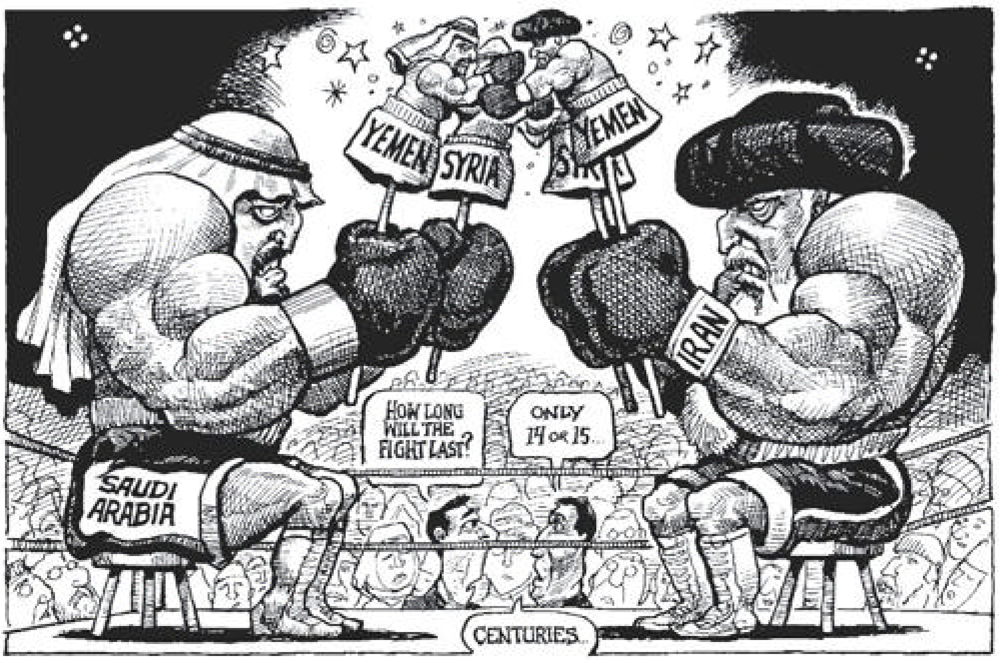
Google appointed Ruth Porat as its next chief financial officer, a position she currently holds at Morgan Stanley. Ms Porat, one of the most powerful women on Wall Street, is widely credited with improving the bank's performance through cost-cutting. Investors will hope she can do the same at Google, which has seen R&D spending soar over recent years.

Supercell, the Finnish mobile-gaming firm that brought "Boom Beach" to the world, said that sales tripled to €1.6 billion ($1.7 billion) last year, and profit doubled to €515m. Supercell has developed only three games (the other two are "Clash of Clans and "Hay Day") that are free to play but which entice users to pay for additional features. They regularly top the charts for downloaded apps on Apple and Android devices.

In the aviation nation...

Amazon complained to a Senate committee about the slow process for approving tests on commercial **drone flights** in America, describing it as "inadequate", especially compared with other countries. It said a waiver it had been granted was already obsolete, as it applies to a drone it is no longer testing.

Other economic data and news can be found on pages 92-93



The world is going to university

More and more money is being spent on higher education. Too little is known about whether it is worth it

"AFTER God had carried us safe to New England, and we had builded our houses, provided necessaries for our livelihood, reared convenient places for God's worship and settled Civil Government, one of the next things we longed for and looked for was to advance learning and perpetuate it to posterity." So ran the first university fundraising brochure, sent from Harvard College to England in 1643 to drum up cash.

America's early and lasting enthusiasm for higher education has given it the biggest and best-funded system in the world. Hardly surprising, then, that other countries are emulating its model as they send ever more of their school-leavers to get a university education. But, as our special report argues, just as America's system is spreading, there are growing concerns about whether it is really worth the vast sums spent on it.

The American way

The modern research university, a marriage of the Oxbridge college and the German research institute, was invented in America, and has become the gold standard for the world. Mass higher education started in America in the 19th century, spread to Europe and East Asia in the 20th and is now happening pretty much everywhere except sub-Saharan Africa. The global tertiary-enrolment ratio—the share of the student-age population at university—went up from 14% to 32% in the two decades to 2012; in that time, the number of countries with a ratio of more than half rose from five to 54. University enrolment is growing faster even than demand for that ultimate consumer good, the car. The hunger for degrees is understandable: these days they are a requirement for a decent job and an entry ticket to the middle class.

There are, broadly, two ways of satisfying this huge demand. One is the continental European approach of state funding and provision, in which most institutions have equal resources and status. The second is the more market-based American model, of mixed private-public funding and provision, with brilliant, well-funded institutions at the top and poorer ones at the bottom.

The world is moving in the American direction. More universities in more countries are charging students tuition fees. And as politicians realise that the "knowledge economy" requires top-flight research, public resources are being focused on a few privileged institutions and the competition to create world-class universities is intensifying.

In some ways, that is excellent. The best universities are responsible for many of the discoveries that have made the world a safer, richer and more interesting place. But costs are rising. OECD countries spend 1.6% of GDP on higher education, compared with 1.3% in 2000. If the American model continues to spread, that share will rise further. America spends 2.7% of its GDP on higher education.

If America were getting its money's worth from higher education, that would be fine. On the research side, it probably is. In 2014, 19 of the 20 universities in the world that produced the most highly cited research papers were American. But on the educational side, the picture is less clear. American graduates score poorly in international numeracy and literacy rankings, and are slipping. In a recent study of academic achievement, 45% of American students made no gains in their first two years of university. Meanwhile, tuition fees have nearly doubled, in real terms, in 20 years. Student debt, at nearly $1.2 trillion, has surpassed credit-card debt and car loans.

None of this means that going to university is a bad investment for a student. A bachelor's degree in America still yields, on average, a 15% return. But it is less clear whether the growing investment in tertiary education makes sense for society as a whole. If graduates earn more than non-graduates because their studies have made them more productive, then university education will boost economic growth and society should want more of it. Yet poor student scores suggest otherwise. So, too, does the testimony of employers. A recent study of recruitment by professional-services firms found that they took graduates from the most prestigious universities not because of what the candidates might have learned but because of those institutions' tough selection procedures. In short, students could be paying vast sums merely to go through a very elaborate sorting mechanism.

If America's universities are indeed poor value for money, why might that be? The main reason is that the market for higher education, like that for health care, does not work well. The government rewards universities for research, so that is what professors concentrate on. Students are looking for a degree from an institution that will impress employers; employers are interested primarily in the selectivity of the institution a candidate has attended. Since the value of a degree from a selective institution depends on its scarcity, good universities have little incentive to produce more graduates. And, in the absence of a clear measure of educational output, price becomes a proxy for quality. By charging more, good universities gain both revenue and prestige.

What's it worth?

More information would make the higher-education market work better. Common tests, which students would sit alongside their final exams, could provide a comparable measure of universities' educational performance. Students would have a better idea of what was taught well where, and employers of how much job candidates had learned. Resources would flow towards universities that were providing value for money and away from those that were not. Institutions would have an incentive to improve teaching and use technology to cut costs. Online courses, which have so far failed to realise their promise of revolutionising higher education, would begin to make a bigger impact. The government would have a better idea of whether society should be investing more or less in higher education.

Sceptics argue that university education is too complex to be measured in this way. Certainly, testing 22-year-olds is harder than testing 12-year-olds. Yet many disciplines contain a core ▸▸

of material that all graduates in that subject should know. More generally, universities should be able to show that they have taught their students to think critically.

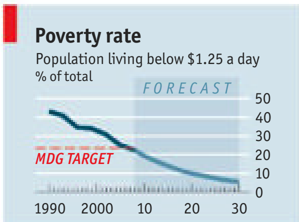
Some governments and institutions are trying to shed light on educational outcomes. A few American state-university systems already administer a common test to graduates. Testing is spreading in Latin America. Most important, the OECD, whose PISA assessments of secondary education gave governments a jolt, is also having a go. It wants to test subject-knowledge and reasoning ability, starting with economics and engineering, and marking institutions as well as countries. Asian governments are keen, partly because they believe that a measure of the quality of their universities will help them in the market for international students; rich countries, which have more to lose and less to gain, are not. Without funding and participation from them, the effort will remain grounded.

Governments need to get behind these efforts. America's market-based system of well-funded, highly differentiated universities can be of huge benefit to society if students learn the right stuff. If not, a great deal of money will be wasted. ■

Development

The 169 commandments

The proposed sustainable development goals would be worse than useless



MOSES brought ten commandments down from Mount Sinai. If only the UN's proposed list of Sustainable Development Goals (SDGs) were as concise. The SDGs are supposed to set out how to improve the lives of the poor in emerging countries, and how to steer money and government policy towards areas where they can do the most good. But the efforts of the SDG drafting committees are so sprawling and misconceived that the entire enterprise is being set up to fail. That would be not just a wasted opportunity, but also a betrayal of the world's poorest people.

The SDGs are the successors to the development targets that governments around the world signed up to in 2000 and promised to reach by 2015. There are eight of these so-called Millennium Development Goals (MDGs) with 21 sub-targets, from educating girls to cutting maternal mortality. Overall, the MDGs have a decent record. Some (such as reducing maternal and child mortality) will be missed by miles. But others, such as cutting by half the share of people who live in abject poverty, have been reached. The MDGs themselves do not always deserve the credit: the plunge in the global poverty rate has far more to do with growth in China than anything agreed on at the UN. But in other cases, such as boosting access to clean water, the prospect of missing an international target shamed countries into acting better than they might have otherwise.

The developing countries and Western aid agencies drawing up the SDGs, which would set targets for 2030 (see page 63), seem to think that you cannot have too much of a good thing. They love the MDGs and want more—148 more. At the moment there are 169 proposed targets, grouped into 17 goals. These are ambitions on a Biblical scale, and not in a good way.

Their supporters justify the proliferation by saying the SDGs are more ambitious than their predecessors: they extend to things such as urbanisation, infrastructure and climate change. The argument is that cutting poverty is not a simple matter. It is rooted in a whole system of inequality and injustice, meaning that you need lots of targets to improve governance, encourage transparency, reduce inequality and so on.

There is truth in that argument, but the SDGs are still a mess. Every lobby group has pitched in for its own special interest. The targets include calls for sustainable tourism and a "global partnership for sustainable development complemented by multi-stakeholder partnerships", whatever that means.

Developing countries seem to think that the more goals there are, the more aid money they will receive. They are wrong. The SDGs are unfeasibly expensive. Meeting them would cost $2 trillion-3 trillion a year of public and private money over 15 years. That is roughly 15% of annual global savings, or 4% of world GDP. At the moment, Western governments promise to provide 0.7% of GDP in aid, and in fact stump up only about a third of that. Planning to spend many times the amount that countries fail to give today is pure fantasy.

The backers of the SDGs concede from the outset that not all countries will meet all the targets—an admission that robs the goals of the power to shame. The MDGs at least identified priorities and chivvied along countries that failed to live up to their promises; a set of 169 commandments means, in practice, no priorities at all.

By establishing myriad of top-down targets, the SDG drafters also flout one of the most important lessons of development: that everywhere is different. Local context is vital; policies that work in one place may not work in another. The MDGs were broad enough to allow local variation. The SDGs are narrow. They will lead to cookie-cutter development policies, which will almost certainly work less well.

Stupid development goals

Worst of all, the SDGs are a distraction. Over the next 15 years, the world has a chance to eliminate extreme poverty—that is, to end the misery of almost 1 billion people who live on no more than $1.25 a day. This goal will not be achieved automatically; in many places the trends today point in the wrong direction. But it could be reached at reasonable cost. Basic transfer programmes to lift everyone above the bare-minimum poverty line would ask for about $65 billion a year, a modest amount compared with $3 trillion. This aim is SDG One. It would have a much better chance of being achieved if it stood at the head of a very short list.

That could still be done. Governments are to approve the SDGs in September. By then the list should honour Moses and be pruned to ten goals aimed squarely at reducing poverty, boosting education (for example, extending girls' schooling by two years) and improving health (say by halving the rate of malaria infection). Today's SDGs are full of good intentions, but everyone knows where good intentions lead. ■

The White House in 2016

Cruz the bruiser

The junior senator from Texas is dangerous

WITH 596 days to go before America's next presidential election, the first serious candidate has announced that he will run (see page 31). Ted Cruz is an intelligent man with an inspiring life story. His father fled from Cuba with a few dollars sewn into his underwear and settled in the United States. The young Ted made a name for himself in Texas while still a teenager, giving lectures to Rotary clubs about the constitution. By his early 30s he was arguing cases before the Supreme Court—and winning. At 41, he was elected to the Senate, overcoming long odds in a Republican primary to beat a tycoon backed by party bigwigs. Now, at 44, he thinks he is ready to be president. You cannot accuse Mr Cruz of lacking self-confidence.

Republicans who do not like Mr Cruz—and that includes many of his colleagues in the Senate—liken him to Barack Obama before he became president. This is meant both as an insult and a backhanded compliment. They mean that Mr Cruz's career so far has consisted entirely of talking and that, with no executive experience, he is hopelessly unprepared for the White House. But they also acknowledge that he is a brilliant speaker and a candidate who should not be underestimated. They are right on all points.

Mr Cruz is an outstanding campaigner. He is sharp and often witty on the stump. He jokes to audiences nervous of NSA snooping that they should leave their mobile phones on, because "I want to make sure that President Obama hears everything I have to say this morning." He is passionate, arguing that "God isn't done with America yet." And he is adept at channelling the rage of those who most dislike the man in the Oval Office. But he would make a terrible president.

First, he offers not a coherent plan for governing but a series of applause lines. "Imagine abolishing the IRS!" is one. How he would pay for his proposed trebling of the Border Patrol after scrapping the Internal Revenue Service is unclear, but no matter. He reveres the constitution, yet he wants to change it quite a lot, for example to require a balanced budget. He is one of the few top-tier Republicans who still harps on about stopping gay people from marrying. He occasionally takes a stance that is both brave and wise: he protests when Uncle Sam lines the pockets of Iowa's corn farmers, for example. But for the most part he offers feel-good mush: "Imagine young people coming out of school with four, five, six job offers!"

Second, he has treated the Senate not as a place to craft laws but as a stage for self-publicising stunts. In 2013 he led the charge to shut down the government in an attempt to defund Obamacare. He was prepared to risk a sovereign default over raising the debt ceiling. He never had a chance of making the president repeal his health reform, but he proved to conservative voters that he really, really objects to it. He compared Republicans who refused to support him to Neville Chamberlain appeasing Hitler.

Mission Impossible

Mr Cruz will not win the presidency, since he repels the swing voters who decide things. But he could still do harm. If he turns the Republican primary into a conservative purity contest, in which anyone softer on Mr Obama is labelled a sell-out, other contenders may be dragged so far to the right that they become unelectable in the general election. That would be bad for the Republican Party and for America. Voters in 2016 deserve a choice between two grown-up candidates. ■

America, Israel and Iran

The ire over Iran

Although Barack Obama is right to chastise Binyamin Netanyahu, Israel's prime minister has a point on Iran

RARELY have relations between an American president and an Israeli prime minister sunk so low. No sooner had Binyamin Netanyahu won the Israeli election, on March 17th, than Barack Obama told him he would "reassess" relations with the Jewish state. Mr Netanyahu, says the president, has all but destroyed his credibility and the chances for peace with Palestinians, and he has eroded Israel's democracy.

These are strong words coming from Israel's best friend. The mood has not been this bad since 1991, when the elder George Bush delayed loan guarantees to Israel; or maybe 1956, when Dwight Eisenhower forced Israel (and Britain and France) to withdraw after the intervention against Egypt.

Mr Obama was right to chastise Mr Netanyahu over Palestine. But he should not ignore him altogether. This is a vital moment in the Middle East. Mr Obama may this week embrace Israel's greatest foe, Iran, by agreeing on the outline for a nuclear deal. As cynical as Mr Netanyahu may be about Palestine, he deserves to be heard on the risk that a deal will turn Iran from a pariah into a legitimate and overbearing regional power.

Not pally on Palestine

Mr Netanyahu prompted this breakdown during his election campaign. He declared that a Palestinian state would never be created on his watch, repudiating his acceptance in 2009 of peace based on two states. On election day he urged his supporters to rush to vote because Arab citizens of Israel were ▸▸

turning out "in droves". His flirtation with Arab-hatred was disturbing for Mr Obama, for liberal-minded supporters of Israel (see Lexington) and, indeed, for this newspaper.

Mr Netanyahu has recalibrated his remarks. He says he has not given up on a Palestinian state, though conditions must change first. He claims his comments on Arab voters were misunderstood and has issued an apology. That is welcome, though he still has much work to do before he will be believed.

But rather than dying down, the spat worsened. Anonymous American officials leaked news that Israel has been treacherously spying on them during the Iran talks and briefing Congress—a charge Israel denies. For a president as self-controlled as Mr Obama, the vehemence towards Mr Netanyahu has a stage-managed quality. So why the drama, Obama?

The suspicion is that Mr Obama wants to blunt Mr Netanyahu's criticism of an Iran deal, or to besmirch him as a racist, so as to stop wavering Democrats from joining the many who cheered Mr Netanyahu in Congress when he denounced the looming agreement as "a very bad deal".

Mr Netanyahu is wrong to reject any plausible deal with Iran. His confrontational tactics may do great damage to his country. Yet he is right on at least one point that Mr Obama is wilfully ignoring: Iran's belligerent behaviour in the Middle East is an increasing menace.

As we show (see page 52), the militias Iran is sponsoring are in some ways the Shia mirror-image of the Sunni jihadists of Islamic State (IS). As the Arab world breaks down, Iran's proxies are not just a response to the sectarian chaos but also a cause of it. This week Yemen's Iran-backed Houthi rebels laid siege to the strategic port of Aden and Saudi Arabia, at the head of a ten-nation coalition, launched attacks to repel them (see page 51). Iran now has strong influence over Beirut, Damascus, Baghdad and Sana'a. Mr Obama has chosen not to speak out much against this—in the chaos of Iraq his aircraft have just begun to help Iranian-backed forces attack IS in Tikrit.

Iranian aggressiveness does not mean abandoning the nuclear talks. An agreement that freezes Iran's nuclear programme for a decade is better than none at all. Perhaps, with time and engagement, Iran itself might change. With a more tractable Iran, other problems in the Middle East would become easier for the outside world to manage.

But Mr Netanyahu is right to point out that nobody should count on it. Free of sanctions, Iran may become more assertive still. To sell his deal, Mr Obama must explain how he can work with a foe, and not a hoped-for friend. In the cold war the West confronted and contained the Soviet Union even as it struck pragmatic arms-control deals. Mr Obama needs to make the case that, with Iran, the West will distrust and verify. ■

Brazil and its president

Dealing with Dilma

Many Brazilians are fed up with their president. But impeaching her would be a bad idea

SHE is less than three months into her second term, but already most Brazilians want to see the back of Dilma Rousseff. Grappling with a sickly economy and a hydra-headed corruption scandal at Petrobras, the state-controlled oil giant, she finds herself almost friendless in Brasília. She has already lost control of a Congress where, in theory, her coalition has a comfortable majority. More than 1m Brazilians took to the streets on March 15th to repudiate their president. Her approval rating has fallen by 30 points in six months to 13%, the lowest for a Brazilian president since Fernando Collor in 1992, on the eve of his impeachment for corruption.

Nearly 60% of respondents in one poll believe that Ms Rousseff merits the same fate. It is not hard to see why voters are angry. She chaired Petrobras's board in 2003-10, when prosecutors believe more than $800m was stolen in kickbacks and funnelled to politicians in the ruling Workers' Party (PT) and its allies, 47 of whom face criminal investigation. She won last year's presidential election—albeit by just 3% of the vote—by assuring Brazilians that their living standards, jobs and social benefits were threatened only by her opponents.

In fact, as many voters now realise, Ms Rousseff was peddling a lie. It was the mistakes committed in her first term that have led to the spending cuts and tax and interest-rate rises she is now inflicting (and which have earned her the enmity of her own party). Add the perception that her re-election campaign may have been partly financed by money stolen from Petrobras, and Brazilians have every reason to feel they are the victims of the political equivalent of a confidence trick.

But to conclude that Ms Rousseff should be kicked out is an emotional overreaction. Brazilian law holds that presidents can be impeached only for criminal acts—and only then if they are committed during their current term. Prosecutors have found no evidence to implicate Ms Rousseff in the racketeering at Petrobras—nor that it is continuing. And although many Brazilian politicians think the president is dogmatic or incompetent, nobody seriously believes that she has enriched herself. Contrast that with Mr Collor, who pocketed money that his associates extracted with promises of influence.

A painful lesson

Impeachment is always as much a political calculation as a legal one. In the end Mr Collor fell because of his arrogance, a failed anti-inflation scheme and his disdain for Congress. That precedent explains why Ms Rousseff is endangered by her political isolation. Yet the opposition and the president's disgruntled allies should not try to push her out unless clear evidence of criminal wrongdoing against her comes to light.

Brazil's institutions are working to detect and punish crimes that were committed by the ruling clique. Impeachment would turn into a witch-hunt that would weaken those institutions by politicising them. Ms Rousseff and the PT must take responsibility for the mess she made during her first term, rather than becoming martyrs to impeachment. Brazilians are paying for her mistakes, too. But by having Ms Rousseff in office, they are more likely to grasp that her old policies are to blame, not the new ones. That is an important lesson. ■

Lee Kuan Yew

The wise man of the East

Authoritarians draw the wrong lessons from Lee Kuan Yew's success in Singapore

IF YOU seek his monument, look around Singapore. Wealthy, orderly, efficient and honestly governed, it is not the work of Lee Kuan Yew alone. But even his severest critics would agree that Mr Lee, who died this week at the age of 91, played an enormous part (see pages 29-30). Singapore's leader from before "self-government" from Britain in 1959, he was prime minister until 1990, leaving the cabinet only in 2011. Under him Singapore, with no natural resources, was transformed from a tiny struggling island into one of the world's richest countries.

Admirers look to Singapore as a model, and Mr Lee as a sage. Part of his influence stemmed from his role as a clear-eyed, blunt-speaking geostrategist. He was an astute observer of the defining contest of the times—China's emergence and how America reacts to it. More than that, though, the admirers look to Singapore's combination of prosperity and one-party rule. They see flaws in "Western-style democracy": its short-termism; its disregard for non-voters such as children and foreigners; and its habit of throwing up unqualified leaders. Mr Lee's "meritocracy" promises a solution.

China's leaders, especially, are fascinated by Mr Lee's firm grip on power: it is no accident that the second-most-powerful man in the Chinese hierarchy is not running the economy or the interior ministry, but is President Xi Jinping's enforcer, Wang Qishan (see page 49). Others, including Rwanda's authoritarian president, Paul Kagame, who is seeking to rewrite the constitution to allow himself a third term (see page 53), enthusiastically compare themselves to Singapore's founding father. Mr Lee does indeed have much to teach the world; but when his admirers conclude that Singapore proves authoritarianism works, they are drawing the wrong lesson.

Pyongyang with broadband

Mr Lee got many things right, especially in his choice of economic managers. They kept government small, the economy open and regulation simple, transparent and effective. Singapore often heads the World Bank's "ease of doing business" rankings. It has deftly exploited the advantages that made it a successful entrepot as early as the 14th century: a fine natural harbour and strategic position on the Malacca Strait, through which an estimated 40% of world maritime trade now passes. Foreign investment has poured in.

Political stability and social order were part of the attraction. With a big ethnic-Chinese majority but sizeable Malay and Indian minorities, Singapore suffered race riots in the 1960s. Since then ethnic harmony has been preserved: by quotas in public housing that enforce integration; by restrictions on inflammatory speech; and by harsh penalties for lawbreaking (including corporal and capital punishment). Strikes and other forms of protest have been extremely rare. Social policies are illiberal—homosexual acts, for example, remain illegal.

Throughout, Mr Lee's own People's Action Party (PAP) has had a vice-like grip on power. The political system is based on the Westminster model inherited from Britain, but modified to prevent the emergence of a serious opposition party. Constituencies have been designed to magnify the distortions of a first-past-the-post system. In the most recent general election in 2011 the PAP won 60% of the votes, but more than 90% of the seats. Mr Lee and other leaders have also used defamation suits to defend their reputations. The mainstream press was tamed. Opposition leaders have found themselves bankrupt.

Critics mock Singapore for being like North Korea or "Disneyland with the death penalty", as William Gibson, an American novelist, described it in 1993. But Mr Lee's defenders argue that the restrictions are a small price to pay for stability and prosperity. GDP figures do not lie: Mr Lee's policies have worked. Singapore is a thriving city-state. Unlike North Korea or Disneyland, it offers a real challenge to the liberal notion that growth, prosperity and freedom go together.

Only one Lee Kuan Yew

But four peculiarities of Singapore make it look like an anomaly, rather than a model for the leaders of China and Rwanda or others who think the best thing for their people is their own unending and unquestioned rule. The first is size. Singapore is a city with a foreign policy, which gives it a cohesion that more politically and ethnically chaotic countries cannot match. Second, this cohesion is reinforced by the turbulent circumstances of its birth. After a painful divorce from Malaysia in 1965, the government has never let Singaporeans forget that a Chinese-majority island, surrounded by Muslim-majority Indonesia and Malaysia, would always be vulnerable. Third, it shines by comparison with its less well-run neighbours. Rather as Hong Kong's prosperity was based on being Chinese but not entirely part of China, Singapore has flourished by being in South-East Asia, but not of it.

However, the most important reason for Singapore's singular experience is Mr Lee himself. Incorruptible, he kept government unusually clean. He ensured that Singapore pays its ministers and civil servants high salaries. Under today's prime minister, his son Lee Hsien Loong, the bureaucracy has remained efficient and untarnished. Unlike many other independence leaders, Mr Lee designed a system to outlast him. Singapore's government claims it has faced enough electoral competition to keep it honest, but not so much that there was a high risk of losing power. So it has been able to eschew populism and take decisions in the country's long-term interests.

But outside Singapore, maintaining probity requires checks and balances. In much of the developing world, critics are regarded as enemies and those in opposition are treated as traitors whether their complaints make sense or not.

Even in Singapore the model may not long outlast its creator. Singaporeans are having few children and ageing fast. The government faces demands for more social spending. Growth depends on immigration, angering natives who feel the influx is suppressing their wages—and making it impossible to get a seat on the tube. That balance between competition and inevitable re-election is shifting. The Singapore model may yet prove unsustainable even in Singapore. ■

ADVERTISEMENT FEATURE

Mitsubishi Heavy Industries Rising

Epitomizing Japan's economic resurgence is the renewed assertiveness of Mitsubishi Heavy Industries, Ltd. (MHI). Long a leading shipbuilder, the company has positioned itself as a global highflier in satellite launch vehicles and commercial aircraft. It also asserts impressive strengths on the ground in such sectors as power plants, transit systems, and automotive components. And yes, MHI retains important strengths in shipbuilding, where it focuses on such high-value vessels as liquefied natural gas carriers.

MHI has sharpened its focus on growth through a sweeping reorganization completed in fiscal 2014 (April 1, 2013–March 31, 2014). The reorganization grouped nine far-flung business headquarters into a more manageable portfolio of four business domains. MHI is fortifying operations central to the four-domain focus and divesting operations tangential to that focus. And it is coaxing renewed growth momentum from each domain.

The company is coming off a year of strong growth: fiscal 2014 operating income up 26.1%, to ¥206.1 billion, on an 18.9% increase in net sales, to ¥3,349.5 billion. And management expects to report another round of double-digit gains in sales and earnings in fiscal 2015: operating income up more than 25%, to ¥260 billion, on growth of nearly 20% in net sales, to ¥4 trillion.

A foundation for sustainable viability

"We are laying a business and financial foundation," explains MHI's president and CEO Shunichi Miyanaga, "to increase our annual sales volume to ¥5 trillion while raising profitability." The ¥5 trillion figure is Miyanaga's baseline for sustainable viability in MHI's capital-intensive business sectors.

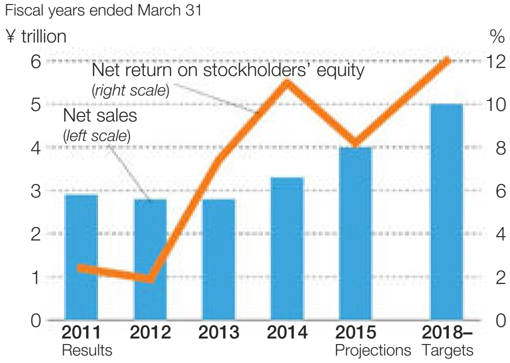
Miyanaga recognizes, meanwhile, that lasting growth for his company will depend on leveraging its resources. He has overseen several large acquisitions and alliances since becoming CEO in 2013 and insists that more are on the way.

MHI's most notable alliance under Miyanaga has been the integration of its thermal power operations with those of Hitachi, Ltd., in February 2014. That spawned the joint venture Mitsubishi Hitachi Power Systems Ltd., 65% owned by MHI. In two other joint ventures, MHI has begun producing steelmaking equipment with Germany's Siemens AG and will build offshore turbines with Denmark's Vestas Wind Systems A/S.

Story continues >>>

Net Sales and Net Return on Equity

Fiscal years ended March 31



MHI is making steady progress in a strategy aimed at accompanying sales growth with gains in return on equity.

Note:

The fluctuation in return on equity in fiscal 2014 and (projected) 2015 reflects a fiscal 2014 extraordinary gain on the integration of MHI's and Hitachi's thermal power system operations.

MHI's H-IIA (photo) and H-IIB launch vehicles have an aggregate success rate of 97%.
Photo © JAXA

Energy & Environment

www.mhi-global.com/ee/index.html

MHI's biggest business domain by far is Energy and Environment. That domain handles thermal power plants, nuclear power plants, chemical plants, renewable energy systems, and marine engines. It accounted for more than 37% of MHI's net sales and for more than 54% of the company's operating income in fiscal 2014.

"Customer focus," declares MHI's Energy and Environment domain CEO Atsushi Maekawa. "We accompany leading-edge strengths in technology with careful attention to customer needs and wants. That's how we win projects in competition with larger competitors."

Pooling capabilities with Hitachi in the Mitsubishi Hitachi Power Systems joint venture has bolstered MHI's global position in thermal power plants. Underlying that joint venture are highly complementary strengths. MHI was especially strong in large gas turbines, Hitachi in small and medium-sized gas turbines, MHI in Southeast Asia and the Middle East, Hitachi in Europe and Africa.

The joint venture benefits hugely from MHI's and Hitachi's world-beating technology in gas turbine combined cycle (GTCC) power plants. That technology provides for recycling the exhaust gas from the gas turbine in the primary generator to drive a secondary generator. The recycling raises energy efficiency and reduces emissions of carbon dioxide.

In the past year, Mitsubishi Hitachi Power Systems has won contracts to deliver a GTCC power plant in Japan and to supply core components for a GTCC power plant in the Republic of Korea. And it agreed in February 2015 to provide Uzbekistan's national electric utility with operational and maintenance support for electric power plants and with training for engineers.

Mitsubishi Hitachi Power Systems' gas turbine combined cycle technology raises energy efficiency at more than two dozen power plants worldwide, including Tohoku Electric Power Co., Inc.'s Higashi Niigata Power Station (photo).

Different energies. And chemicals, too

Nuclear power, too, is an important part of MHI's array of solutions for the world's energy needs. The company's business in that sector centers presently on a nuclear plant it is engineering in Turkey with France's Areva SA.

In addition to engineering power plants, MHI participates in a growing range of projects as a power provider. It participates in that capacity at projects in Bulgaria, Japan, and Turkey.

Maekawa emphasizes his domain's activity in reducing the environmental impact of thermal power generation. "Our business in this sector," he notes, "includes engineering systems for recovering carbon dioxide from plant exhaust."

The domain CEO is equally emphatic about the MHI commitment to renewable energies. "Our joint venture with Vestas Wind Systems," adds Maekawa, "has solidified our foothold in offshore wind turbines."

The Energy and Environment domain is also moving to serve the mounting global demand for chemical plants. MHI is especially competitive in plants for producing urea, ammonia, and methanol. And its North American plant business includes a growing number of orders for plants to be supplied with shale gas feedstock. The company is also cultivating chemical plant business vigorously in other markets rich in gas resources, such as Russia and Africa.

The M501J gas turbine from Mitsubishi Hitachi Power Systems has raised the bar in thermal efficiency.
Photo © MHPS

Rising

The number of orders for the Mitsubishi Regional Jet (MRJ) from a multinational cast of airlines has reached 407—223 firm orders and 184 options and purchase rights. That demand reflects the high expectations of the first small jet airliner to be developed and manufactured in Japan. The MRJ is under development as a family of airliners that will accommodate 70 to 90 passengers. And its development schedule calls for deliveries to begin in 2017.

The MRJ will bring to regional air transport a new generation of advances in fuel economy, clean and quiet operation, and passenger amenity.
Photo © MITAC

"We did the first engine run with the MRJ in January," reports MHI's Commercial Aviation and Transportation Systems domain CEO Yoichi Kujirai. "That marked the start of full-scale testing. It allowed us to verify the integrated operation of several of the aircraft's systems, including the hydraulic, fuel, air-conditioning, and electrical systems."

The engine run described by Kujirai is a big step toward the MRJ's first flight. And the development of the MRJ is the latest advance for MHI in commercial aircraft. MHI is a trusted supplier of long standing to Boeing Company, Airbus SAS, Bombardier Inc., and other aircraft manufacturers. For example, it supplies the composite-material wing box for the Boeing 787 Dreamliner.

An automated guideway transit system supplied by MHI carries passengers reliably and comfortably on a 22.5-kilometer, 33-station route between the Singapore towns of Sengkang and Punggol.

Terrestrial mobility

MHI carries people and cargo across the land and the sea, as well as through the sky. On the land, it supplies automated people mover systems for airports, light rail transit systems and mass rapid transit systems for urban transportation, and high-speed rail systems for regional transportation. MHI leads a consortium that has won a contract to build a fully automated, driverless metro system in Doha, Qatar. Eyeing further growth in this sector, the company recently completed the comprehensive Mihara Test Center for land transportation systems in Japan's Hiroshima Prefecture.

"In shipbuilding, we are focusing on high-value-added vessels," says Kujirai. He acknowledges the challenge from Chinese and Korean rivals in cost competition but argues that MHI can "assert a competitive edge with original technologies." He cites MHI's next-generation liquefied natural gas carrier as an example. Advances in tank design and in propulsion have increased carrying capacity and fuel efficiency. MHI is targeting the new LNG carrier at the market for transporting North American shale gas.

Commercial Aviation & Transportation Systems

www.mhi-global.com/cats/index.html

Mitsubishi Heavy Industries

Integrated Defense & Space Systems

An aggregate success rate of nearly 97% positions MHI's H-IIA and H-IIB rockets as the world's most reliable satellite launch vehicles. That positioning gained further momentum with the flawless launch of the H-IIA on February 1, 2015. That was the 26th successful launch of the H-IIA since the rocket's first flight in 2001. The H-IIA's larger sibling, the H-IIB, has a 100% success rate in four launches since 2009.

"Our greatest strength in launch services," comments MHI's Integrated Defense and Space Systems domain CEO Hisakazu Mizutani, "is our comprehensive scope. We coordinate the entire process from manufacturing the launch vehicle to fine-tuning the interface between the launch vehicle and the payload and carrying out the launch. Our engineers work directly with their counterparts at the satellite manufacturers and satellite operators to support sound judgment throughout the process."

The approach described by Mizutani has earned the satisfaction of public-sector customers, and it is beginning to win business in the private sector. Recently, the Canada-based satellite operator Telesat Holdings Inc. contracted MHI to place its next-generation Telstar satellite, the Telstar 12 Vantage, in orbit. The satellite will go aloft on an H-IIA rocket in 2015. Once in orbit, the Telstar 12 Vantage will upgrade Telesat's service for customers in the broadcast, corporate, and government sectors.

Delivering supplies to the International Space Station is the role of the H-II Transfer Vehicle, built by MHI.
Photo © JAXA

Activity in space development at MHI is more than launch vehicles. For example, the company has manufactured and delivered resupply vehicles for the International Space Station. And it builds modules for carrying out experiments in the space environment.

National defense

MHI, as a primary defense contractor, also develops and supplies aeronautics products and land- and sea-based products, for Japan's Self-Defense Forces. "We provide the Japanese government with products and services for defense," says Mizutani, "that meet needs for joint operation on the land, on the sea, and in the air. That includes working with the Ministry of Defense in developing sophisticated escort ships and amphibious vehicles and in researching technologies for future jet fighters."

In space development and in national defense, MHI works to offer advanced, cost-effective products and services optimally matched to customer needs. Thus is the company striving to help fulfill Japan's commitment to promoting world peace.

MHI and Aerojet Rocketdyne, Inc., have teamed to develop the MB family of cryogenic engines. MB engines are candidates for upper-stage propulsion in next-generation launch vehicles.

www.mhi-global.com/idss/index.html

Machinery, Equipment & Infrastructure

www.mhi-global.com/mei/index.html

MHI's vast business portfolio comprises some 700 product categories, and responsible for about half of those products is the Machinery, Equipment and Infrastructure domain. Among the main products handled by this domain are engines, turbochargers, air-conditioners, water heaters and chillers, machine tools, compressors for chemical production and shale gas development, heavy machinery for manufacturing industries, water treatment plants, printing equipment, agricultural machinery, and materials handling equipment.

"Managing all those product categories is a challenge," acknowledges Machinery, Equipment and Infrastructure domain CEO Kazuaki Kimura. "But bringing all these products together in the same domain has generated lots of potential for new synergies."

A good example of a sector where Kimura's business domain is cultivating synergies is the automotive industry. MHI is a world leader in automotive turbochargers and also supplies automakers worldwide with air-conditioners and with other components. The company also serves the automobile industry, meanwhile, with production equipment, such as machine tools and injection molding machines, and with testing equipment, including crash simulators. Under Kimura, every MHI sales representative for every automotive product is an evangelist for the company's entire line of automotive products.

One thing for certain is that turbochargers will remain a central theme in MHI's automotive evangelism. Nations worldwide are enacting ever-stricter regulations for fuel economy. Automakers, therefore, need to secure greater output from smaller engines. Turbocharging—a common feature in diesel power—is part of the solution. Automakers are installing turbochargers on a growing range of gasoline engines. And MHI is addressing that trend by expanding its global production capacity for turbochargers to 10 million units a year.

The MEGANINJA mobile generating unit delivers power at remote sites in China.

The four-domain format is generating synergies for MHI in manufacturing, as well as in marketing. Kimura offers the example of basic processing and machining. MHI, he explains, has long handled parts for different machinery products at shared factories and at a common foundry and forging center. The domain format, Kimura reports, allows for sharing production functions more broadly.

Cross-border alliances are another way that the Machinery, Equipment and Infrastructure domain is leveraging its resources. In a recent example, MHI established a joint venture, Primetals Technologies, Limited, with Siemens AG to provide plants, equipment, and services to the iron, steel, and aluminum industries.

Local power

MHI is a leading supplier of diesel, gas, and gasoline engines. Its engines range in output from 1 horsepower to nearly 30,000 horsepower and render service in multitudinous applications. Kimura cites as an example the growing demand for diesel and gas engines in local generating systems in emerging nations. Power grids are not keeping up with the growth in demand for electricity in those nations, so communities and companies rely increasingly on distributed, onsite generation.

Kimura is especially proud of a mobile generating unit that MHI has introduced in China. That unit, named MEGANINJA, is the size and shape of a shipping container, so it is easy to transport by rail or by truck. And getting the unit up and running after it arrives at a remote site takes only 24 hours.

MHI is putting in place global production capacity to supply 10 million automotive turbochargers annually.

Paying for doctors

In an otherwise reasonable synopsis of the recent trends in American health-care spending, your cynical observation that the "fee for service" system is prone to excess because doctors "are tempted to order lots of unnecessary procedures to pay for a new yacht or their children's education" was an oversimplification ("Will Obamacare cut costs?", March 7th). First and foremost, doctors order tests because they want to rule out conditions that may explain a patient's problems. It is more challenging to convince a patient that a test is unnecessary, particularly in our litigious society.

But less than 20% of health spending goes on physician services. The greatest beneficiaries of overprescribing diagnostic testing and treatments are hospitals and the drug industry. Perhaps this explains the tepid growth in physicians' wages since 1990. We have not seen a similar trend in salaries for hospital executives or in the profit margins of the health insurers.

GREGORY COTÉ
Associate professor of medicine
Medical University of South Carolina
Charleston, South Carolina

Your assessment of Obamacare's potential and progress to date was largely on point. But structural reform of what accounts for 17% of the American economy is a Herculean undertaking, and is unlikely to be accomplished by one legislative act. Increased coverage through Medicaid, the creation of health-insurance exchanges and the elimination of medical underwriting are Obamacare's greatest accomplishments.

But there are other quality and cost-controlling nuggets in the law that will require tweaks, fixes and next steps. The greatest threat to Obamacare and to American health care is partisan gridlock. Even in baseball, Americans give the batter three strikes before being called out.

HOWARD KAHN
Retired chief executive
LA Care Health Plan
Los Angeles

"The law is working" with regard to Obamacare is not a legal argument. Whether it works or not is beside the point. A court's role is to apply the law as written by the legislature, not as some may have wished it were written.

Whether you favour or oppose Obamacare or any statute, you should hope that the courts stick to their job of judging, and leave the writing of laws, even the 1,000-page, ill-drafted ones, to Congress.

ANDREW TERHUNE
Philadelphia

When Republicans like Ted Cruz tentatively broached the idea of reining in Medicare costs they were pilloried by Democrats, for example through TV ads depicting Mr Cruz pushing a grandmother in a wheelchair over a cliff. This inflamed partisan rhetoric and the refusal, on both sides of the aisle, to face financial reality are leading the United States to bankruptcy.

ED BEAUREGARD
Surrey, Canada

The first smartwatch

Your article on wearable technology opened with the line: "In the beginning was Apple" ("The wear, why and how", March 14th). This acknowledges Apple's ability to create new game-changing products. However, in your brief references to some of the ancestors of the smartwatch, I found no mention of the Timex Datalink watch, which was introduced in 1994. It was the first watch capable of wirelessly downloading information from a computer. The information is transmitted to a sensor in the watch face held in front of the computer by means of rapidly flashing light pulses from a CRT monitor. Birthdays, appointments, phone numbers and other data are digitally displayed on the watch face upon command, or can be automatically displayed.

WILLIAM CRUTCHER
Middlebury, Connecticut

The real nuclear fallout

The increased danger of the expanded or intended development of nuclear weapons, which you thoroughly described ("The unkicked addiction", March 7th), becomes of greater concern when we consider the possible consequences of their use. The bomb used on Hiroshima is a child's toy by comparison with today's version.

According to the most recent issue of the *Bulletin of the Atomic Scientists*, around 700 nuclear warheads on Russian intercontinental ballistic missiles are rated at 800 kilotons. Each has the explosive power of 800,000 tons of TNT. If detonated over Manhattan it would create a temperature up to five times greater than the centre of the sun, extinguishing all life and destroying everything within 150 square miles.

Mankind take care.

BERTRAND HORWITZ
Asheville, North Carolina

Harvard's on course online

The contrast between Arizona State University and elite institutions in offering online courses is not as stark as you implied ("The log-on degree", March 14th). Harvard, which you described as a "digital resister," has several digital arms in addition to HarvardX. A growing number of regular courses at Harvard can be taken for credit by students in the Extension School.

Moreover, two-thirds of the Harvard Extension students received a passing grade in the wildly popular Introduction to Computer Science, a considerably higher percentage than the corresponding HarvardX MOOC version of the same course, which enrolled more than 300,000 students. Completing individual courses is important. Online education can provide engaging simulations and collaboration tools to help students stay the course. Through its professional certificates and degree options, Harvard Extension School courses focus on raising students' level of attainment in a field of learning and aiding their progression toward a rewarding career.

This isn't the first revolution in education that Harvard has seen since 1636.

HENRY LEITNER
Chief innovation officer for the Division of Continuing Education
Harvard University
Cambridge, Massachusetts

Something to Marvel

The illustration to your review of Joseph Nye's book on American power depicted Captain America striking his enemies with his shield ("The end is not nigh", March 7th). The caption read "Captain America demonstrates his soft power".

Mr Nye's soft power refers not to material power, however defensively employed, but to the power of American ideals. So Captain America is demonstrating his hard power, not soft power, in your image. The superhero would do better to use the power of culture or ideology to twist minds, rather than brute force to twist arms.

ZOLTAN BUZAS
Philadelphia

Letters are welcome and should be addressed to the Editor at
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E-mail: letters@economist.com
More letters are available at:
Economist.com/letters

ECSEL
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Asia's city-statesman

The founder of Singapore, who died on March 23rd, turned the island into an economic success story while curbing democratic freedoms

THERE was no vainglory in the title of the first volume of Lee Kuan Yew's memoirs: "The Singapore Story". Few leaders have so embodied and dominated their countries: Fidel Castro, perhaps, and Kim Il Sung, in their day. But both of those signally failed to match Mr Lee's achievement in propelling Singapore "From Third World to First" (as the second volume is called). Moreover, he managed it against far worse odds: no space, beyond a crowded little island; no natural resources; and, as an island of polyglot immigrants, not much shared history. The search for a common heritage may have been why, in the 1990s, Mr Lee's Singapore championed "Asian values". By then, Singapore was the most Westernised place in Asia.

Mr Lee himself, whose anglophile grandfather had added "Harry" to his Chinese name, was once called by George Brown, a British foreign secretary, "the best bloody Englishman east of Suez". He was proud of his success in colonial society. He was a star student in pre-war Singapore, and, after an interlude during the Japanese occupation of 1942-45, again at the London School of Economics (LSE) and Cambridge. He and his wife, Kwa Geok Choo, both got firsts in law.

When Geok Choo first appears in "The Singapore Story" it is as a student who, horror of horrors, beats young Harry in economics and English exams. Mr Lee always excelled at co-option as well as coercion. When he returned to Singapore in 1950, he was confident in the knowledge that she "could be a sole breadwinner and bring up the children", giving him an "insurance policy" that would let him enter politics. He remained devoted to her. Before her death, when she lay bedridden and mute for two years, he maintained a spreadsheet listing the books he read to her: Lewis Carroll, Jane Austen, Shakespeare's sonnets.

In his political life he gave few hints of such inner tenderness. Influenced by Harold Laski, a British academic whom he had met at the LSE, he was in the anti-colonial movement of the 1950s, and in Britain had campaigned for the Labour Party. But for him ideology always took second place to a pragmatic appreciation of how power works. He also boasted of his streetfighting prowess: "Nobody doubts that if you take me on, I will put on knuckle-dusters and catch you in a cul-de-sac." He was a ruthless operator, manoeuvring himself into a position at the head of the People's Action Party (PAP) to become Singapore's first prime minister when self-governance arrived in 1959. He remained so for 31 years.

Just once in that time the steely mask slipped. Having led Singapore into a federation with Malaysia in 1963, Mr Lee led it out again when it was expelled in August 1965, with Malaysia's prime minister accusing him of leading a state government "that showed no measure of loyalty to its central government". For his part, he had become convinced that Chinese-majority Singapore would always be at a disadvantage in a Malay-dominated polity. Still he had believed in and worked for the merger all his life. Announcing its dissolution, he wept.

In compensation, he turned Singapore into a hugely admired economic success story. As he and his government would often note, this seemed far from the likeliest outcome in the dark days of the 1960s. Among the many resources that Singapore lacked was an adequate water supply, which left it alarmingly dependent on a pipeline from peninsular Malaysia, from which it had just divorced. It was beholden to America's goodwill and the crumbling might of the former colonial power, Britain, for its defence. The regional giant, Indonesia, had been engaged in a policy of *Konfrontasi*—hostility to the Malaysian federation just short of open warfare—to stress that it was only an accident of colonial history that had left British-ruled Malaya and its offshoots separate from the Dutch-ruled East Indies, which became Indonesia.

Singapore as a country did not exist. "How were we to create a nation out of a polyglot collection of migrants from China, India, Malaysia, Indonesia and several other parts of Asia?" asked Mr Lee in retrospect. Race riots in the 1960s, in Singapore itself as well as in Malaysia, coloured Mr Lee's thinking for the rest of his life. Even when Singapore appeared to outsiders a peaceful, harmonious, indeed rather boringly stable place, its government often behaved as if it were dancing on the edge of an abyss of ethnic animosity. Public housing, one of the government's greatest successes, remains subject to ethnic quotas to prevent the minority Malays and Indians from coalescing into ghettoes.

That sense of external weakness and internal fragility was central to Mr Lee's policies for the young country. Abandoned by Britain in 1971 when it withdrew from "east of Suez", Singapore has always made national defence a high priority, although direct threats to its security have eased. Relations with Malaysia have frequently been fraught, but never to the point when a military conflict seemed likely. And Indonesia ended *Konfrontasi* in the mid-1960s. The formation in 1967 of the Association of South-East Asian Nations, with Mr Lee as one of the founding fathers, helped unite the region. Yet Singaporean men still perform nearly two years of national service in the armed forces. Defence spending, in a country of 5.3m, is more than in Indonesia, with nearly 250m; in 2014 it soaked up over one-fifth of the budget.

Singapore's vulnerability also justified, for Mr Lee, some curtailment of democratic freedoms. In the early days this involved strong-arm methods—locking up suspected communists, for example. But it became more subtle: a combination of economic success, gerrymandering, stifling press controls and the legal hounding of opposition politicians and critics, including the foreign press. Singapore has had regular, free and fair elections. Indeed, voting is compulsory, though Mr Lee said in 1994 that he was "not intellectually convinced that one-man, one-vote is the best". He said Singapore practised it because the British had left it behind. So he designed a system where clean elections are held, but it has also been almost inconceivable for the PAP to lose power.

The biggest reason for that has been its economic success: growth has averaged nearly 7% a year for four decades. But Mr Lee's party has left nothing to chance. The traditional media are toothless; opposition politicians have been hounded into bankruptcy by defamation laws inherited from Britain; voters have faced the threat that, if they elect opposition candidates, their constituencies will get less money; constituency boundaries have been manipulated by the government. The advantage of Mr Lee's system, proponents say, is that it introduced just enough electoral competition to keep the government honest, but not so much that it risks losing power. So it can look round corners on behalf of its people, plan for the long term and resist the temptation to pander to populist pressures.

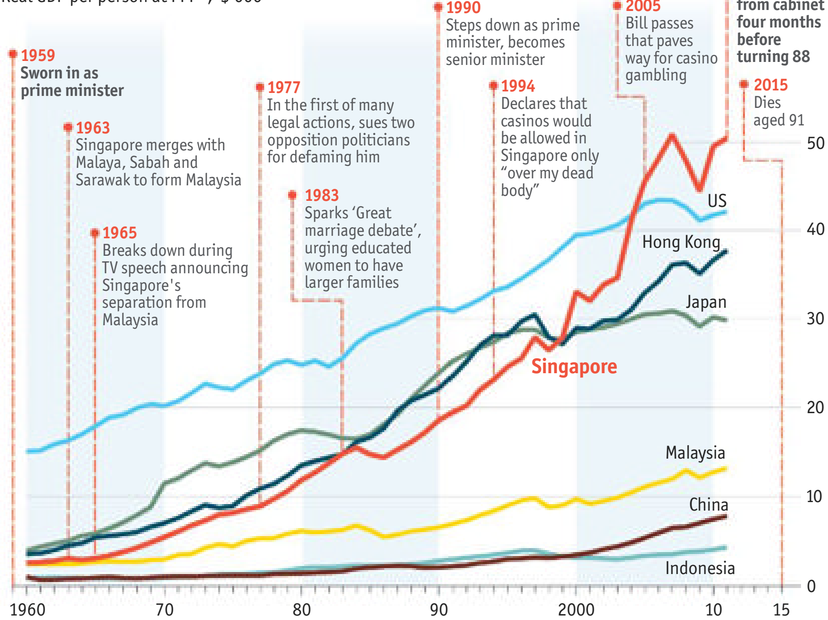
Mr Lee was a firm believer in "meritocracy", or government by the most able, defined in large part by scholastic success. "We decide what is right. Never mind what the people think," as he put it in 1987. His government's ministers were the world's best-paid, to attract talent from the private sector and curb corruption. Corruption did indeed become rare in Singapore. Like other crime, it was deterred in part by harsh punishments, ranging from brutal caning for vandalism to hanging for murder or drug-smuggling. As Mr Lee also said: "Between being loved and feared, I have always believed Machiavelli was right. If nobody is afraid of me, I'm meaningless." As a police state, however, Singapore is such a success that you rarely see a cop.

A cool guy

In some ways, Mr Lee was a bit of a crank. Among a number of 20th-century luminaries asked by the *Wall Street Journal* in 1999 to pick the most influential invention of the millennium, he alone shunned the printing press, the internal combustion engine and the internet and chose the air-conditioner. He explained that, before A/C, people living in the tropics were at a disadvantage because the heat and humidity damaged the quality of their work. Now, they "need no longer lag behind". Cherian George, a journalist and scholar, spotted in this a metaphor for Mr Lee's style of government, and wrote one of the best books about it: "The air-conditioned nation: Essays on the politics of comfort and control". Mr Lee made Singapore comfortable, but was careful to control the thermostat.

Singapore in the Lee Kuan Yew years

Real GDP per person at PPP*, $'000



Sources: Penn World Table, University of Groningen; *The Economist*

*Purchasing-power parity

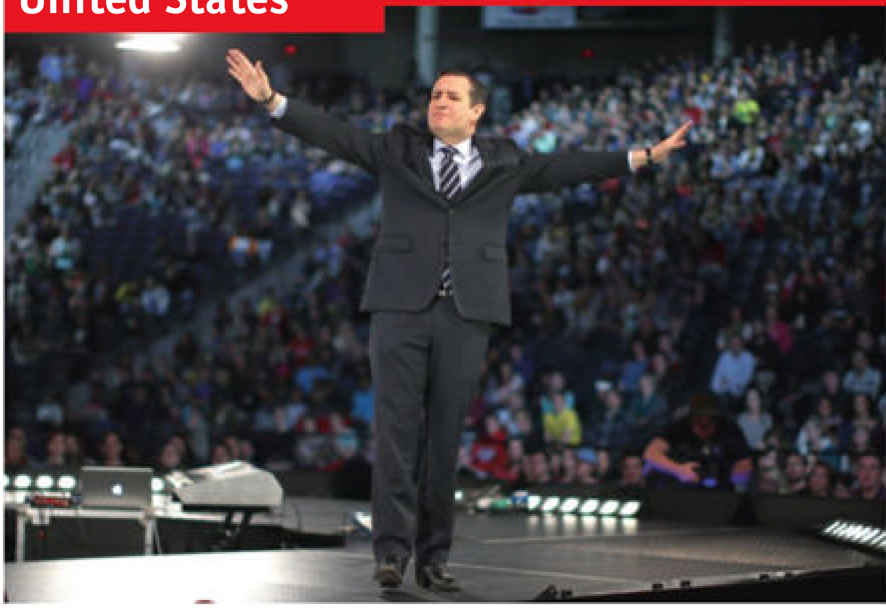
Singaporeans, seeing their island transform itself and modernise, seemed to accept this. But in 2011 the PAP did worse than ever in a general election (just 60% of the vote but 93% of the elected seats). Many thought change would have to come, and that the structure Mr Lee had built was unsuitable for the age of Facebook and the burgeoning of unbiddable networks. They began to chafe at the restrictions on their lives, no longer so convinced of Singapore's fragility, and less afraid of the consequences of criticising the government.

They resented above all that many people, despite a much-vaunted compulsory savings scheme, did not have enough money for their retirement. And they blamed high levels of immigration for keeping their wages down and living costs up. This was a consequence of a unique failure among Mr Lee's many campaigns to make Singaporeans change their ways. He succeeded in creating a nation of Mandarin speakers who are politer than they used to be and neither jaywalk nor chew gum; but he could not make them have more children. In the early 1980s he dropped his "stop at two" policy and started to encourage larger families among the better-educated. But, three decades later, Singaporean women have as low a fertility rate as any in the world.

The hereditary principle

The "setback" of the 2011 election led Mr Lee into the final stage of retirement. In 1990 he had moved from prime minister to "senior minister", and in 2004 to "minister mentor". Now he left the cabinet, but remained in parliament. By then, Singapore's prime minister for seven years had been Lee Hsien Loong, his son. The Lee family would sue anyone who hinted at nepotism. And for the elder Mr Lee, talent was obviously inherited. "Occasionally two grey horses produce a white horse, but very few. If you have two white horses, the chances are you breed white horses."

Such ideas, applied ethnically, veer close to racism. The stream of distinguished Western visitors who trooped to see Mr Lee in Singapore would steer clear of such touchy areas. They preferred to seek his views on the rise of China or America's decline. They also admired the comfort and the economic success of Singapore, and sought his advice on how to replicate it. Meanwhile, the control and good "social order" there attracted admirers, too, including Chinese leaders, notably Deng Xiaoping, who was, like Mr Lee, a member of the Hakka Chinese minority. Thus a man who was both a scourge of communists at home and a critic of Western decadence and its wishy-washy idealism was revered as a geopolitical sage in China and the West alike. What, he must have wondered, if fate had allotted him a superpower instead of a city-state? ■



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Ted Cruz

Baptist of fire

LYNCHBURG

The junior senator for Texas will not be America's next president, but he could shape the race for the White House

IN OFFICES around the country bets have been placed on March Madness, the college basketball tournament that pits a bewildering number of teams against each other in a knockout formula designed to throw up surprises. Not to be outdone, the Republican Party's presidential primary for 2016 is also now under way, after Ted Cruz, a senator from Texas, declared his candidacy on Twitter and launched it a few hours later before 10,000 students at Liberty University, a Christian college in Virginia, on March 23rd. Most of what is said now about an election that will not take place until November 2016 can safely be disregarded. But Senator Cruz's candidacy is worth taking seriously because he represents a distinctive style in American politics, which may prove more popular than his detractors realise.

Among the detractors, opinions range from those who think Mr Cruz is the new Joe McCarthy to those who reckon he is a (mostly) harmless kook. His fans see something else: a ferociously intelligent Hispanic conservative who can best almost anyone in debate and a devout Southern Baptist who makes them feel good.

Mr Cruz revels in the hysterical reaction his name provokes among Democrats, the result of two decades of hard work. As a young lawyer he helped to craft legal arguments for the impeachment of Bill Clinton and then, in 2000, was part of George W. Bush's legal team when Florida's votes were recounted. When he moved from Washington, DC back to Texas to become the state's solicitor-general, he specialised in cases that expanded gun rights, shored up the death penalty and endorsed a particular view of religious liberty: that keeping religion away from public institutions threatens faith rather than protecting it.

After a Senate campaign that attracted support from the most outraged bits of the Republican base, and resulted in a surprise primary victory in 2012, the newly arrived senator turned his attention to his own side. The government shutdown and subsequent gunfight over raising the debt ceiling, intended to remove funding from Obamacare in the autumn of 2013, were partly of his design. The key to making the plan work, he explained, was not to blink first. Republicans lost that fight because the plan was unworkable, but that is not how Mr Cruz sees it. He notes that Republicans went on to capture the Senate.

Other highlights of his time in Congress have included an updating of one of Cicero's speeches to cast Barack Obama in the role of a conspirator planning to overthrow the republic, and reading a Dr Seuss story from the chamber floor, as part of a 21-hour speech. What Mr Cruz has not done while in the Senate is interesting too. He has neither proposed substantial legislation nor championed any policy that cannot be conveyed in 140 characters.

Many of the other potential Republican candidates have made efforts to change the party's position on issues that matter. Rand Paul, a senator from Kentucky, argues that America should drop fewer bombs abroad and lock up fewer young black men at home. Jeb Bush, a former governor of Florida, favours common standards in schools and observes that the government cannot deport all 11m illegal immigrants. Marco Rubio, a senator from Florida, wants the tax code to ease poverty and encourage work. Scott Walker, the governor ▸▸

The wit and wisdom of Ted Cruz

"Look, we saw it in Britain. Neville Chamberlain told the British people: accept the Nazis. Yes, they will dominate the continent of Europe, but that is not our problem. Let's appease them." Chiding his Republican colleagues for not supporting his effort to defund Obamacare

"I've spent the past month in Washington, DC, and it is terrific to be back in America." Missing his home state of Texas

"I actually intellectually find this very curious, but on 9/11, I didn't like how rock music responded. And country music, collectively, the way they responded, it resonated with me." Offering an insight into his album collection

On Chuck Hagel, fellow Republican and Barack Obama's defence secretary: "It is at a minimum relevant to know if that $200,000 he deposited in his bank account came directly from Saudi Arabia [or] North Korea."

"When, President Obama, do you mean to cease abusing our patience? How long is that madness of yours still to mock us? When is there to be an end to that unbridled audacity of yours swaggering about as it does now?" Borrowing some zingers from the Roman orator Cicero, first used to denounce a traitor in 63 BC

On posterity: "Twenty years from now if there is some obscure Trivial Pursuit question, I am confident I will be the answer."

Source: Ted Cruz; *The Economist*

of Wisconsin, seems to agree with Mr Cruz that the key to winning the White House is to be more conservative, but even he has had to work with others to govern a medium-sized state. Mr Cruz's conservatism is unsullied by any whiff of compromise.

This is one of his favourite themes. His speeches often include an applause line about how the real divide in America is not between Republicans and Democrats but between professional politicians and the American people. Presented this way politics is simple, for there are no difficult trade-offs. In Lynchburg he proposed scrapping the Internal Revenue Service while also guaranteeing every child "a right to a quality education" and health insurance that is "personal and portable and affordable". He reminisced about an America that has welcomed so many millions, including his Cuban-born father, then asked when the country would "finally, finally, finally" get a president who secures the borders.

Anyone interested in more detail must guess it from the company Mr Cruz keeps. He might favour some version of the tax plan proposed by Mr Rubio and Mike Lee, a senator from Utah, which would cut business taxes, eliminate capital-gains and estate taxes and increase tax breaks for parents (it has less detail on spending cuts). Rather than make choices or solve problems, though, Mr Cruz would rather turn every discussion into a debate about the meaning of America as enshrined in the constitution. This can become wearying.

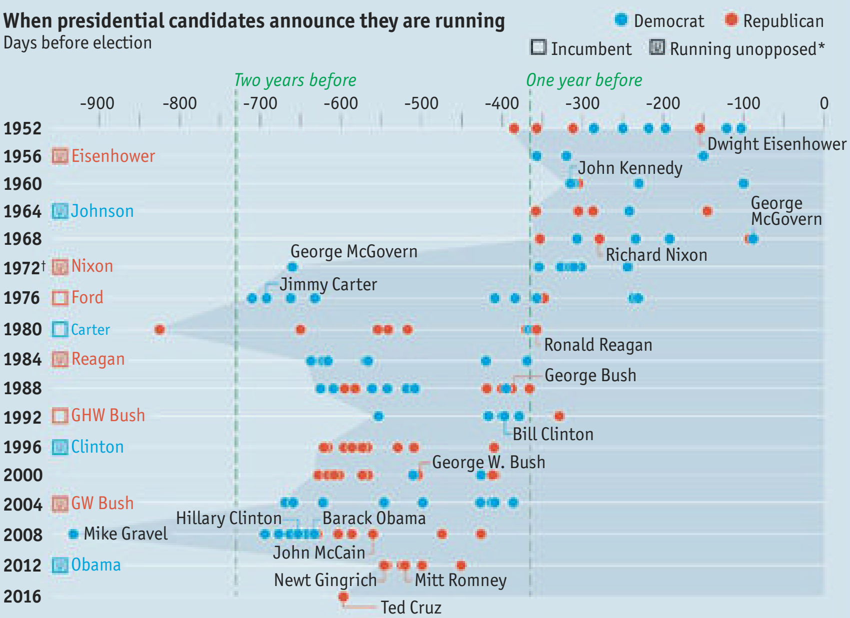
It is also an unpromising route to the White House. Around 40% of Americans consistently describe themselves as conservative, twice the proportion who describe themselves as liberal but tantalisingly short of a majority. To win in a nation split down the middle in presidential elections the Republican Party cannot rely on social conservatives alone, (which was the notion Mr Cruz suggested to Liberty University's students). The Pew Research Centre estimates that only about 12% of Americans are socially conservative populists. Nearly as many are business conservatives who hold many opposing views. Add younger Republicans, who tend to marry more socially liberal views with a desire for less government, stir in the coolness of the party's biggest donors towards Mr Cruz, and his strategy looks shakier still.

Yet Mr Cruz can shape the Republican primary without winning it. A victory in Iowa could knock out one of the front-runners, leaving the race clearer for whoever is left. He might drag the other candidates to the right, making them unelectable in the general election. Or he could divide the socially conservative vote and let a less preachy candidate capture the nomination. One thing is sure: if the Republicans lose, Mr Cruz will say it was because they weren't conservative enough. ■

Early announcers seldom win

On March 23rd, 596 days before election day, Senator Ted Cruz said he was running for president. Before the 1970s campaigns were mercifully shorter (see chart), but this was because nominees were picked in back-room negotiations. Campaigns grew longer after the parties gave more weight to primary elections. This forced candidates to make their pitches directly to ordinary voters, which takes longer.

When presidential candidates announce they are running
Days before election



Sources: *"The Making of the Presidential Candidates 2012"* ed. by William Mayer and Jonathan Bernstein; news reports

*Without serious opposition
†Democrats change rules to make primaries more important

Chicago's mayoral election

Can Jesús save Chicago?

CHICAGO

Rahm Emanuel's challenger promises miracles

"SUCH a nice man," says Lerry Knox, the boss of Unplugged Capital, a private-equity fund. He sits on the board of a charity alongside Jesús (Chuy) García, Rahm Emanuel's challenger in the run-off for Chicago's mayor. "He is so likeable, but he has no idea how to pay for everything," sighs an Emanuel ally. "Sometimes I just want to shake him and say, 'Sweetie, there is no money.'"

As early voting starts for the city elections on April 7th, Chicagoans are faced with a striking choice. One candidate is the mild-mannered, mustachioed Mr García, one of 17 Cook County commissioners, who has spent his career in local politics and is pretty universally liked. The other is the abrasive Mr Emanuel, who made a bundle in investment banking, served President Barack Obama as chief-of-staff, was elected as mayor in 2011 and turned out to be one of the most polarising politicians in the country.

Personalities aside, the two offer very different brands of Democratic politics. Mr Emanuel is a pragmatic centrist, closer to Bill Clinton (for whom he also worked) than to Mr Obama. He understands business, excels at attracting investors to Chicago and is so popular with plutocrats, including Republican ones, that he managed to raise $21m for his campaign in record time. Mr García is an old-fashioned leftist. He promises to do more for all Chicagoans, in particular those in the hard-up, crime-ridden neighbourhoods on the south and west sides of the city, where unemployment is high and the schools are bad.

At the García campaign headquarters—a converted restaurant with a giant doormat in the shape of his moustache—stacks of flyers in English and Spanish proclaim that Mr García will hire 1,000 new police officers, abolish red-light and speed cameras, protect pension and health-care benefits, make members of the public-school board stand for election and fight for a $15 hourly wage for workers. His first three promises would cost the city several hundred million dollars. Electing the school board would make any further closures of half-empty or underperforming schools impossible. And a $15 minimum wage could put small firms out of business.

The trouble with nice Mr García's pledges is that Chicago is beyond broke. On February 27th Moody's, a credit-rating agency, downgraded the city's credit-worthiness to two notches above junk, mostly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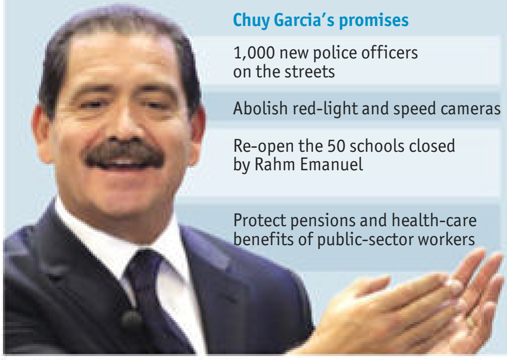
Jesus saves; Jesús would rather splurge



Chuy Garcia's promises	Estimated cost (or revenue loss)
1,000 new police officers on the streets	$100,000 a year in salary and benefits per officer, or $100m in total
Abolish red-light and speed cameras	($70m a year)
Re-open the 50 schools closed by Rahm Emanuel	Unknown, since he has back-tracked a bit on this promise. Chicago's public schools face a deficit of $1.1 billion this year
Protect pensions and health-care benefits of public-sector workers	Unknown, but Chicago's biggest financial problem is $20 billion in unfunded pension liabilities

Source: *The Economist*

because Chicago is carrying more than $20 billion in unfunded liabilities for four of its pension funds, and already has a deficit of around $300m in its operating budget. Moreover, a payment of $550m for the police and firemen's pension fund is due at the end of this year, and the public schools are $1.1 billion in the red.

Mark Kirk, a Republican senator from Illinois, has warned that Chicago could follow Detroit into bankruptcy if Mr García wins. García fans dispute this, pointing out that he was the floor leader for Toni Preckwinkle, president of the Cook County board, who managed to balance the county budget last year for the first time in years. Some on the left accuse Mr Kirk of racism for even suggesting that creditors might not trust Mr García.

Mr García hopes to appeal to Latinos and African-Americans, who are nearly two-thirds of Chicago's voters. But many blacks think Hispanics and other immigrants are taking their jobs, while many Hispanics hold prejudices about blacks living on welfare. In the first round Mr Emanuel received almost 43% of the vote in wards with a black majority; Mr García got 25%. The latest polls strongly favour Mr Emanuel, but undecided voters could still tip the scales. Whoever wins will swiftly need to placate the bond market. ■

California's Senate race

The unresisted rise of Kamala Harris

LOS ANGELES

Kamala Harris has no rivals for Barbara Boxer's seat

FOR the first time since 1992, California has an open Senate seat. In January Barbara Boxer, who at 74 is the younger of its two senators, said she would not seek re-election in 2016. That should have been the cue for an almighty dust-up among Democrats: a Senate seat is a big deal, after all. Instead it is turning into a coronation. Only a Democrat can win in the Golden State, and only one serious Democrat has entered the fray: Kamala Harris, the attorney-general.

Tom Steyer, a billionaire environmentalist, Antonio Villaraigosa, a former mayor of Los Angeles, and Gavin Newsom, the lieutenant-governor, have all stepped aside. "An entire generation of Democrats, who have been waiting for this moment for years, took one look at Kamala Harris, and quickly backed off," says Dan Schnur, a politics professor at the University of Southern California.

Ms Harris is an intimidating opponent. The daughter of an Indian cancer researcher and a Jamaican economics professor, she is the first woman, first African-American and first Asian attorney-general of California. She has fought against crime and for gay marriage, making her popular with law-and-order and civil-rights enthusiasts. She dresses impeccably, usually in crisp grey skirt suits with a string of pearls. Barack Obama once had to apologise for calling her the "the best-looking attorney-general" in America, though it is far from clear that she was upset.

On March 25th Ms Harris found an unpopular dragon to slay. A crank has proposed asking Californian voters to approve a new law called the "Sodomite Suppression Act", which would impose the death penalty on gay people. It has no chance of attracting enough signatures to get on the ballot, let alone passing. Still, just to be sure, Ms Harris asked a court to relieve her of her duty, as attorney-general, to write a summary of the measure to be presented to the public before it goes to the signature-gathering stage.

In 2011 Ms Harris walked out of talks with big banks accused of wrongful foreclosures during the mortgage crisis, a tactic that may have prompted them to cough up billions more to settle the case. Elizabeth Warren, a senator admired by the anti-Wall Street left, praises her fighting spirit.

Before her election to attorney-general in 2010, she spent seven years as the district attorney of San Francisco. There she started a programme for minor drug offenders called "Back on Track"; recidivism among participants was less than 10%, compared with a previous average of 54%. As attorney-general she championed the use of data and technology to track repeat offenders and figure out how to stop them from erring again.

She has also commissioned reports on little-studied areas such as school truancy, which she believes eventually lands a lot of young people in jail. She has broadened the remit of the attorney-general's office, drawing attention to human trafficking and online privacy, and issuing guidelines about what software developers should do to protect customers' personal data on mobile devices. More recently she has been talking to Google, Twitter and Facebook about what she calls "cyber-exploitation"—also known as "revenge porn"—the ▸▸

Everyone's scared of Ms Harris

posting of sexually explicit photos without the subject's consent. Some jilted lovers (usually men) do this to hurt the women who dumped them; some websites encourage it, or charge the victim money to get the photos taken down. Ms Harris has encouraged tech firms to scrub such photos from their servers.

Can Ms Harris make the leap from state law enforcement to national politics? One thing she has going for her, says Bruce Cain, a political-science professor at Stanford University, is that she hasn't yet made any big mistakes. "California campaigns are heavily TV-driven, so the positive is not nearly as important as the negative," says Mr Cain. "You win and lose based on the negative, which is why we've had a whole string of bland and boring governors."

Another advantage is that by launching her campaign early, Ms Harris will have a head start in raising money. She has already held about two dozen fundraisers since announcing her Senate bid. That is a big advantage in California, which is an expensive place to run for office: sprawling, populous and with pricey media markets.

Ms Harris argues that many of the issues that she has addressed as attorney-general—such as the foreclosure crisis, recidivism, and truancy—are relevant to the country as a whole. If elected, she says she would focus on immigration, the environment, veterans' welfare and civil rights.

She offers few bold or risky ideas. On foreign policy, for example, she says little beyond noting that Israel is a close ally. Still, what she says is sensible enough. She favours comprehensive immigration reform, curbs on greenhouse gases and a non-partisan approach to most problems. "People just want solutions," she says. ■

Environmental law

Coal states v Uncle Sam

NEW YORK

Who rules the air?

CONGRESS passed the Clean Air Act to reduce harmful air pollution. The Environmental Protection Agency (EPA) issues regulations to enforce that law. But 21 states are asking the Supreme Court to rule that the EPA has overstepped its authority.

The case of *Michigan v EPA*, which was argued on March 25th, concerns the agency's plan to regulate mercury, arsenic and other toxins emitted by power plants. Both sides agree that the new rule would cost about $9.6 billion a year to implement. The EPA estimates that reduced mercury emissions would bring health benefits of up to $6m a year—a tiny sum it reached only after assuming that lots of pregnant "women in subsistence fishing populations" will eat vast amounts of mercury-tainted fish and thereby reduce their children's IQs by an undetectable 0.002 points each.

If that were all, the rule would clearly be a huge waste of money. But the EPA wants to curb mercury in a way that would also reduce particulate emissions, generating "co-benefits" which it estimates at a massive $37 billion-90 billion. (Particulate pollution causes bronchitis, asthma and heart attacks, among other things.) This is where it gets knotty.

Particulate emissions are regulated under a different part of the Clean Air Act, which sets standards but lets the states decide how to curb emissions. An amicus brief by the Cato Institute, a libertarian think-tank, argues that the EPA is using the mercury rule as a Trojan horse. Its real aim, says Cato, is to wrest control of particulate regulation from the states, some of which are friendlier to the coal industry (an ailing one: see page 65) than Barack Obama is. That would be an illegal power grab, the EPA's critics argue.

The EPA retorts that Congress instructed it to issue rules when they are "appropriate and necessary" to protect public health—and so the rule is justified. Craig Oren of Rutgers University estimates that the overall benefit-to-cost ratio of the rule is "at least" three to one.

Oral argument before the Supreme Court focused on the question of when the EPA must take account of costs. The states pressing the suit say the law requires the calculation to take place right off the bat, when the agency is deciding whether to develop standards. Donald Verrilli, the solicitor-general (backed by some other states and power firms), said that taking account of costs could wait until the stage when regulatory standards were spelled out—allowing the EPA to include those "co-benefits".

For Justice Antonin Scalia, however, that is "a silly way to read" the law. His three fellow conservatives seem to concur. The court's four liberals appear to accept the EPA's reading. That leaves Justice Anthony Kennedy as the swing vote, as usual. Mr Kennedy grilled both sides, but he may have tipped his hand. When Mr Verrilli argued that the agency need not analyse costs and benefits before deciding to curb a pollutant, Mr Kennedy raised an eyebrow. "But at that point," he said, "the game is over." A decision is expected by summer.

Crude-oil exports

Binning the ban

WASHINGTON, DC

A ban that benefits only American oil refiners is under fire

INTRODUCED to help enforce price controls in the fuel-hungry 1970s, America's ban on crude-oil exports was all but forgotten when the economy boomed and imports soared. Now it is in the news again. It keeps American crude, measured by the West Texas Intermediate benchmark, around $10 below the world price (see chart). Cash-strapped oilmen would like to sell their product abroad—just like any other industry—and are lobbying to lift the ban. A study by IHS, a consultancy, says that free trade in crude would boost output, investment, jobs, pay, profits and tax revenues—and GDP by $86 billion. It would not raise petrol prices: these are set in the (freely traded) world market. Most likely they would fall a bit.

But politicians are fearful. Sooner or later, the petrol price will go up again—and anyone who voted to allow precious hydrocarbons to be sold to foreigners will be in the firing line. Supporters of the ban argue that it not only keeps prices low. It protects jobs, and also helps national security, by promoting self-sufficiency.

Some of these arguments are contradictory. At a Senate hearing last week Jeffrey Warmann of Monroe Energy, speaking on behalf of a lobby group called the CRUDE Coalition, argued that the export ban kept the petrol price low. He also said exports would mean "petroleum products refined in Europe but derived from American crude returning to our shores"—but that would happen only if those products were competitive, and consumers wanted them.

It is also hard to argue that the ban boosts economic security. It undermines America's moral authority at the World Trade Organisation, where the administration berates China, for example, for impos- ▸▸

Money on the table

Oil prices, Brent Crude minus West Texas Intermediate, $ per barrel

Source: Thomson Reuters

ing export bans on scarce minerals. American crude-oil exports would also hurt hostile petrostates such as Russia and Iran.

The mood may be shifting against the ban. Some refiners would be sorry to lose their artificially cheap raw materials. But they would accept instead what they call a "comprehensive" policy, meaning laxer rules on renewable fuels, and a change in the Jones Act. This is an even more archaic law which bans foreign ships from carrying cargo between American ports. It delights shipowners and unions, but imposes a hefty cost on anyone wanting to send a tanker from, say, a refinery on the Gulf coast to a port in the north-east.

Politics may trump logic. The administration supports lifting the ban, and so do many in Congress. But each wants the other to take the lead. And Republicans are chary of almost anything done by the executive branch, such as new rules announced last week to restrict fracking on federal land. Nonetheless, the mood at the Senate hearing gave freetraders grounds for optimism. "They were asking questions and listening to the arguments," says a jaded observer, sounding rather surprised. ■

Juvenile justice

Children in adult jails

PHILADELPHIA

Treating young offenders like grown-ups makes little sense

LAST May two 12-year-girls lured Payton Leutner into the woods in Waukesha, Wisconsin, stabbed her 19 times and left her for dead. The girls claim they were trying to appease the Slender Man, a fictional bogeyman who preys on children. Ms Leutner is now back at school, but her alleged assailants are in police custody. In Wisconsin all killers over the age of ten must begin their cases in criminal court, and on March 13th a Waukesha judge decided to try them as adults. If they are convicted, these two girls could be in prison for up to 65 years.

The practice of charging young people as adults gained momentum in America in the 1990s, as youth crime spiked. Between 1990 and 2010 the number of juveniles in adult jails went up by nearly 230% (see chart). Now about a tenth of confined young people are in an adult prison or jail. This is bad for two reasons. It is costly: more than $31,000, on average, to incarcerate an adult for a year. And it tends to turn young tearaways into serious criminals. Young people who are charged as adults are nearly 35% likelier to be rearrested than those who are tried as juveniles, according to the Centres for Disease Control.

Whether a child is judged as an adult depends more on the state than the crime. In Pennsylvania any child accused of homicide must begin in adult court. In Mississippi a 13-year-old accused of a felony will be sent to adult court, but in Alabama offenders remain juveniles until they are 16 (though judges can choose to send those as young as 14 to criminal court). In North Carolina and New York 16-year-olds always face adult courts. When judges and prosecutors have discretion over how to charge a juvenile, they use it unevenly. In 2012 black youths were 40% more likely to be charged as adults as their white peers, according to the Justice Department.

Yet young people are easier to rehabilitate than older offenders, so programmes that keep them out of prison in the first place can save money and reduce crime. Connecticut, for example, once led the country in incarcerating minors as adults, confining 20% more than any other state. But the state cut the number of young people it locks up by more than 75% between 1997 and 2011, by raising the age at which offenders can be tried as juveniles and by arresting fewer youngsters for minor offences. Instead of expelling or arresting rowdy pupils, several school districts now offer mental-health treatment. Connecticut has saved millions of dollars, and juvenile crime there continues to drop.

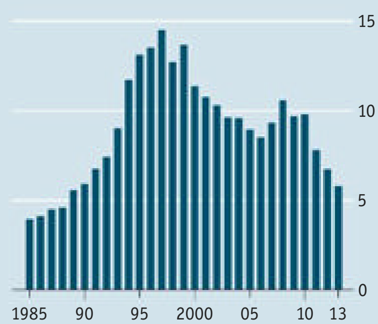
Since 2005, according to the Campaign for Youth Justice, an advocacy group, 29 states plus Washington, DC have passed laws to make it harder to prosecute and sentence juveniles as adults, and several others are thinking about it.

The Supreme Court has bolstered this change of heart. Arguing that young people have an "underdeveloped sense of responsibility"—no kidding—the justices banned putting them to death in 2005. In 2010 the court struck down mandatory life sentences without parole for minors charged with crimes other than murder, and in 2012 the ruling was extended to all juveniles. Judges can still throw young killers in jail and toss away the key, but they must first take into account the "immaturity [and] impetuosity" of youth.

States are split over whether the Supreme Court's ruling on mandatory life sentences applies retroactively. Some 2,500 inmates are still serving life sentences without parole for crimes they committed as children, according to the Juvenile Law Centre, an advocacy group. On March 19th Florida became the tenth state to decide that such prisoners should be resentenced; this could affect roughly 200 people. In Louisiana, Michigan, Minnesota and Pennsylvania felons who started their mandatory life sentences when young still moulder without reprieve; but the court announced on March 23rd that it would soon consider those cases, too. ■

Boys and girls behind bars

Juveniles held as adults, '000



Source: The Sentencing Project

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Lexington | Unhappy Jewish America

A traditionally Democratic voter bloc frets about Barack Obama and Israel

THE Vietnam war was raging when Sheldon Zimmerman arrived in Manhattan as a young rabbi. His liberal beliefs blended seamlessly with his Judaism: he once took a youth group from his synagogue to an anti-war march. A few years earlier rabbis marched with Martin Luther King in Selma, Alabama. Jews risked (and lost) lives fighting for civil rights in the South.

Four decades later Mr Zimmerman leads the Jewish Centre of the Hamptons, a synagogue in East Hampton, a seaside haven for New York's elite on Long Island. As never before, his love of Israel and his progressive politics are tugging him in different ways.

This is an unhappy time for Jewish-Americans, and that is unusual. No other Jewish community is as visible and successful, outside Israel. Mr Zimmerman's synagogue is built around a lovely, light-filled sanctuary of glass and cedar wood. Itzhak Perlman, the violinist, drops in to play concerts. Summer "Shabbat on the beach" draws 200 people to outdoor prayers (try that in parts of Europe, and lines of police would be needed).

Though the congregation includes wealthy donors to Democrats and Republicans, most share a vision of an Israel that is at once Jewish, democratic and respectful of all faiths and none—in part because American pluralism, dating back to the Founding Fathers, played such a role in letting Jews flourish. Mr Zimmerman winced when Binyamin Netanyahu, Israel's prime minister, fired up conservatives at Israel's recent elections by warning that Arab-Israelis were poised to vote in "droves". Nationally, Jewish leaders, notably in the Reform movement, expressed public disquiet, explicitly recalling the example of those who marched for minority voting rights in Selma in 1965.

President Barack Obama and aides have been harsher, attacking Mr Netanyahu for "divisive rhetoric". They have threatened to reassess American diplomatic strategies in the light of Mr Netanyahu's election-campaign statements that seemed to rule out a Palestinian state while he is in office. Brushing aside the Israeli leader's attempts to soften that stance, Mr Obama now calls the prospects for Israeli-Palestinian peace "very dim".

American Jews feel forced to choose between competing loyalties. Mr Zimmerman was proud to vote for Mr Obama, and is not alone. With the exception of Jimmy Carter in 1980, since 1972 Democratic contenders for the White House have received between 64% and 80% of Jewish votes. But now the rabbi feels his president is bent on the "public humiliation" of Israel's prime minister. If Mr Obama were running again, Mr Zimmerman would probably not vote for him.

Congregation members harbour nagging concerns that Mr Obama has a vision for Middle East peace that puts wooing Iran, Saudi Arabia or Turkey ahead of Israel's security (and that he is about to accept a bad deal with Iran that leaves the regime free to build nuclear weapons). More and more youngsters "feel beset on their campuses" by college campaigns against Israeli government policies. Their well-travelled parents worry that parts of Europe are an anti-Semitic no-go zone.

The synagogue in East Hampton has not turned solidly Republican overnight. Mr Obama will not be on the ballot again, and there is "a great deal of support" for Hillary Clinton: fans see her as pro-Israel. But what the rabbi calls the centre of political opinion is "very shaky".

East Hampton lies at one end of New York's first congressional district, a moderate seat which in last year's election was snatched from the Democrats by Lee Zeldin, a hawkish Iraq war veteran who is now the only Republican Jewish member of Congress. The district is home to about 33,000 Jews. At its western edge sits Patchogue, a small town off the highway to New York. Many Jews there remain loyal Democrats. Elaine Pogar sells lingerie at Blums, a fixture on Main Street for 88 years. "Republicans are more for the money, not for the middle class," she says.

Still, Mr Zeldin insists that more Jewish voters are reaching "breaking point" with the president. Rabbi Joel Levinson leads the Temple Beth El, a homely red-brick place. He suspects that Jewish votes did boost Mr Zeldin, helping him to a swing twice as large as the Republican national average. Mr Levinson switched his own vote in 2012 after years of backing Democrats. The rabbi does not share Republicans' views on such issues as abortion. He was unimpressed when they invited Mr Netanyahu to address Congress on March 3rd without consulting the president—the partisan fuss obscured what he saw as vital warnings about Iran. But he thinks Mr Obama "petulant" towards Mr Netanyahu.

Jewish votes are only half of it

Treat talk of big shifts in the Jewish vote with caution. Jewish support for Democrats has slipped ten percentage points since 2008, with very religious and male Jews leading the shift rightwards. But support fell from sky-high levels. And with only 5m Jewish-Americans, depending on how they are counted, they routinely swing elections in only a few places, of which Florida is the most important. The Democrats' problem is that Jewish supporters stiffen the party's "organisational backbone" and donate a lot of money, argues Benjamin Ginsberg of Johns Hopkins University. Republicans do not need Jewish votes, he says: "What they need is for Jews to support Democrats less."

Since the terror attacks of 2001, support for Israel has united Republicans. National security hawks and religious conservatives see Mr Netanyahu as a hero in a civilisational clash with radical Islam. In contrast, Israel divides the left. Rabbi Rick Jacobs of the Union for Reform Judaism, representing almost 900 synagogues, worries that if Israel becomes a partisan issue, liberal Jews will not vote Republican but they may drift away from Israel. These are anxious times. Jews have rarely had to choose between their American and Jewish identities: that has been one secret of America's success. They do not want to start now. ■

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Colombia and the FARC

Treading carefully

BOGOTÁ

A landmine-clearance deal brings Colombia a step closer to ending 50 years of war

"ARTURO" spent the better part of his life as a mid-level commander of Colombia's FARC guerrillas before deciding six months ago to desert. Though he and his comrades were aware that their leaders were engaged in peace talks with the government of President Juan Manuel Santos, the negotiations were a distant and nebulous concept. In the jungles and mountains they still fled from bombing raids on their camps, planned ambushes on troops, recruited children and planted minefields. For civilians, too, the impact of the peace process had hardly been felt since the two sides began negotiating in 2012 in Havana.

That is starting to change. In the past month the government and the FARC have jointly and separately taken bold decisions that will produce the first tangible results of the promising but slow-moving negotiations. "The process is just now beginning to bear fruit," says Arturo, who spent nearly 20 of his 49 years in the rebel ranks.

The two sides had already agreed on three of the five main points being hammered out in Havana. Plans regarding rural development, the political participation of former guerrillas and the cocaine trade (in which the FARC are active) have been drawn up. But those schemes are to be put in place some time in an indeterminate future. The latest decisions, while not part of the official agenda, are far more concrete.

In December the FARC announced a unilateral and indefinite ceasefire, which they have largely stuck to. Then in February they said they would stop forcibly recruiting minors, a promise that is hard to verify but welcomed nonetheless by families with children at risk of being press-ganged. One-third of the 6,000 minors rescued from the guerrillas since 2000 have been between the ages of nine and 15.

On March 7th the FARC and the government announced a joint effort to clear landmines planted by the FARC (the "most prolific" non-governmental user of mines in the world, according to the International Campaign to Ban Landmines). Three days later, Mr Santos announced that the bombing of FARC camps would be suspended for a month, and perhaps longer.

Be less afraid

These decisions are meant to build confidence by addressing each side's worst fears. The FARC consider landmines their most effective weapon against soldiers, who make up two-thirds of the victims. Meanwhile, air raids have given the armed forces some of their most resounding victories, including the killing in recent years of three senior FARC leaders. The bombs are "what guerrillas fear most", according to Arturo.

The measures are also intended to build confidence among ordinary Colombians and rank-and-file guerrillas. A majority of citizens has been sceptical about the peace process from the start. The FARC fighters were doubtful, too. "We had little information and nothing out there really changed," Arturo says. Now, opinion is shifting. On March 5th a Gallup poll found that 53% think the talks could lead to peace. For the FARC's troops, a halt in bombings changes the game, Arturo believes.

For civilians, the mine-clearing could be the game changer. The war has left the countryside littered with improvised mines, often fashioned out of soda bottles, fertiliser, gunpowder and syringes. Of the country's 32 provinces only one, the Caribbean archipelago of San Andrés, is mine-free. More than 11,000 Colombians have been killed or wounded by mines in the past quarter-century, a toll second only to that of Afghanistan. A week after the deal was announced, two children aged nine and ten were killed by a mine in the southwestern province of Nariño. Days later a soldier was killed and three others wounded in nearby Cauca.

Under the new deal, soldiers will be guided by unarmed, plain-clothed guerrillas to map minefields that pose a threat to civilians. The army will deactivate them. Álvaro Jiménez of the Colombian Campaign Against Landmines has pinpointed 57 priority areas. "They can choose one or all of them, but what's important is to start," he says. Efforts could begin in May.

Demining has been excruciatingly slow. The army conducts sweeps as it advances on guerrillas, and has a special battalion for "humanitarian" demining. The Halo Trust, a British NGO, is authorised to clear mines in conflict-free "green zones". After surveying residents in La Quiebra, a village in the northwestern province of Antioquia, its team of 11 goes over a suspected minefield metre by metre, clearing the brush with garden shears and sweeping the ground with metal detectors. Where the detectors beep, they dig, carefully. After three months, and clearing 3,099 square metres in La Quiebra, they have ▸▸

found and deactivated three mines.

The new plan will target "red zones", where the conflict still rages. "It will put the sticking-plaster where the wound is," says Mr Jiménez. It will also put active guerrillas to work alongside soldiers. With help from those who planted the mines, things should be quicker. Officials say it could still take a decade to clear the 688 municipalities where mines are known to exist.

Although the FARC have agreed to help clear mines, they have not promised to stop planting them. The country's second-largest rebel group, the ELN, has not joined the peace talks and continues to sow minefields. Still, Humberto de la Calle, the government's chief negotiator, called the landmine agreement a "new and decisive step" towards peace.

The negotiations are now in their trickiest phase. Pablo Catatumbo, a FARC spokesman, has warned that it is too soon to talk about an irreversible process: "very complex issues" remain, he said on March 23rd. Among them are how much (if any) prison time guerrilla leaders will serve; how to compensate their victims; and how to demobilise the FARC's fighters.

Doubting a deal would be reached, Arturo joined the government's reintegration programme for fighters who desert. In the past 12 years, 57,000 former guerrillas and right-wing paramilitaries have gone through the programme. Now it is preparing to take on up to 30,000 more if the FARC and government reach a deal to end the conflict. The army estimates that the FARC has around 8,000 fighters, plus 20,000 working in logistical support. "I beat my comrades to it," says Arturo of his return to civilian life. There is a long way to go before a mass demobilisation and a definitive end to the conflict. But the recent decisions to turn down the intensity of the war bring it a step nearer. ■

Bello | Cleaning up Latin American democracy

Governing is getting harder—but it doesn't have to be so difficult or dirty

DURING the multitudinous demonstration against Brazil's president, Dilma Rousseff, in São Paulo on March 15th, a lunatic fringe chanted for a return to military rule. That was sad more than worrying. The rightists were shouted down. Their isolation served to underline how routine democracy has become in many Latin American countries in the third of a century or so since the generals returned to barracks.

That outcome was not inevitable. Compared with Europe or North America, democracy in Latin America must struggle against big obstacles, including poverty, gaping income inequality and corruption. Another is poor institutional design. Latin America combines directly elected presidents, as in the United States, with multiparty legislatures chosen by proportional representation, in the manner of many European parliamentary systems. The result has often been gridlock: weak governments have lacked majorities in legislatures unthreatened by dissolution, which induces consensus in parliamentary regimes.

These problems have mattered less in the past decade or so. Faster economic growth, falling poverty and rising government spending meant that presidents were popular. Some took advantage to push through constitutional changes to allow re-election and concentrate all power in the presidency.

Those days are now over. With the end of the commodity boom, growth has slowed or stopped and so has the fall in poverty, making corruption less bearable. As well as Ms Rousseff, Mexico's Enrique Peña Nieto and Michelle Bachelet in Chile have seen their approval ratings slump to record lows. Public cynicism towards politicians in general is widespread.

Not coincidentally, political reform has moved to the top of the regional agenda. In fact, Latin America has long fiddled with the rules of electoral and party systems. A forthcoming study of 18 countries by Flavia Friedenberg and Tomas Dosek of the University of Salamanca found 220 such reforms in 1978-2015. These tended to boost presidential power, and also tried to ensure that previously excluded groups (such as indigenous people) were better represented.

What is needed now are measures to strengthen parties and to reform their financing to reduce corruption and influence-peddling. The problem is that politicians are notoriously reluctant to change the rules under which they were elected.

The need is especially acute in Brazil, which suffers the world's most fragmented party system, with the 513-seat lower house of Congress Balkanised among 13 "effective" parties (ie, those with more than a handful of seats). The response has been an increasingly dysfunctional "coalitional presidentialism". Ms Rousseff heads a coalition of nine parties and an absurd cabinet of 39 ministries to accommodate them. The cost of politics has risen relentlessly, partly because of "open lists" in which each candidate competes against colleagues from the same party as well as against rivals. States act as single constituencies, so the 70 deputies for São Paulo must canvass 30m voters.

Congressional leaders favour a change under which voters would in effect choose individuals regardless of party. This would make politics even more expensive, argues Cláudio Couto, a political scientist in São Paulo. More sensible would be to create smaller constituencies and, above all, barriers to the multiplication of parties. The Supreme Court in 2006 inexplicably quashed a law introducing a German-style threshold of 5% of the vote for parties to win seats in Congress. Mr Couto thinks the best that can be hoped for is smaller steps, such as barring electoral coalitions, which would force parties to merge.

The second task, in Brazil and elsewhere, should be to enforce stricter rules on party financing. The corruption scandal embroiling Petrobras was in large part due to the voracious greed of the ruling Workers' Party and its allies. Public opinion is hostile to state funding of parties. For that reason, Peru's presidents have since 2007 stopped implementing a law on public funding. Daniel Zovatto of the International Institute for Democracy and Electoral Assistance, an inter-governmental body, favours bans on corporate and anonymous donations, and partial public funding in return for much tougher scrutiny of party finances and greater internal democracy.

Political reform alone won't improve the quality of democracy in Latin America. But as governing becomes harder, politicians should do all they can to restore the prestige and effectiveness of the region's political systems.

Vancouver

More tax, less traffic?

VANCOUVER

A famously "liveable" city is becoming too popular for its own good

VANCOUVER is the best place to live in the Americas, according to a quality-of-life ranking published earlier this month by Mercer, a consulting firm. The city regularly tops such indices, thanks to its clean air, spacious homes and weekend possibilities of sailing and skiing. But its status as an urban oasis is threatened by worsening congestion. Over the next three decades, another 1m residents are expected to live in the Greater Vancouver region, adding more cars, bicycles and lorries to roads that are already struggling to serve the existing 2.3m residents.

A proposal by Vancouver's mayor and 20 of the 22 other local governments in the region seeks to avert the snarl-up. Upgrades would be made to 2,300 kilometres (1,400 miles) of road lanes, as well as bus routes and cycle paths. Four hundred new buses would join the fleet of 1,830. There would be more trains and more "seabus" ferry crossings between Vancouver and its wealthy northern suburbs. The catch: to get all that, residents must vote in a referendum to accept a hike in sales tax, from 7% to 7.5%. Polls suggest they will vote no.

Everyone agrees that a more efficient transit system is needed. Hemmed in by mountains to the north, the United States to the south and the Pacific Ocean to the west, Vancouver has sprawled in the only direction where there is still land, into the Fraser Valley, which just a few decades ago was mostly farmland. Highway 7 winds eastward through shopping centres in the suburbs of Burnaby and Coquitlam, and into the residential neighbourhoods of Pitt Meadows and Maple Ridge. The road is often clogged. Signs tout high-rise apartments and condos under construction, telling drivers that they could be home by now if only they weren't stuck in their cars on a slow-moving highway.

Yet commuters' suspicion of local bureaucrats may trump their dislike of congestion. TransLink, which runs public transport in the region, is unloved by taxpayers. Passengers blame it when Skytrain, the light-rail system, stalls because of mechanical or electrical faults, as happened twice in one week last summer, leaving commuters stuck in carriages with nothing to do but vent their anger on Twitter. TransLink's boss, Ian Jarvis, was ousted early in the referendum campaign, only to be kept on as a consultant earning C$35,000 ($28,000) a month.

That sort of thing has made voters less willing to fork out the C$7.5 billion in capital spending that the ten-year transit upgrade would involve. Gregor Robertson, Vancouver's left-leaning mayor, acknowledges that the plan is a hard sell. "Generally people don't opt in for paying more taxes. It's a difficult question to pose to citizens and it doesn't always succeed unless a really strong case is made," he says. He is running out of time to make it. Postal ballots went out earlier this month, and voters have until May 29th to return them.

A coalition of trade associations, labour unions and environmental groups is hoping to turn the tide. Despite the complaints, Vancouver's transit system is a decent, well-integrated one on which to build, reckons Todd Litman, a transport consultant who has worked for TransLink. "These upgrades are all-important if Vancouver wants to maintain its reputation for being a destination others want to go to," he says. If congestion worsens, the city may slip down the liveability rankings, attracting fewer new residents. At least that might mitigate the traffic problem. ■

Dengue fever in Brazil

When it rains, it pours

SÃO PAULO

The welcome return of wet weather has a nasty side-effect

A MOIST March, combined with the wettest February in 20 years, has brought respite to Brazil's parched south-east. Last year's record drought in the region, where two in five Brazilians live and where more than half the country's output is produced, had stretched into January. So the drenching is welcome. But the rains have also stirred up an old scourge: dengue fever, a disease transmitted by mosquitoes. Its early symptoms resemble flu but it can cause fatal internal and external bleeding.

At least 224,000 cases had been registered across Brazil by March 7th, 162% more than in the same period in 2014, when the dry weather left fewer stagnant puddles in which mosquitoes could breed. The situation is gravest in the state of São Paulo, where 124,000 people have been diagnosed since January, an eight-fold increase on last year. Infections have reached epidemic levels in nearly half the state's municipalities (mostly the smaller ones). São Paulo has seen 67 confirmed fatalities. Mercifully, things in the rest of the country are better, meaning that the situation is less severe than the full-blown epidemic that infected 1.5m people in 2013.

The rain is not the only reason for the current outbreak. Paradoxically, another cause is last year's drought. Faced with the threat of rationing, people have been storing rainwater, often in open containers, which make good breeding-grounds for mosquitoes. In São Paulo, many of this year's worst-hit towns were spared during previous dengue flare-ups, so fewer inhabitants have had a chance to develop natural immunity.

To stress the need to dispose of rubbish and to drain standing water, on March 25th David Uip, the state health secretary, launched a public-awareness campaign. It complements one last October by the central government. Warnings will be printed on trains, buses and beer bottles, and 10m text messages will be sent to citizens. The federal health ministry plans to spend 1.3 billion reais ($410m) on dengue surveillance this year. It is in talks with Sanofi Pasteur, a French pharmaceutical giant, which expects final regulatory approval for its vaccine, the world's first, later this year.

Much more rain is still needed if the south-east is to alleviate its water shortages. Despite above-average rainfall in the past two months, inflows into São Paulo's Cantareira system of reservoirs, the country's biggest, are barely half their long-term average. Because of deforestation, in some areas rainwater no longer runs through its usual channels into reservoirs; instead, it forms torrents that gush away downstream. There, some of the water settles in mosquito-spawning ponds. São Paulo is damned if it rains, and damned if it doesn't.

No shelter from the mosquitoes

Also in this section

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Tourism in Japan

Treasure hunt

HAKONE

The economy gets a boost from record numbers of visitors

IN GINZA, Tokyo's best-known shopping district, a dozen-odd tour buses disgorge crowds of determined Chinese shoppers at their first stop: a suitcase emporium from which they emerge with the extra capacity they need to cart home the cornucopia of Japanese goods they are about to amass, including what mainlanders now dub Japan's "four treasures"—brand-name rice cookers, vacuum flasks, ceramic knives and high-tech lavatory seats (see story on page 50). In the funky boutiques of Daikanyama, Chinese dandies are hard to tell apart from local counterparts in cropped trousers and round, horn-rimmed spectacles (until recently Chinese tourists always stood out a mile for their unsophisticated dress sense). Meanwhile, mainland Chinese, Hong Kongers, Taiwanese and South Koreans are filling hotels and *ryokan*, traditional inns, from Japan's northernmost province of Hokkaido to Okinawa, a subtropical island in the south.

The tourism boom began in earnest last year and has far surpassed anything the government dared hope for. Just over 13m foreigners, 11m of them Asian, came to Japan in 2014, up nearly 30% compared with a year earlier and half as many again as in 2010. Chinese arrivals have jumped by more than four-fifths since 2013, and 450,000 mainlanders came for the week of the Chinese new year in February alone.

A huge incentive is the weakness of the yen thanks to the Bank of Japan's monetary easing. The currency has fallen sharply, including by nearly two-fifths against the yuan, which is loosely pegged to the dollar, since October 2011. The draw for sightseers and shoppers is proving irresistible. Foreign tourists spent ¥2 trillion ($18.9 billion) last year, about double their outlay in 2012. Think of it as the most visible consequence of Abenomics, the plan by the prime minister, Shinzo Abe, to boost the economy mainly through central-bank easing. Once notorious for its high prices, Japan is now ludicrously cheap. Song Yuanyin, hired by a Shanghainese family to help hunt for rice cookers, says goods are much cheaper than in Shanghai.

Looser visa rules have also helped spur inbound tourism, along with tax-free shopping. Japanese businesses are adapting. No-frills hotels for travelling salarymen are being revamped to cater to foreign tourists—hotels in the Apa group ("Always Pleasant Amenity") are popular with foreigners for their traditional twist and low cost. *Michi no eki*, government-designated rest areas for motorists offering restaurants, crafts shops and even *onsen* hot springs now aim their services squarely at Asian visitors.

Yokoso!

Tourist arrivals in Japan, m

Source: CLSA, Japan National Tourism Organisation

The Japanese themselves were once caricatured as they descended upon Europe's tourist spots by the coach load. Now many Japanese complain about boorish Asian tourists. South Koreans, for instance, always demand discounts, says Kazushi Komatsuzaki, the manager of a men's clothing store in Daikanyama. Another manager of a clothes shop says that even though Chinese buy as many as 30 items at a time, they tend to eat while fingering all the goods. At *onsen*, visitors violate a strict etiquette, with Chinese the worst offenders, says Kaori Tsuda, the owner of a thatched *onsen* resort in Hakone, a national park near Mount Fuji. You are supposed to wash yourself thoroughly before quietly slipping in naked to the communal pool. Instead, some Chinese jump in fully clothed and even try to make bubbles by pouring in liquid soap. In refined Kyoto, Chinese were caught—horrors—shaking a cherry tree to make a shower of blossom. But it is all worth it. A foreign visitor spends on average ¥130,000, and a good chunk of the spending benefits depressed local regions once visitors can be lured away from Ginza.

Besides, visitors seem to take home more than just souvenirs, shopping bags and selfies. Zeng Yang, from the southern Chinese city of Shenzhen, says that she particularly relishes Japan's clean air. For Chinese visiting Hakone, the clear skies ▸▸

and pristine environment make a deep impression, says Ling Yun, a guide. In Naha, Okinawa's capital, Hong Kongers fill huge bags with fresh vegetables and fruit, so wary are they of chemically contaminated produce back home from mainland China.

What is more, as Japanese diplomats observe hopefully, mainland Chinese visitors are often surprised to find that their neighbours are not the blood-curdling imperialists portrayed in anti-Japanese television dramas in China. Instead, they go home with stories of having lost wallets or other items safely returned to them. Indeed, on Sina Weibo, a Chinese microblogging service, a theme of the "true goodness" of the Japanese has taken off, much to the Japanese tourist board's delight. For this outbreak of amity, give thanks to the central bank. ■

Singapore after Lee Kuan Yew

After the patriarch

SINGAPORE

The island-state mourns its founding father, but its politics is changing

LEE KUAN YEW died on March 23rd after spending 47 days in intensive care. His son and prime minister, Lee Hsien Loong, told the country that Singapore will not see a man like him again. Its first prime minister had "fought for independence, built a nation where there was none and made us proud to be Singaporeans". After a family wake, the patriarch's body lay in state on March 25th. Singaporeans came in huge numbers to pay respects: by the afternoon the queues wound all around downtown Singapore, with an eight-hour wait to file past the coffin. Elsewhere, at designated sites, people left flowers, cards and balloons. A typical note read: "Thank you for all the sweat and tears you've shed for the building of our nation."

Another tribute to Mr Lee's nation-building was the absence of any flicker from the stockmarket on news of his death. True, Mr Lee had not been prime minister for 25 years, and he had been out of government entirely since 2011. But Singapore sits in a region rife with political instability and corruption. By contrast, and thanks largely to Mr Lee, Singapore's institutions are strong, its governance honest, effective—and dull.

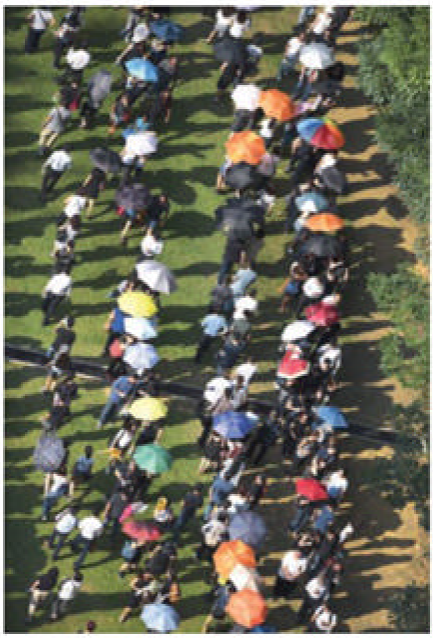
Yet slowly and unmistakably, its controlled politics is changing. When Mr Lee pulled tiny Singapore out of its union with Malaysia, it was poor and faced long odds. Today Singaporeans are well-educated and well-travelled, while GDP per head is among the world's highest. Having grown up in a rich country, young Singaporeans increasingly chafe at restrictions their grandparents willingly accepted. Public protests remain rare. (One place where they are partly tolerated, Hong Lim Park's Speakers' Corner, was closed this week "for remembering" Mr Lee.) But complaining, criticising and venting frustrations on social media are increasingly common.

Rising expectations have already produced popular discontent, or what passes for it in Singapore. The People's Action Party (PAP), which Mr Lee founded, has governed without interruption since before Singapore became a republic in 1965. But in the most recent general election, in 2011, the PAP posted its worst-ever performance, winning just 60% of the popular vote—6.5 percentage points less than it took in 2006 (though thanks to clever boundary-drawing, it still won 81 of 87 elected seats).

That election, says Kenneth Paul Tan at the Lee Kuan Yew School for Public Policy, showed the government that "citizens' views really do matter" and that the old paternalist model of politics that assumed Singaporeans could see no further than their narrow self-interest no longer holds.

Especially since that election, the government has made a point of listening to citizens rather than just lecturing them. Our Singapore Conversation, an initiative launched in 2012, has held more than 660 "dialogue sessions" across the country, during which Singaporeans have discussed their views on government policies. Such programmes may be largely symbolic, but they at least show government openness. And, Mr Tan argues, they help develop the civic and democratic values that years of paternalism had discouraged.

That is a long-term transformation. In the nearer term, the PAP must contest another election—it will probably call one for later this year. No one seriously expects it to lose. At the recent launch of a new political party, Singaporeans First, opposition leaders conceded that Mr Lee's death and Singapore's 50th anniversary celebrations in August will boost the ruling party.



The mourners keep coming

But a party does not have to lose to change. In recent years the PAP has overcome its aversion to welfare programmes, expanding financial aid to the elderly and directing more benefits to poorer Singaporeans. It has tried to use persuasion rather than bullying in meeting popular discontent over high rates of immigration and concerns over whether Singapore's forced-savings scheme can meet the needs of an ageing population. In his time, Lee Kuan Yew would have done it differently. But the times are changing. ■

Thailand after the coup

The pen and the sword

BANGKOK

The junta's plans for Thailand's future grow clearer, though no more welcome

TEN months after seizing power in a coup, Thailand's junta chafes at still having to defend its record. It will soon start handing out to passers-by in busy parts of Bangkok the first of 10,000 glossy booklets recounting the junta's glorious achievements. It probably hopes the missive will help to quell creeping discontent in the capital, and save Prayuth Chan-ocha, the general serving as Thailand's prime minister, from endless questioning. He recently said he had been tempted to punch a journalist in the face.

The army's propagandists have plenty to scribble about. Unburdened of democratic process, its rubber-stamp parliament, the National Legislative Assembly (NLA), has been cranking out new laws—more than 60 since it was set up in September. Among other things it has banned foreigners from paying Thai women to be surrogate mothers. It is mulling economic reforms to help online entrepreneurs (critics warn of more censorship and cyber snooping). It is also legitimising aspects of martial law, including tougher rules on protests and the right to detain civilians for nearly three months without charge.

Just as busy are the bigwigs whom the junta has put in charge of writing a new constitution. Many of the constitutional proposals, which will be published in draft form in mid-April, aim to shrink the power of political parties. They may include reducing the size of the national assembly's lower house and encouraging the growth of independent candidates. It all seems de- ▸▸

signed to prevent any party gaining the dominance that was enjoyed by Pheu Thai, a populist outfit abhorred by Bangkok's coup-backers but which easily won both the general elections it contested.

A new constitution may well allow for an unelected prime minister in times of crisis—a similar rule kept the army in charge throughout the 1980s. Thailand's half-elected senate will probably be replaced by a fully-appointed one with more powers—a "House of Citizens", the idea's supporters call it. The constitution may also create high-level committees to make sure that future governments continue social and economic programmes which the junta is now launching.

Yet as the army tightens its grip on the political machinery it is finding it harder to command obedience among ordinary Thais. Student protesters are proving indefatigable. Prosecutors will soon decide whether or not to charge four high-profile activists who staged a mock election. An uptick in low-level violence is perhaps the biggest concern. Recently someone threw a grenade at a Bangkok courthouse. In February two pipe bombs exploded outside a shopping centre in the capital. And on March 22nd police found a cache of explosives hidden in forests not far from where the junta will soon hold a cabinet meeting.

Heavy-handedness could embolden dissent rather than suppress it. Two young people sentenced to 2½ years in prison for their part in a satirical play are among many feeling the stricter enforcement of Thailand's lèse-majesté law. On March 19th Yingluck Shinawatra, prime minister until last May, learnt that she faces a trial for negligence in political office that could see her jailed for a decade. Anti-corruption officials want the NLA to consider banning more than 200 of her former MPs from holding political office.

The junta says that its new constitution will be finalised in September, perhaps allowing for a general election to be held next February. But before that it will have to decide whether the constitution should be put to a referendum, as happened in 2007. The junta's supporters seem to be discouraging the idea, claiming that it would delay the return to democracy.

As for politicians from Thailand's two main political parties, both turfed out of parliament by the coup, they are starting to look unusually united in their opposition to the junta's plans. This month Abhisit Vejjajiva, leader of the pro-establishment Democrat Party and a former prime minister, called the constitutional proposals "a step back for democracy". Members of Pheu Thai warn that the new constitution could cause fresh conflict. The generals had always promised that their takeover would help Thailand's feuding politicians find common ground. It has happened in ways they did not intend. ■

China, Japan and South Korea

The buds of March

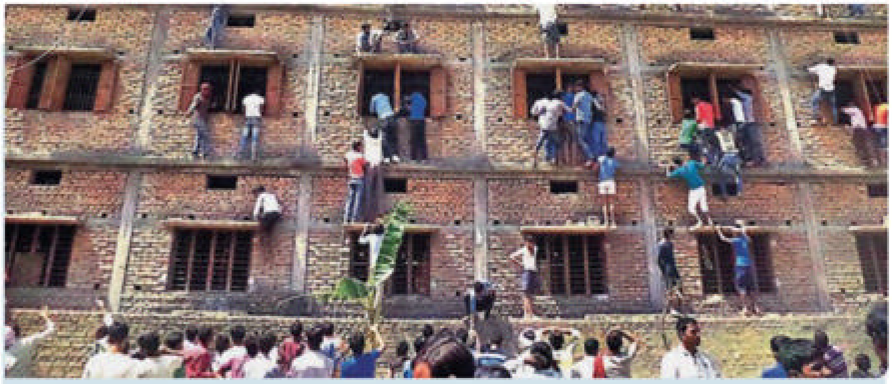
BEIJING, SEOUL AND TOKYO

The first meeting of foreign ministers in three years heralds a milder spell

THE prospects for a summit between the leaders of China, Japan and South Korea had appeared bleak since an annual chin-wag, begun in 2008, was called off in 2013 over worsening territorial spats (between China and Japan, and between South Korea and Japan) and over accusations by China and South Korea that Japan was not facing up to its wartime past. Yet on March 21st the countries' foreign ministers met for the first time in three years and agreed to push for a resumption of trilateral summits as soon as "convenient". In a fraught region, this counts as progress.

In the meeting in Seoul, the South Korean capital, China's foreign minister, Wang Yi, claimed that three-way co-operation had been put "back on a normal track". It was the result of diplomatic shuttling and a cooling of tempers. In particular, a studiously sullen handshake in Beijing in November between President Xi Jinping of China and Shinzo Abe, Japan's prime minister, helped unfreeze relations between those two countries after China had challenged Japan's control of the Senkaku islands (Diaoyu in Chinese) and Mr Abe had visited Tokyo's Yasukuni shrine with its militarist overtones. Chinese incursions into the waters surrounding the Senkakus have not decreased. But at least the two sides are discussing a military hotline and the incursions follow a choreographed routine. On March 19th they held their first high-level security talks in four years. More broadly, day-to-day relations between them have improved dramatically.

The talks in Seoul have now evinced a broader recognition that grievances must not be left to overshadow essential economic relationships. Common ground was found on disaster management, tourism, trade, the environment and ageing societies. A senior Japanese official said that President Park Geun-hye of South Korea had shown leadership in helping to ▸▸



Education in India

Wall of shame

As teaching standards go out the window, crib sheets come in

PHOTOGRAPHS of parents scaling the walls of an exam hall to pass cheat sheets to students offer the latest evidence of India's failing school system. The examinees in Bihar, a largely rural state, were in the matriculating class, known as class ten. A good mark might be a gateway to college and a decent job in government, computing or banking. Sadly a big decline in school standards has made this far harder to achieve, at least by fair means. Hence the lengths—or heights—to which parents will go.

A recent report on education in rural India shows how far standards have slipped in the past decade. Fewer than half of pupils in class five could properly read a text written for class two pupils. Almost a fifth in class two could not recognise single-digit numbers.

An education system that favours elitism over basic schooling is in part to blame. The OECD found that the top 5% of 15-year-olds in two Indian states performed as well as average rich-country children in reading, mathematics and science. But the rest were far behind. And there are shortcomings even in higher education. Technology firms complain that graduate recruits are not up to scratch. Only a quarter with technical degrees are considered employable, according to one industry body. The pictures from Bihar will encourage employers to be still more sceptical about Indian qualifications.

broker the meeting. Strikingly, the three ministers also came up with a tripartite statement on North Korea's threatening nuclear ambitions.

The foreign ministers' meeting in Seoul was welcome, but the contentious issues remain, especially over matters of history in this, the 70th anniversary year of the end of the second world war. Mr Wang described discord between China and Japan over history as "a ridge that cannot be sidestepped". Perhaps, but building the ridge higher, which China is doing by planning a provocative military parade in September, does not help. Nor do the historical evasions of those around Mr Abe, and sometimes of the prime minister himself. They include questioning the definition of "invasion" to refer to Japan's war in China from 1937. (What else was it?)

Yet at least Mr Abe has pledged to stand by previous official anniversary apologies. He has appointed a panel to come up with some consensus on history matters in time for his expected statement on August 15th. The panel's members expect no consensus, but they do hope their deliberations will foster a wider public debate.

As for the expected statement, that is up to Mr Abe alone. Shen Dingli of Fudan University in Shanghai says that China is unlikely to take bolder steps, including towards a three-way summit between Mr Xi, Mr Abe and Ms Park, until it hears what Mr Abe has to say. America also wants to know. It may get a better sense when he visits Washington at the end of April, becoming the first Japanese prime minister to address a joint session of Congress. The template of his speech is likely to be one he delivered to Australia's Parliament in Canberra in November, in which he offered his "sincere condolences" for the horrors of the war. But it is easier to say sorry to your friends.

America is certainly pleased by improving ties between its two Asian allies, South Korea and Japan. Tension between them, it says, has been a "strategic liability". Yet Ms Park is vacillating on another front that concerns America: accepting its advanced anti-missile defence system (known as THAAD, or Terminal High Altitude Area Defence). Though ostensibly designed to counter North Korean aggression, China has expressed displeasure to South Korea—fearing it may also be used to contain China. Despite their tentative rapprochement in Seoul, there is much still trying to pull Japan, South Korea and China apart. ■

Afghan-American relations

Love bombs

KABUL

Afghanistan's president wins a pause in the withdrawal of American forces

DURING his first visit to Washington as Afghanistan's president, Ashraf Ghani said everything his infuriating predecessor, Hamid Karzai, did not. Where Mr Karzai could sound insultingly ungrateful, Mr Ghani heaped thanks on his American hosts for the roughly $1 trillion spent in Afghanistan since 2001, and the more than 2,200 American lives lost—even, at a Pentagon ceremony, addressing some of the families of those who died. He emphasised a determination to crack down on corruption. And he won praise from President Barack Obama for having "taken on the mantle of commander-in-chief in a way that we have not seen in the past from an Afghan president."

Mr Ghani comes away with a prize, of sorts: a tweaking of Mr Obama's plans to pull American forces out of Afghanistan. Instead of nearly halving the American force, to 5,500, from the middle of this year, Mr Obama said all 9,800 soldiers would now remain until the end of the year. They will not be sent into combat but rather continue in the "train, advise and assist" role they adopted at the end of 2014. By the end of 2016, when Mr Obama leaves office, even that supporting role will supposedly be over, with only a military assistance office remaining.

Opinions polls show that Afghans fear a complete departure of foreign troops. The pause should help Afghanistan get through the "fighting season" against the Taliban and other insurgents in the warmer months of this year. The country's security forces need continuing training and they still struggle with logistics and basic management. American military types in Kabul, the capital, blame an alarming shrinkage in the size of the Afghan army last year not on a lack of appetite among young Afghans to join security forces suffering horrendous casualties fighting the Taliban, but on the failure of ministries to meet recruitment targets because they do not have the bureaucratic capacity.

The hope now is that a strong showing by Afghan forces in the coming months, even if losses remain high, will help nudge the insurgents to the negotiating table. It is something that Pakistan, the Taliban's former sponsor, is also encouraging, now that Mr Ghani is also mending fences with Afghanistan's eastern neighbour.

Nor is it clear that the withdrawal of all American forces by the end of next year is set in stone. Mr Obama long wanted to be able to say at the end of his presidency that he had ended the foreign wars in which America was engaged, and had brought all the troops home. However, the campaign against Islamic State in Iraq now makes it an impossible boast; that in turn weakens the political imperative of getting fully out of Afghanistan. Moreover, Ashton ("Ash") Carter, Mr Obama's new defence secretary, is reckoned to be more committed to ensuring a respectable denouement in Afghanistan than was his predecessor, Chuck Hagel. If Mr Carter thinks some troops should stay on, Mr Obama might find it hard to overrule him.

Yet in the end, foreign cash may prove more critical than foreign troops in sustaining a fragile government against an insurgency. Mr Obama promised to ask Congress, which Mr Ghani addressed on March 25th, to pay for the country's 352,000 police and soldiers at least until the end of 2017. Mr Ghani was careful to thank not just American soldiers but also "the American taxpayer for his and her hard-earned dollars". ■

Ghani and Obama: seeing eye to eye

Banyan | What's the big deal?

Why a whiff of panic has entered America's Pacific trade negotiations

NEGOTIATIONS on the Trans-Pacific Partnership (TPP), an ambitious trade agreement linking America, Japan and ten other countries—together accounting for 40% of global GDP—have missed so many deadlines that one more may not seem to matter. But talks are reaching a point of no return. Without an agreement in the next few weeks there will not be enough time to complete the TPP before America is embroiled in a presidential election campaign, and progress will be impossible until 2017. American diplomats, however, insist the deal is on track. They sometimes seem to be trying to convince themselves that an aim that has become a linchpin of American strategy is still achievable.

Their nervousness has been heightened by the recent embarrassment over the Asian Infrastructure Investment Bank (AIIB), a new, China-led multilateral development-finance institution. A number of close American allies have applied to become founding shareholders, ignoring American entreaties to shun it as a threat to global standards. After that setback, America needs the TPP to succeed more than ever. It may well do so. But the most recent round of TPP talks, in Hawaii, appears to have ended with some important disagreements still unresolved.

This is not surprising. The TPP is to be a "21st-century" agreement, involving contentious reforms in areas such as intellectual property, the treatment of state-owned companies and environmental and labour standards. It includes economies at very different stages of development—from Peru and Vietnam to America and Australia. And even on 20th-century issues of import tariffs and market access, big differences remain between the two biggest economies in the TPP, America and Japan. In both agriculture and carmaking, America is demanding concessions that Japan's prime minister, Shinzo Abe, will find politically difficult.

The biggest problems, however, may be at home in Washington, DC. The 11 other countries will be loth to show their final position until the Obama administration has "fast-track" Trade Promotion Authority (TPA) from Congress. Without TPA, Congress could unpick any agreement clause by clause rather than have to pass or reject it as a whole. And securing TPA is far from certain. The pact faces criticism from right-wing Republicans as well as from many Democrats. Paul Krugman, an economics Nobel laureate turned *New York Times* columnist, has called the economic case for the TPP "weak". In February he wrote that if it does not happen it will be "no big deal".

Mr Krugman is wrong there. Failure to complete it would be a terrible blow to American interests, for a number of reasons. Trade liberalisation itself is of course one. With prospects of a global agreement at the World Trade Organisation vanishing, America's hopes lie in the TPP and the more distant Transatlantic Trade and Investment Partnership with Europe. In his state-of-the-union speech to Congress in January, Barack Obama dwelt on "the world's fastest-growing region", ie, Asia and the Pacific.

The TPP has also become central to America's most important alliance in Asia, with Japan. Concluding it would show that the two countries can overcome the trade irritants that have always tested the relationship. It it is also seen as a vital part of Mr Abe's strategy to shake the Japanese economy out of its prolonged torpor, in part by forcing structural reform upon it. This week Mr Obama confirmed an invitation to Mr Abe to the White House on April 28th. Mr Abe will also make a speech to Congress. But an inability to conclude the TPP, combined with renewed difficulties over moving a controversial American marine base on the southern Japanese island of Okinawa, could make the inevitable professions of eternal friendship ring a little hollow.

More broadly, so would another central boast of Mr Obama's diplomacy, the "pivot" or "rebalancing" of American interests towards Asia. Diplomatically, this has always looked a little perfunctory, as crises in the Middle East and Europe have distracted America. The military component has so far not seemed very significant. And so more and more emphasis has been placed on the economic element—the TPP. Having advertised it as a symbol of their country's enduring role as a regional leader, Americans can hardly complain if other countries choose to interpret it that way.

Yet when Mr Obama made his pitch in his state-of-the-union speech for support for TPA, he did not make the argument as one about global trade, the Japanese alliance or "rebalancing" to Asia. Rather, he argued it was needed to protect the interests of American workers and businesses against strategic competition from China, which, he said, wants to "set the rules" in the region.

China is at present excluded from TPP, but is engaged in talks with 15 other countries, including the ten members of the Association of South-East Asian Nations, as well as India and Japan, on what looks like a rival trade agreement, known as the RCEP. China has long suspected that the TPP is designed to keep it out—one part of an American policy of containment. Why, for example, its scholars ask, is Vietnam included? Its economy, too, is lacking in transparency and distorted by state-owned industry.

The zero-sum illusion

So the struggle to complete trade agreements seems to have become yet another area of strategic competition between America and China as they tussle for regional influence. As with the AIIB fiasco, this is unwarranted: both countries would gain from the boost to the global economy that the TPP and RCEP would provide. And China is free to join the TPP if it accepts its standards, which it has not ruled out. The dream is that, in the end, the overlapping trade pacts will merge in a broad free-trade area including both America and China—under American-style rules. So each should be cheering the other's efforts on. Failure to complete the TPP would be a serious defeat for American diplomacy for many reasons. Portraying it as a way of countering China risks adding an unnecessary one: that it would look like a Chinese victory. ■

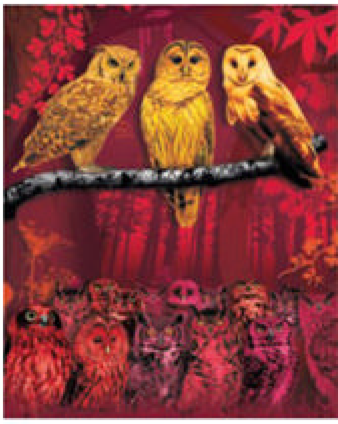
The Economist

SPECIAL REPORT
UNIVERSITIES
MARCH 28th 2015

Excellence v equity

Excellence v equity

The American model of higher education is spreading. It is good at producing excellence, but needs to get better at providing access to decent education at a reasonable cost, says Emma Duncan



IF YOU LEARNED that the top dogs in a particular market were the same as 100 years ago, you would probably surmise that the business concerned had suffered a century of stagnation. In the case of higher education, which has been dominated by American universities since the early 20th century, you would be quite wrong. It grew slowly for the first quarter-century, gathered pace in the middle half and took off in the fourth quarter. You might then conclude that the top dogs were truly outstanding, or that there was something very odd about the market. In the case of higher education, you would be right on both counts.

America gave the world the modern research university. The American elite imported the model of the Oxbridge college in the 17th century to give its rough sons a polish. In 1876 the trustees of the estate of Johns Hopkins, a banker and railroad magnate, decided to use what was then the largest bequest in history to marry up the Oxbridge college with the research university, an institution the Germans had developed at the beginning of the 19th century. Both private and public universities adopted the model, and Harvard, Yale, Princeton, Caltech and the rest of America's top rank emerged as the prime movers of the world's intellectual and scientific life shortly afterwards.

These institutions have produced a startling number of the inventions that have made the world safer, more comfortable and more interesting. "Imagine life without polio vaccines and heart pacemakers…or municipal water-purification systems. Or space-based weather forecasting. Or advanced cancer therapies. Or jet airliners," wrote a bunch of America's business leaders to Congress in 1995, pleading with the government not to cut research funding to universities. Since then, those institutions have also powered the digital revolution that has improved life in every corner of the planet.

America led the world, too, in creating mass higher education. That transformation was driven in part by the economy's need for higher skills and in part by society's desire to give the men who fought in the second world war a chance to better themselves. America thus became the first country in the world in which the children of the middle classes went to college, and college became a passport to prosperity.

Given its success, it is hardly surprising that the American approach to higher education is spreading. Mass education has taken off all over the world. The American-style research university is the gold standard, and competition among nations to create world-class research universities as good as America's is intensifying. Spending on higher education is rising: across the OECD, from 1.3% of GDP in 2000 to 1.6% in 2011. Provision, financing and control everywhere is moving away from the Euro- ▸▸

CONTENTS

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A list of sources is at **Economist.com/specialreports**

An audio interview with the author is at **Economist.com/audiovideo/specialreports** pean model, where everything is done by the state, towards the American one, in which the private sector provides a large part of the education and individuals pay for most of their tuition.

But just as the American model is spreading around the world, it is struggling at home. America's best universities still do more top-class research than any other country's; the problem lies in getting value for money on the teaching side. Tests suggest that many students do not learn enough these days. They work less than they used to. The average performance of America's graduates, compared with those of other countries, is low and slipping. Higher education does not increase social mobility but reinforces existing barriers. At the same time costs have nearly doubled in real terms in the past 20 years. The enrolment rate is falling. Technology offers the promise of making education both cheaper and more effective, but universities resist adopting it.

This special report will argue that the problems spring in part from the tensions at the heart of higher education between research and teaching, and between excellence and equity; but that technology and better information can help make the teaching side of the business more effective. America, having exported its model to the world, could learn some lessons from other countries about how to improve its own system.

How much is too much?

"Everybody's gettin' so goddam educated in this country there'll be nobody to take away the garbage…You stand on the street today and spit, you're gonna hit a college man," says Keller in Arthur Miller's play, "All My Sons", written in 1946. Higher education in America started to spread from the elite to the masses as early as the 19th century, with the establishment of the land-grant universities, but got its biggest boost with the 1944 GI bill that paid servicemen to go to college.

What happened in America then happened in Europe and Japan in the 1960s and 1970s, in South Korea in the 1980s, and is now happening the world over. Student numbers are growing faster than global GDP. So hungry is the world for higher education that enrolment is growing faster than purchases of that ultimate consumer good, the car (see chart 1). The global tertiary enrolment ratio—the proportion of the respective age cohort enrolled in university—increased from 14% to 32% in the two decades to 2012; the number of countries with an enrolment ratio of more than half went up from five to 54 over the period. Sub-Saharan Africa is the only part of the world where "massification" is not much in evidence yet.

Some countries, such as South Korea, where pretty much everybody goes to university, have probably reached saturation point. Others are still seeing phenomenal growth. In China, student numbers grew from 1m to 7m in 1998-2010. In the decade to 2009, Chinese universities hired nearly 900,000 new full-time faculty members. The country now produces more graduates than America and India combined, and by 2020 aims to enroll 40% of its young people in universities.

All over the world labour-market changes, urbanisation and demography have fuelled the boom. The "knowledge economy" has increased the demand for workers with well-furnished minds. When people go to live in cities, universities become more accessible so more people attend them. Rising numbers of young people have fuelled the boom, and—especially in Arab countries—combustible politics increase the need to offer opportunities to teenagers.

In most countries the number of 18- to 24-year-olds will shrink in the next half-century, but the demand for higher education seems likely to more than counteract that demographic effect. Simon Marginson of University College London's Institute of Education reckons that "the tendency to growth of participation in higher education appears to have no natural limit" once a country's GDP per person rises above $3,000.

The laws of supply and demand suggest that this vast increase in the number of graduates should reduce the return on investment in a degree, and to some extent that seems to have happened. By and large, the return to higher education is higher in poor countries than in rich ones (see chart 2, next page), except in the Middle East, where high enrolment combined with low growth has led to high graduate unemployment. Harry Patrinos, the lead education economist at the World Bank, reckons that globalisation has increased the chances for well-qualified people in poor countries of getting a good job.

In the rich world, even though nearly half of young adults are graduates and numbers are continuing to rise, the graduate premium (the wage difference between those with and those without degrees) has remained high enough for it to be worth going to university. Part of the explanation may be credentialism in some rich countries. The more people have degrees, the more employers will insist on recruiting graduates. In many countries jobs such as teaching and nursing, which did not require a degree 30 years ago, are now reserved for graduates. When just a small elite went to university, plenty of decent jobs were available to those with only secondary schooling. That is no longer true.

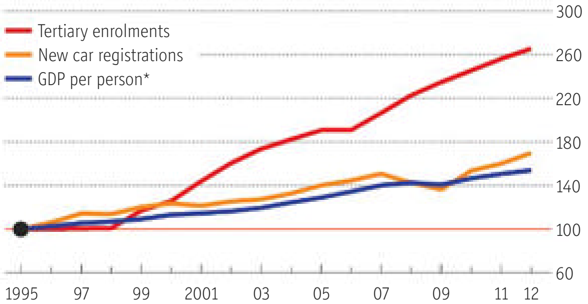
But changes in the labour market also help to explain the ever-growing pressure to get a degree. Automation has created what Claudia Goldin and Lawrence Katz, two Harvard academics, have called "a race between education and technology" which only those with plenty of education will win. As automation depresses wages at the bottom of the pile, inequality grows, and the more unequal society becomes, the riskier it is not to have a degree. For all the stories of university dropouts who became software billionaires, non-graduates have little chance of joining the ranks of the prosperous few.

As first degrees become standard, more people are getting postgraduate qualifications to stand out from the crowd. In both America and Britain, 14% of the adult workforce have a postgraduate degree; and despite the increase in supply, the postgraduate premium has increased in both America and Britain, especially since 2000. There was a time, points out Stephen Machin, professor of economics at University College London, when a postgraduate degree depressed wages; but that was when maths PhDs worked mainly in academia, not in the financial sector.

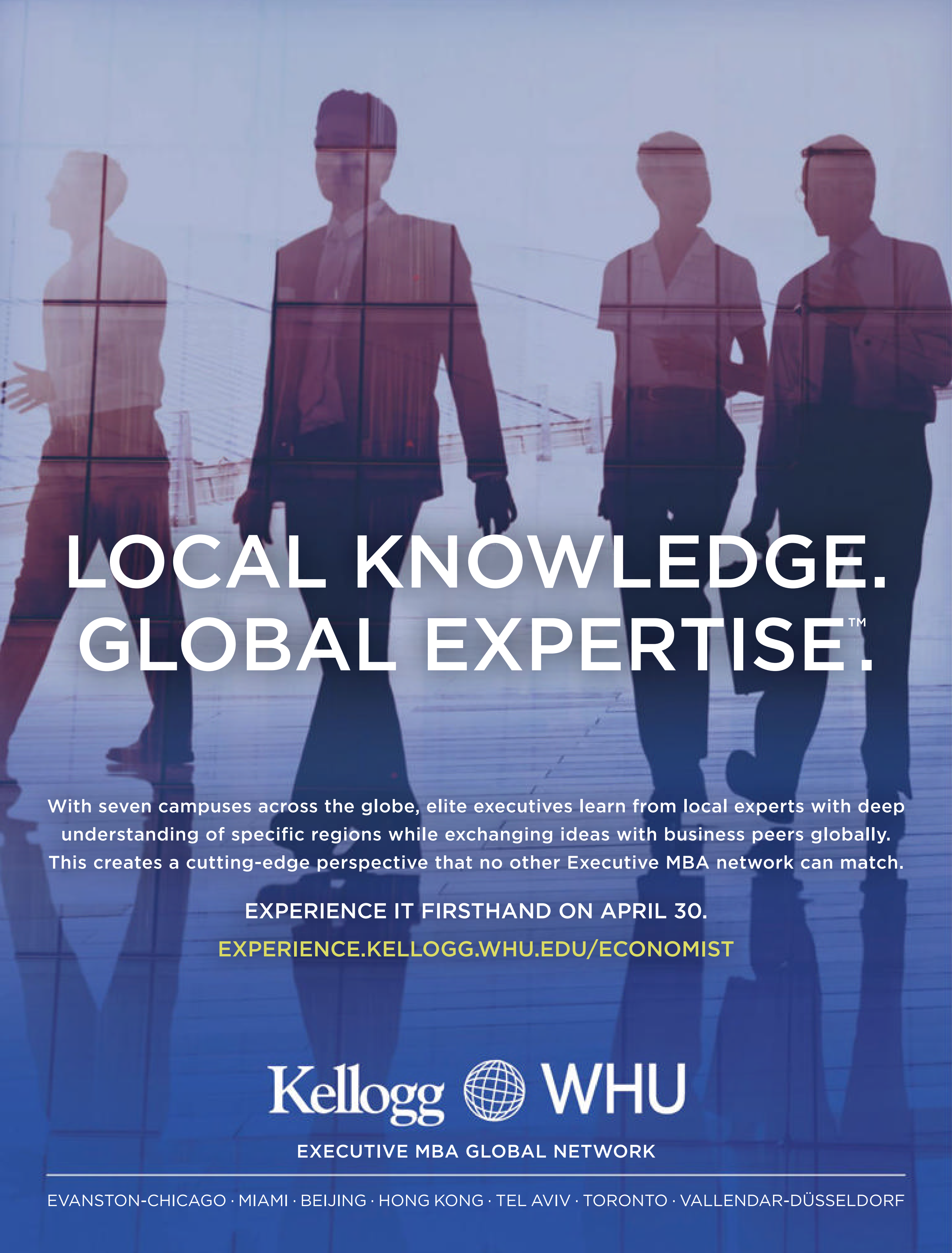
Although individuals enjoy decent returns to their investment in higher education, it is less clear that society as a whole does. The big question is whether the graduate premium is the consequence of higher productivity or of establishing a pecking order. If universities increase people's productivity, then society

Never mind the car, get the degree 1

Global, 1995=100



Sources: UNESCO; Economist Intelligence Unit; *The Economist* *At 2005 $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Poorer countries, richer returns

Average increase in earnings for every additional year of tertiary education
1970-2013, %

Source: World Bank

should invest in having more graduates, but if they are merely a mechanism for signalling to employers that graduates are cleverer than non-graduates, then it should not. And since little effort goes into measuring whether universities actually educate people—a matter to which this special report will return—society does not know whether investing in education is worthwhile.

Even if the social returns on investment in higher education were poor, there would be a strong political argument for the state to provide access to it. If people need a degree to get ahead, then democratic governments must offer everybody with sufficient brains a chance of getting one. The market alone will not lend money at a reasonable rate to students who can provide no security, so even governments that rely heavily on private finance tend to offer loans to students.

But access to higher education is not binary. Some provision is excellent and some is not, and the returns to low-quality higher education are poor. So the ambition expressed by pretty much all governments everywhere to widen access to good-quality higher education conflicts with another global force: competition to create the best universities. ■

Rankings

Top of the class

Competition among universities has become intense and international

AS JAMIL SALMI leaves the stage at a *Times Higher Education* conference in Qatar, he is mobbed by people pressing their cards on him. As a former co-ordinator of the World Bank's tertiary-education programme and author of a book entitled "The Challenge of Establishing World-Class Universities", he is the white-haired sage of the world-class university contest. And he is greatly in demand, for the competition to climb the international rankings has become intense.

Higher education in America has long been a strongly competitive business. Students and university presidents alike keenly watch the rankings produced by the *US News and World Report*. Such rankings encourage stratification. One of the metrics is the proportion of students a university turns away, which encourages selectivity. That in turn encourages differentiation between better and worse universities. The American model is thus quite different from the continental European one, which (aside from France's *grandes écoles*) is a lot less selective and more homogeneous.

Now competition and stratification are spreading. According to Ellen Hazelkorn, author of "Rankings and the Reshaping of Higher Education", there are around 150 national rankings around the world. But thanks to globalisation and the growth in international student flows, attention has shifted from national to international rankings.

Governments want top-class universities because the modern economy is driven by human capital. The goal is to nurture people who will create intellectual property and clusters of high-tech companies similar to those around Stanford and Cambridge. A great research university is not a sufficient condition for creating such a cluster, says Jean-Lou Chameau, former president of Caltech and now president of Saudi Arabia's King Abdullah University of Science and Technology (KAUST); but "you can't do it without having more than one great university around."

Increasing reliance on tuition fees is another reason for more competition. Students "want to be sure that they have got a big global brand on their certificate that's going to be a passport to their future", says Phil Baty, editor-at-large of *Times Higher Education*. America's state universities, he says, used to show little interest in the international market. Now that their budgets have been cut, he sees a lot more of their presidents.

The qualities that matter

Nian Cai Liu of Shanghai Jiao Tong University started the international race in 2003. "My university was one of the first that the government picked to become a world-class university. I decided to benchmark us against those in the West," he says. He came up with six indicators of research excellence, used them to rank the world's top universities and published the result. It caused uproar in countries that did badly—particularly Germany, birthplace of the research university. *Times Higher Education* and another company, QS, followed with their own rankings. Shanghai focuses purely on research; THE and QS also look at things like staff-student ratios and reputation.

American institutions take the top slots in the Shanghai rankings (see chart 3, next page), with Britain as the runner-up. Private universities dominate, though some state universities (such as California's) are also excellent. But in relation to their population size, the Nordic countries, Switzerland and the Netherlands do best, and there is movement in the rankings. Emerging markets are on the rise; America's state universities and Britain's second tier are slipping.

The rankings matter because of their impact not just on the *amour propre* of politicians and university presidents, but also on how universities are run. "Rankings force institutions and governments to question their standards. They are a driver of behaviour and of change," says Professor Hazelkorn.

One way of improving your rankings is to set up a top-class research outfit from scratch and hire a former head of Caltech to run it, as Saudi Arabia has done with KAUST. But not many countries can afford the $20 billion endowment that KAUST is said to have received from the late King Abdullah. An alternative luxury model is to get a top-class foreign university to set up on your soil. The United Arab Emirates has got NYU (see box at the end of this section), which has also set up a campus in Shanghai, while Yale has a partnership with the National University of Singapore.

Qatar is doing something different again. Education City is a collection of eight foreign universities in grand new buildings on the outskirts of Doha, each of which teaches a subject the government considers useful to the country. Texas A&M does engineering (for the gas industry); Northwestern does journalism (for


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Advertisement feature

THE FUTURE OF HIGHER EDUCATION:

HOW MICHAEL CROW IS TRANSFORMING THE AMERICAN UNIVERSITY

Michael M. Crow
Arizona State University, President

Today's higher education system is at a crossroads. Costs are rising at an alarming rate, and highly selective admissions mean that a quality education is now beyond the reach of too many students. Despite small-scale changes at some universities, most continue to take an incremental approach that follows in the footsteps of the most vaunted institutions.

"If everyone tries to be Columbia or Harvard, the system will fail," says Michael Crow, president of Arizona State University (ASU). When Crow left his post as executive vice provost at Columbia to become ASU president in 2002, he launched an effort to transform every aspect of how the university operates—including confronting the system's entrenched organizational conservatism.

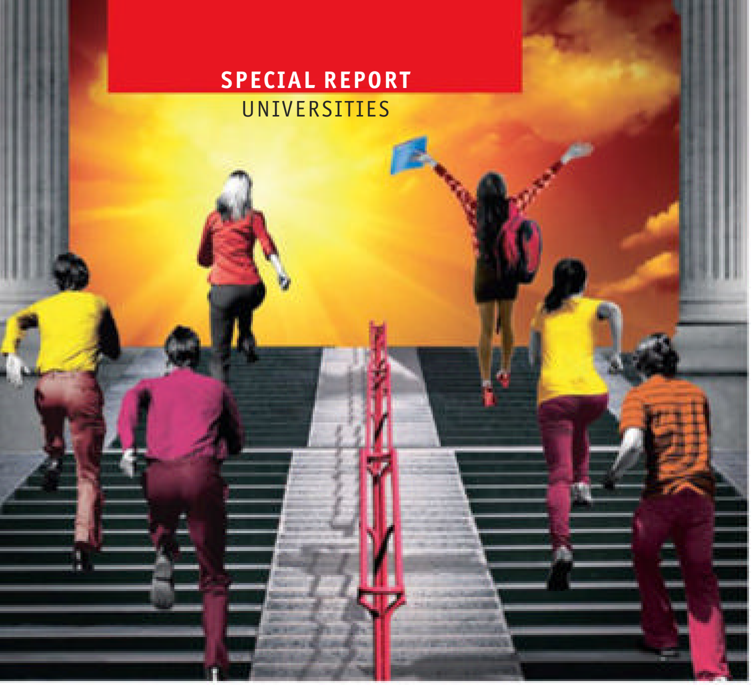
"Today, universities are incentivized to raise admission standards because the most selective schools are the highest ranked," Crow says. "We don't think measuring success by inputs is the ultimate model, nor is it sustainable." Instead, he believes that education should be affordable, accessible to all qualified students, and—crucially—measured by learning outcomes. To accomplish these goals, Crow sought to reorient the way education is delivered to help students develop the critical thinking skills they need to thrive after college.

ASU became the real-world proving ground for Crow's vision. He instituted a new pedagogy, merging separate departments and separate schools into interdisciplinary schools and colleges. He replaced the semester system for a six-module system, enabling students to cover 15 weeks of material in half the time. And he deployed new technology applications to support everything from instruction and advising to operations.

These changes have transformed ASU: graduation rates have doubled and research expenditures have tripled. The engineering school has grown to 17,000 students, from 8,000. With one of the largest undergraduate student populations in the United States, ASU is now able to scale academic excellence while maintaining accessibility; the school attracts approximately 11,000 academically distinguished freshman each year, as well as more Pell-eligible students than all the Ivy Leagues combined.

In his new book, *Designing the New American University*, Crow seeks to redefine the role of higher education in society, asking, "Can you build a public university that is accessible to all aspiring social classes?" He presents a history of the four "waves" of American university evolution, from the colonial colleges of the 17th and 18th centuries through the late–19th century founding of the first American research university. The fifth wave must break from this evolutionary pattern to ensure universities of the future are adaptive, partnership-oriented, technology-enabled, and scalable.

"Everything is changing, and if universities stay static, they will dramatically underperform in preparing people for what lies ahead," Crow says. "Our role as educators is to produce master learners from the entire breadth of society in large numbers at the lowest possible cost without giving up anything. This is what the new American university has to deliver."



Competition has intensified not just for excellent academics but also for excellent students

Al Jazeera, Qatar's news outfit); Georgetown does foreign studies (for Qatar's regional foreign policy); and so on. Nazarbayev University in Kazakhstan and Songdo University in Incheon, South Korea, have adopted the same model.

Most countries, though, work with the universities they have got and try to improve the quality of their top institutions. China has a project called "985", launched in May 1998, to which the Shanghai rankings were a response. Germany launched its Exzellenzinitiative in 2005. In 2011 Nicolas Sarkozy, then France's president, announced a programme to create a "Sorbonne league"—clusters of universities and organisations affiliated to its Centre National de la Recherche Scientifique—to compete with America's Ivy League. Russia has started a project called "5-100" to get five universities into the *Times Higher Education* top 100. Japan, under its Super Global Universities Programme, will give selected universities extra funds, with the bulk going to 13 research universities. Britain has tweaked its system to hand more research money to the top tier and less to the middle-rankers (the bottom layer never got any anyway).

Excellent universities need excellent faculty, so competition for them has increased. Among the big markets, Australia, America and Canada universities are (on average) the best payers, but some of the new Gulf employers offer twice as much.

Pay for the best is rising in China, too. The country's universities were destroyed during the Cultural Revolution. As part of Deng Xiaoping's modernisation programme, Chinese students were sent abroad to study, and many did not return. In 2008 the country launched a programme, "Thousand Talents", to entice more of them back. Scholars get a 1m yuan ($160,000) "resettlement grant", and universities use research funds from the government and industry to raise salaries. One of its successes is Shi Yigong, a former Princeton professor who is now professor of life sciences at Tsinghua University. He has (somewhat) narrowed the gap between salaries in his department and those in Western universities. When he returned in 2008, a full professor earned around 100,000 yuan ($14,400) a year; now the figure is more like 300,000-500,000 ($50,000-80,000) a year. Professor Shi is particularly proud of having recruited a scientist who had a job offer from Cambridge, though he says that he still has difficulty attracting talented young scientists with faculty positions from Harvard, Stanford or Princeton.

Competition has intensified not just for excellent academics but also for excellent students. Singapore's "global schoolhouse" strategy, launched in 2002, set a target of attracting 150,000 students by 2015. International students pay more than locals, but the scheme was not designed to make money out of them. Singaporean talent scouts roam the region, generous scholarships are offered to the brightest, and tuition fees are cut for those who stay to work when they have finished their degrees—in sharp contrast to Britain, which chucks out most international students the moment they have graduated. The idea, according to Lee Hsien Loong, Singapore's prime minister, was to "attract talent from all over the world to add sparkle to our diamond".

Germany, too, is keen to welcome foreign students. Again, this is not to make money, since the universities do not charge tuition fees. Chinese students are prominent, as they are everywhere else. "Our demographics mean we are in need of foreign talent," says Georg Krücken, director of the international centre for higher-education research at Kassel university. "These students are nodes in a global network of talent."

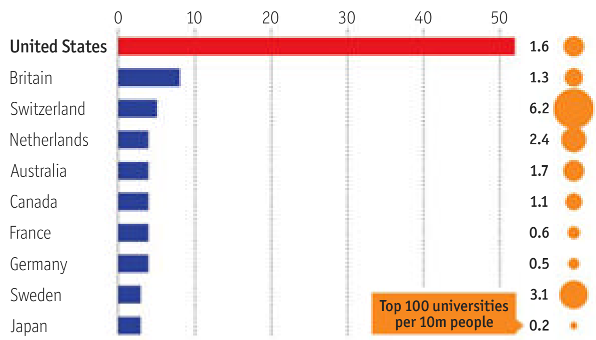
There are plenty of worries about the effects of rankings. Bahram Bekhradnia, president of Britain's Higher Education Policy Institute, reckons that "they're worse than useless. They're positively dangerous. I've heard presidents say this all over the world: I'll do anything to increase my ranking, and nothing to harm it." That is hardly surprising, since universities' boards commonly use rankings as a performance indicator for determining presidents' bonuses.

One concern is that these metrics measure inputs rather than outputs. "The indicators are resource-intensive. They're about wealth," says Professor Hazelkorn. Some are also unreliable. A staff-student ratio is easily manipulated and says nothing about the quality of the teaching. But the main objection is that most of the metrics, directly or indirectly, concern research. There are no good internationally comparable measures of teaching quality. So one of Mr Salmi's favourite universities, the Franklin W. Olin College of Engineering in Massachusetts, which he says "provides a superb learning experience to its students", does not feature in international rankings because it does no research.

Justin Lin, a former chief economist at the World Bank and currently director of the China Centre for Economic Research at Peking University, has a habit of swimming against the tide. In 1979 he defected from the Taiwanese army to China, swimming

Mighty minds 3

Number of universities* in Shanghai ranking top 100, 2014-15



Sources: ShanghaiRanking.com; UN; *The Economist* *More than two across the narrow strait from Taiwanese-administered Kinmen to the mainland. These days his contrarian nature has tamer outlets: he doubts that China should be in the race to create world-class universities if the concept is defined by the number of its faculty's publications in journals dominated by the West's research agenda. "Who cares about world-class research if it doesn't apply to the conditions that you are in?" he asks.

The tallest poppies

Higher salaries for academics returning home are causing rancour. When Professor Shi circulated a proposal for offering generous salaries and ample research funds to top-flight scientists from abroad, he was criticised. "Some people said that they contributed to China's past development while these recent returnees stayed away in the West, but now these guys want luxury." In Singapore the shortage of places for locals has caused anger. Incentives for clever foreign students have been cut back.

In Germany the idea of promoting a few universities above the rest has met with resistance. "The myth of the German university is that all universities are equal. There has been a lot of criticism of [the excellence initiative]," says Professor Krücken. The government has responded by setting up a new initiative, focused on teaching, not research, and covering more universities.

Europeans, cross that they did so badly in rankings designed by the Chinese and the Anglo-Saxons, have started their own systems. France's Ecole des Mines has produced the "Professional Ranking of World Universities"—the number of graduates from an institution who are running *Fortune* 500 companies—in which the French do nearly as well as the Americans and better than the British. The European Union has created the U-Multirank, a ratings system which gives different answers depending on the search criteria, to get away from the zero-sum competition of rankings. There is a virtue in that: a single indicator is rarely a good measure of quality.

But since the U-Multirank offers students little information on British or American universities, it is of limited use to those with global horizons. Anyway, politicians and university presidents, like the rest of humanity, are competitive creatures: nothing will stop them measuring themselves against each other. The main constraint on the race is not aversion to competition but the scarcity of funds. That is one reason why higher education is, increasingly, turning to the private sector for money. ■

A pearl in the desert

A controversial Middle Eastern outpost of an American educational empire

JOE JEAN, A 25-year-old Haitian, cannot believe his luck. In the aftermath of the earthquake of 2010, University of the People, an American online university, offered scholarships to Haitians. Mr Jean took one of them up to study computer science and, as one of UoPeople's top students, was offered a place at New York University's Abu Dhabi campus. He gets his tuition and living expenses paid, plus a stipend of $500 a quarter and two flights home a year.

NYU Abu Dhabi started up in 2008. In 2014 it moved to a new campus on Saadiyat Island, which, in contrast to the rest of the emirate, is intended as a haven of culture and beauty. The path that snakes past its minimalist white buildings is bordered by neat lawns, water features and shaded benches; an elevated walkway recalls New York's Hi-Line park. For now, most of Saadiyat Island is a building site, but NYU's neighbours will soon be local outposts of the Guggenheim, the Louvre and the Sorbonne, housed in equally elegant buildings.

Abu Dhabi's rulers want to turn the emirate into "one of the world's true cultural capitals" and to improve its education system, according to Khaldoon al Mubarak, an aide to Abu Dhabi's crown prince, who is on NYU's board of trustees. The country's ambitions may have been piqued by the extraordinary flourishing of culture in neighbouring Qatar, capped by I.M. Pei's stunning Museum of Islamic Art. For the privilege of hosting NYU, Abu Dhabi has forked out an initial donation of $50m and paid for the campus. It also covers most students' tuition and living costs. When it is full, there will be 2,000 of them, the great majority of them non-Emiratis. If they cost as much to educate as do students at top American universities, the bill must be over $100m a year.

The Abu Dhabi campus, along with one in Shanghai, fulfils the dream of John Sexton, NYU's president, to create a "global networked university". It has, he says, led to "an extraordinary elevation of brand", as well as more concrete benefits, including contributions to overheads (including his salary), new jobs and the ability to hire people who would not have come otherwise. "For 15 years I had been trying to get Anthony Appiah [a British philosopher, formerly at Princeton] to come to NYU. One trip to Abu Dhabi, and he came."

Some faculty are hired directly to the Abu Dhabi campus; some come from New York for stints of a few weeks to a few years. The money is good—up to twice as much as at home—and conditions are exceedingly comfortable, with pleasant apartments on campus and drivers on tap. One academic describes it as "like living in business class". The material rewards are not the only attraction. "The teaching is amazing here," says Justin Blau, a professor of biology at the campus. "The classes are really small, the students more motivated." And everything is so new that "it allows us to do things differently." The experimental research building, for instance, brings together biology, engineering and chemistry, enabling scientists to work across departmental boundaries.

Not everybody is happy. Mr Sexton has rubbed the faculty in New York up the wrong way over pay and property development, and the Abu Dhabi venture is another manifestation of his "imperial presidency", according to Andrew Ross, president of the local chapter of the American Association of University Professors in New York. There have been allegations of abuses of the workers who built the campus, and questions about whether an institution that depends on freedom of speech can flourish in an autocracy. "It's a monarchy, not an autocracy," says Mr Sexton, describing the crown prince, Mohammed bin Zayed al Nahyan, as a "philosopher-king".

Mr Al Mubarak has described Abu Dhabi's commitment to NYU as "a Catholic marriage. It's forever." But the campus is, inevitably, vulnerable to the vagaries of the oil price and Middle Eastern politics. A visit to it in a sandstorm, with clouds of dust blowing into the pristine buildings, makes an Ozymandian fate easy to imagine. For now, though, it provides a first-class education to young people from all over the world who would not otherwise be able to afford one. Back on the mainland, the Emirates Palace Hotel, with its Las Vegas-style decor and a vending machine that sells gold bars, serves as a useful reminder that there are worse ways to use surplus wealth.

Privatisation

Mix and match

Both provision and funding of higher education is shifting towards the private sector

THE STUDENT STRIKE in Quebec in 2012 did not just bring down the province's government; it also revealed deep cultural differences in ideas about university funding. French Canadian students, influenced by European thinking, were outraged that their government had proposed raising tuition fees from C$2,168 ($2,168) a year to C$3,793; the rest of Canada, used—American-style—to much higher fees, was baffled by their fury.

In most European countries the state pays 80-100% of the costs of tuition. The main advantages of this model are equity and cost control. Where it works well—in northern Europe—graduate education levels are uniformly high. Where it works badly—in southern Europe—they are uniformly low.

American uses mixed funding, with individuals paying most of the costs of tuition and the government helping out with loans and grants. In some countries with similar models, such as Japan and South Korea, individuals and families pick up the tab. These systems tend to be better funded and more expensive than the European ones (see chart 4, next page) because people fork out readily, and costs are harder to control.

The mixed-funding model is spreading. That's partly because rising demand has increased the burden that higher education places on government budgets. So has "Baumol's disease", which increases the relative cost of labour-intensive industries, such as health and education, as technological change lifts the productivity of capital. Ageing populations are pushing up health bills, so education—another huge chunk of government spending—loses out; and since the social benefits of primary and secondary education are clearer than those of tertiary education, universities tend to suffer the most.

One option is to allow quality to deteriorate. That has happened in many European countries. In Germany students commonly pack lecture halls in their hundreds. "We have more and more students," says Georg Krücken of Kassel university, "but the number of professors doesn't grow at the same pace."

Another option is to make individuals pay more. In America, retrenchment in state budgets has pushed up tuition fees. In California, for instance, they have tripled over 15 years, and a further 28% rise is proposed. Outside America, the first big shift towards private funding happened in Australia, where tuition fees were jacked up in the late 1980s. A host of other countries followed, including New Zealand, Chile, South Africa, some of the former Soviet republics, Britain and Thailand. China used to impose no fees at all; now it charges 5,000-10,000 yuan ($800-1,600) a year, not much for an urban family but a lot for a rural one. Countries with good universities increasingly rely on foreign students—who tend to pay more than domestic ones—as a source of revenue. In Britain, for instance, nearly a fifth of students are foreigners. International flows of students are up from 1.8m in 2000 to 3.5m in 2012.

Another source of private funds for universities is philanthropy. Endowments at some American universities dwarf income from fees. Institutions elsewhere are scouring the globe for wealthy alumni. Cambridge, which has done best out of the British universities, had collected £4.9 billion ($7.6 billion) by 2012. Sometimes philanthropy extends across borders: in 2013 Stephen Schwarzman, chief executive of Blackstone, a private-equity company, handed over $100m to establish a scholarship programme at Tsinghua University.

Horses for courses

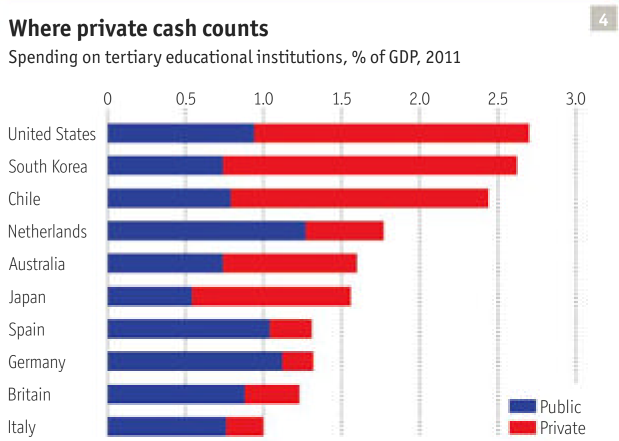
The biggest provider of higher education that nobody has ever heard of is Laureate, an American for-profit education company with revenues of $4 billion, nearly 1m students and 70,000 staff. It does not promote its brand because it prefers to be known through the names of the 80-plus universities and colleges it owns all over the world.

Private provision is growing. In some systems, private colleges (usually non-profit ones) provide a first-class education. That is true in America and is beginning to happen elsewhere, including India. Philip Altbach, director of the Centre for International Higher Education at Boston College, describes India's higher-education system as "a sea of mediocrity in which islands of excellence can be found". But those islands—such as the Indian Institutes of Technology—are accessible only to a lucky few. New private non-profit institutions are helping to broaden the provision, including Azim Premji University in Bangalore (whose eponymous founder made his fortune from Wipro, an IT company) and Shiv Nadar University near Delhi (the money for which came from HCL, another IT company). These new non-profits are too few and far between to transform India's system, but they may well create a wider choice of high-quality islands.

In much of Latin America, governments have handed over the job of providing mass higher education to the private sector. The results are patchy. In some countries, such as Brazil and Colombia, the state does a decent job of providing quality assur- ▸▸

Where private cash counts

Spending on tertiary educational institutions, % of GDP, 2011



Source: OECD

ance, and there are many good private-sector outfits, both local and foreign-owned. Laureate has 11 colleges and universities in Brazil; nine have seen their scores improve since Laureate took them over, one has deteriorated and the remaining one has been bought too recently for the effects to have become clear.

In most of the world the private sector is active at the margins of higher education. Private for-profit companies, such as Kaplan and Apollo, both American companies serving the global market, tend to supply the more vocational end, like courses in law and accountancy. They cater to older students, often working people or parents, for whom the standard campus-based three- or four-year degree is not suitable. They also bring international students up to the level of the rich-country universities in which they have enrolled. The numbers in both categories are large and growing, so these are healthy markets.

As the protests in Quebec showed, raising tuition fees can be politically explosive. Several German states introduced such fees a decade ago and all have since abandoned them. "Tuition fees didn't fit well into the German tradition," says Professor Krücken. "Here higher education is seen as a public good." In Chile, student protests against the cost of higher education helped oust the government in 2013; the new government is committed to eliminating tuition fees. And Britain's Labour Party promises that if it wins the general election in May, it will bring down the maximum fee from £9,000 to £6,000 a year.

He who pays the piper

Advocates of private funding say that it makes students more demanding and universities more responsive (though they often forget to add that it may also increase the pressure to inflate grades). Sir Steve Smith, vice-chancellor of Britain's Exeter University, says his university spent £470m in 2009-14, raised from donations, borrowing, the government and its own cash, on getting the campus up to scratch: students paying fat fees expect decent facilities. The university is also making extra academic efforts: it has, for instance, promised that students will get essays marked and returned within three weeks of submitting them.

A decade ago Exeter had 11,000 students. Now it has 19,000 and plans to expand to 22,000. As better universities get bigger, worse ones will come under pressure. More reliance on philanthropy will mean that rich universities, which tend to produce rich alumni, will get richer still. Greater independence from government tends to make higher education systems more stratified, and thus more American—just when America itself is increasingly worried about its own system. ■

America

A flagging model

America's higher-education system is no longer delivering all it should

IN HIS PROPOSAL for reforming the curriculum at William and Mary College in Virginia, Thomas Jefferson wrote that it should nurture "those talents which nature has sown as liberally among the poor as the rich, but which perish without use, if not sought for and cultivated". Inspired by Jefferson, Americans expect higher education to boost the chances of disadvantaged people, but it seems to be failing in that task—and in some of the other jobs its customers want it to do.

Higher education has two sets of customers: students and the government. Students want all sorts of things from it—to make friends, sharpen their minds and get away from home. But most of all they want it to improve their economic prospects.

Despite rising costs, college still does that. An investment in a four-year degree offers a return of around 15% a year for somebody working until the age of 65, a figure that has been steady since 2000. But the returns have held up not because graduates have done so well but because those with only high-school degrees have done so badly (see chart 5, next page). And although average returns remain decent, the range is vast. According to Payscale, a pay consultancy, it varies from +22% to -21%. Rising inequality increases the range of possible outcomes, and hence the risk of taking on student debt.

Governments want three things from higher education: research, human capital and equity. On the research side, America's government has little to complain of. Although several European countries have more Shanghai top 100 universities in relation to their population than the United States does, America still dominates the summit of research: 19 of the world's top 20 universities in Leiden University's ranking of most-cited scientific papers in 2014 were American.

On the human-capital side, things look less good. In 1995 America had the highest graduation rate in the OECD. Now it lags behind seven other countries. President Barack Obama has set a target for his country to return to the top of the graduation league by 2020, but it is unlikely to be met. Young American graduates are below the OECD average in numeracy (see chart 5, next page) and literacy, and are doing relatively worse than older ones. Some of the explanation lies with the poor performance of America's schools, but the most expensive tertiary-education system in the OECD might be expected to help students catch up.

Recent work by American academics suggests that it does not. Richard Arum of New York University and Josipa Roksa of the University of Virginia, authors of "Academically Adrift", looked at the results of 2,300 students who took the Collegiate Learning Assessment (CLA), a test of critical thinking, complex reasoning and writing, and found that 45% of the sample showed no significant gains between their first and third years.

On equity, the results also look bleak. Graduation rates between rich and poor are diverging (see chart 5, next page). Given the difference in spending on those at the top and at the bottom, that is perhaps not surprising. "Community colleges", says Derek Bok, a former president of Harvard, "spend roughly $10,000 per student. Harvard probably spends over $100,000. And our students are much easier to teach." The combination of state spend-

ing cuts, which have led some community colleges to restrict entry, and endowments lifted by booming stockmarkets is increasing the gap further.

In real terms, tuition fees have nearly doubled over 20 years. Big bills mean big debts (see chart 5). Nearly a third of students are in default, and the rate is rising. Student loans can rarely be discharged, even by bankruptcy, so default damages people's credit history, makes it hard to get mortgages and thus both harms people's welfare and acts as a drag on the economy. Given unprecedented default rates, there are worries that the federal government will be stuck with a lot of the debt.

Not what it seems

In most markets, the combination of technological progress and competition pushes price down and quality up. But the technological revolution that has upended other parts of the information industry (see box, next page) has left most of the higher-education business unmoved. Why?

For one thing, while research impact is easy to gauge, educational impact is not. There are no reliable national measures of what different universities' graduates have learned, nor data on what they earn, so there is no way of assessing which universities are doing the educational side of their job well. Universities are paid on the basis of research, not educational, output.

Students, meanwhile, are not buying education any more than the government is. They are buying degrees, whose main purpose is to signal to employers that an individual went to a—preferably highly selective—university. Harvard degrees are valuable because there are so few of them. Harvard therefore has no incentive to make them cheaper, nor to produce more of them: that would make them less precious.

This helps explain why America's universities are failing to deliver equity. People are prepared to pay through the nose to buy advantage for their children, so top institutions charge ever higher prices and acquire ever more resources, while those at the bottom get less. That does not serve the Jeffersonian ideal of nurturing the talents of the poor as well as the rich for the greater good of society. So higher education has a divided soul: it is both a great collective enterprise to increase the nation's welfare and a fight to the death between status-hungry parents.

Employers are not much interested in the education universities provide either. Lauren Rivera of Northwestern University's Kellogg School of Management interviewed 120 recruiters from American law firms, management consultancies and investment banks. Their principal filter was the applicant's university. Unless he had attended one of the top institutions, he was not even considered. "Evaluators relied so intensely on 'school' as a criterion of evaluation not because they believed that the content of elite curricula better prepared students for life in their firms…but because of the perceived rigour of the admissions process," Ms Rivera wrote. After the status of the institution, recruiters looked not at students' grades but at their extracurricular activities, preferring the team sports—lacrosse, field-hockey and rowing—favoured by well-off white men.

If employers are not interested in grades, students might as well take it easy. That is, indeed, what they seem to be doing. Time-use studies show that the time students spend in class or studying has dropped from 40 hours a week in the 1920s to the 1960s to 27 hours a week now. And since academics are promoted largely on the basis of their research, they might as well give up teaching. That is, indeed, what they seem to be doing. Tenured faculty—the ones with the well-paid, secure jobs—spend less and less time with undergraduates. Increasingly, teaching is done by "non-tenure-track" faculty on short contracts. Mr Arum and Ms Roksa conclude that "no actors in the system are primarily interested in undergraduate student academic growth."

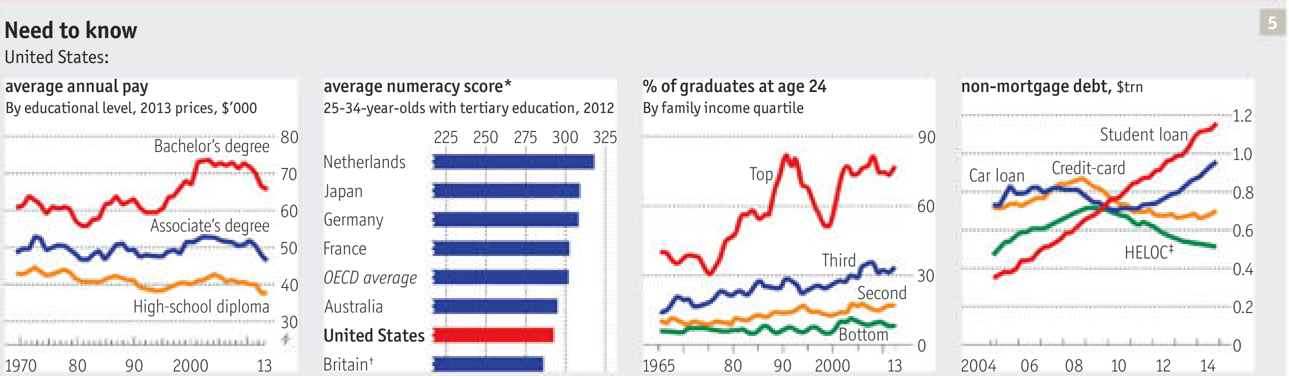
The peculiar way in which universities are managed contributes to their failure to respond to market pressures. "Shared governance", which gives power to faculty, limits managers' ability to manage. "It was thought an affront to academic freedom when I suggested all departments should have the same computer vendor," says Larry Summers, a former Harvard president. Universities "have the characteristics of a workers' co-op. They expand slowly, they are not especially focused on those they serve, and they are run for the comfort of the faculty."

Cost control is especially hard. As Clark Kerr, who designed the Californian higher-education system in the 1960s, wrote: "The call for effectiveness in the use of resources will be perceived by many inside the university world as the best current definition of evil." Bringing about change is also tough. Change is rarely welcome, but in most organisations competition makes it inevitable. Mr Kerr doubted that university faculty "can agree on more than the preservation of the status quo". Academics' resistance to change gains added strength from their belief that education is not an occupation but a calling; and that to defend it against barbarians is not self-interest but moral duty.

But the pressure for change is growing. Some of it comes from the federal government, which is trying to make higher education more equitable and to get more value for money. On the equity side, Mr Obama announced in his state-of-the-union address in January that attending community college would be free for most people. But since the least well-off already get grants to cover their living expenses as well as tuition costs, it is not clear how much difference that will make.

Need to know

United States:



Sources: Federal Reserve Bank of New York/Equifax; OECD; Pell Institute; US Census Bureau

* Range: 0-500 †England & N. Ireland ‡Home equity line of credit

Not classy enough

Online learning could disrupt higher education, but many universities are resisting it

WHEN MASSIVE OPEN online courses (MOOCs) took off three years ago, there was much concern that they would destroy traditional universities. That isn't happening. "We're doing a better job of improving job skills than of transforming the university sector," says Rick Levin, a former president of Yale, who runs Coursera, the biggest of the MOOCs.

At the margins, technology is making education cheaper, more convenient and more effective. University of the People, a non-profit American-accredited online university, offers degrees to students all over the world at a total cost of $4,000; if they are poor, they can get scholarships. It started teaching in 2009, was accredited last year, has produced 65 graduates so far and now has 1,500 students. The faculty is made up of academics who volunteer their services.

The convenience of online study makes it especially suitable for working people. According to Phil Regier, dean of Arizona State University (ASU) Online, the market for online degrees in America is the 30m or so 25- to 40-year-olds who dropped out of college first time round. Mr Levin says that 85% of Coursera's students are over 22. The for-profit companies are also big providers of education to older people, and they increasingly rely on the internet. Of Kaplan University's 42,000 students, 94% study online. A handful of state universities are also in the online market: ASU has 13,000 online students as well as 70,000 on campus.

Derek Bok, the former Harvard president, is optimistic that computers can make teaching more effective: "Technology is gradually causing a number of professors to re-examine the way they teach, away from a passive form of learning to a more interesting and active form." Carnegie Mellon University developed an introductory statistics course in which professors teach for less than half the time they do in the traditional model, and students spend more than half their time on a computer programmed to help them when they get stuck. Only when a student has got the hang of that part of the course will he move on to the next.

William G. Bowen, a former president of Princeton University, tested such courses at several universities and found that students learned as much as with conventional teaching in three-quarters of the time, with cost reductions of 19-57%. Carol Twigg, president of the National Centre for Academic Transformation, tested similar methods in 156 projects, with similar results.

Established companies such as Kaplan, Apollo and Pearson (which owns 50% of *The Economist*) are all investing in "edtech", and a host of startups are piling in too. Kevin Carey, author of "The End of College", believes that electronic "badges" now being created by a number of startups, proving that the holder has earned a particular qualification (at a relatively low cost), will eventually undermine traditional high-cost university education. But so far edtech has not made much of a dent in it.

One reason is that universities are wary of undermining the value of their degrees. So the certificates that students get for completing MOOCs do not, by and large, count towards degrees, and are therefore unlikely to make much difference to their earnings. And online degrees tend to be priced so that they do not undercut the traditional, campus-based sort: at ASU they cost $60,000, compared with $40,000 for campus-based degrees for in-state students and $80,000 for out-of-state students. Thus they have not helped hold down costs.

Resistance by faculty also slows down the adoption of new technology. When academics at San Jose State University were asked to teach a course on social justice created for Edx, a MOOC, by Michael Sandel, a Harvard professor, they refused, telling Mr Sandel that such developments threatened to "replace professors, dismantle departments and provide a diminished education for students in public universities". Similar protests have been echoing around the country. For now, the interests of academics generally prevail over those of students.

On value for money, the government has launched an attack on for-profit colleges. A report by a congressional committee published in 2012 found that for-profits had a 64% drop-out rate and spent 22% of revenues on marketing, advertising, recruiting and admissions, against 18% on teaching. The government is asking colleges to ensure that average debt repayment of graduates on their programmes is below a set percentage of graduates' incomes. For-profits point out that they don't control students' borrowing, nor can they control incomes, which depend on the economic cycle. They maintain that the measure—currently stuck in the courts—would damage equity: since poorer students are more likely to get into financial trouble, "the powerful incentive", says Andrew Rosen, chairman of Kaplan, "is to jettison the least-prepared students."

Better information about the returns to education would make heavy-handed regulation unnecessary. There is a bit more around, these days, but it is patchy. The CLA has been used by around 700 colleges to test what students have learned; some institutions are taking it up because, at a time of grade inflation, it offers employers an externally verified assessment of students' brainpower. Payscale publishes data on graduates' average income levels, but they are based on self-reporting and limited samples. Several states have applied to the IRS to get data on earnings, but have been turned down. The government is developing a "scorecard" of universities, but it seems unlikely to include earnings data. "A combined effort by the White House, the Council of Economic Advisers and the Office of Management and Budget is needed," says Mark Schneider, a former commissioner of the National Centre for Education Statistics. It is unlikely to be forthcoming. Republicans object on privacy grounds (even though no personal information would be published); Democrats, who rely on the educational establishment for support, resist publication of the data because the universities do.

There is pressure on the sector from the market as well as from the government. After years of big increases in tuition fees, universities are facing resistance from the customers, and financial prospects for the sector are looking gloomy. Moody's has a negative outlook: universities are "expecting the weakest net tuition revenue in a decade in fiscal year 2015". It expects tuition fees at public universities to rise by an average of only 1.9%, though at private universities the increase is likely to be a more comfortable 2.7%. In the past five years college enrolment among those finishing high school has fallen, as cash-strapped community colleges turn applicants away and for-profits restrict recruitment of marginal students.

"America seems to have hit a wall," says Simon Marginson. The country that has given the world so many ideas about how to run higher education could do with some new ones itself. ■

Policy options

Having it all

Ideas for delivering equity as well as excellence

IN ORDER TO produce innovative research and to stretch the best brains, a modern, democratic country needs excellent universities. In order to provide equality of opportunity and exploit people's talents to the full, it needs to give its cleverest young people a chance of getting into the best institutions regardless of their incomes and to offer everybody who wants to earn a degree a chance of doing so at a reasonable cost.

America's higher education system is doing well at creating excellence, but struggling with access and cost control. Given that much of the world is heading in its direction, the problems it is experiencing are likely to be replicated elsewhere. But measures can be taken to mitigate them.

Finance can make it easier to access higher education. In America, the government provides loans for all, which students have to repay irrespective of their earnings, and grants for the poor. The Obama administration has increased grants and eased loans to reduce the burden on the least well-off, but the combination of high costs and a fundamentally unforgiving loan system is discouraging the squeezed middle.

Australia's system of income-contingent loans lets students off making repayments unless and until their earnings reach a certain threshold. While leaving individuals to bear the bulk of the costs of tuition, they have not deterred the less well-off from going to university. There is a danger that the state may end up with a large bill, if the threshold is set too high or the economy underperforms; to keep the bill down, Australia's government charges higher earners more. Eight other countries have adopted similar systems. America should do the same.

Greater efforts need to be made to control the costs of higher education. Technology can help. Universities should be more adventurous in giving people access to their offerings online and in using technology to make education more effective. They might think that controlling costs is not important to them, but they would be wrong: in America the universities' customers are fed up with high fees and have started to vote with their feet.

The question is how higher education can deliver both equity and excellence without breaking the bank

Higher education needs to do more to prove its worth. At present, although it is clear that individuals, on average, benefit from a college education, it is not clear whether this is because their degree certificate signals to employers that they were clever enough to go to university or because their studies added to their human capital.

Latin American countries are leading the way in trying to find out. Their reliance on the private sector makes them especially conscious of the need to get value for money. In Brazil a federal government agency tests all graduate students before they enter a programme and after they have finished in order to measure the value the degree has added. Brazil now produces about as many scientific papers as the rest of Latin America put together.

Colombia has gone one further. In 2010 it started testing undergraduate students when they leave university, and compares the results with tests taken when they arrive to assess how much they have learned. It publishes average grades, along with average earnings, of graduates from different programmes at different universities, thus helping students decide where to go to university and what to study. Such rich information obviates the need for the heavy regulation that the American government is currently applying to for-profit universities.

The OECD is trying to establish a system for assessing what students all over the world have learned at tertiary institutions, similar to its widely watched PISA assessment of secondary-level achievement. AHELO, the proposed tertiary system, would start with economics and engineering, testing students both on their subjects and on their reasoning abilities. This would help young people decide where to study and employers to understand the value of their qualifications; it would encourage complacent universities to sharpen up their act and governments to put pressure on them to do so. "Nobody is telling young people the truth," says Andreas Schleicher, director of education and skills at the OECD. "They work hard to get a degree, but often when they get into the labour market they find it's not worth what they thought."

The OECD has been trying to get AHELO off the ground for eight years. A successful pilot convinced Mr Schleicher that the problems were not methodological or operational but political. The Japanese, Chinese and South Koreans are keen, he says: "They know that if they're going to compete in a global market they need proper metrics." The Americans are not. "It's difficult to get buy-in from elite institutions that have a lot to lose." There is no public opposition, but not much progress either. A former American official describes their approach as "foot-dragging". That is a shame: governments and students both need to know what they get for the money they pour into universities.

The American model of higher education has brought immense benefits to the world, and its global spread is to be applauded. But for all its virtues, it is expensive and inequitable. Costs are hard to control and value for money is hard to measure. Resolving these problems is partly up to governments, the universities' most powerful customers, but also up to the universities. The institutions that have done so much to change the world need to embrace change themselves. ■

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Politics

The devil, or Mr Wang

BEIJING

China's second most powerful leader is admired and feared

FEAR is Wang Qishan's favoured weapon. As leader of the Communist Party's most sustained and wide-ranging anti-corruption campaign in its history, he often urges his investigators to be "frightening". One story goes that at a meeting of the party's Central Commission for Discipline Inspection (CCDI), convened after Mr Wang took charge of it in November 2012, senior members—themselves among the most feared officials in the party—were presented with dossiers of their own sins. Mr Wang's aim, it appeared, was to terrorise the enforcers themselves. Failure to uncover high-level graft, he has warned them, would be "dereliction of duty".

At the time, a few were said to have grumbled—relentlessly pursuing the powerful over ill-gotten gains had not been a common feature of the unruffled life of a CCDI official. Before taking up the job, corruption had not even been Mr Wang's preoccupation. A one-time banker and mayor of Beijing, he had gained a reputation as a troubleshooter during crises such as a deadly outbreak of Severe Acute Respiratory Syndrome in 2003 and the global financial crisis of 2008-09. To foreign dignitaries he even came across as affable: the professorial face of a secretive leadership. Now few dare to complain. At the age of 66, Mr Wang is the sixth-ranking member of the Politburo but is clearly second only to President Xi Jinping in the power he wields. He is perhaps the most feared.

On Mr Xi's behalf, Mr Wang (pictured above, left, with Mr Xi) has waged an assault on the vast machinery of the party that is unprecedented in its scale, complexity and ambition. Its targets have included high-ranking opponents of Mr Xi, but it is more than just a vendetta. Fear has spread throughout the bureaucracy and the management of state-owned enterprises. Mr Wang's army of hundreds of thousands of party investigators, who have licence to detain and interrogate suspects without legal restraints, have taken down senior officials in redoubts such as the domestic security apparatus and the People's Liberation Army, powerful state-owned enterprises and state regulators.

Tougher treatment

Number of senior officials being investigated by procuratorates for corruption*

Source: Supreme People's Procuratorate of China

*Including dereliction of duty

More than one-third of provinces have lost at least one member of their senior party leadership to corruption inquiries. The coal-mining province of Shanxi has lost the majority of its 13-member party leadership. Last year Mr Wang authorised the punishment of nearly 200 of his own investigators there. The largest oil company, China National Petroleum Corporation, has lost so many senior executives that designated replacements are reportedly at the ready should more disappear into Mr Wang's clutches. That is likely: those detained are pressed—and sometimes tortured—into confessing and giving up more names in a secretive, extralegal system known as *shuanggui*. Dozens of generals and numerous former aides to party elders, all the sorts of people usually spared such treatment in the past, have been caught in the dragnet. Long dreaded by party officials, the *shuanggui* system is said by some to have become even more brutal. Officials have said they "would rather see the devil" than Mr Wang.

Normal bureaucratic life has been widely disrupted. The party has acknowledged that many officials are so afraid that they try to avoid making important decisions for fear of standing out—who knows what secrets their rivals might divulge to investigators? Provinces and ministries gutted by the CCDI squads are in desperate need of personnel. On March 6th the party chief of Shanxi said his province still needed to fill nearly 300 vacancies left by graft investigations there, including the most senior party posts in three cities. Many officials will not be keen to apply, so tainted by corruption is Shanxi's reputation. ▸▸

Mr Wang and Mr Xi may deem such disruption to be an acceptable risk. From almost his first day in power Mr Xi has declared the party to be riddled with corruption; life-threateningly so, indeed. Predecessors have used similarly strong language, but Mr Xi appears to be taking the problem far more seriously. This partly relates to the scale of it: recent years of double-digit growth in a flimsy legal environment have enabled officials to make fabulous sums of money through graft. It also relates to a broader political concern, that corrupt networks have become an obstacle to the economic reforms needed to sustain growth in the years ahead. The party describes anti-graft investigators as breaking "factions" that have subverted central authority by blocking its reforms. Hence state-owned enterprises that control vital areas of the economy, including the energy sector, are among the main targets.

For now, Mr Xi and Mr Wang seem to have the support of those around them. The other five members of the party's highest ruling body, the Politburo Standing Committee, endorsed the detention of Zhou Yongkang, a former chief of domestic security who himself served on the committee until he retired in 2012 (he is the first man of his rank to be charged with corruption in the party's history). The same was true for Xu Caihou, a retired vice-chairman of the military high command, who was formally detained last year (he died of cancer on March 15th), and would be true for his fellow retired vice-chairman, Guo Boxiong, whose detention appears likely. By targeting such figures (Mr Xu and Mr Guo were the armed forces' two most senior officers) Mr Xi has strengthened his grip on the security establishment. Investigators appear to be preparing political charges against Mr Zhou, possibly that he colluded with a former Politburo member, Bo Xilai (now serving a life sentence), as well as with generals; many suspect they tried to challenge Mr Xi's rise to power.

Mr Xi, Mr Wang and others on the Politburo Standing Committee have paid visits to members of the so-called "red nobility", as relatives of former leaders are often described, to secure their co-operation. (Mr Xi and Mr Wang are princelings themselves.) Families belonging to the party aristocracy have so far escaped the worst of the anti-corruption campaign, but they have been told to turn over illegal assets to the state and rein in extravagant spending. Those so instructed have included Mr Xi's own relatives, who were reported by Bloomberg in 2012 to have amassed hundreds of millions of dollars (though the news service found no indication of wrongdoing by them or Mr Xi). It also includes associates of Jiang Zemin, a former president and party chief.

It is certain that some in the elite are resentful, though the threat they may pose to Mr Xi is hard to calculate. The inner debates of China's leadership are cloaked in intense secrecy. Last autumn sources close to the party leadership said they expected the anti-corruption campaign to wind down soon because of bad morale in the bureaucracy. That may have been wishful thinking: if anything, the campaign is intensifying. In the seven months to March 20th, 24 more ministerial-level officials have been detained for corruption, bringing the total to 69 in 28 months—more than double the number than in the previous five years under Mr Xi's predecessor, Hu Jintao. More than twice as many senior officials were investigated by prosecutors for corruption last year than in 2013 (see chart, previous page).

Mr Wang is due to retire in 2017, but he is trying to beef up the CCDI to enable it keep on catching "tigers", as senior targets are known. He has hired detectives from other agencies and forensic accountants from state-owned firms. He has also created a new, more powerful, internal-affairs unit to monitor anti-corruption officials.

Independent activists who dare to speak out about party corruption, however, are being suppressed as ruthlessly as the corrupt themselves. Mr Xi has presided over the toughest crackdown on dissent in many years, with the jailing of outspoken lawyers and a tightening of controls over the media and the internet.

Mr Wang has spoken of dealing with corruption in three stages. The first involves instilling fear, but the second would require strengthening rule of law to make it harder to be corrupt in the first place. The final stage would be to change China's political culture so that officials would not even think of taking backhanders. For now, however, there is nothing but fear itself. ■

High-tech sanitation

Race to the bottom

BEIJING AND TOKYO

A rush to buy Japanese toilet-seats prompts soul-searching in China

JAPAN is often viewed with antipathy in China, but increasingly commerce is trumping contempt. During the lunar new-year holiday in February, Chinese tourists thronged to Japan in record numbers. Many came home lugging a high-end Japanese luxury: a heated toilet-seat complete with pulsating water jets, deodorisers and even music to drown out less melodious tinklings. In recent weeks the run on Japanese loos has been a topic of much debate among Chinese commentators, revealing deep insecurities.

Chinese visitors bought more high-tech lavatory seats than almost any other Japanese product during the week-long break, according to Hottolink, a Japanese consulting firm. Most popular was a new variety with hands-free lid opening, say staff at a branch in Tokyo of Bic Camera, a consumer electronics store where Chinese shoppers are so numerous that signs advertise wares in Chinese and assistants speak Mandarin. These cost around ¥65,000 ($540). Some bought several seats, including portable, battery-powered ones.

Relations between China and Japan have shown recent, tentative signs of warmth after a long chill. But only three years ago demonstrators in several Chinese cities called for a boycott of Japanese goods in protest against Japan's stance in a still-festering dispute over uninhabited islands in the East China Sea. Some Japanese companies responded by minimising or hiding their branding on products sold in China.

China's state-controlled media have found little comfort in the discovery that many Japanese loos are actually made-to-order in China, a situation that is not confined to the water closet. Many Chinese consumers do not trust the reliability of such items sold at home—and refuse to pay the often higher prices charged for export-standard goods.

The thorny issue was even raised during meetings this month of China's parliament and its advisory body. The prime minister, Li Keqiang, chimed in, calling for Chinese firms to raise the quality of their own seats. "At least that could save consumers the price of a plane ticket," he said. Relations between the two countries may become bogged down in yet another intractable rivalry.

Also in this section

War in Yemen

Riyadh enters the fray

DUBAI

Saudi Arabia starts bombing its southern neighbour

SAUDI ARABIA was only going to tolerate the advances of the Iranian-backed Houthi rebels for so long. Early on the morning of March 26th the kingdom said it had started a military operation in neighbouring Yemen to push back the Houthis and reinstate the "legitimate government" of President Abd Rabbo Mansour Hadi.

The first air strikes hit Houthi positions in Sana'a, the Yemeni capital, including the airport and the group's political headquarters. They also targeted military bases controlled by loyalists of Ali Abdullah Saleh, Yemen's former president, who was ousted in 2011 and has been backing the Houthis, a Shia militia that occupied Sana'a in September and has rapidly taken over swathes of the country.

Adel al-Jubeir, the Saudi ambassador to America, says the strikes are the opening salvo in a campaign involving ten countries—mainly Gulf states as well as Jordan and Egypt. America said it was providing logistical and intelligence support.

The Saudi-led intervention comes after an advance by forces loyal to Houthis and Mr Saleh towards Aden, a strategic southern port to which Mr Hadi had fled earlier this year after the fall of the capital. The Houthi advance worries Saudi Arabia because the militiamen are backed by Iran, its main strategic rival for influence in the region (see next article). As the Houthis have moved south, so Iran's support for them has increased. Tehran recently announced twice-daily flights to Sana'a and said it will supply Yemen with oil.

When the Houthis advanced, taking an important military installation 60km (35 miles) northwest of Aden, Mr Hadi was rumoured to have fled again, this time to Riyadh, the capital of Saudi Arabia. He called for military intervention before he left. Yemenis fear that the Saudi action will catalyse the country's long-predicted collapse into what Jamal Benomar, the UN envoy to Yemen, has described as an "Iraq-Libya-Syria" scenario.

The air strikes have laid bare the divisions caused by the Houthis' rise. In the south of the country and in northern tribal areas populated by Sunnis, who fear dominance by the Houthi's Zaydi sect (a subset of Shia Islam), people are cheering the Saudi-led campaign.

But in Sana'a even the Houthis' sternest critics are dismayed by the foreign bombardment. Many Yemenis believe it will only lead to more fighting. "Saudi Arabia is fucking our country," says a Sunni tribesman who spent the night cowering with his family in Sana'a as blasts echoed through the capital.

The anti-Houthi groups' wish is not to bring back Mr Hadi—a man who ceded control of the capital without a fight six months ago; it is that the Houthi menace be brought to heel.

Yet Saudi Arabia's attempt to bring this about risks leading to an expansion of sectarian violence between Sunni and Shia. That is because Yemen will inevitably become a proxy battleground for Saudi Arabia, a Sunni bulwark, and Iran, the main Shia power.

Extremist Sunni groups are already active. Yemen is home to al-Qaeda in the Arabian Peninsula (AQAP), al-Qaeda's deadliest branch, and an affiliate of Islamic State, which claimed responsibility for the suicide bombings of two Zaydi mosques in Sana'a on March 20th, leaving at least 137 people dead.

Before he left the country, Mr Hadi was in the process of forming a 20,000 strong Saudi-backed militia. His opponents accuse him of arming and funding some Sunni extremist groups.

For the Houthis, the Saudi-led operation is a public-relations coup. In a vitriolic and paranoid speech on March 20th, their leader, Abdelmalek al-Houthi, accused the Gulf Arab states and America of plotting to destabilise the country in order to reinstall Mr Hadi as a puppet leader.

The Houthis have evolved into a highly effective guerrilla force after a decade of war against Mr Saleh and Saudi Arabia. With the backing of Saleh loyalists they are likely to prove a tough enemy.

"They control the skies and we control the ground," says a Houthi man in Sana'a. "This will be just like the sixth war in Saada when the Saudis lost Saudi territory," he says, referring to an earlier bombing campaign by the kingdom in 2009. Houthis responded to that by crossing the border and humiliating the Saudi army by seizing dozens of towns and villages. On March 26th, after threatening revenge against the "Zionist Saudi regime", they said that they had fired rockets across the border into Saudi territory. As so often in the Middle East, the Saudis may find that joining a war is easier than winning one. ■

Iran and Shia militias

The Shia crescendo

BAGHDAD, DAHIYA AND TEHRAN

Shia militias are proliferating in the Middle East

LITTLE more than a decade ago King Abdullah II of Jordan sounded a warning that America's toppling of Saddam Hussein in Iraq would lead to the emergence of an Iranian-influenced "Shia crescent"—code for Iranian expansion—from Lebanon to Saudi Arabia. His words were dismissed as alarmist. Now, though, that vision might be coming about. As Arab states have broken up, the void has been filled not only by the Sunni jihadists of Islamic State (IS) but also by the makings of a transnational Shia force backed by Iran.

Iran's allies are propping up Bashar Assad in Syria, halting the advance of IS in Iraq and spreading Iranian influence in Yemen. More important is that once-disparate armed groups are now communicating and fighting side-by-side, giving the impression of a cross-border Shia-flavoured movement.

The most visible signs of emerging Shia power in the Arab world are in Iraq, where an assortment of Shia militias is leading the battle against IS. The main fighting is now taking place in the Sunni heartland in Tikrit, the tribal centre of the former dictator, Saddam Hussein (see map). Hizbullah, the strongest militia in Lebanon and the country's dominant political force, gained many admirers as the most effective enemy of Israel. But it has moved large numbers of men into neighbouring Syria, to push back Sunnis seeking to topple the regime of Bashar Assad. Some have deployed on the Golan Heights, extending the front against Israel. Hizbullah is also reaching into Iraq, where it has provided explosives experts to help train and advise local Shia militiamen.

In Iraq the fighting is being co-ordinated mainly by Iran, notably by Qassem Suleimani, the chief of Iran's elite al-Quds branch of the Revolutionary Guard. In Syria Iranians have helped train the paramilitary National Defence Force (NDF), which musters some 100,000 fighters from various sects. They also helped create Shia militias made up of foreign fighters and joint command centres in Iraq and Syria. The links between militias are fluid, with members moving from one to another. The Abo Fadl Al-Abbas militia in Syria, for instance, is headed by Aws al-Khafaji, an Iraqi Shia who crossed into Syria after American troops toppled Saddam.

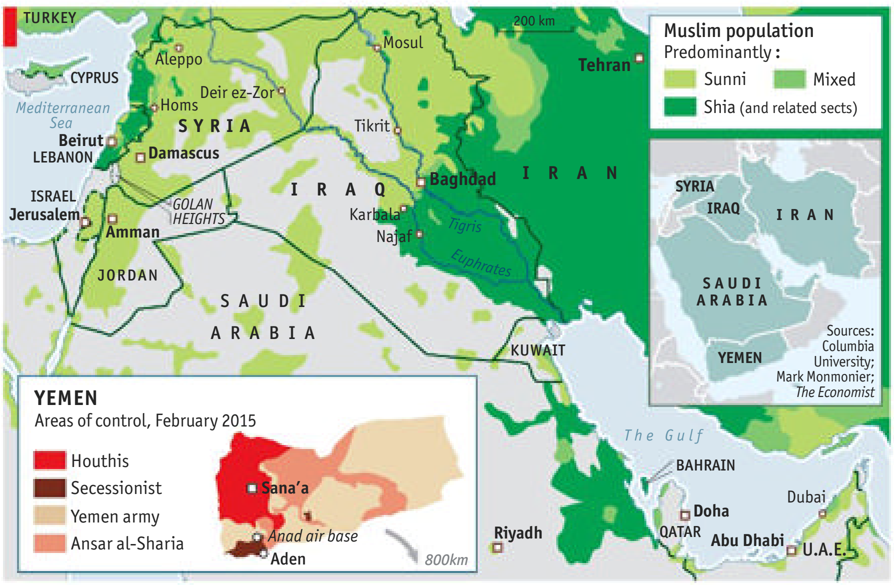
Many Shia militias claim simply to be defending Shia holy sites. In his office in the Baghdad district of Karrada, Mr Khafaji claims his men in Syria are not fighting for Mr Assad. But the militias' role goes far beyond the shrines. Hizbullah people make no bones about controlling southern Syria, on the Israeli border. They hint that the land will not be given back to Mr Assad. A Hizbullah commander says that in Syria Hizbullah calls the shots. "Each country is a separate operation, but the goal is one," says a commander of a militia brigade in Syria. Mr Khafaji hopes eventually for "a Guards of the Shia Revolution, one force across the whole region."

That may be fanciful. Hizbullah fighters are contemptuous of their Shia comrades elsewhere. "Hizbullah follows the Koran; our men have a role, tactics and a plan," says the brigade commander. He calls some Iraqi militias "extremists" and criticises their brutality.

Distrust between Shia militias and some of their allies is rife, partly because of sectarian differences. Hizbullah says that, in some cases, Mr Assad's Sunni pilots have bombed the positions of their Shia allies. Western governments have generally viewed Shia militias as less of a worry than their Sunni counterparts, though they are often as bloody. One reason is that they do not yet target Westerners. Nonetheless, Shia militias are exacerbating violence across the region. Though Iran does also back some non-Shia or mixed groups, including the Iraqi Kurds, Palestine's Hamas and the NDF, its actions are generally becoming more sectarian.

The ubiquity of Iranian proxies across the Middle East places America in an awkward position. In Iraq, its air strikes are supporting the Shia militias fighting in Tikrit. In Yemen, though, America is offering logistical and intelligence support to Saudi-led forces against Shia Houthis.

Iran and its proxies risk spreading themselves too thin. Sunnis outnumber Shias by nine to one. Disgruntlement is rising, and not just among Sunnis. On March 13th Ayatollah Ali al-Sistani, Iraq's leading Shia cleric, warned Iran not to forget that Iraq is an independent state. ■



Israel and America

How not to win friends

JERUSALEM AND RAMALLAH

Bibi and Obama fall out

BARELY a day has gone by since the Israeli prime minister, Binyamin Netanyahu, won re-election on March 17th without one senior American official or another chastising him in public. On March 23rd officials leaked word claiming Israel had spied on America's talks with Iran. A day later President Barack Obama himself referred to a "knotty policy difference that has great consequences for both countries and the region."

Senior figures in Mr Netanyahu's circle think this is all a ploy to weaken the prime minister's efforts to influence the talks over a nuclear deal with Iran. The view is that Mr Obama is resolved to reach a rapprochement with Iran, and that he sees Mr Netanyahu and his Republican allies in Congress as the main obstacles. Mr Netanyahu, about to begin his fourth term as prime minister, resolutely opposes what he calls a "bad deal", even if that damages relations with the White House.

Israeli officials think the talks in Lausanne will result in a general outline of an agreement. That could allow the negotiations to continue until June to finalise the details. Meanwhile they have largely given up on trying to convince the administration to drive a tougher deal. Instead, they ▸▸

and the Saudis are trying to stiffen the positions of the British and French.

Pressure is also mounting on Israel over the establishment of a Palestinian state. Earlier this month the central committee of the Palestine Liberation Organisation, which runs the Palestinian Authority in the West Bank, recommended that security co-operation with Israel be halted. Similar threats have been made in the past but never fulfilled. This time, insists Saeb Erekat, the chief Palestinian negotiator, "it's really happening. We're not going back. We're not playing games."

On April 1st the Palestinians will become members of the International Criminal Court, where they hope to see Israel in the dock for alleged war crimes committed during last year's Gaza war, and for settlement-building in the West Bank.

For Mr Netanyahu this means fighting on two separate diplomatic fronts before he has even sworn-in his new government. "Bibi is counting down the days before Obama leaves the White House" says one adviser. "These are going to be twenty-two long months." ■

Rwanda's political future

King Paul

A successful man with no successor

IN MANY ways Paul Kagame, the Rwandan president, is one of the most successful leaders in modern African history. He led an ethnic-Tutsi militia that in 1994 ended a genocide perpetrated by the Hutu majority. The guilty were punished in courts under a democratic government which he established, mostly without creating new injustices. Rwandans are healthier and better educated than ever. Business is booming, corruption minimal and foreign investors flock to the country.

Rwanda's success is not just down to Mr Kagame but it is hard to imagine it without his disciplined and strategic presence. He has embraced modern management techniques (his generals and ministers are on a corporate retreat this week). So familiar is he with cutting-edge communications that he is likely to respond to this article from his Twitter account, as he has done many times before. Even his worst enemies would not suggest that Mr Kagame is seeking glory or riches.

Richer but poorer

Rwanda's:

*human rights index**
100=maximum score

GDP per person
2005 prices, $

Sources: World Bank; Mo Ibrahim Foundation

*Civil liberties, freedom of expression and association

And yet in one important respect he has failed. In history's judgment, leaders are only as good as the successors they groom. Mr Kagame has sacked or chased away just about everyone around him who could take over. Some have fled the country and a few have died in mysterious circumstances; others went to prison. In Rwanda it feels inconceivable that anyone could replace Mr Kagame, who last year said that dissidents plotting against the government would "pay the price wherever they are."

Such talk is symptomatic of a wider failure. The nation, and in particular the Tutsi minority, has yet to uncurl from the defensive crouch that was understandably assumed during the genocide. Ideas like political competition and free speech are distrusted, on grounds that they could open the back door to the *génocidaires* who fled abroad and have yet to repent. Mr Kagame "won" the last election with 93% of the vote and does not face another one until 2017. According to the constitution, drafted under his tutelage, he is not currently eligible to stand. But his minions are already seeding the ground for the removal of term limits. Almost daily articles in the media call on him to remain in office.

Yet what Rwanda needs is fresh blood at the top. Unitary rule breeds resentment, and there is a limit to how long one brilliant man can protect his people from renewed genocide. Independent institutions are the only thing that can keep the peace, and Mr Kagame has not done nearly enough to foster them.

Rwanda's success has encouraged other violence-plagued nations to view it as a lodestar. Mr Kagame's lesson is that tight political control is a key ingredient of development. At best that idea is open to abuse in the hands of less capable leaders. At worst it can lead people straight back to where they came from. ■

Golf in the Arab world

New shades of green

RABAT

At least for a growing minority, a hobby brings calm to a region that needs it

ON A manicured fairway in Morocco's capital, Rabat, a muezzin's call to prayer drowns out the crack of a well-aimed iron and the whirr of a little white ball. As a hobby and a business, golf may be past its peak in Europe, North America and Japan, but in the Middle East and north Africa, there is lots of room for growth. And in places the future looks promising. Morocco recently hosted 138 global golf stars in a contest for prize-money worth €1.5m ($1.6m) named after the late king, Hassan II; he teed off almost every day of his reign and hired some brilliant golf-course architects.

His successor, Mohammed VI, prefers water sports, but the course-building has accelerated; the country now has 40 places to play golf, up from 12 at the turn of the century; its tourism hub, Marrakech, is also its golf capital.

Balls were first whacked in north Africa during the colonial era (the French built a course in Tangier in 1914); and since 1923, Beirut's Francophile elite has braved the din from the adjacent airport, and far more disturbing sounds, to hobnob at that city's golf club, as much a social as a sporting venue.

The sport is newer in the Gulf, but it is taking off. The United Arab Emirates (UAE) now counts 20 courses; it had none in 1990. Dubai and Abu Dhabi, the emirates' richest statelets, host annual professional tournaments. According to KPMG, a consultancy, golf in the Gulf is a nice earner, with 15% profit margins on yearly revenues that average $8.5m per 18 holes. And if Egypt can once again convince the world that it is a safe tourist destination, it can offer more than 20 courses, mostly on the Red Sea.

One weakness of the Arab golf scene is the dearth of local talent; the UAE has only 8,000 home-grown players, and Morocco just 6,500 registered ones, compared with 303,000 in Spain and 24m in the United States. Not all ventures succeed; some golf projects in Marrakech lie half-empty and unfinished. Thirsty greens compete for scarce water. Fear of terrorism, especially after this month's deadly attack at a museum in Tunis, may deter investors as well as tourists, though operators in Morocco insist there have been no mass cancellations.

On the plus side, think of the reliable winter sunshine. Spain, Portugal and the islands they administer can be chilly in winter. Last week the Madeira Islands Open, a men's tournament, was postponed till the summer because of torrential rain. The previous year it was curtailed by fog. Golf in the Arab world may be disrupted by noises off the green, but hurricanes are all but unknown.

Nigeria's oil

Crude politics

PORT HARCOURT

A broken oil industry is the source of many woes

DEAD fish wash up on the once-fertile shores of creeks around Bodo, a town in the Niger delta, that are covered with crude oil more than six years after two massive spills. Locals have only now received compensation from Shell, the oil firm responsible for the leaks. For the first time in half a decade, fishermen have cash to start businesses, repair their houses and send children to school. But most other villagers in this Ogoniland region of the delta wish Nigeria had never struck oil at all. "Look," says the chief of a tiny town called B-Dere, just a few miles from Bodo. He gestures to the deathly-black banks still bearing the marks of the slicks. "There is nothing to drink, nowhere to fish. What good has come from it?"

As Nigerians head to the polls in presidential elections on March 28th the oil industry—Africa's largest—will permeate the vote. The cash it provides has greased Nigerian politics for decades. Gross mismanagement and corruption in the industry are the causes of much of the inequality and discontent with the ruling party in an economy that is not just Africa's largest but that ought to also be one of its wealthiest. Fixing Nigeria's oil industry will have to be the main priority of whoever wins the election, whether that is the current president, Goodluck Jonathan, or his main rival, Muhammadu Buhari.

Nigeria pumps something like 2m barrels of oil a day. These account for most of its exports and about 70% of government revenues. But official figures are as murky as its polluted creeks. Volumes are recorded only at export terminals rather than at the wellhead, says Celestine AkpoBari of the Port Harcourt-based advocacy group, Social Action. Were a proper tally kept, he says, corruption would be exposed on a scale that would shock even the most cynical Nigerian.

It seems likely that more than 100,000 barrels of crude are stolen (or "bunkered" in the local parlance) every day, at a cost to the state and investors of billions of dollars a year. Politicians, oil workers and security forces are said to be behind the complex cartels that steal, illegally refine and sell crude oil. They have amassed almost unimaginable wealth in a country where poverty is still rife.

Oil's taint has seeped into almost all levels of government and business. Yet the central problem is found in the petroleum ministry, which wields vast unaccountable power. The Nigerian National Petroleum Corporation (NNPC), a state-owned behemoth, is responsible for all aspects of the industry, from exploration to production and regulation. It is among the most secretive oil groups in the world, and is "accountable to no one", says Inemo Samiama, country head of the Stakeholder Democracy Network, a non-profit group.

In 2013 the former governor of the central bank, Lamido Sanusi, alleged that $20 billion in oil revenues was missing from state coffers. He was fired for his troubles soon after. The government has since commissioned an investigation by PWC, an auditing firm. But officials have only released a few pages of the extensive report and have claimed they show that a mere $1.5 billion was missing.

Even where cash has not been nicked, it has often been squandered. Take the Excess Crude Account (ECA), a sovereign-wealth fund intended to cushion Nigeria's budget against falling oil prices. Most of it was spent over the past two years, despite oil prices being relatively high for most of that period.

The industry itself is in as sorry a state as the government's finances. Although oil practically gushes from the ground in parts of the delta, oil output has been stagnant for years and billions of dollars of investment are stalled because of uncertainty over a new law for the industry.

This is holding back Nigeria's economy almost across the board. Because the industry has failed to build the infrastructure to pipe gas to domestic consumers such as power plants, much of it is simply flared and burned: Britain reckons that some $800m worth of Nigeria's gas a year goes up in smoke. The country is also chronically short of fuel even though it has four state-owned oil refineries. Because of poor maintenance and ageing equipment they operate at well below capacity, forcing Nigeria to import about 70% of the fuel it needs. There is little incentive for reform since the government pays hefty subsidies to NNPC to keep on importing.

A new government, whatever its stripes, will have its work cut out reforming the industry and preventing a revival of militancy in the delta. But a starting point should be to halt subsidies for fuel imports. At a stroke that would undercut a major source of corruption and crime (both on land and at sea) that spills into neighbouring countries, the destination for smuggled consignments of cheap Nigerian fuel. It should also take a close look at NNPC, which should not be allowed both to participate in the market and regulate it. Some of its assets could be privatised. The ruling party and opposition are considering both.

With regulatory certainty, local refining would be ready to take off—it has already attracted investment from Aliko Dangote, a Nigerian businessman with interests from cement to sugar. Another business waiting to boom, given the right regulations and infrastructure, is power generation, which is stymied by a lack of gas.

For communities in Ogoniland, the most pressing problem is cleaning up. Shell has promised to mop up the mess around Bodo, though the process has yet to start. Compensation is one thing, Bodo residents say, but what they really want is their livelihood back. ■

Cursed resource

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Ukraine's future

President v oligarch

KIEV

Building a nation means putting plutocrats in their place

FOR the past year, Ukraine's government has enlisted the help of the country's powerful oligarchs in fighting its war against pro-Russian separatists. This week a new war opened up, pitting the government against one of the very oligarchs it had relied upon. On March 25th Petro Poroshenko, Ukraine's president, forced Ihor Kolomoisky, a business magnate, to resign from his post as governor of the central region of Dnipropetrovsk. Mr Kolomoisky had financed pro-Kiev battalions and played a vital role in stemming the spread of separatism. Yet after Mr Kolomoisky deployed his personal militia in Kiev to block the government from regulating his business interests, the president had no choice but to sack him.

The clash was the biggest skirmish yet in an unfolding confrontation between the government and the oligarchy. It may be the single most important front in the struggle for Ukraine's future. Sergii Leshchenko, a former investigative journalist and now a reformist member of parliament, calls it the second phase of the Maidan revolution: "Maidan removed [the former president, Viktor] Yanukovych, but not the oligarchic system." But it could mean war with the oligarchs at a time when Ukraine can ill afford instability.

Ukraine's oligarchs amassed their fortunes through shady privatisation deals in the 1990s. Mr Kolomoisky collected holdings in oil and gas, aviation, banking, and media. Last year he began financing volunteer battalions to supplement the country's decrepit army. By defending Ukraine, Mr Kolomoisky was also protecting his business empire. His bank, PrivatBank, offered rewards of $10,000 for captured separatists and equipped some of its armoured cars for military use. In March last year Mr Kolomoisky was given his governorship.

Other magnates have had less of a formal role in government than Mr Kolomoisky. But unlike Russia's oligarchs, whom Vladimir Putin pushed out of politics, Ukraine's retain unfettered influence over the country's leadership. Ownership of the media allows them to act as kingmakers. A closed party-list voting system means that their lackeys can slip into parliament unchallenged. Corrupt courts do their bidding. As a result, business and government do not merely coexist, they are often one and the same.

It was a challenge to this nexus that led to the outburst from Mr Kolomoisky. At issue is his stake in a state oil company, UkrNafta. Previously, Ukrainian law required 60% of shares for a quorum at meetings of state-owned firms, giving Mr Kolomoisky, with a 42% stake, de facto control. He milked the company for cash, withholding billions of hryvnias in state dividends. Mr Kolomoisky claims that in the early 2000s he paid $5m a month to Viktor Pinchuk, another oligarch, to protect his stake in the lucrative enterprise. Mr Pinchuk's representatives deny the claims.

On March 19th reformists in parliament passed a law reducing the quorum requirement at state firms to a simple majority, denying Mr Kolomoisky a veto. Some days later a group of armed men, apparently loyal to Mr Kolomoisky, arrived in a military vehicle without number plates and ▸▸

Notable Ukrainian oligarchs

	Major businesses	Net worth, $bn*	Media interests
Ihor Kolomoisky	UkrNafta *(oil & gas)*, PrivatBank	1.36	1+1 Media Group (TV, online)
Rinat Akhmetov	Metinvest *(mining & steel)*, DTEK *(energy)*	6.9	Media Group Ukraine (TV, online)
Viktor Pinchuk	EastOne Group *(finance)*, Interpipe *(metals)*	1.5	StarLightMedia (TV), *Fakty i Kommentarii*
Dmitry Firtash	RosUkrEnergo *(gas transport)*, Gaztek *(gas)*, Ostchem *(chemicals)*	0.5	Inter Media Group (TV)
Petro Poroshenko	Roshen *(confectionery)*, Leninska Kuznya *(shipbuilding)*	1.3	Kanal 5 (TV)

Sources: Forbes; *The Economist*

*All March 2015 except Firtash, March 2014 built metal barricades around UkrNafta's headquarters. Earlier in the week Mr Kolomoisky had appeared with a phalanx of guards at another state-owned oil company, UkrTransNafta, after the government tried to replace a manager loyal to him. At both companies, Mr Kolomoisky ultimately backed down.

Ukraine's reformers have wanted to wean the country off the oligarchs ever since the Maidan revolution, with only limited success. The margin of graft on government tenders has fallen from about 40% to 10%, say anti-corruption activists. Some notorious schemes have closed, including, last week, UkrEcoResoursy, a state-owned recycling firm that in reality recycled only cash for its masters.

Yet behind a façade of reforms, corruption continues. If bribes are smaller, that is partly because Mr Yanukovych monopolised corruption on a grand scale. Now it has returned to its more diffuse pre-Yanukovych form, says Vitaliy Shabunin of the Anti-Corruption Action Centre. Progress comes only where the new elite and Western partners apply pressure together. America sent a signal last year by bringing bribery charges against Dmitry Firtash, another Ukrainian oligarch. He is trapped in Vienna fighting extradition.

True change can only come with a "systemic reset", says Viktoriya Voytsitska, a new member of parliament who argued for the law on shareholder quorums. Otherwise "we'll just feed the oligarch wars." The oligarchs are constantly struggling with each other over their shares of the economic pie. Mr Pinchuk and Mr Kolomoisky are fighting a court case in London. Mr Poroshenko, an oligarch himself, has fed resentment by appointing business partners and friends to government posts. He has also reneged on a campaign promise to sell his confectionery company, Roshen. Unless oligarchs transform as a class into law-abiding big businesses, their assets will simply be transferred from one to another, says Ms Voytsitska.

UkrTransNafta epitomises these risks. Mr Kolomoisky calls the government's attempt to replace his loyal manager at the company a "raider attack". The new manager, a former officer in the security services, was appointed without an open competition. He has ties to a member of parliament who is one of Mr Kolomoisky's business competitors. "It was ugly," says Ms Voytsitska.

Perhaps Mr Kolomoisky has secretly been compensated for his ousting. Yulia Mostovaya, editor of *Zerkalo Nedeli*, a newspaper, says backroom deals could include a refinancing of PrivatBank or the promise of neutral management at UkrNafta and UkrTransNafta. If Mr Kolomoisky gets nothing, his peace deal with Mr Poroshenko may not hold, and Mr Kolomoisky could seek to strike back.

But not by undermining the war effort. That would not serve Mr Kolomoisky's interests now any more than it did last spring, argues Volodymyr Fesenko of Penta, a Kiev-based think-tank. Instead, his ties with the National Guard and his ownership of PrivatBank could help him to claw back influence. Local elections scheduled for October will present another opportunity to accrue political allies. The process of "deoligarchisation", says Mr Fesenko, will be "complex and painful". But at least it has begun. ■

French elections

Ménage à trois

PARIS

The National Front's strength makes French politics a three-way affair

SOMETIMES small elections are markers of major political change. France's latest vote, a two-round ballot on March 22nd and 29th to elect deputies to the 98 assemblies of France's "departments", may well turn out to be just such an election. On the face of it, the outcome will be a straightforward victory for the centre-right, led by Nicolas Sarkozy, a former president. In reality, it marks a shift in France from alternating two-party politics to a more fluid tripartite system.

The first element in this new political order is the performance of the populist National Front (FN), with its anti-immigration, anti-Europe and anti-establishment message. The party's combative leader, Marine Le Pen, had hoped it would come top in first-round voting and become, in her words, "the first party of France". In the end, Mr Sarkozy's UMP scored 29%, while the FN finished second with 25%, short of the triumph she had hoped for.

For some commentators, this amounted to a defeat. Manuel Valls, the Socialist prime minister whose party came third with 21%, reportedly lit a cigar to celebrate the FN's failure to place first. It was, he said, an "honourable" result for his party, and he congratulated "republican" voters for rejecting a party which, he judges, does not share the country's founding values. Certainly the polls, which had predicted Ms Le Pen's party would win about 30%, turned out to have been a poor guide, in part because voter turnout was higher than usual for this sort of election.

Yet it is a measure of how far the FN has come to shape the French political debate that her result could be considered a disappointment. It was the party's best-ever score at national level, just above that achieved at European elections in 2014. The party came top in nearly half the country's departments, including some of the rural constituencies that have become its new frontier. In the run-offs, the FN is set to pick up scores of councillors, up from just two in 2011.

In other words, the FN is transforming itself from a fringe movement that throws up periodic freak results into a regular feature of French politics, with the electoral ups and downs that this implies. This increasingly makes it an alternative opposition party to the governing Socialists, with a solid quarter or so of voters. Such a position is all the more remarkable given that the UMP's first-place score was achieved only thanks to an alliance with the UDI and Modem, two centrist parties.

All the same, Mr Sarkozy will take comfort from the result, which is likely to hand his party a sweeping victory in the second round. Hitherto the ex-president's political comeback had been faltering. Mr Sarkozy was elected UMP chief last November on the back of a lower-than-expected score, and has struggled to convince a divided party and its centre-right voters that he is the leader of the future. The latest result will strengthen his hand, and his chances of securing the party's presidential nomination for elections in 2017.

As for President François Hollande, the result was a downright humiliation, however much Mr Valls tried to argue otherwise. The Socialists are set for crushing losses in the second round–they have lost every mid-term election since Mr Hollande took office. This election exposes a cruel calculation on the left, as the party turns its eyes towards 2017. The Socialists' poor score reflects a failure in most constituencies to join up with the Greens and other parties of the left. If the party has any hope of making it into the presidential run-off in 2017, it needs friends. Yet the ideological differences between the moderates around Mr Valls and the rest of the French left have never looked so wide, nor the chances of bridging them so slim. ■

Turkey's AK party

Cracks in the façade

ISTANBUL

A senior member of Turkey's ruling party breaks ranks with the president

RIDING on robust growth and democratic reforms, Turkey's pro-Islamist Justice and Development (AK) party has won three terms in power since 2002. With parliamentary elections due on June 7th, its secular rivals gloomily thought that AK was poised for another victory. That was until Bulent Arinc, the government spokesman and a founding member of the party, let rip at his leader.

Over the past week, Mr Arinc has been doing what no AK official had ever dared: publicly castigating Turkey's autocratic president, Recep Tayyip Erdogan. Mr Arinc called his fellow AK founder "emotional", and said he had harmed himself by criticising peace talks between the government and the imprisoned Kurdish leader Abdullah Ocalan.

The conflict quickly developed into a free-for-all between Mr Arinc and the president's supporters. Ankara's AK mayor, Melih Gokcek, came to Mr Erdogan's defence, demanding that Mr Arinc resign. Mr Arinc in turn accused Mr Gokcek of corruption. Turkey's prime minister, Ahmet Davutoglu, scolded both men for breaching party discipline. A public prosecutor launched probes of potential wrongdoing by both Mr Gokcek and Mr Arinc.

But the dispute goes far beyond charges of corruption, argues Soli Ozel, a political scientist at Istanbul's Kadir Has University. Mr Arinc, he says, has "opened a Pandora's box". For the first time, divisions within the party have been clearly exposed. These pit Mr Erdogan, who wants to endow his presidency with executive powers, against those within the party who are rattled by the president's increasingly erratic behaviour and want to keep his constitutional authority in check. Mr Davutoglu is said to be among the doubters.

Many have been disturbed by Mr Erdogan's diatribes against Turkey's central bank. In January Mr Erdogan demanded that it slash interest rates. Last month he accused the bank's governor, Erdem Basci, of "selling out the homeland" for failing to do so. The lira has shed 11% of its value since the sniping intensified.

Mr Erdogan's new bugbear appears to be the Kurds. Last week the president attacked the government's dialogue with Mr Ocalan's outlawed Kurdistan Workers' Party (PKK) over ending its 40-year-long armed campaign for Kurdish self-rule. A 10-point plan outlining a framework for formal peace talks that was unveiled by the pro-Kurdish Democratic Peoples' Party (HDP) "has nothing to do with democracy", Mr Erdogan complained. A few days earlier he declared there was "no Kurdish problem". Such comments have bred speculation that Mr Erdogan is courting Turkish nationalists, as well as his former foes in Turkey's army, to win their backing for his executive presidency.

Some opinion polls suggest AK may not win an outright majority in parliament, let alone win the two-thirds of seats needed to change the constitution and create an executive presidency. Much will depend on how the HDP fares. Should it get the minimum 10% required for representation in parliament, it would complicate matters for Mr Erdogan. Should it fail AK will sweep all of its seats, and Mr Erdogan's dreams may materialise.

A move to an executive presidency would only heighten many Turks' sense of unease. The economy is slowing, and questionable arrests are undermining the rule of law. Islamic State jihadists are lapping at the country's borders.

But a more immediate battle looms. Mr Erdogan is trying to ensure that his own allies make it onto AK's candidate lists, but he is constitutionally barred from meddling in the AK party's affairs. It remains unclear whether Mr Davutoglu has either the strength or the will to withstand the president and his army of business cronies and party loyalists. The HDP's charismatic co-chair Selahattin Demirtas says his party alone can prevent "a one-man dictatorship". He may well prove right. ■

Greek crisis

The squeeze tightens

ATHENS

As deadlines near, Greeks find it hard to believe Europe would let them go

IN HARD and uncertain times, a tax amnesty can be a fillip to the popular mood. Stelios Alivizakis, an engineering consultant struggling to survive in Greece's depressed property market, was overjoyed when the radical left-wing Syriza government announced a one-week "special offer" for tax debtors. Anyone willing to pay some or all of their overdue taxes by March 27th would have the accumulated interest written off. "I'll have a breathing space to get my affairs in order," says Mr Alivizakis, who owes thousands of euros in unpaid income, property and value-added tax.

Many hard-pressed Greek businesspeople reacted in similar fashion. The finance ministry's tax website attracted over 100,000 hits within minutes of the offer being posted. Nadia Valavani, the deputy finance minister charged with trying to fill Greece's depleted coffers, said €50m ($55m) was raised within the first 24 hours. She hopes another €200m will flow in by the end of the week. That would cheer government officials fighting to pay pensions and civil servants' salaries at the end of the month. It could also avert a possible default on April 9th, when Greece is due to re- ▸▸

Air disaster in France

A passenger jet operated by Germanwings, Lufthansa's low-cost subsidiary, crashed in the French Alps on March 24th, killing all 150 people on board. The Airbus A320, en route from Barcelona to Düsseldorf, had reached cruising altitude before suddenly and inexplicably making an eight-minute descent that ended in the aircraft colliding with a remote mountainside. The victims, mainly Germans and Spaniards, included a party of 16 schoolchildren. Two days later, after recovering one of the "black box" flight recorders, French accident investigators made the horrifying discovery that the plane had been deliberately crashed by the co-pilot after he had locked the pilot out of the plane's cockpit. Voice recordings revealed that the pilot made increasingly frantic attempts to get back into the cockpit during the plane's descent. Brice Robin, the Marseilles prosecutor investigating the crash, said that the co-pilot, 28-year-old Andreas Lubitz, had taken control of the plane, but that there was "no element that indicates that this is a terrorist action." Mr Robin added that he could not call the co-pilot's actions suicide, but that it was a "legitimate question to ask".

pay a €450m loan instalment to the International Monetary Fund (IMF).

But solving Greece's deeper financial woes won't be that simple, and the euphoria that swept the country after Syriza's election victory in January has subsided. Greece's creditors are tightening the squeeze on the brash, inexperienced government of Alexis Tsipras. The prime minister has been unsuccessful in his efforts to unlock part of a €7.2 billion chunk of bail-out funding, needed to keep Greece afloat while it negotiates a new deal with the European Union and IMF. Yanis Varoufakis, his wayward finance minister, has annoyed EU officials and his peers, including Germany's Wolfgang Schäuble. (Mr Varoufakis has been told to stay put in Athens and help bail-out technocrats draft an emergency reform package.)

Some in Athens were hopeful that a visit by Mr Tsipras to Berlin on March 23rd for talks with Angela Merkel, the German chancellor, would lighten the mood. Greek officials were upbeat afterwards, saying a "dialogue" had begun. But gloom returned the next day, when senior finance ministry officials from the euro zone rejected a Greek request to return €1.2 billion which Athens claimed it had paid by mistake to the European Financial Stability Facility, the EU's own bail-out fund.

"We've been on a roller-coaster ride for two months now and there is no end in sight," says Alkis Stamatopoulos, an olive-oil exporter. "It's become impossible to plan ahead."

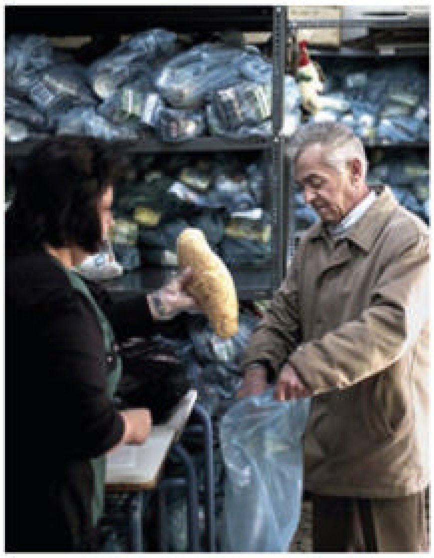
Greece has fallen back into recession following last year's modest recovery, according to central bank officials. This year's growth projection has been unofficially cut from 2.9% to about 1.5% of GDP. After declining in 2014, the unemployment rate has edged up again. For the moment tourist bookings are still buoyant, but that could quickly change if the deadlock with Greece's creditors continues.

Greek banks now rely on a drip-feed of emergency funding approved on a weekly basis by the ECB. Credit for importers has dried up; Athens-based firms complain of having to pay suppliers in full before goods can be shipped. Bigger groups have sent cash to accounts in other euro-zone countries. Greek shipowners bring in just enough to pay their employees.

One top Greek banker estimates that ordinary citizens have stashed €10 billion under their mattresses since Syriza came to power. They fear that Greece might follow the example of Cyprus in 2013 and be forced to impose capital controls. Another €15 billion of deposits has been moved out of the country. There is certainly anxiety in the air, especially among those with something to lose. Yet the sense of panic that swept Athens in 2012 when a "Grexit" seemed imminent is less acute today. "I don't think the Europeans will abandon us after everything Greece has been through in the past five years," says Maria Ifantidou, a pensioner.

Mr Tsipras is still riding fairly high in public esteem, though his approval rating has fallen from over 80% following the election in January to around 60% now. Syriza leads the centre-right New Democracy party by more than 20 points, despite the clouds on the financial horizon.

Many Greeks admired the tough stance that Mr Tsipras took towards the country's creditors after his election, even if they are not sure whether it will have the desired result. As people start to worry about unpaid salaries and empty cash machines, his popularity is likely to fall further. ■



Making ends meet

Sweden and the Middle East

Clean hands, fewer friends

Who could take offence over a speech on women's rights? The Arab League

RUNNING a human-rights-oriented foreign policy is a challenge, even for the Swedes. In October Sweden became the first Western government to recognise the state of Palestine. Margot Wallstrom, the foreign minister, was duly invited to address a meeting of the Arab League on March 9th. Ms Wallstrom wrote a rather anodyne speech exhorting the member states to live up to their commitments on human rights, particularly women's rights. Saudi Arabia objected, and the league blocked her from speaking. Now Sweden's relations with much of the Arab world are in shambles.

The speech was not the only trigger for the falling-out. On March 10th the Swedish government said it would revoke a weapons export agreement with Saudi Arabia that had been in place since 2005. Stefan Lofven, the Social Democrat prime minister, had been under pressure from his coalition partners in the Green Party to end the agreement, but the timing could not have been worse. The same day, the Saudis recalled their ambassador to Stockholm, and the Arab League publicly condemned Ms Wallstrom's cancelled speech, calling it an offence to Saudi Arabia and to Islam. In the following weeks, the United Arab Emirates recalled its ambassador, and Saudi Arabia said it would neither issue new business visas to Swedes nor renew the visas of those living in the kingdom.

The standoff has serious consequences for Swedish business. Exports to Saudi Arabia came to 11.2 billion kroner ($1.3 billion) last year, 1% of Sweden's total. A group of 31 Swedish business leaders pleaded with the government to calm the tensions in an op-ed article in the *Dagens Nyheter*, a newspaper; they followed up with a meeting with Ms Wallstrom and with Mikael Damberg, minister for enterprise and innovation. On March 20th Ms Wallstrom backpedalled, saying her intention was never to criticise Islam and that the government wants better relations with Saudi Arabia. But she could not resist adding that "Sweden has a tradition of plain speaking about democracy and human rights, worldwide and in every type of country."

While advocating human rights has lost Sweden friends among Arab states, recognising Palestine has soured relations with Israel. In January Ms Wallstrom cancelled an official visit after Avigdor Lieberman, Israel's foreign minister, said she was not welcome. Binyamin Netanyahu, the prime minister, claimed "Scandinavian governments" were trying to topple him during his recent election campaign.

The Swedes can at least count on the friendship of the Palestinians, to whom they have promised $177m in aid. But Stockholm is campaigning for a non-permanent seat on the United Nations Security Council in 2017, and needs the support of two-thirds of the UN General Assembly. Ms Wallstrom had hoped to win the votes of the 22-member Arab League. That no longer looks likely. Sweden's rivals for the seat include Italy and the Netherlands, neither of which has been so undiplomatic as to respond to an Arab League invitation with a lecture about human rights.

Charlemagne | In Germany's shadow

Germany is coming to terms with a messy world

THE timing was certainly awkward. Talks between Greece and the euro zone were on a knife-edge. Beset by rumours that Greece was running out of money, Alexis Tsipras, the prime minister, had agreed to propose reforms to unlock bail-out funds. Then, just before Mr Tsipras was to visit Angela Merkel, Germany's chancellor, a news magazine ran a cover of Mrs Merkel overlaid on an image of occupying Nazi forces at the Parthenon. "The German *Übermacht* ('Dominance')", read the headline.

Insinuations that Germany's tough line on debtor countries carries a whiff of the Third Reich have been common throughout the euro crisis, usually in Greece. But this time it was *Der Spiegel*, a respected German weekly, that made the comparison (depicting European perceptions, it insists). At a press conference with Mrs Merkel, Mr Tsipras condemned the cover (before repeating his call for war reparations). But as Greece again throws the euro zone into turmoil, Germany is facing awkward questions.

During the euro crisis, power shifted from European institutions to capitals, Berlin chief among them. On the urgent question of foreign policy, French weakness and British drift have shrunk Europe's "big three" to one-and-a-half—if you are feeling generous towards France. In contrast to the apocryphal story of Henry Kissinger wondering what number one calls to speak to Europe, Barack Obama knows exactly whom to consult on Europe's Russia policy—and she does not sit in Brussels.

German dominance is in part a consequence of others' retreat. That may be why complaints have been muted. "If the Italians don't bring pasta and the French don't bring pâté," says a diplomat, "you can't complain about Mrs Merkel's cabbage soup." Meanwhile, outside Greece, the worst of the budget-cutting that bred European resentment of Germany is over. The recent solid economic performance of most bailed-out countries has strengthened Germans' conviction that they were right all along.

That helps explain why Germans continue to crave well-defined rules in Europe. The fiscal process is established, if shaky, and at some point Germany may resume its call for greater co-ordination of economic policies, such as labour-market regulations and tax bases. Such proposals make some European countries squeal but seem eminently sensible to Germany: in the absence of political union, how else is a common currency to work?

But because the world does not always bend to its will, Germany has had to accept political compromises. It was intensely irritated when the European Commission appeared to relax its fiscal rules in January. It has had to swallow the European Central Bank's decision to begin quantitative easing. And Germany grudgingly accepted the commission's decision last month to grant France more time to reduce its budget deficit. At last seemingly serious about economic reform, the French government insisted that this was not the time to close off its fiscal space. This political argument found a surprisingly receptive ear in Berlin (which has itself broken EU deficit rules in the past).

Indeed, after several rocky years Franco-German relations are warming. François Hollande was by Mrs Merkel's side as she negotiated a peace deal with Vladimir Putin in Minsk last month, and listened to Mr Tsipras's entreaties in Brussels last week. This matters to Germany; although it will act alone if necessary, it still fears the appearance of imposing its will unilaterally. During last month's jousting matches with Greece, Wolfgang Schäuble, Germany's combative finance minister, never tired of telling reporters that Germany was not alone in its tough stance.

Mrs Merkel has been well served by her adversaries. On Russia, countries like Cyprus and Italy may grumble about sanctions. But thanks to Mr Putin's alarming behaviour none has broken ranks when it matters. (This proposition will be tested in June, when all 28 EU members must agree to renew the toughest measures.) The boneheaded negotiating approach of Mr Tsipras's government has destroyed any chance of a split in the euro zone: Greece has made anti-austerity a toxic brand, at least for now. Similarly, should a re-elected David Cameron pursue his promised renegotiation of Britain's EU membership, he will find few allies if he seeks to alter the EU's basic rules.

All this suits Mrs Merkel's style. She exercises patience, waiting for Greece to see sense on economic reform and Britain to resolve its domestic problems. She took a risk in pursuing the Minsk peace deal with Russia because the situation in eastern Ukraine had become desperate. Yet she has eschewed calls from American senators to send arms, instead comparing the situation to the long wait for the Berlin Wall to come down. This appears to mean she is prepared to see the conflict "frozen". If Mr Obama was once accused of leading from behind, Mrs Merkel sometimes leads from a direction no one else can understand.

France matters more than Britain

A united Europe, governed by strict fiscal rules, harmonious and at peace with its neighbours: such is the stuff of German dreams. Reality is messier, but Germany is not rigid. During the euro crisis Mrs Merkel always found the political will to keep the currency together, even if her solutions often involved sticking plasters.

But the future will test Germany's priorities. Keeping Greece in the euro and Britain in the EU are important, but not at any cost. (Some officials think the euro zone will weather a Grexit without too much difficulty.) Nor will Mrs Merkel expend much political capital to save TTIP, a proposed transatlantic trade deal that many Germans distrust. But on existential matters such as saving the euro or keeping France strong enough to remain a meaningful partner, Mrs Merkel will not hesitate to exercise her power, even if it means breaking pledges or undermining rules. That would be a sign of true leadership, and Europe should welcome it. ■

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Politics

What will move the needle?

Why, despite a strong leader and a big lead on the economy, the Conservative Party is not yet pulling away

BLISS it is in this dawn to be a Conservative. Or at least, it should be. With the general election six weeks away, Britain's main governing party presides over a growing economy and zero inflation. In David Cameron it has by far the most popular leader. The right-wing UK Independence Party, which once threatened to erode the Tory vote, is declining in some polls. The pro-independence Scottish National Party, by contrast, looks ever more likely to demolish the opposition Labour Party in Scotland. The Conservatives' straightforward messages about economic competence and leadership compare well not only with Labour's ramshackle offering but also with their own meandering campaign in 2010.

Lynton Crosby, the party's election guru, has long told the Tory troops that these advantages will eventually propel the party past Labour in opinion polls. His theory is that once voters start thinking about the choice at the election, they will suddenly prefer the certainty of the status quo. He has a point: governing parties typically get a poll boost towards the end of their terms in office. But the surge, once expected in October, then in January, then after last week's budget statement, remains elusive. The Tories have gradually closed the gap with Labour, but, with the official campaign period due to start on March 30th, the two parties remain tied.

Why are the Conservatives' economic record and leadership strengths not yet translating into a lead (see chart)? One reason is that the central project of Mr Cameron's leadership, to erase his party's out-of-touch, nasty image, has been only partly successful. The prime minister has made some strides in this direction: gay voters, in particular, are pleased by his move to legalise same-sex marriage. Yet still the Conservative Party generally lags behind the opposition among women, non-whites, young people and in the traditionally Labour-voting north of England (see box on next page). According to an Ipsos MORI poll last year, fully 40% of voters say they would never vote Tory, compared with just 33% who would not vote Labour.

A hint at why the Conservatives still struggle with what party strategists call their "brand problem" came on March 23rd when a recording emerged of Hugo Swire, a minister, joking that anyone on benefits could afford to donate £55,000 ($82,000) to the party. Another came the following day when the Tory candidate for Dudley North, a West Midlands marginal, resigned following claims that he had encouraged the hard-right English Defence League to plan a march against a planned mosque, creating tensions that he would defuse.

Warm fuzzy feeling

Conservative polling lead over Labour on:
Percentage points

Source: YouGov

Another factor is that the party seems to be losing its composure as it rounds the final bend. From Mr Cameron's bizarre retirement announcement (see next story) to an online question-and-answer session that was predictably hijacked by anti-Tory troublemakers, the slick Conservative campaign has shuddered in recent days. On March 24th the prime minister was heckled and booed by a crowd of pensioners when he talked about health care (a subject on which his party lags behind Labour and about which it talks little—mistakenly, grumble some in its ranks).

But the best explanation for Labour's durability in polls of voting intention is the fact that it has a stronger ground campaign. The Conservative Party is smaller, older and less tribal than its opponent. It has tried to correct this deficiency, most notably with Road Trip 2015, a tour of marginal seats for young activists known as the "shag bus". But recent polling by Lord Ashcroft, a Conservative peer, found that in five of eight key Tory-Labour marginals Labour had contacted more voters—in some cases many more.

The Conservatives are stronger at the national level. They have more support among newspapers, more money for advertising and a stronger team of media performers on their front bench. Yet party figures and academics increasingly suspect that, to quote Paul Whiteley of Essex University, the "ground war" may now be more effective than the "air war". So La- ▸▸

bour's strong local campaigns could give it more of an edge than in the past. Moreover, after months of wriggling Mr Cameron has agreed to debate the other party leaders on television. That might favour Ed Miliband, the Labour leader, whose ratings can hardly get worse.

None of this means the Tories will not pull into the lead eventually. Most forecasts by political scientists (who factor in the usual late swing to the incumbent) suggest they will win more seats in the House of Commons than Labour. But time is running out for the sort of dramatic surge that would enable the party to obtain more seats than it did in 2010 and thus to be sure of staying in power. Mr Crosby is now telling MPs that the surge will come in the final ten days of the campaign. It better had, they mutter. ■

Politics in the north-west

The boomtown reds

CHESTER

In a wealthy northern city, a chill wind for Conservatives

CHESTER is the sort of place George Osborne, the Conservative chancellor of the exchequer, has in mind when he boasts that Britain is the "comeback country". This cathedral city in north-west England exudes prosperity. The bustling streets around the city centre are full of new shops and fancy cars; extensions are being added to sprawling houses in the suburbs. Unemployment in the local authority area has fallen from 7% in 2010 to 5%. Only 30 miles from Mr Osborne's own constituency of Tatton, Chester is also the sort of marginal Tory seat that the party must hold if it is to be certain of leading the next government.

It might not manage it. The Tories have invested in a full-time campaign guru, Simon Harris. But despite his energetic efforts (over 30,000 leaflets delivered in the past two weeks, he boasts in his party's frenetic office) and the incumbency advantage enjoyed by the MP, Stephen Mosley, the Tories trail Labour by 11 points in the constituency, according to a poll published by Lord Ashcroft, a Conservative peer, on March 17th.

Chester is a mix of urban and rural areas, with several large council estates dotted around the edge of the city. And among the economic winners are plenty of losers. Poor locals complain about cuts to welfare, particularly to housing benefit for those living in properties too large for their needs (a policy Labour has dubbed a "bedroom tax"). A food bank set up in 2012 now supplies 450 people each month, up from around 50 in its first month. The Labour Party candidate, Christian Matheson, points to figures suggesting wages have fallen there since 2010 even in cash terms.

But the biggest problem for the Conservative Party is cultural. If Chester was in southern England it would surely be Tory. But it is in the north-west, a region where the Conservatives are still blamed for the collapse of industry in the 1980s. In Lord Ashcroft's poll, 49% of Cestrians—as they are known—declared they would definitely not vote Tory. Only 35% would not vote Labour. Vora Mallion, a pensioner, talks approvingly about the many people who have been nudged back into work recently. But she worries about what the Conservatives might do to the National Health Service, and is voting Labour. "If David Cameron was in front of me I would want to slap him," adds Steve, a manual worker. He will have to settle for not voting for the prime minister's party.

David Cameron

The retiring type

The prime minister rules out a third term before he has won a second

UNLIKE American presidents, British prime ministers are not limited to two terms. If they keep winning elections, they get to pick when to step down. That means they can avoid the fate of every "lame duck" inhabitant of the White House, his authority gradually waning as his remaining time ticks away. Most electorally successful prime ministers hang on until their parties ditch them or their health fails.

So Westminster was aghast when, on March 24th, David Cameron let slip in an interview with the BBC that, if he wins a second term at the election on May 7th, he would not seek a third one five years later.

Actually, maybe just two

Prime ministerial terms, he added, are "like Shredded Wheat: two are wonderful but three might just be too many." Yet Mr Cameron's announcement was much less relevant to his role as prime minister than to his other job as leader of the Tory Party.

That is partly because his comments were, to quote Michael Gove, the Tory chief whip, "stating the bleeding obvious." It is generally thought that, as Tony Blair once put it, "two terms is all you get in the modern world". And unlike Mr Blair, or Margaret Thatcher, Mr Cameron is not the sort of legacy-obsessed leader who would cling on as long as possible. For years the assumption in the Conservative Party had been that, if returned to power, he would step down after a promised referendum on Britain's EU membership in 2017.

And although Labour Party figures gleefully accused the prime minister of arrogance, voters seem unmoved by his comment. In a YouGov poll taken just after the interview was released, only 9% of respondents said it made them think worse of him, whereas 21% said it made them more positive and 59% were indifferent.

The only place where Mr Cameron's comment truly matters is inside the Conservative Party. MPs already nervous about their party's election prospects briefed that, by firing the starting gun on a leadership contest, Mr Cameron had made any second Tory-led government less stable—and the chances that he will face a challenge, if the election result is disappointingly inconclusive, more likely.

Others were still angrier about what Mr Cameron said immediately after musing on breakfast cereals and political longevity. The prime minister named three possible successors, including George Osborne. Many have long thought the liberal-minded chancellor of the exchequer, Mr Cameron's closest ally, too unpopular to lead his party. By floating his name, reckon some angry right-wingers, the prime minister was trying to push him forward.

The comments add to a list of pent-up grievances among Conservative MPs, who are waiting until after votes are cast to make them public. Indeed it is possible, if unlikely, that Mr Cameron will cling on as prime minister only to lose office at the hands of his own party. Perhaps American presidents should be grateful after all. Their power may be time-limited, but at least they owe it to voters alone. ■

Bagehot | They haven’t gone away

Rows over Europe could wreck a second Conservative-led government

DO PRIME MINISTERS go mad in office, as David Cameron suggested in his kitchen on March 23rd, with a nod to Tony Blair and Margaret Thatcher? Or do their supporters, increasingly irked by the contradictions that government demands, stop giving them the benefit of the doubt? A bit of both, is the answer. The titanic self-assurance that made Thatcher and Mr Blair seem barking was apparent even in their majority-winning pomp. And if both pushed that envelope too far, their supporters changed more—by ditching them—than they ever did. This is bad news for the indubitably sane Tory incumbent. Because, while Mr Cameron stands a rising chance of getting and surviving a second term with his wits intact, his relentlessly tactical approach to politics has created a number of deeply irritating loose ends.

On fiscal consolidation, education and the environment, Mr Cameron’s achievements are real, but often hyped and unsatisfying. A bigger problem is Europe—the fissure that has threatened to split the Tories for three decades, which he has sought to straddle, not close. If he regains power in May, that will end. He has promised a referendum on Britain’s EU membership by 2017 in which he, unlike perhaps a third of his MPs, would vote to stay “in”. If Britain leaves the EU, he will be disgraced. If it stays, he will have a livid, divided party on his hands. Either way, the oddest suggestion of his hob-side musing on the advantages of two terms over three was that he might ever have the choice.

So far in the general-election campaign, Europe has been absent. In part, that is because Mr Cameron’s referendum promise, being primarily intended to mollify his party’s rebellious Eurosceptic backbenchers, has succeeded. The rebels—81 of whom defied the whip to demand such a vote in 2011—do not trust Mr Cameron. Nor are they satisfied by his promise to renegotiate Britain’s EU membership terms ahead of the promised referendum. They fear a rerun of Harold Wilson’s ruse in 1975: a renegotiation that was largely cosmetic yet sufficient to persuade a confused electorate that Britain’s place in Europe was profoundly improved. Still, Mr Cameron is the sceptics’ best hope of getting the referendum they dream of, so they are keeping quiet for now.

At least they understand their interests. British business is more conflicted. Corporate bosses are horrified by the risk the referendum would represent to their access to the single market; yet they are so united in disdain for the leader of the Labour Party, Ed Miliband, that most seem relaxed about it. And that complacency is spreading. Developments in Brussels that look propitious for Mr Cameron’s agenda—including the emergence, under the hitherto reviled Jean-Claude Juncker, of a leaner, more self-critical EU Commission—together with polls that show support for Britain’s EU membership, have persuaded Mr Cameron’s advisers that he could get by with his usual last-ditch aplomb. Here are three reasons why such complacency is dangerous and wrong.

First, the propitious circumstances in Brussels, which also include Germany’s resolve to keep Britain in and widening discontent with the EU migration that fuels British Euroscepticism, do not resolve the central flaw in the prime minister’s gambit. When he announced it, in 2013, he assumed further euro-zone integration must lead, by 2017, to a revision of the EU’s treaties, to which his demands could be appended. There is little prospect of that. No other EU member wants the horse-trading it would involve or the referendums it would trigger. Probably the best Mr Cameron can aim for is a draft settlement and promise of future treaty change—whenever that might be possible—to enshrine it.

If that sounds weak, the settlement would also amount to much less change than Mr Cameron has promised. He would get more curbs on benefit payments to EU migrants; nothing like those on the free movement of EU citizens he craves. He could trumpet success in the war on red tape waged by Mr Juncker’s deputy, Frans Timmermans, and in preventing euro-zone members caucusing against the rest. And these would improve the EU; they would not obviously change Britain’s place within it.

The spirit is Wilson

If that suggests a 1975 rerun is Mr Cameron’s best hope, the political context, between Britain now and then, is different—which is the second reason for worry. The popular press is today far more Eurosceptic. The UK Independence Party, which wants to leave the EU, may be about to come second in a hundred constituencies. And the Tory Eurosceptics, who suspect that Mr Cameron will not negotiate hard ungoaded, are sharpening their knives. One calls the prime minister’s draft renegotiation platform “minimalist and virtually irrelevant”, while consoling himself with the thought that “the prime minister has always responded to pressure.” How long might it be before the Eurosceptics applied this? “No time,” says another, recalling fondly the rebellions over the Maastricht treaty that kiboshed John Major. “Many of the Maastricht guys are still around.” In other words, the Tory awkward squad are not merely prepared to hijack Mr Cameron’s next government; they relish the prospect.

Mr Cameron might still get away with it. Support for the status quo in referendums tends to harden. And if last year’s near-miss Scottish independence vote was almost an exception, Euroscepticism is less potent than nationalism and UKIP and the Tory headbangers are less formidable than the Scottish National Party. But if that is reassuring, the longer-term effects of Mr Cameron’s referendum—the third disquieting thought—could be tremendous. The 1975 referendum led, six years later, to the division of the Labour Party, formation of the Social Democratic Party, and a new realignment in the centre. It is hard to imagine the fallout this time around, for a far less stable polity, could be less traumatic.

Competence versus chaos—applied to Labour, that is the Tories’ favourite slogan, and a good one it is. But if Mr Cameron returns to Downing Street, it could seem tragically misapplied. ■

Also in this section

Global economic development

Unsustainable goals

2015 will be a big year for global governance. Perhaps too big

MARY ROBINSON, a former president of Ireland, calls 2015 "the Bretton Woods moment for our generation". In 1944 the small town in New Hampshire of that name hosted a conference which was to shape the post-war economic order. The open trading rules it established laid the foundation for decades of post-war growth and the "Bretton Woods twins" that it founded, the IMF and World Bank, still influence global financial governance.

Four UN conferences comprise the new Bretton Woods. Though they are unlikely to produce institutions that will matter in 50 years, if they go well they could boost growth and development in poor countries. If they do not, the only outcome will be windy and pointless political rhetoric.

The first of the conferences has just finished in Sendai, the nearest city to the epicentre of an earthquake and tsunami that devastated Japan in 2011. The importance of its subject—how to reduce the risk of disasters—was dramatically highlighted the day before it started when Cyclone Pam smashed into the tiny island chain of Vanuatu in the South Pacific, ravaging its economy and killing at least 17 people. The country's president, Baldwin Lonsdale, who was in Sendai at the time, said the storm had wiped out many years' development gains.

Another of the conferences is a special meeting of the UN in New York in September that will be dedicated to development. Its aim is to approve a set of "Sustainable Development Goals" (SDGS) to replace the "Millennium Development Goals" (MDGS) which were agreed in 2000. The MDGS measure progress towards such aims as providing clean water, combating HIV/AIDS and cutting child and maternal mortality, and are due to expire in 2015. Negotiators are busy arguing about what the SDGS that replace them should be.

Before that, in July, another meeting will be held in Addis Ababa, Ethiopia's capital, to talk about how to raise more money for projects that would speed development. The idea is to find ways to ensure that a larger share of global savings is used for the plethora of big proposals that need funding. HSBC, a bank, recently estimated that Asia alone will need to spend $11 trillion on infrastructure over the next 15 years. But commercial lenders and investors are not willing to take on many sorts of infrastructure risk. The aim of the conference is to encourage risk to be shared more widely, as well as to persuade rich countries to stump up more money for aid.

The final conference is in Paris in December, when governments hope to sign a global treaty on tackling climate change. It is supposed to be based upon what countries are already planning to do to rein in greenhouse gases and adapt to climate change. By the end of March each country is to spell out its policies (or, in the jargon, "contributions" to the treaty) in such a way that negotiators can construct a deal.

The aims of the four meetings overlap. Climate change can increase the number and severity of disasters, and increase poverty since hundreds of millions living just above the poverty line risk being pushed back into destitution by a flood or epidemic. It is also linked to development because some of the most vulnerable countries are very poor, for example Sahelian states threatened by desertification and small island states affected by rising sea levels and ocean acidification. Conversely, though coal-fired economic development can reduce poverty, it also increases carbon emissions, thus contributing to climate change.

Grand designs

Helen Clark, a former prime minister of New Zealand and now head of the UN Development Programme, says success in 2015 means getting agreement on all of these negotiating strands: a climate treaty with teeth; most of the proposed SDGS, lots of financial promises. That will not be easy. The conference in Sendai shows some of the difficulties. It approved various targets—to reduce the number of people killed in disasters by 2030 "substantially", for instance (it was 700,000 in 2005-15). But the target was vague, and there was little on how it is to be achieved.

The bigger problem is that the other three strands are enormously ambitious. The climate treaty, assuming it is signed, would be the first global climate treaty since the Kyoto protocol in 1997. Though the decision to base it on what countries are doing anyway should make a deal easier to reach, rich and poor countries are still bickering over how much the rich ought to pay the poor to help them deal with the costs of climate change.

The meeting in Addis Ababa also risks a split over how generous rich countries are ▸▸

prepared to be. There are plenty of opportunities for disagreement: it is supposed to deal not only with the vast costs of financing infrastructure and climate policies but also to crack down on illicit trade flows and give a boost to world trade talks. Each of these is knotty enough to scupper the event on its own.

But the most ambitious of the conferences concerns the SDGs. The MDGs were mainly about the poor; their successors are supposed to go far beyond that, with goals proposed for urbanisation, infrastructure, standards of governance, income inequality and climate change. The MDGs, says Homi Kharas of the Brookings Institution, who helped draft an early version of the SDGs, were about reducing poverty; the new goals are about creating peaceful and inclusive societies.

Future perfect

The number of SDGs reflects this breadth of ambition: there are 17 overarching goals and 169 targets, compared with just eight MDGs. It also shows what happens when a bureaucratic process runs out of control. The organisers sought to consult as widely as possible, with the result that each country and aid lobbyist got a target for its particular bugbear and is now unwilling to give it up unless others give up theirs. Something for everyone has produced too much for anyone. Making matters worse, some developing countries think each extra goal will come with a pot of money, so the more goals, the more aid. All attempts to chop down the list have failed: last year negotiators cut the number of proposals from 212 to 169, but largely by running separate targets together into one.

The original Bretton Woods conference established lasting institutions partly because its members faced a common enemy (Japan and Germany); shared a clear set of beliefs (that open markets were essential if economic nationalism was to be defeated); and were willing to take unpopular steps (such as lowering their own barriers to trade). But now rich and poor countries are divided, there is no consensus on how to tackle climate change and most countries are demanding that others, not they, should make sacrifices to strengthen the global economic system. The Bretton Woods moment is not doomed to failure. But seizing it will not be easy. ■

Assessing development goals

The good, the bad and the hideous

Which MDGs did some good and which SDGs might work?

WHEN the Millennium Development Goals were adopted in 2000 they seemed Utopian. But the most important one was achieved five years early. This was to halve, by 2015, the share of people globally living on under $1.25 a day, which was 36% in 1990. Most progress was in China, where the proportion fell from 60% in 1990 to 12% in 2010. Other regions missed their target. In South Asia it fell from 51% to 30%. In Sub-Saharan Africa it went from 56% to 48%. Still, more than 700m people struggled out of extreme poverty in that period.

Of the other targets, those that depended on public money rather than behavioural change are most likely to be reached. Over 2.3 billion people got access to improved drinking water between 1990 and 2012 as countries built treatment plants. The targets for malaria and tuberculosis are also likely to be hit, thanks to ambitious public-health programmes.

But nutrition is also influenced by custom, so though the share of undernourished people has declined (from 24% in developing countries in 1990-92 to 14% in 2011-13), it will not have halved by 2015. Similarly, cutting maternal and child mortality means treating preventable diseases and improving care at home; these targets are far from being met.

An analysis by Britain's Overseas Development Institute, a think-tank, found that the poorest countries which started furthest from the goals are doing better than expected given their starting point, but that (except for the first goal on poverty reduction) their progress tends to be jerky, with the pace of improvements varying from one period to another.

Those conclusions contain a warning for the proposed Sustainable Development Goals (SDGs), which set targets for 2030. Overall, countries are better off than they used to be, so it may be harder to meet the new goals than the old ones. And the patchy pattern of improvement means targets of zero (for, say, extreme poverty or deaths from tuberculosis) will be especially tough.

The Copenhagen Consensus Centre, a not-for-profit organisation, asked economists and other researchers to look at various topics covered by the SDGs to see which offer the best rates of return (ie, are most cost-effective). They found that 18 of the 169 would pay back $15 or more for every $1 spent. Half of those are health interventions, such as better treatment of malaria and tuberculosis, immunising more children and making family planning available to all. Three are energy policies, including phasing out subsidies for fossil fuels, which now run at $50 billion a year. Three target education, including the universal provision of primary education in Africa and ensuring that girls receive, on average, two years more education than they now get.

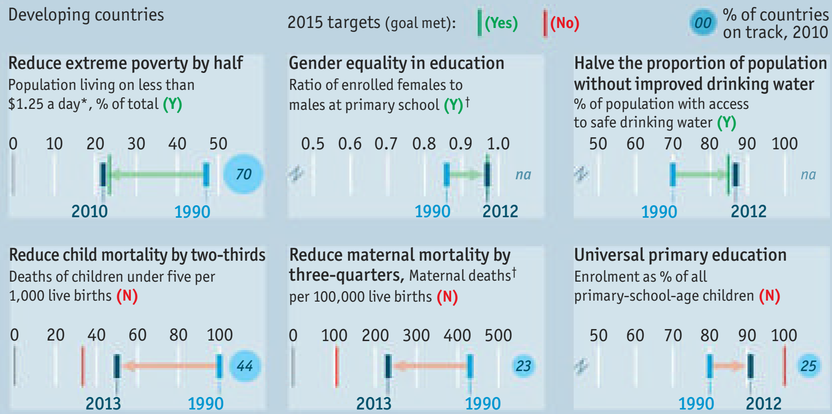
Alas, too many resemble goal 4.7:

> "by 2030 ensure all learners acquire knowledge and skills needed to promote sustainable development, including among others through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development."

Try measuring that.

Progress on selected Millennium Development Goals

Developing countries



Sources: UN; E. Samman, L. Rodriguez Takeuchi, Overseas Development Institute *At purchasing-power parity †Women aged 15-49

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Coal mining

In the depths

WARSAW

As more countries turn against coal, producers face prolonged weakness in prices

CHEAP energy matters most to poor people, and the coal industry's hopes have rested on emerging economies burning the black stuff to fuel their modernisation. But growing energy efficiency, rising pollution worries and stiffer competition from other fuels mean that in most countries the tide is turning against coal. Prices have been sliding (see chart), political opposition growing and demand drooping. The Dow Jones Total Coal Market index has fallen by 76% in the past five years.

High-cost deep mines in the rich world are worst-hit: in America 24 coal companies have gone bust in the past three years, and one-sixth of the remaining capacity loses money. But even Australia, whose low-cost opencast mines play a role akin to Saudi Arabia's in the oil market, is jittery.

Stoking the gloom is China, once the strongest market. It is still the world's biggest coal consumer, and has accounted for four-fifths of global demand growth since 2000. But Chinese consumption dipped by 1.6% in 2014, despite economic growth of 7.3%. The country's voracious appetite for steel is peaking, damping demand for coking coal. Worries about pollution mean that demand for thermal coal, as used in power stations, is slackening too. Water conservation is another concern for policymakers—on current trends coal could account for a quarter of China's water use by 2020 and coal reserves are mainly in the most parched regions. Its coal-fired plants are running at only 54% of capacity, a 35-year low. In Beijing two big coal-fired plants closed this week; the capital's last one will shut down next year.

Another prop to demand has been power generation in rich countries. But in America coal now struggles to compete with natural gas, which has fallen by 80% in price since 2008. Domestic coal use there peaked in 2007. European consumption soared after Germany's hasty decision to close its nuclear-power plants. But gas and renewables are eating into that.

Coalswarm, an environmental think-tank, says in a new report that two-thirds of coal-fired power plants proposed worldwide since 2010 have been stalled or cancelled. The growth rate in coal-fired generating capacity is slowing, down from 6.9% in 2010 to 2.7% in 2013. In 2014 the world added more generation from windpower than coal. Overall, Europe and America have already cut coal-fired generation capacity by over a fifth in a decade. The output of American coal mines dropped to 1993 levels in 2013 (though consumption rose slightly, compared with 2012, as stocks were run down).

Shafted

Coal price, $ per tonne

Source: Thomson Reuters *Australia †China

Political pressure is growing against the most carbon-intensive fossil fuel. Coal provides 40% of the world's electricity. But of 1,617GW of global capacity, 75% is of the dirtiest kind, which burns coal at low temperatures and emits 75% more carbon dioxide than the most advanced (and costly) "ultra-supercritical" plants, which burn powdered coal at high temperatures. The chimneys of all but the most modern coal plants also emit plenty of other nasties. Mercury emissions stunt young brains. Sulphur and nitrous oxides scald lungs. Overall, coal kills around 800,000 people a year, most of them poor. In China it is responsible for up to a sixth of the particulates most dangerous for human health.

Germany is introducing new CO_2 curbs to force the closure of its dirtiest coal plants. In America the coal and electric-utility industries are fighting the Environmental Protection Agency's attempts to curb emissions of CO_2, mercury and other toxins contained in coal. On March 25th the Supreme Court heard arguments by some state governments, backed by the miners and utilities, that the agency has failed duly to consider the cost of its measures against mercury (see page 35).

Campaigners reckon 80% of the world's coal reserves must stay in the ground if the planet is to stand a chance of keeping glo- ▸▸

bal warming under 2°C by 2050. A divestment movement akin to the apartheid-era campaign to boycott South Africa is under way in many universities. Stanford may dump its coal investments and Oxford University is under pressure to do likewise. The World Bank no longer invests in coal-fired plants. Last year Norway's sovereign-wealth fund dumped its holdings in more than 50 coal companies worldwide. South Korea recently introduced a carbon cap-and-trade scheme which punishes coal.

The horizon is not wholly bleak for coalmen. Clean-coal technology can abate the worst pollution, at a cost. Schemes for capturing power stations' CO_2 emissions may one day prove economic, countering coal's reputation as a planet-cooker.

Furthermore, in some emerging markets, India especially, demand for coal is set to continue rising—so overall global demand may not peak until at least the 2030s. This week India's government predicted a 19% rise in the country's coal imports in this fiscal year. But thereafter the plan is to bring in private contractors to develop India's untapped coalfields, and then to phase out all thermal-coal imports. If so, that will be grim news for the Indonesian, Australian and South African mining firms that are supplying India at the moment.

Black hole

Even though some other developing nations' coal imports will grow in future, coal companies are having to face up to a crisis now. Some are cutting costs and getting ready for a wave of consolidation. Others are litigating and lobbying against change. In Poland, Europe's largest producer, pampered and powerful miners produce costly deep-mined coal that nobody wants to buy. It costs the state-owned miner, Kompania Weglowa, $80 to mine a tonne of coal against a world price of $61 for similar grades. A stockpile of 16m tonnes continues to grow, as Poles import much cheaper coal from Russia. Miners have nonetheless reacted furiously to plans to close four of the countries' least efficient mines and to create a new company with nine more viable ones. The authorities, in the run-up to elections this year, quickly retreated.

The biggest danger for the coal miners is that capital ceases to flow their way. Investors can cope with a cyclical business, but the fear now is of a structural shift, in which China follows the rich world in beginning to phase out coal, India increasingly produces its own, and a plentiful supply of cheap gas keeps prices low everywhere. If so, new coal-mining investments would risk becoming stranded assets, and older deep mines would be even more uneconomic than now. Carbon Tracker, a non-profit group, reckons that more than $100 billion-worth of planned capital spending risks being stranded by 2035. A prospect as black as a miner's lungs. ■

Buffett buys Kraft Foods

A big bite

NEW YORK

Berkshire Hathaway's latest big deal is quite a mouthful

WARREN BUFFETT says he likes to buy companies that are easy to understand and are performing well. His latest deal, the $50 billion acquisition of Kraft Foods that was announced on March 25th, passes only one of those tests. Most people can get their heads around the slices of processed cheese and hot dogs that Kraft churns out—indeed Mr Buffett, known to favour plain fare, would probably like to get his lips round them, too. But as a business, Kraft is a bit of a mess.

Last year its revenues were stagnant and its volumes and profits fell. Its chief executive left in December. It generates 98.5% of its sales in the mature markets of America and Canada, where, the suspicion is, a new generation of healthier eaters no longer aches to scoff a Kraft Macaroni & Cheese, followed by a plate of Jello and washed down by a Capri Sun drink.

Kraft's predicament is in large part a result of its turbulent ownership over three decades, in turn a testament to the hyperactivity of Wall Street's dealmakers. It has been the subject of seven big mergers or spin-offs since 1980, including an unhappy spell under the ownership of Philip Morris, a tobacco firm, between 1988 and 2007. Most recently Kraft was separated from its global snack brands in 2012, which were renamed Mondelez International.

Reflecting Kraft's troubled past and iffy present performance, Mr Buffett is not buying it alone, nor managing it. Instead he is working with 3G Capital, a buy-out firm with Brazilian roots which is the closest thing the consumer-goods industry has to a miracle-worker. In 2013 Berkshire Hathaway, Mr Buffett's investment vehicle, teamed up with 3G to buy Heinz, another food company, with each taking 50%.

Snackers' yard

Operating margins*, 2014, %

Sources: Bloomberg; *The Economist*

*EBITDA/Sales
†Nine months to February

The new deal builds on this structure: aided by a capital injection from its owners, Heinz will purchase Kraft. Once the deal closes Berkshire and 3G should each own about 25% of the combined firm and the rest will be in the hands of outside shareholders. Heinz's top brass will run it, and its chairman will be Alex Behring, a founder of 3G.

The buy-out firm has experience of corporate orphans—another big investment is Burger King, which had flipped ownership four times in less than two decades. What 3G really excels at, though, is cost cutting, guided by the philosophy of "zero-based budgeting": every dollar of expense must continually be questioned, from corporate jets to photocopying bills. 3G was behind the creation of Anheuser-Busch InBev, the world's biggest brewer, that has industry-leading margins. Since 3G has run Heinz, its gross operating margins have risen by eight percentage points.

Mr Buffett and 3G are paying top dollar for Kraft. Based on last year's underlying profit figure, the deal will generate a miserly 4% post-tax return on capital. Were Kraft to enjoy the same margin uplift that Heinz has, this would rise to 6%—still subpar. So, to make the numbers work, Kraft will also have to expand its sales, preferably outside America. The plan is to use Heinz's international footprint (it generates over half its sales abroad) to help Kraft's all-American brands go global.

Investors concluded that all this makes sense: Kraft's shares rose by 36% on the day of the announcement. And yet this latest giant deal raises two uncomfortable questions. One is that it has all been tried before. In 2004 Kraft launched a "one company" initiative, with the aim of creating a huge and globally integrated firm with lower costs, only to do a U-turn seven years later, to focus instead on creating nimble niche businesses. Perhaps now, after decades of strategic indecision, the global approach will work under stable ownership—Mr Buffett promises Berkshire will hold its Kraft stake "forever".

Yet it is Mr Buffett's own role that raises the second question. With an enterprise value of $110 billion, Heinz-Kraft will be one of the biggest businesses in which Berkshire Hathaway has a significant stake. Its holdings in the group, including preferred stock, will be worth about $30 billion, equivalent to roughly a tenth of Berkshire's market value. It is unclear how control of this huge investment will be split between 3G and Berkshire, a question given saliency by the fact that Mr Buffett, aged 84, cannot go on leading his company forever. It may end up being a matter for his as-yet-unnamed successor to grapple with. There is another solution, of course. If Mr Buffett admires 3G and its founders so much, perhaps he should consider asking them to run Berkshire itself. ■

Mobile services

The message is the medium

Messaging services are rapidly growing beyond online chat

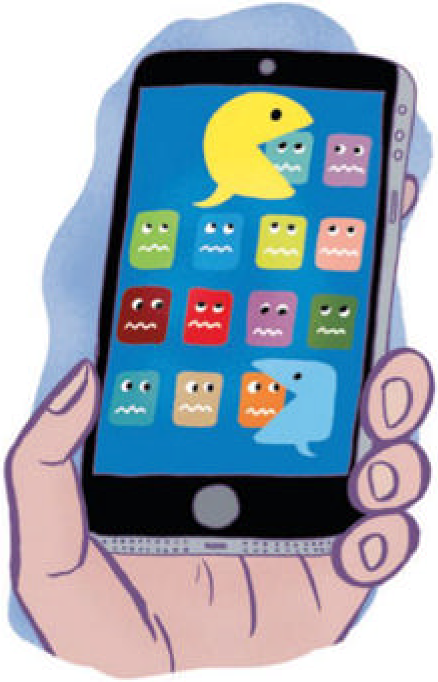
"I PROPOSE, if and when found, to take him by his beastly neck, shake him till he froths, and pull him inside out and make him swallow himself." It is not often that Silicon Valley's denizens quote P.G. Wodehouse. But this is what Benedict Evans of Andreessen Horowitz, a venture-capital firm, expects the success of messaging services could do to both mobile and corporate software.

The most striking example so far of this process came on March 25th when Facebook announced at a conference in San Francisco that it has started to turn its Messenger service into a "platform" that can carry, and be integrated with, all manner of apps created by other software firms. So Facebook Messenger, which is itself an app for smartphones that run on Apple's iOS and Google's Android operating systems, will then be competing with those operating systems' services for buying apps and downloads. In plain language, it could become the app that ate Apple's app store.

The prospect may surprise those who thought messaging apps were just another way for teens to share this week's tragic news about One Direction (a pop group, apparently). But their continuing explosive growth suggests that they will be a lasting phenomenon. According to Flurry, a market-research firm, the total number of users grew by more than 100% last year (which explains why old-style text messages seem to have peaked, see chart). Together the ten biggest messaging apps, which include KakaoTalk, Viber and WeChat, now boast more than 3 billion users. WhatsApp, the leader of the pack, alone has 700m—a big reason why Facebook last year paid $22 billion for the firm, despite continuing to develop its own Messenger app.

As the number of users has grown, specialised versions of messaging apps have emerged. What made Snapchat popular was the ability to exchange pictures that vanish after a few seconds (and often contain nudity). Secret, Whisper and Yik Yak let users remain anonymous (including bullies, unfortunately). Telegram stands out because of its strong encryption (making intelligence services unhappy). And FireChat works without cellular service: users' phones communicate directly, which was a popular feature during recent protests in Hong Kong.

The time users are spending on messaging services has encouraged investors to value them highly, even though it is not yet

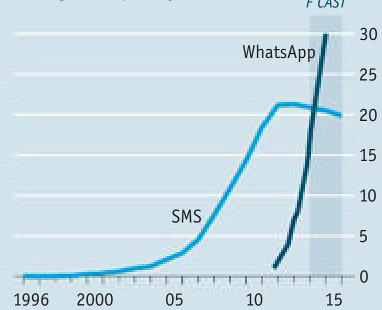


clear how some of them will make money—much as happened with the rise of Twitter and with Facebook's original service, its social network. WhatsApp handled more than seven trillion messages last year, about 1,000 per person on the planet. In Britain users spent as much time on WhatsApp as on Facebook's social-networking app, according to Forrester, another research firm. In China subscribers to WeChat are estimated to use the app for about 1,100 minutes a month on average.

Although the numbers are smaller, something similar is happening in the business world. Slack, a messaging service that works on both smartphones and personal computers, seems to be succeeding where other attempts to create "corporate social networks" have failed, by replacing e-mail as the main communications channel inside firms. Just over a year old, Slack now has 500,000 users. It says they typically spend 135 minutes each working day on the service and altogether send 300m messages a month—which is why investors valued the firm at more than $1 billion when it raised capital in October.

OMG, RIP txt

Messages sent per day, bn



Sources: Portio Research; a16z

Instead of inundating workers with individual messages, Slack divides the digital deluge into more manageable "channels", each dedicated to a project or a team. Users can create and subscribe to such channels, exchange messages, post links and upload files—all of which are saved. Besides reducing the time everyone spends handling e-mail, the channels also help new employees to get up to speed quickly, instead of starting with an empty inbox.

Slack is not the only service of its kind. Other startups, including Quip and HipChat, offer similar features. Established firms are not far behind. Cisco, a maker of networking gear, recently launched a service called Spark, which looks and feels a bit like Slack, but lets users switch to voice and video communication if needed. IBM will soon follow suit with Verse, a web-based e-mail service which lets users exchange instant messages, but also employs the firm's artificial-intelligence engine, Watson, to sort messages and even reply, to reduce the communication burden.

To please investors as much as they evidently please their users, messaging services, in their consumer and corporate incarnations, will eventually need to turn a profit. There are several ways in which they aim to do this. One is by selling add-ons, at a modest price but in large volumes: for instance, in Asia some messaging services sell "stickers", little pictures that let users make their messages more expressive, for something like a dollar a dozen.

Another way to make a living is to take a cut of any e-commerce or money transfers that take place over their networks. WeChat users have long been able to order taxis and buy air tickets over the service, and as its popularity keeps growing, so will its ability to start charging businesses for sending customers their way. Snapchat already lets CNN, *National Geographic* and other news media publish articles on its service in return for a share of any advertising revenue. Line and Snapchat have recently added a payment service, as has Facebook Messenger.

Although most messaging services are free, WhatsApp charges a small subscription fee, of 99 cents a year, something the main social networks have shied away from. Once users, and all their friends and contacts, have grown accustomed to using a particular messaging service, it should become easier to get them to cough up a small annual payment. Multiplied by a huge user base, with only modest running costs to subtract, that could provide a handsome profit.

For corporate messaging services, there is even more potential for charging such re- ▸▸

curring fees, since businesses are already used to paying annual licensing and maintenance charges for the e-mail systems and other software that these services aim to replace. Companies large and small have all sorts of online functions, from customer support to the tracking of software bugs, that bombard them with alerts and queries—so anything that helps them deal with these more efficiently is worth paying for. Slack's customers, for $7 a month for each user, can pump unlimited numbers of external messages into channels, turning the service into a hub for all the flows of information that make a company tick.

Yet the juiciest prospects may lie in the example Facebook set this week—allowing messaging services to become platforms on top of which other firms can develop content and apps, with all sorts of means to generate revenues. WeChat, with its various add-ons, is already a platform of sorts. Facebook now intends to go even further and wants its Messenger to become the point of integration for other services and apps. Users will, for instance, be able to open another app simply by tapping a link embedded in the flow of messages.

Such moves to become the platform that supersedes other platforms are a natural evolution in software, says Venkatesh Rao of Ribbonfarm, a consulting firm. Similar battles have happened before, most notably in the "browser wars" of the mid-1990s, when Netscape's Navigator tried to usurp a dominant platform, Microsoft's Windows operating system. This time the incumbents are Android and iOS, and they will certainly fight back. ■

Pay rises in America

Serfs up

NEW YORK

American firms are having to get back into the habit of granting pay rises

THIS week the rank and file of the United Auto Workers union (UAW) met in Detroit under a logo of a clenched fist and the slogan, "It's our time". When they last collectively negotiated a big pay deal, it was in 2011 and General Motors, Ford and Chrysler were still crawling out of the worst recession in memory. What the workers got then reflected the firms' feeble condition: for Ford's hourly-paid UAW members that was an annual rise of just 1%.

That deal expires this year, just as the motor industry is booming again. The big-three car firms complain that their wage bills are still higher than those of foreign rivals, and say they will resist pay rises. But together they made underlying pre-tax profits of $19 billion in 2014. Workers want their slice of the cake. The gathering in Detroit was to plan tactics ahead of talks with the car bosses in July.

Revolving doors

US retail jobs, monthly turnover rates*

Three-month moving average

Source: Bureau of Labour Statistics

*Number as % of total retail employment

Carmaking is not the only industry where there is upward pressure on pay. In February Walmart, known for its stingy wages and lack of unions, said it would pay junior staff at least $9 per hour, which is above the federal minimum wage of $7.25. That will affect 500,000 staff and cost $1 billion, equivalent to 6% of net profits. This week Target, another retailer, was reported to have raised its minimum pay to $9 an hour. It so far refuses to confirm this.

The Federal Reserve and many economists may be perplexed as to why hourly wage rises across the economy remain subdued, at just 2% year-on-year in February, even as the unemployment rate has reached a low of 5.5%. But to many bosses it is clear which way the wind is blowing.

For a start there is political and popular pressure to raise pay, and not just from the White House. Seattle's mayor, Ed Murray, plans to force big firms in the city to pay at least $15 an hour by 2017. At the bottom of the pay scale the actions of giants such as Walmart will have a knock-on effect among the 3m-odd Americans who get paid the federal minimum wage or less. McDonald's recent annual report warns of "the trend towards higher wages".

The bosses of smaller companies, which account for a large chunk of employment, already face a tight labour market. In February the share of small firms that said they had job openings that they were unable to fill, and were raising pay, rose to levels last seen before the 2008 financial crisis, according to the National Federation of Independent Business.

If many bosses fret about rising pay, investors do not. Most listed firms do not disclose their labour costs and few analysts ask about them. That seems complacent. The companies that form the S&P 500 index of America's biggest firms employ 24m people worldwide. And their profits are still quite sensitive to wage costs. A 10% rise in pay would cut profits by 8%, based on official statistics for big American multinationals. Walmart's shares dropped by 3% on the day that it announced its pay rise.

Rising paybills need not be bad news for shareholders, however. In labour-intensive industries the American way of low pay, low staff retention and low motivation may be a false economy. Perhaps a third of Walmart's staff are reckoned to quit in any given year, which could be one reason why it often scores poorly for customer service. In 2014 it said inept shelf-stocking cost it $3 billion a year—more than its planned pay rise. As the economy improves, many retailers are busy hiring new staff only to see others walk out of the door (see chart). Zeynep Ton of the MIT Sloan School of Management notes that some retailers, including Costco, pay more and have happier staff who quit less and build up skills. Margins are higher as a result.

But if a trend of rising wages does set in, it will require a change of mindset among American firms. Managing labour is an art form in economies beset by pay inflation. In India, outsourcing firms such as TCS, which employs 318,000 people, put intense effort into reducing staff-churn rates—TCS's is just 13% per year. Corporate America has almost forgotten what it is like when people are a scarce resource. It is time to remember. ■

Startups in Myanmar

Land of temples and tech

YANGON

The startup culture germinates in an unlikely place

REMARKABLE views greet visitors to Phandeeyar, an open-plan office and events space which sits atop a tower block in the centre of Yangon, Myanmar's biggest city. Its north windows frame golden pagodas and colonial mansions; to the south weather-beaten cargo ships glide up the Yangon River. The room is much-loved by the gaggle of computer programmers, entrepreneurs and digital-media types who have lately begun to congregate there—but it would be better still if Yangon's power were more reliable. It is a long way down when the lift is out of action.

Just about every country, from Mexico to Malaysia via Montenegro, wants to create the next Silicon Valley. Myanmar does too, though it starts from a lower base than even most developing economies. Still, a few firms have begun to blossom since its ruling generals began opening up the economy in 2011. Back then, less than 1% of Burmese people could access the internet. But with wireless towers now popping up across the country, the government thinks 80% of citizens may have a mobile phone with a data connection by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Blessed with the fruits of modern technology

2016. Small, local firms are racing to benefit: MySQUAR, a social network, said on March 22nd it was hoping to raise $2.5m by listing in London. There is Rebbiz, which runs property and jobs portals; Bindez, a search engine; and NEX and Technomation, which design smartphone apps.

With little proficiency in foreign languages, Myanmar's web users are clamouring for local content. But Yangon's tech entrepreneurs—who include home-grown talent and returning emigrants—face many hurdles. Good programmers remain sparse: coders who trained to work on government projects may not know the open-source languages from which many online services are now built. Competing standards for encoding the Burmese alphabet are making it tricky to produce text that will be readable on all devices.

Making online payments is another difficulty, notes James Chan, an angel investor, because most Burmese are unbanked. At first, people mostly bought apps by paying cash for them in an electronics shop. The shop would download each app to the buyer's smartphone from an encrypted memory stick provided by its designers. More recently, scratch-cards bearing download codes have become popular. Once Myanmar's new wireless networks are complete, mobile payments should take off, provided the government allows this. But for the moment many would-be web entrepreneurs are relying on corporate contract work to pay their bills.

Perhaps the greatest uncertainty is how many local tech firms will survive once foreign rivals move in. Already, Facebook is probably Myanmar's most-visited website; Viber, an Israeli messaging app, is following behind. Rocket Internet, a German firm that builds e-commerce sites for emerging markets, is testing the water; and in February Google launched a local-language version of Gmail, its e-mail service.

One day, the founders of local startups may get rich by agreeing to be bought out by such foreign firms. But so far, most are nowhere near advanced enough to be attractive purchases. Vagueness in the rules on foreign investment and intellectual-property rights do not help with the difficult task of finding funding from abroad.

But ever more Burmese entrepreneurs are prepared to have a go, and plenty of foreigners would like them to succeed. Phandeeyar is supported in part by the Omidyar Network, an American philanthropic foundation, which hopes to inspire programmers and do-gooders to collaborate on projects that accelerate Myanmar's development. Ooredoo, a Qatari mobile-telecoms operator which is building one of the country's new networks, has also been promoting local startups. Life in a closed country has made the Burmese unusually resourceful, reckons Kaung Sitt, an entrepreneur who has recently returned home from Singapore: "You find your own way to get things done." ■

Chinese firms in Europe

Gone shopping

MILAN

More European businesses are coming under Chinese ownership

"ITALIAN industrial policy is now made in Beijing," lamented Romano Prodi, a former Italian prime minister, on March 23rd. His comment followed news the day before that China National Chemical Corporation (CNCC), a state-owned conglomerate, would buy Pirelli, an Italian tyre-maker, for €7 billion ($7.7 billion). It will be the biggest Chinese investment in Italy so far, but just the latest in a string of acquisitions driven by China's growing appetite for Europe's brands and technology.

CNCC agreed with Pirelli's controlling shareholders to buy Camfin, a holding company which owns 26% of the tyre-maker, as a first step before launching a takeover bid for the whole group. The deal is in some ways an outlier, not just because of its size but because its shareholder structure, which includes Rosneft, a Russian oil firm under American sanctions, ruled out many industrial partners. Yet it is also part of a trend that has seen China's investment in Italian businesses grow from almost nothing in 2008 to €6 billion last year, according to KPMG, an accounting firm.

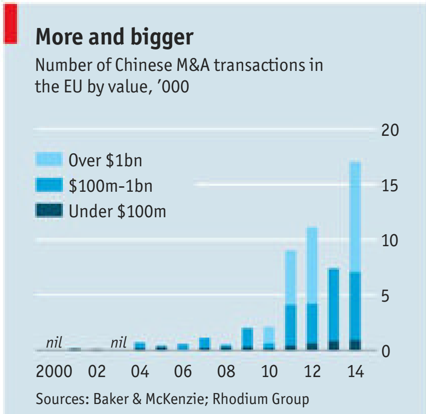
That made China Italy's biggest source of foreign investment in 2014, and Italy the biggest beneficiary in Europe of Chinese investment after Britain. Chinese deals in Europe as a whole rose from $2 billion in 2010 to $18 billion in 2014, according to research by Baker & McKenzie and the Rhodium Group, a law firm and a research outfit (see chart, next page).

Chinese firms are following an edict to acquire advanced technology and high-quality brands from abroad that the government laid down in its five-year plan of 2011. Until recently most outbound deal-making was by state firms buying up raw materials. Now high value-added businesses are the main target, and private capital is flowing: in 2014 private Chinese firms accounted for 41% of deal value. Like Japan in the 1980s, China is cash-rich and ready to pay up for prized assets.

Europe is attractive because it has lots of businesses going cheap—privatisations, cash-strapped firms and a weak euro provide ample opportunities—and because it is open for business. In France and Italy an obsession with national ownership has been eroded by a need for foreign investment. Germans are proud that their firms are desired by the world's rising economic power. America, by contrast, is choosier about who buys its strategic assets.

In Britain, which has long been open to foreign ownership, Chinese firms have stakes in Thames Water and Heathrow airport. In France they have invested in Toulouse airport; in PSA Peugeot Citroën, a carmaker; and in Club Med, a resort operator. In Greece a Chinese firm runs part of the port of Piraeus. In Sweden Volvo, another carmaker, is also Chinese-owned. InFront, a Swiss firm that is a big owner of sports-broadcasting rights, has just been bought by a Chinese conglomerate. And in Italy, besides Pirelli, Chinese firms' purchases range from Ferretti, a yachtbuilder, to Salov Group, an olive-oil producer, and stakes in Ansaldo Energia, a maker of gas turbines, and Ferragamo, a fashion house.

China's appetite for European assets, particularly in areas such as technology, food and property, will keep growing. Less clear is how well Chinese firms can manage their acquisitions. They are not as quick at learning this as they have hitherto been at copying foreign products, reckons



Alberto Forchielli of Mandarin Capital Partners, a Sino-Italian private-equity fund. Many are "buffoons" when it comes to doing business in the West, he says. They tend to centralise decision-making in China, while failing to give directions to local managers, leaving the company in limbo. In cases where Chinese owners leave their foreign acquisitions' managers largely to do their own thing, while helping them gain access to China's huge domestic market, things go better.

Some deals offer hope. Many scoffed at Geely's acquisition of Volvo in 2010. It took a while, but Volvo's sales last year hit a record 465,900 cars. The acquisition by Changsha Zoomlion of Cifa, an Italian maker of concrete pumps, ultimately led to Asian construction contracts that saved the firm. And Peugeot's deal with Dongfeng, in partnership with the French government, helped the firm return to profit in 2014; it is now selling more cars in China than in France.

Francesco Moccagatta of N+1 SYZ, an adviser on mergers and acquisitions, thinks Chinese managers are rapidly wising up. Their fluency in English has improved greatly over the past five years; they are increasingly using big Western investment banks to handle deals instead of doing things for themselves; and Chinese admissions to American executive MBA courses are rising. "They're going to kick our arses," he predicts. Maurizio Castello of KPMG agrees that Chinese investors no longer stumble around like tourists, but says too few of them understand due diligence and the other processes in M&A deals.

There would be more Chinese purchases of European firms but for a gap in expectations. Chinese firms are aware that buying and turning round an ailing foreign business would be beyond them, and yet the family owners of the best-performing European businesses—the ones the Chinese covet—are fussy about whom they might sell to. If the Pirelli deal and others go well, that could help shift attitudes. If so, and if Chinese firms master the art of doing business in the West, Mr Moccagatta could be proved right. ■

Corporate governance in Japan

Fanuc stoops to conquer

YAMANASHI PREFECTURE

A reticent robot-maker resolves to speak to its shareholders

YOSHIHARU INABA, the president of Fanuc, a secretive Japanese maker of industrial robots and machine-tool controllers, has something of importance to say to the outside world. Having invited your correspondent to visit its complex, deep in a forest in the foothills of Mount Fuji, he explains that the reason why he and the company's workers (human and metallic) all dress in yellow is not that Fanuc is some sort of occult group, but because that colour is conspicuous and is a useful public-relations tool. Both he and his father, Seiuemon Inaba, Fanuc's honorary chairman, he confides, prefer to wear blue in private.

Investors in Fanuc can in future look forward to somewhat more profound revelations. On March 13th the firm caused surprise with news that it would consider returning some of its massive reserves of cash, earned from fat profit margins on a rapidly expanding business, to its shareholders. Shares in Fanuc, which supplies over half of the computer systems controlling the world's machine tools, leapt by 13% on the day of the announcement, lifting its market capitalisation to ¥6.3 trillion ($53 billion). To still greater amazement, it said it would henceforth speak regularly with shareholders, and will provide a formal investor-relations service, starting on April 1st. The company has even started making contact with journalists.

But old habits die hard, it seems. One shareholder who also made the trip to Fanuc's yellow campus in March, and asked to see the incoming head of the new department, was rebuffed. Typical, he huffed. A report by the Securities Analysts Association of Japan ranked Fanuc last out of 251 firms for the extent of its disclosures to investors. Mr Inaba says that having to talk to investors will take away time from building relationships with his customers, which include Apple and General Motors.

The company bristles at the idea that its changes were the result of Daniel Loeb, an American activist investor, taking a stake and pressing for share buy-backs. The reason for them, Fanuc says, is rather that they were needed to comply with a new corporate-governance code for listed companies that goes into effect in June. The code will also require firms to appoint at least two outside directors to boards. Mr Inaba says he plans to appoint more than two such outsiders to Fanuc's board in the near future, compared with one now.

The job of those new directors will be to ask difficult questions that have thus far gone unasked. Investors complain that Mr Inaba took over running the firm from his father in 2013 with next to no discussion with them, even though the family owns only a small shareholding. That said, there is little immediate pressure on executives beyond the question of capital management, because Fanuc's business is thriving as automation expands across factory floors and elsewhere. Mr Loeb, indeed, has compared the company to Apple, for its focus on a handful of technologically superior products.

Given the weight of cash on its balance-sheet, admits Mr Inaba, it could be said that Fanuc does not know how to spend money. He will meet Mr Loeb soon, but says he has made no decision on how exactly to return cash to shareholders. However, as an apparent concession to the activist investor (though the company denies any connection), Fanuc has promised to spend more on expanding production and research capacity.

Nadim Rizk of Fiera Capital, a Canadian investment manager, says Fanuc has long been one of the most difficult Japanese companies to deal with. However, even if it is merely going through the motions of opening up, its move is significant. It is another sign of hope that hitherto opaque businesses are gradually becoming more responsive to the demands of institutional investors (see Schumpeter). As well as the country's new governance rules, which could soon force around 700 large firms without outside directors to appoint them, Japan now has a new stewardship code that obliges Japanese pension funds and the like to monitor firms more closely. More suits will soon be on their way to Fanuc, perhaps even outnumbering the hikers headed for Mount Fuji. ■

Oh, look, a human

Schumpeter | Firm beliefs

"Asian" corporate values seem to be making a comeback—but appearances are deceptive

WHEN Asia plunged into crisis in 1997-98, and the IMF was forcing Western economic medicine down the throats of Asian governments, it was also assumed that the region's opaque and over-diversified business groups would be compelled to swallow the Anglo-Saxon model of capitalism. Whether controlled by tycoons or the state, these outfits would become open, focused, responsive to investors and managed by professionals.

Today the idea that corporate Asia will converge with the West seems quite mad. About 70% of Asia's stockmarket value is represented by state-run firms or "business houses"—broad conglomerates that are usually family-controlled. Asian firms pay out just a third of their profits in dividends and buy-backs, compared with three-quarters for European firms and 90% for American ones. In 2014 Apple spent more on repurchasing stock than the top 500 Asian firms combined. East of Suez lies a continent that the modern doctrine of shareholder value never conquered.

Indeed, to Anglo-Saxon types, corporate Asia often appears to be going back in time. Consider China's supposed reforms of its state firms. In January CITIC, a conglomerate that thrived under Deng Xiaoping, sold stakes to CP Group, a Thai firm whose patriarch has Chinese roots, and Itochu, a Japanese trading house. CP and Itochu were among the first foreign firms to invest in China, in the 1970s. The alliance's use of cross-shareholdings and the vagueness of its strategic goals were a flashback to a murkier era. In September Sinopec, a Chinese energy giant, sold a $17.5 billion stake in its marketing arm to a consortium of state bodies, entrepreneurs and shell companies in tax havens. The deal epitomised the opacity at the heart of Chinese governance.

The subprime crash and other scandals have tarnished Anglo-Saxon capitalism's image. Many of the West's rising tech stars have spurned its ideals. Alibaba, a Chinese e-commerce firm, has listed in America with a complex ownership structure that leaves investors all but powerless—inspired to do so by Silicon Valley's young moguls as well as Asia's older ones. India's biggest private conglomerates are still sticking fingers in every nook of the economy, as they did decades ago. Reliance Industries recently bought a broadcaster, giving it even more political clout. Tata Sons, which has strong corporate governance but sloppy capital allocation, is starting two airlines (its first was nationalised in 1953).

South Korea's business houses, the *chaebol*, also seem at times to be reverting to old ways. Hyundai, a carmaker, has infuriated some investors by spending $10 billion on land in Seoul's posh Gangnam district for a new headquarters. The daughter of the tycoon who runs Korean Air was sentenced to jail last month after humiliating a flight attendant who served her nuts incorrectly. For Koreans the episode showed the abiding sense of entitlement of the *chaebol*'s founding families. A recent survey by CLSA, a stockbroker, concludes that firms' governance in Asia—judged by measures such as board independence—has slipped since 2012.

Perhaps Asia just has its own way of doing business. Scholars have long debated whether weak legal systems and capital markets lead Asian firms to diversify and rely on political and familial networks. To its detractors this habit breeds cronyism. Fans say it allows long-term decision-making. But both sides probably now agree that "Asian" corporate values will only grow more powerful, as the continent's economic weight in the world rises.

In fact this view is as complacent as the belief that Asia will mimic the West. Strong long-term forces will push Asia's firms to change, as has just been illustrated by Li Ka-shing, the continent's second-richest man. In January he announced an unscrambling of his empire of interlocking property, retail and telecoms assets. That helps with succession, making it easier for his children to exert control—Mr Li is 86. It makes institutional investors happy—the group's value has since risen by $12 billion. And it helps marshal capital so that the group's main businesses can gain scale. This week Mr Li closed a deal to buy O2, one of Britain's largest mobile-phone operators, for $15 billion.

The rigours of mortality

These three forces—mortality, the need to please shareholders and the drive to achieve global scale—will lead other firms to reform. Hong Kong's richest five tycoons have an average age of 82. In South Korea Samsung and Hyundai are trying to reshuffle their holding chains in preparation for a new generation to take over. To do so they need to win over their outside investors. After its Gangnam-style fiasco Hyundai launched a share buy-back. Both *chaebol* have faced shareholder rebellions and been forced to sweeten or abandon restructuring plans.

As patriarchs get older, institutional investors will gain more clout, especially as more Asians save for retirement. Already, global funds such as BlackRock are many firms' biggest outside investors. This month South Korea's state pension fund opposed the election of two directors of Hyundai companies. Japan's state pension fund is pushing firms to boost their profits. On March 13th Fanuc, a secretive Japanese robot-maker, said it would create an investor-relations department and consider paying more dividends. It has been a target of Third Point, an activist fund.

Globalisation does not affect every industry—property, the bedrock of many Asian fortunes, is a parochial affair. But firms active in sectors that are open to foreign competition will need to concentrate their firepower to gain economies of scale, rather than follow the old way of sprawling diversification. Two of Asia's most valuable firms are focused multinationals—AIA, an insurer, and TSMC, a Taiwanese chipmaker. More will follow.

The result of all this could be a rising cohort of Asian firms like Mr Li's—with families (or the state) still exerting some control, but with accountability to other investors and an emphasis on global scale. The view that Asian firms would converge with an Anglo-Saxon ideal was mad. But so is the idea that they will stand still. ■


47
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Bank resolution

Pre-empting the next crisis

Regulators' desire to make banks easy to kill is determining how they live

JUST 51 hours separate the closing of the New York Stock Exchange on Friday afternoon from the opening of the Tokyo bourse the following Monday. How bankers wish it were longer. Regulators want it to be possible for any bank to fail without causing chaos or taking a bail-out from taxpayers. To that end, they are demanding that big financial firms draw up plans that would make it easier to dismember them or start winding them down during the brief weekly hiatus in trading.

That is proving tricky. This week the Federal Deposit Insurance Corporation (FDIC), the American regulator that takes charge of failing banks, rejected the "living wills" of the local subsidiaries of three of the world's biggest banks: BNP Paribas, HSBC and RBS. Last year it declared inadequate the plans of all 11 of the banks with more than $250 billion in assets in America, including Bank of America, Barclays, Citigroup, Credit Suisse, Goldman Sachs, JPMorgan Chase, Morgan Stanley and UBS. The second lot have until July 1st to revise their submissions; the first three until the end of the year. If any of the revised plans are rejected, regulators will gain extraordinary powers to stem the growth of the banks in question or break them up.

The basic problem is that big banks' operations are too complicated for a quick and easy dismemberment. The FDIC and other "resolution authorities" (Europe's new one held its first meeting this week) are forcing them to become much simpler. The aim is to make a bank failure akin to that of any other firm in the economy: painful for investors, potentially troubling for staff and suppliers, but far less noteworthy for customers and the wider world.

Regulators want choices they didn't have during the financial crisis, when nudging a financial firm into bankruptcy was thought likely to unleash pandemonium—a conjecture confirmed when Lehman Brothers foundered in 2008. Since then, many governments have given resolution authorities the power to take over a faltering bank well before the cash runs out. They will be allowed to run their charges much like an administrator does an insolvent company.

Regulators also intend to impose losses from a bank failure not only on shareholders, but on bondholders too. That would be an improvement on the financial crisis, when bondholders were largely spared for fear of exacerbating the credit crunch. A large part of the money banks use to fund themselves now has to be in the form of "bail-inable" debt, (some of) which is intended to be written off if a bank is close to failure, not just if it is bust. In theory, a regulator would be able to impose enough losses on shareholders and creditors to stabilise a bank over that brief first weekend without troubling depositors or taxpayers. The resolution authority would then have a few months to make decisions on whether to wind down the bank or allow parts of it to keep going.

For all this to work, regulators think banks need to change. Ideally, they would like each operating unit to be able to function independently, with its own dedicated funding and capital. The watchdogs also want banks to be simpler. They are not keen on rococo corporate structures (cross-shareholdings between units based in assorted offshore jurisdictions, say) which mere mortals can scarcely understand, let alone disentangle in a crisis. "Too complex to resolve" is the new "too big to fail".

Banks must codify what were once informal relationships between different units. Critical but dull support services—the IT helpdesk, say, or the property-management division that holds the lease on the bank's head office—must have clear service contracts with other bits of the bank, in case they get sundered in a break-up. Another form of simplification is the agreement 18 global banks struck last October promising not to pull out of derivative contracts abruptly if one them hits the buffers.

American regulators also want banks to be able to go through full-blown bankruptcy without needing to borrow from the Federal Reserve—a Herculean task, given depositors' and creditors' tendency to flee troubled banks. So far, Wells Fargo is the only big American bank that the FDIC judges capable of that. It is helped by a comparatively simple corporate structure: its foreign operations are small, and it does hardly any investment banking.

Some bankers concede that drafting living wills has helped them rationalise their ▸▸

businesses by weeding out "junk DNA" in the form of defunct subsidiaries tied to forgotten deals. Others dismiss the exercise, which for many has involved submitting over 10,000 pages of documents, as another pointless regulatory burden. "Our plan says: fire anyone who knows anything about running the firm, sell everything, get smaller," one gripes.

Asking for each unit to be self-sufficient is pushing towards a less streamlined financial system, bankers complain. "What used to be informal lending between two subsidiaries is now a strict revolving facility," says the boss of a global bank. This not only adds to administrative costs, but also makes it hard to put capital to the most profitable use. "It stops the easy flow of money across operations," says the head of regulation at another banking giant. All this will eventually translate into higher costs for customers.

"If banks cannot die in the market, the pressure on regulators will be to make them simpler and smaller," says Thomas Huertas, a former regulator now at EY, an advisory firm. However, if regulators can be made confident their charges are safe to fail, they might ease up on the red tape. One senior official speaks of a "pivot" away from ever more regulation once resolution is a credible option for banks.

In the meantime, the regulators themselves have work to do. In Britain and America, both global financial hubs, supervisors have run "war games" to simulate their resolution strategies in a crisis. But winding down a bank in practice is bound to be much tougher. One pressing question is how much international co-operation there would be. During the crisis, national regulators scrambled to protect "their" bit of global banks, to the detriment of others. Watchdogs have agreed to work together next time. Few expect they will. ■

Buttonwood | Mayday

Financial markets have not priced in Britain's shaky politics

THE British political system is noted for producing strong, stable governments. But that is changing fast. May's general election may generate a chaotic result—something financial markets are being slow to recognise.

As in other European countries, voters are turning away from the mainstream parties. Britain's first-past-the-post electoral system moderates the impact of this change. But the polls nonetheless suggest that both the Conservatives and Labour, the two parties that have dominated British politics for a century, will fall well short of a majority—as they did at the last election in 2010.

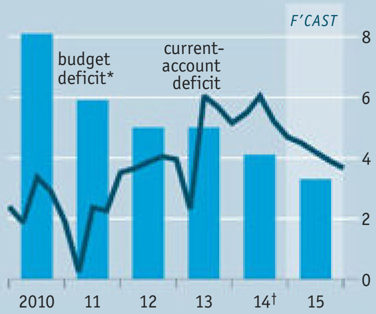
An average of four electoral models, along with the odds offered by Ladbrokes, a bookmaker, produces the following result: Conservatives 280 seats, Labour 273, Scottish Nationalist Party (SNP) 46, Liberal Democrats 25, UKIP 4 and others 22. With 650 seats in total, 326 are needed for an outright majority although, since five Sinn Fein (Irish nationalist) MPs tend not to turn up, 323 would be enough.

On those numbers, the current coalition of Conservatives and Liberal Democrats would not have enough seats to form a majority government, nor would a Labour/Lib Dem combination. A formal Conservative/SNP deal would pass the numerical test but not a practical one: neither party would agree to it. Both Labour and the SNP have ruled out a formal coalition, which would in any case require the support of other parties (the Greens and the Welsh Nationalists, for example) to secure a working majority.

The most likely outcome, then, is that a minority government would take power, attempting to pass legislation on a bill-by-bill basis. The party with the most seats (on current betting, the Conservatives) would get the first chance to rule. But it would probably find it impossible to push through a financial plan that resembled its latest budget; indeed, Alex Salmond, the likely leader of the SNP at Westminster, has just said he would vote down any Conservative legislative programme.

Gap years

As % of GDP, Britain's:



Source: OBR *Financial years ending March †Estimate

Given that the SNP may well have the casting vote (it, too, benefits from first-past-the-post), Labour may end up in charge. But its programme would also be hostage to the SNP. Mr Salmond has made it clear he would be opposed to further austerity (as well as demanding an expensive high-speed railway line to Scotland). Either way, the creation of a minority government would lead to considerable doubt about the government's fiscal position.

The last time a minority government took office was in 1974; a second election was called quickly. But the rules have changed since then. Now another election will take place only if a government loses a confidence vote (and no alternative can be formed) or if two-thirds of MPs vote for a new poll. That process (requiring many MPs to vote for early unemployment) would be another source of uncertainty.

Even if chaos is avoided, the results will not necessarily be market-friendly. If the Conservatives win, they are committed to a referendum by 2017 on exiting the European Union. That creates the potential for further uncertainty as the vote approaches. Some businesses may wait to invest in Britain until the result is clear.

A Labour victory would probably avoid a referendum, but investors would be worried about a perceived anti-business agenda of higher taxes and more regulation. The most market-friendly result might be a grand coalition of Conservative and Labour, but that is highly unlikely. Ramsay Macdonald, the only previous Labour leader to agree to such a pact in peacetime, is reviled in party lore as a class traitor.

All this might not matter if the British economy did not have some significant weaknesses. Recent growth may have been strong (GDP rose by 2.6% in 2014) but the foundations look shaky. Productivity is a big concern: output per hour is 2% below its pre-crisis peak. Andrew Haldane, the Bank of England's chief economist, has suggested the next move in interest rates might be down, not up—hardly a sign of a buoyant economy. Britain's current-account deficit, an annualised 6% of GDP in the third quarter, is equal to its highest level since 1955, making the country dependent on foreign capital.

As yet, markets show no sign of alarm. The FTSE 100 share index recently passed the 7,000 mark for the first time. Ten-year gilt yields, at 1.5%, are very low by historical standards. And though sterling is close to its lowest level against the dollar since 2010, it has held up well in trade-weighted terms, thanks to the euro's weakness. All that may change abruptly in May.

Economist.com/blogs/buttonwood

South Korea's economy

A tiger in winter

SEOUL

A once fearsome economy struggles to fend off a deflationary funk

THE previous president of South Korea, Lee Myung-bak, set a target for economic growth of 7%—a level the country once achieved regularly, but missed on his watch. Last year his successor, Park Geun-hye, adopted a more modest goal of 4%. Yet in January the Bank of Korea revised its growth forecast for this year down from 3.9% to 3.4%. HSBC, a bank, thinks growth will barely top 3%.

Consumer spending is feeble. Wages have grown by less than 1% a year over the past decade, on average, after adjusting for inflation. Households have been borrowing instead: their debts, of 80% of GDP last year, were higher than Americans', according to McKinsey, a consultancy.

Industrial output is also sagging. Slowing growth in China, South Korea's biggest export market, has taken its toll. So has the strong won. It has surged by 40% against the yen since late 2012, which has pinched exporters' profits, since they compete against Japanese firms in electronics and carmaking, among other businesses.

In response, the central bank cut its main interest rate twice last year. This month it clipped it by a further quarter of a percentage point, to 1.75%—an all-time low. It may well cut again soon. In February inflation dropped to its slowest pace since 1999, 0.5% year on year. That is well below the central bank's target of 2.5-3.5%. Excluding tobacco, which has become more expensive recently, prices are actually falling.

The government expects the rate cut to pep up consumer sentiment and ease the squeeze on exporters. Several other Asian countries have had to keep rates higher, to stem an outflow of funds in anticipation of higher interest rates in America. But South Korea is better protected than most, with a big current-account surplus and little external debt.

Still, Jun Sung-in of Hongik University says the latest rate cut will amount to little more than a "spring breeze" for the economy. It will slightly lower debt-servicing costs, but otherwise do little to revive household consumption. It is true that debt may continue to grow. In the last quarter of 2014 it expanded at its fastest pace in a decade, thanks to an easing of restrictions on bank lending intended to revive the faltering property market. But much of the new credit is being used for everyday expenses, or to refinance existing debt, rather than to buy homes.

Raising government spending, some say, would provide more of a boost to the economy than lower interest rates. In mid-March the government announced it would bring forward 3 trillion won ($2.7 billion) of spending planned for later in the year, and attempt to expand corporate investment by another 7 trillion won through loans from state-owned banks and expansion schemes at state-owned firms, among other measures. It is prodding companies to create more jobs, and plans a rise in the minimum wage.

The Bank of Korea says low inflation is mostly due to the plummeting price of oil; the finance ministry contends that the slide in other indicators is transient too. Deflation, they concur, is not on the cards. Yet for four years in a row, South Korea has grown more slowly than the average big economy. Their composure, Mr Jun argues, is a concern in itself. ■

The party is over

Benjamin Lawsky

Shock therapy

NEW YORK

A state regulator generates controversy

DESPICABLE criminals, eye-popping sums of money and doughty defenders of the law are a marketable mix, as any comic-book author can attest. They also tend to feature prominently in the speeches of Benjamin Lawsky, the head of New York's Department of Financial Services (DFS). The agency is said to be about to agree on a settlement with Deutsche Bank for its alleged part in the manipulation of LIBOR, a benchmark interest rate. If it does, expect another stentorian statement.

The DFS was created from the merger of two existing state regulators in 2011, at the behest of Andrew Cuomo, New York's governor. He appointed Mr Lawsky, his former chief of staff, to run it. Although the Federal Reserve, the Federal Deposit Insurance Corporation and federal prosecutors typically take the lead in keeping banks honest, any big international bank must have an operation in New York—and it is Mr Lawsky who hands out most licences for that. This has allowed the DFS to elbow in on investigations of all manner of wrongdoing, and along with America's national regulators, extract massive fines.

In 2012 Mr Lawsky inserted himself into negotiations between other regulators and Standard Chartered Bank over transactions it facilitated that may have violated American sanctions on Iran. Although the bank did not admit to any crime, it ended up paying $640m in settlements to the DFS. Subsequent triumphs include similar deals with Bank of Tokyo-Mitsubishi UFJ (which paid $565m in relation to transactions involving Iran), Credit Suisse ($715m, tied to tax evasion by clients), BNP Paribas ($2.2 billion, related to both Iran and Sudan) and Commerzbank ($610m, tied to Iran again). Penalties have also been levied on a handful of American firms for various infractions. DFS has raised $5.3 billion in this way in just three-and-a-half years.

Mr Lawsky, in turn, has become a figure of some controversy, especially for foreign firms, which believe they have been hit particularly hard because they lack domestic political advocates. The firms he pursues complain that the fines are arbitrary, but that they dare not dispute them, since they cannot risk losing all-important licences. The assumption that Mr Lawsky's crusade against financial crooks is a precursor to a campaign for political office is almost universal. After all, in addition to working for Mr Cuomo, he also served as legal counsel to Charles Schumer, New ▸▸

No cape, but lots of crusades

York's senior senator. Both Mr Cuomo and another recent governor, Eliot Spitzer, made their careers by prosecuting wayward moneymen; so did Rudolph Giuliani, a recent mayor of New York city.

Past state regulators concentrated on duller supervisory matters. But Mr Lawsky, who has also worked as a prosecutor, has a wider vision for the DFS. Explaining his intervention in the Standard Chartered case, Mr Lawsky once said: "We felt the system needed a shock." It "got all the regulators more focused," he added—the sort of statement that makes less showy officials scowl. They contend that the DFS is a legal lightweight, exploiting cases developed by other agencies.

Mr Lawsky is an innovator in several respects, however. He makes much of his efforts to hold individuals to account for financial misdeeds, something federal authorities have tried but failed to do in the wake of the financial crisis. The DFS has no power to prosecute, but BNP, Commerzbank, Credit Suisse and RBS have all agreed to dismiss senior executives as part of their settlements with it. Ocwen, a firm which administers mortgages, agreed to part company with the chairman of its board.

Mr Lawsky also has an eye for controversial new subjects. He has spoken repeatedly about the need to fight cyber crime and to keep tabs on alternative payment systems such as bitcoin. The DFS's authority over insurers gives it some sway in health care; in recent speeches Mr Lawsky has said his agency will play a "crucial" role in the implementation of Obamacare.

Scalded domestic banks, meanwhile, are mulling swapping their state charters for national ones to escape Mr Lawsky's supervision. Foreign institutions are looking for ways to minimise their business in New York. But such radical steps would take time, and by then Mr Lawsky will surely have moved on to grander things. ■

Inequality and housing

Through the roof

Rising house prices may be chiefly responsible for rising inequality

THERE are lots of critics of "Capital in the Twenty-First Century", Thomas Piketty's study of increasing inequality in the rich world. Few have been as effective, however, as Matthew Rognlie, a 26-year-old graduate student at the Massachusetts Institute of Technology, who first took Mr Piketty to task in a 459-word blog post last year. On March 20th he presented a paper that expanded on the flaws he sees in Mr Piketty's book.

Mr Piketty argues that over the long run the rate of return on wealth exceeds economic growth. Over time, this relationship increases inequality as the share of national income going to those who own capital (the rich) rises, while the portion going to labour (everyone else) falls. He also argues that the return on capital in recent history has been remarkably stable, even as economic growth has fallen, and that this trend will continue in the future.

Mr Rognlie has three main criticisms of all this. Several commentators have pointed out that the rate of return from capital should decline in the long run, rather than remaining high as Mr Piketty maintains, owing to the law of diminishing returns. Mr Rognlie expands on this, arguing that Mr Piketty has an inflated idea of the current return. Modern forms of capital, such as software, depreciate faster in value than equipment did in the past: a giant metal press might have a working life of decades whereas a new piece of database-management software will be obsolete in a few years at most. This means that returns from wealth may not necessarily be growing in net terms, since a rising share of the gains that flow to the owners of capital must be reinvested.

Second, Mr Rognlie finds that higher returns to wealth have not been distributed equally across all investments. The return on assets other than housing has been remarkably stable since 1970. In fact, surging house prices are almost entirely responsible for growing returns on capital.

Third, the idea that workers' share of wealth can continue to decline rests on the assumption that it is easy to substitute capital (ie, robots) for workers. But if lots of the capital in question is tied up in houses, then this switch would be far harder than Mr Piketty suggests.

Mr Rognlie has critics of his own. He appears to underestimate the role that changing technology plays in widening inequality (by making it simpler to substitute capital for labour, for instance, or by concentrating jobs in expensive cities). But his observation that it is homeowners in particular, rather than rentiers generally, who are grabbing a larger share of the pie is important. For one thing, homeowners are a much bigger and more lovable group than hedge-fund managers. Moreover, if housing is the biggest source of rising inequality, then the wealth tax Mr Piketty advocates is the wrong response. Policymakers should instead try to reduce the planning restrictions which, by inhibiting new construction, allow homeowners to earn such big returns on their assets.

Just how inconvenient Mr Rognlie's argument is for Mr Piketty's overarching narrative is a matter of perspective. The celebrated French economist certainly did not make housing wealth the central theme of his bestselling book. But a story in which a privileged elite uses its political clout to create economic rents for the few (albeit through the planning system) fits Mr Piketty's argument to a tee. ■

European bank mergers

Passport check

MADRID AND PARIS

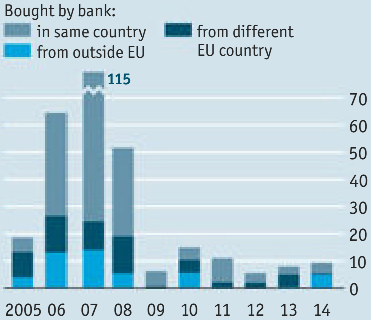
Banking union or no, an integrated European market is still some way off

THE announcement on March 20th that Banco Sabadell, Spain's fifth-biggest lender, would spend £1.7 billion ($2.5 billion) buying TSB, a "challenger" to Britain's four main high-street banks, marks the biggest cross-border banking acquisition in the European Union since the financial crisis. It follows a bid of €1.1 billion ($1.2 billion) in February by fellow Spaniard Caixa Bank for the 56% it does not already own of BPI, a Portuguese bank. Is this the start of a long-awaited wave of intra-European deals, after a long post-crisis chill in deal-making (see chart on next page)?

Alas, no. For starters, Sabadell's purchase is deliberately outside the European core. Sabadell's chairman, Josep Oliu, says his goal is to diversify away from Spain, and TSB would increase the group's assets abroad from 5% to 22% of the total. He likes the British market, where the authorities are keen on welcoming new entrants, growth is healthier and regulation is stable. Second, a genuine single market is one in which banks are able to move capital and liquidity around freely. Regulators are still not keen on that idea. Sabadell has no plans to shift capital across borders. It thinks it can cut costs, especially in IT, and pump more business through TSB's under-used branches; any excess capital will, for the moment, stay in Britain.

Disjointed

Mergers and aquisitions of EU banks, $bn



Source: SNL Financial

CaixaBank's Portuguese tilt, which BPI's board has so far rejected, also stems less from pan-European ambition than from the desire to fix a problem that has limited its influence since it invested in BPI 20 years ago. Its offer is contingent on the scrapping of a cap that restricts any shareholder's voting rights to 20%.

There are still lots of deals to be done in Europe. In Portugal Novo Banco, the successor of failed Banco Espírito Santo, is up for sale. Spain has already restructured brutally, but a few state-owned entities as well as private tiddlers will eventually come to market. Other places need more of a shakeout. In Italy the government has just changed the law to permit mutual banks to convert to joint-stock companies and merge or be taken over.

Rumours swirl as to which bank will acquire Monte dei Paschi di Siena (MPS), the third-largest Italian lender, and smaller Banca Carige, both of which need capital. Germany's fragmented banking system also could use condensing. Deutsche Bank, Germany's biggest, is mulling the sale of all or part of its retail operations. European banks have already cut costs fiercely. Given what promises to be a long period of slow growth and low interest rates, consolidation looks the best hope of boosting profits.

The question is whether the buying is likely to take place within national markets or across borders. Despite Sabadell's move, cross-border mergers suffer from several drawbacks. Andrea Filtri of Mediobanca Securities calculates that in 2004-14 the cost savings on international deals within Europe averaged 16%, compared with 31% on domestic mergers. Guntram Wolff of Bruegel, a think-tank, agrees that national differences in products, disclosure, corporate governance, insolvency law and so on make cross-border mergers more expensive.

Regulatory risks also seem higher for cross-border mergers. BNP Paribas, France's biggest bank, slightly increased its international footprint in 2013 and 2014. But it is trying to dampen speculation that it might be interested in buying either MPS or Commerzbank, Germany's second-biggest bank. It may be that BNP fears bulking up further lest it be deemed more of a "global systemically important bank" and thus incur higher capital charges.

Within the euro zone, moreover, it is not clear whether national restrictions on capital and liquidity will be swept away. ING, a Dutch bank which like BNP is broadly established in the euro zone, complains that local regulators prevent it from putting the deposits it raises in Germany to use in more capital-starved bits of the euro zone. The installation a few months ago of the European Central Bank as a single regulator for bigger euro-zone banks has not yet changed much. "There have been some improvements, a little more leniency on the liquidity side but none on capital, and none in Germany," says Koos Timmermans, the deputy chairman of ING's management board, who remains hopeful that the ECB will take a less parochial approach.

Cross-border consolidation will come to Europe one day, says Mr Oliu of Sabadell. But for the moment he thinks such mergers are likely to be rare, and confined to markets where banks have too little capital to stand alone. ■

Milk and economic development

No use crying

The ability to digest milk may explain how Europe got rich

HUMANS can digest lactose, the main carbohydrate in milk, only with the help of an enzyme called lactase. But two-thirds of people stop producing it after they have been weaned. The lucky third—those with "lactase persistence"—continue to produce it into adulthood. A recent paper* argues that this genetic quirk helps explain why some countries are rich and others poor.

Justin Cook of the University of California, Merced, uses data on historical migration flows to estimate the ethnic composition of 108 countries in Africa, Asia and Europe in 1500. He then estimates what proportion of the population would have been able to digest milk, using data on the lactose tolerance of different ethnic groups (which he assumes has not changed much over the centuries). Pre-colonial countries in western Europe tended to have the highest rates of lactase persistence, Mr Cook estimates. Some 96% of Swedes had it, for instance. The lowest levels were in Sub-Saharan Africa and South-East Asia.

Udderly crucial

A one-standard-deviation increase in the incidence of lactase persistence, in turn, was associated with a 40% rise in population density. People who could digest milk, the theory goes, used resources more efficiently than those who couldn't. They could extract liquid energy from livestock, in addition to the wool, fertiliser, ploughing power and meat for which others raised them. The white stuff may have helped in other ways too: its fats, proteins, vitamins and minerals added balance to the pre-colonial diet, reducing the incidence of disease. If used as a substitute for breast-feeding, animal milk could have reduced weaning time and, thus, the time between mothers' pregnancies. All this suggests that milk-guzzling societies could support higher population densities (although it remains puzzling that lactase persistence evolved in parts of Africa, but did not spread).

When people are tightly bunched together, the theory goes, growth takes off. Rulers find it easier to build infrastructure and administer the law, including property rights. Cities can develop, which allows workers to specialise. Technological innovation explodes; bigger armies can defend what is produced. Small wonder, then, that places with high population density in pre-colonial times tend to be relatively rich today. No single factor can explain long-run economic outcomes, of course, but Mr Cook's idea may be worth milking.

* "The role of lactase persistence in pre-colonial development", by C. Justin Cook, *Journal of Economic Growth*, December 2014.

Free exchange | Towers of Babel

Is there such a thing as a skyscraper curse?

THE world is in the middle of a skyscraper boom. Last year nearly 100 buildings over 200 metres tall were built—more than ever before. This year China's business capital will welcome the Shanghai Tower, which will be the world's second-tallest building. Saudi Arabia is building Kingdom Tower, which will be the world's tallest (and twice the height of One World Trade Centre in New York, the tallest building in the Americas). Does this frenzy of building augur badly for the world economy? Various academics and pundits, many of them cited by *The Economist*, have long argued as much, but new research casts doubt on it.

In 1999 Andrew Lawrence, then of Dresdner Kleinwort Benson, an investment bank, identified what came to be known as the "skyscraper curse".* Mr Lawrence noticed a curious correlation between the construction of the world's tallest buildings and economic crises. The unveiling of the Singer Building and the Metropolitan Life Tower in New York, in 1908 and 1909 respectively, roughly coincided with the financial panic of 1907 and subsequent recession. The Empire State Building opened its doors in 1931, as the Great Depression was getting going (it was soon dubbed the "Empty State Building"). Malaysia's Petronas Towers became the world's tallest building in 1996, just before the Asian financial crisis. Dubai's Burj Khalifa, currently the world's tallest building, opened in 2010 in the middle of a local and global crash.

Skyscrapers can be hugely profitable, since by building upwards developers can rent out more floor space on a given plot of land. But at some point extra storeys are no longer a good deal, since marginal costs—for more lifts and extra steel to stop the building from swaying in the wind, for example—increase faster than marginal revenues (rents or sales). William Clark and John Kingston, an economist and an architect writing in 1930, found that the profit-maximising height for a skyscraper in midtown New York in the 1920s was no more than 63 storeys. (The ideal height is probably not much different today.) Record-breaking skyscrapers could therefore be seen as an indication that gung-ho investors are overestimating the probable future returns from new construction. Indeed, developers may be building record-breaking towers even though they know they are economically inefficient. There is, after all, a certain cachet to having a very tall building with your name on it. In 1998 Donald Trump, a magnate, presented a plan to build the world's tallest residential building in New York as the righting of a historical wrong, not a shrewd business move. "I've always thought that New York should have the tallest building in the world," he proclaimed. If such vanity projects can secure funding, the theory goes, financial markets must be out of control and will soon suffer a sharp correction. Mr Trump's tower opened just as the dotcom bubble was bursting.

Historical analysis suggests that developers are prone to bouts of irrationality. In a paper from 2010, Jason Barr of Rutgers University looked at 458 skyscrapers (those at least 100 metres tall) completed in Manhattan between 1895 and 2004. The number of skyscrapers built and their average height depended in part on the growth in population and employment in office jobs. But Mr Barr's calculations suggest that the height of towers was also shaped by those nearby, especially during economic booms. In the 1920s, Mr Barr estimates, New York builders added four to six more floors per project, just to stand out in the skyline.

Phallic sample

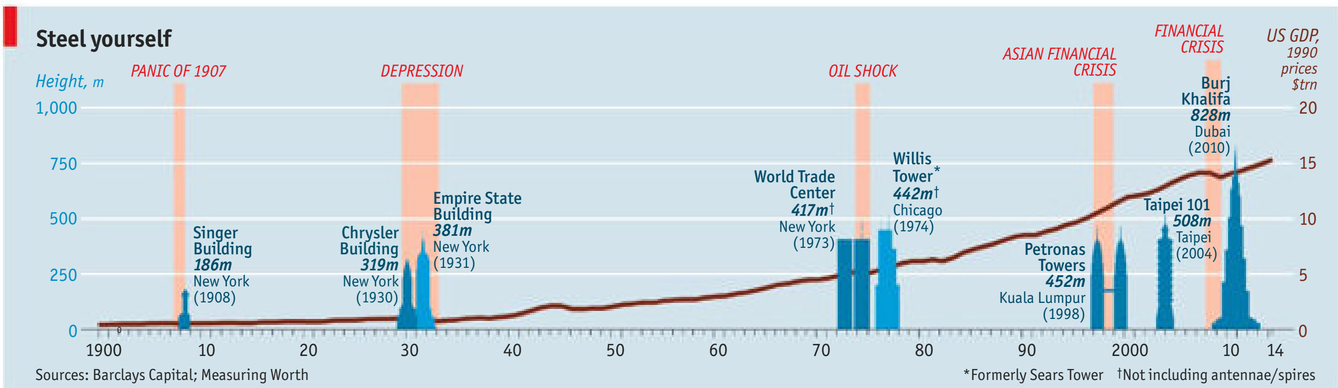
Until recently, however, there had been no formal analysis of the skyscraper curse. A new paper by Mr Barr, Bruce Mizrach and Kusum Mundra (all of Rutgers) investigates Mr Lawrence's musings in detail. They look at the building of 14 world-record-breaking skyscrapers, from New York's Pulitzer (which opened in 1890) to the Burj Khalifa, and compare them to American GDP growth (which they see as a decent proxy for the world economy).

If, as the skyscraper curse suggests, the decision to build the biggest towers happens near the peak of the business cycle, then you could use record-breaking projects to predict the future path of GDP. However, the range of months between the announcement of the towers and the business-cycle peak is large, varying from zero to 45 months. And only seven of the 14 opened during a downward phase of the business cycle (see chart). In other words, you cannot accurately forecast a recession or financial panic by looking at either the announcement or the completion of the world's tallest building.

With such a small sample, it is tricky to draw firm conclusions. But the paper expands the sample to 311 by looking at the tallest building completed each year in four countries (America, Canada, China and Hong Kong). The authors then compare building height to GDP per person. They find that in all countries GDP per person and skyscraper height are "cointegrated", a fancy way of saying that the two things track each other. In other words, developers tend to be profit-maximisers, responding rationally to rising incomes (and thus increased demand for office space) by making buildings bigger. While ego and hubris afflict the skyscraper market, the authors argue, its foundations appear sound. ■

* Studies cited in this article can be found at www.economist.com/skyscrapers15

Economist.com/blogs/freeexchange



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Drones

The buzz of something new

Small drones need to fly free of human operators. Insects suggest to engineers how that might be done

THIS year, some predict, will be the year of the microdrone. Small, pilotless aircraft—most of them helicopters with four or more sets of rotors and a payload slung between them—are moving out of the laboratory and into practical use. They are already employed for aerial photography and surveillance, particularly in Europe. In Paris, earlier this month, drones flying around the Eiffel tower caused a security scare. And in America, on March 19th, Amazon, a retailer, was given permission to test a drone designed to deliver its goods.

These drones, though, rely on an operator on the ground. Indeed, this is often a legal requirement. But it is also a constraint. If a world of microdrones really is to come about, then the craft will need to be able to cut the surly bonds of Earth and fly unsupervised. For that, they are going to have to get a lot more intelligent.

The problem is not navigation. The Global Positioning System and Google Earth can tell a drone where it is and what large, permanent obstacles it might encounter, and it can be programmed with its course before it lifts off. The problem, rather, is the unexpected: an unwary bird; an unmapped tree; a gust of wind. Part of making drones able to fly by themselves will be to give them the senses they need to deal with such hazards.

One approach is to ask how natural drones do it. The word, after all, referred originally to a male bee, and bees and other insects rarely blunder into things or fall out of the sky. Copying their tricks makes sense. And laboratories around the world, using bees, blowflies and hawk moths as their models, are trying to do just that.

Joining the drones' club

Ashutosh Natraj's idea is to give his drones vision. Dr Natraj, who works at Oxford University, drew his inspiration from a bee he saw buzzing around his house one day. He wondered how the animal avoided the many hazards a human dwelling presents.

The answer, he found after a few days perusing the apidological literature, is fairly straightforward, at least in principle. Bees rely on optic flow. This is the perception, familiar to anyone who has looked out of a train window, that nearby things are moving faster than distant ones.

To build optic-flow perception into a drone, Dr Natraj had first to fit it with an eye and a brain. The eye is a video camera that weighs a mere 8g. This sends a stream of images, at a rate of 25 a second, to the brain. At the moment this is a computer on the ground that is linked to the camera by Wi-Fi. Dr Natraj, though, plans to replace it by a Raspberry Pi—a device the size of a credit card—on board the drone itself.

The computer, whether terrestrial or airborne, extracts from the incoming images features salient to optic flow. In particular, it identifies objects' edges and tracks them from frame to frame. This way, it can work out how quickly the drone is approaching something and, if a collision is likely, how the drone's path needs to shift to avert it. It then uses this information to change the pitch of the rotors.

That sounds easy in principle, but collision-avoidance, especially when what is to be avoided is moving as well, requires good manoeuvring skills. This is where the flies and the moths come in. Adjusted for size, blowflies are better at manoeuvring than any fighter aircraft yet built. Hawk moths are superb at hovering. Both insects use the same method: they combine vision with an inertial guidance system.

Inertial guidance relies on measuring the position of something that, because of its inertia, resists following the object it is part of. Man-made systems use gyroscopes. Moths use their antennae. Flies use a pair of tiny organs called halteres that have evolved from the animals' hind wings and are shaped like balls on sticks.

Several groups of researchers are looking into insect inertial guidance. Those studying blowflies are based in London. Those studying moths are based in Baltimore. The London group, led by Holger Krapp of Imperial College, has used microelectrodes to follow the insects' nerve impulses, and high-speed photography and computed tomography (an advanced form of X-raying) to follow the movements of their external body parts and their muscles. That, with the addition of a bit of computer modelling, has shown them how ▸▸

dipteran inertial guidance works.

Flies do it using input from hundreds—possibly thousands—of sensors. These are the elements of their compound eyes, and also the many cells at the bases of their halteres. The signals from these, it turns out, do not have to pass through the brain to be processed. Instead, they act as a series of reflexes controlling the insect's speed, attitude and heading directly. That is the opposite of most approaches to engineering drone avionics. But it suggests that true drone manoeuvrability might be better created without trying to imitate the functions of a brain. Dr Krapp's colleague Mirko Kovac is now attempting to do this.

Hovercraft

One way manoeuvrability might be engineered into a drone's airframe is shown by the work on hawk moths. These insects, when hovering over flowers to drink nectar from them, employ a similar control system to flies—though in this case information from their antennae substitutes for that which flies get from their halteres. Hawk moths are being studied independently by two groups at Johns Hopkins University—one led by Rajat Mittal and the other by Noah Cowan. They have found that the moths hold their heads and thoraxes steady with respect to a flower by making minute changes to the orientation of their abdomens.

Dr Cowan, indeed, has gone further than mere analysis. He has used knowledge garnered about how moths hover to fit a drone with the equivalent of an abdomen. The drone's battery pack hangs beneath it, and is fitted with servo motors that adjust its position in the way that a moth moves its abdomen. That stabilises the drone in mid air.

At Harvard, meanwhile, Robert Wood has taken a different approach to the problem of hovering. Though referred to as microdrones, quadcopters and their kin are usually tens of centimetres across. Dr Wood's drones really are micro. They measure 3cm from wingtip to wingtip. Moreover, their wings flap like those of real insects, rather than rotating.

Dr Wood has built simple eyes into his drones, and these act like occelli, which are small eye spots that insects use to take bearings on the sun or the moon, so that they can fly at a constant angle to these distant light sources and thus maintain a straight course. (Confusion of the ocelli is thought to be the reason moths circle bright artificial lights at night.)

Dr Wood's artificial eyes are pyramid-shaped and have a photosensor on each face. They are thus able, like real ocelli, to track the sun. Dr Wood has not yet translated that ability into an on-board navigation system, but it should not be too hard to do so—so long, of course, as his drones do not come across any candles. ■

Microbiology

Out of a pickle

Fermented foods could help biologists understand bugs better

FOR breakfast, a bit of *Saccharomyces cerevisiae* and, perhaps, a dash of *Lactobacillus*. For lunch, some *Acetobacter* or *Leuconostoc mesenteroides*—but look out for any stray *Streptococcus faecalis*. In the evening, probably back to *S. cerevisiae*. From bread and yogurt, via pickles, kimchi and vinaigrette, to beer and wine, people have co-opted many microbes to work their magic in the service of flavour.

It is only in recent years, though, that science has looked into how the bacteria and fungi involved do their fermenting—consuming one set of molecules and excreting a tastier set, or one that preserves the food, or one that inebriates the imbiber. Those who make traditional cheeses and salamis follow recipes that, through tight control of temperature, salinity or moisture, shepherd the growth of a special community of unicellular critters to end up with a desired flavour. But experimental chefs such as David Chang in America and René Redzepi in Denmark are trying to extend fermentation's range. That has resulted in, for example, Hozon, Mr Chang's commercial flavouring made from nuts or beans fermented with *Aspergillus*, a mould more usually used with rice to make sake, or with soya to make miso.

Your *Penicillium roqueforti*, madam

Such efforts often call on science in support. So it was that Rachel Dutton, a microbiologist at Harvard University, began to receive packages from experimental chefs. Inside she found novel fermented foods, inoculated with this bug or that. The chefs wanted to know whether their creations were safe to eat. Dr Dutton, who came to Harvard to look into the microbial particulars of cheese, found herself cataloguing the bugs in these novelties, and then considering whether the microbiology of fermented foods has more general lessons to teach about how such bugs collaborate and fight. Working with Benjamin Wolfe of Tufts University, for example, she is looking at which interactions between tasty bugs on cheeses can prevent the invasion of dangerous ones.

Others, too, are interested in the field. A group of researchers from Belgium and Switzerland—both famous producers of chocolate—showed, for instance, that the fermentation of cocoa pulp is dominated at first by fast-working but delicate *Hanseniaspora* yeasts. These, though, are later roughed up and booted out by more robust yeasts such as *S. cerevisiae* and *Pichia kudriavzevii*. And micro-organisms' effects on food and drink are not restricted to fermentation of the ingredients. A paper published this week in *mBio* suggests that bacteria have a lot to do with a wine's *terroir*, since those covering the fruit and the leaves, as well as the roots, all seem to originate in the soil.

Mastery of the underlying ecological mechanisms and rhythms of micro-organisms has implications far beyond the culinary. On a tree trunk, in the ocean or in the human gut, thousands of microbe species live cheek by jowl. That makes it hard to understand what is going on. A simplified version of this complexity would therefore be welcome. Dr Dutton and Dr Wolfe suggest, in a paper just published in *Cell*, that many fermented foods fit that bill perfectly.

Such foodstuffs host mixtures of a few dozen species, and these are usually of a kind that can be grown easily in laboratories. If studying fermentation in this way revealed general principles about how bugs live together, then it would be possible to imagine recruiting such communities to do jobs other than fermenting food and drink: acting as pesticides, for example; or treating waste water; or turning various sorts of leftovers into fuels.

This is the opposite approach to that taken in the emerging field of synthetic biology, which tries to design bespoke individual organisms to perform particular tasks. But executing those tasks with families of naturally occurring creatures instead of individual artificial ones might be both easier and less contentious. ■

Invasive species

Not weeds

Despite concerns, alien plants are rarely troublesome to native ones

TO JUDGE by some of the headlines, you might think they were triffids. Even the term employed for them, "invasive", has pejorative military overtones. But do interloping plant species from other lands actually cause environmental damage by outcompeting the locals?

That was a question Chris Thomas and Georgina Palmer of the University of York, in England, asked themselves. The answer, just published in the *Proceedings of the National Academy of Sciences*, is that they do not. Where aliens thrive, locals thrive too. Where they don't, neither do the locals. No one, it seems, is being driven towards extinction by introductions.

Dr Thomas and Dr Palmer drew their data from the Countryside Survey, a study of Britain's wildlife that is conducted every six or seven years. They were able both to track the changes that happened between 1990 and 2007 at 479 sites around Britain, looking for evidence of introduced species outcompeting native ones, and to examine the effect of newcomers over much longer periods of time.

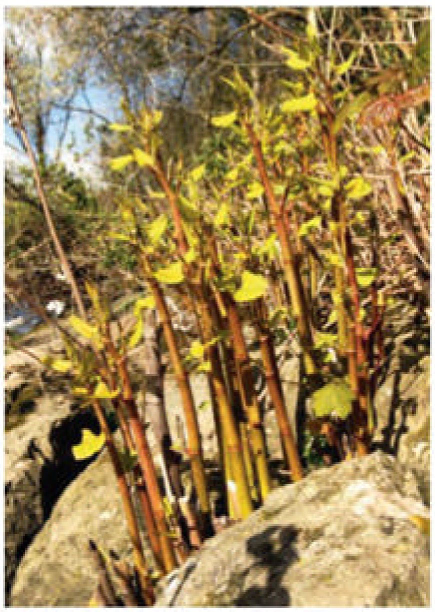
What counts as native and what as foreign is not as clear-cut as it might be. The two researchers actually recognised three categories. True natives were those present from time immemorial. In practice, most of these would have arrived after the end of the last ice age, since before that the small part of Britain not buried under glaciers would have been tundra. Then, there were archaeophytes. These were known introductions that happened before 1500—that is before plants started arriving from the New World. Neophytes, by contrast, were introduced after 1500.

There was no suggestion of the newcomers running amok. Though almost a fifth of species recorded by the survey of 2007 were aliens, all 50 of the most widespread species were native. Even extending the count as far as 100 introduced only seven outsiders (four archaeophytes and three neophytes). In terms of area covered rather than geographical range aliens did a bit better. Even so, only 11 of the 100 most abundant species, counted this way, were alien. And, though there were changes between 1990 and 2007 in the abundance of many species, natives were as likely as either archaeophytes or neophytes to increase or to decrease.

The upshot, Dr Thomas and Dr Palmer suggest, is that British members of the vegetable kingdom are more than capable of holding their own against newcomers—whether those newcomers have been around for several centuries or are more recent immigrants. This does not, they observe, mean that all introduced species are without problems. Japanese knotweed, for example, is immensely destructive of the foundations of buildings. But buildings are not plants. And, if inconvenience to human beings is the criterion, some natives are just as bad. Ragwort, for instance, is toxic to horses and tends to grow in pastureland of the sort used to graze them.

The situation is different for invasive animals. There is no doubt that the introduction into Britain of North American grey squirrels was bad for the native red variety, which is extinct in all but a handful of places. And, farther afield, the introduction of rats, cats and pigs onto small islands has often had a disastrous effect on local fauna. But plants seem benign. In this context, Dr Thomas and Dr Palmer think it odd that only 820 of the species listed in the Global Invasive Species Database (a register kept by the International Union for the Conservation of Nature) are animals, whereas 3,163 are plants. Their research, albeit drawn from one smallish country, suggests the database's threatening-plant list could do with pruning.

Some conservationists object to introduced species just because they are alien. Their view seems to be that the way things are today (or, more accurately, were in some prelapsarian moment in the recent but pre-industrial past) represents a "natural" state of affairs, deviations from which are to be regretted. But given the continual flux of nature even without human intervention, stasis is probably as unnatural as the modern reality of introductions from afar. And if those introductions are increasing biodiversity, what's not to like? ■



OK. These knotweeds really are weeds

Computer security

Hacking the hackers

Automating the search for loopholes in software

"SET a thief to catch a thief." Security-conscious companies, from banks to newspapers, often hire, if not thieves, then the analogues of thieves, to test their computer systems for weaknesses. These professional hackers, called penetration testers, poke and prod at their clients' systems. If they find a way in, they inform the client, who can then fix the problem. Penetration testing, though, is expensive—for the skills required to be a good tester are rare. That is why a French firm called Cryptosense is hoping to automate the job.

One part of ensuring that a program is secure is checking that it is free of bugs and that it responds to odd or malformed sequences of commands without spilling any of the secrets it is meant to be guarding. This is a big task. The number of combinations of commands that can be entered into a piece of software increases exponentially as it gets more complicated. And many firms modify programs they have bought off the shelf, inadvertently introducing new bugs as they do so. It is thus no use relying on what a programmer has told you about how his code works.

Penetrating insights

Cryptosense's penetrator, therefore, starts from scratch. First, it works its way through the list of commands that can be given to the program it is trying to subvert, in order to see how it responds. "At the end of that process it has two piles," says Graham Steel, one of Cryptosense's founders, "one where [the target program] did what it was supposed to do, and another pile full of error messages." Armed with those experimental data, the virtual penetrator can work backwards, reconstructing a simulacrum of the target program whose behaviour, mistakes and all, matches reality.

Thus armed, it can begin trying to break things. Even with a computer rather than a human being doing the testing, an exhaustive search of all possible sequences of commands can be time-consuming. But the testing algorithm is smart enough, says Dr Steel, to give priority to those combinations most likely to prove fruitful. (Unsurprisingly, he will not disclose how exactly that is done.)

Even if Cryptosense's automated hacker can find and plug all the holes in a particular piece of software, there will still be weak links. Software is used by people, and people can be tricked, threatened or charmed into spilling secrets. Also, what ▸▸

works for the good guys can work for the bad. If automatic hacking proves itself, there is nothing to prevent malicious hackers coming up with their own versions, and using those to scan for weaknesses.

Nevertheless, the prospect of automated security checks has already garnered Cryptosense several customers. Many of these are banks, which are frequent targets for hackers. Others operate in more esoteric settings. Security experts like to tell tales of "back doors" built into weapon systems, designed to allow their makers to disable them remotely. Cryptosense has found at least one flaw in a security module used in a modern weapon system which seems capable of doing just that. ■

Genes and infection

Under the influence

Is influenza a genetic disease?

IT MIGHT sound strange to suggest that flu is, in any sense, a hereditary illness. Classic inherited diseases, such as sickle-cell anaemia and cystic fibrosis, are caused by broken genes that come from a sufferer's parents. Flu is caused by a virus.

A paper published in this week's *Science* by Jean-Laurent Casanova of the Necker Hospital for Sick Children, in Paris, shows, though, how categories can get blurred—and emphasises the point that, however much people might like to classify things biological into the neat bins of "genes" and "environment", nature is not so obliging. In all but the rarest of circumstances, both are involved.

The case Dr Casanova reports is of a then-two-year-old girl admitted to the Necker in 2011 with severe flu. He was one of the girl's doctors, and her symptoms were so extreme (technically, they constituted what is known as acute respiratory distress syndrome, or ARDS), that he suspected there might be something unusual about her. He therefore sequenced her genome and, in so doing, discovered she had two broken copies (one from each parent) of the gene encoding a protein called interferon regulatory factor 7.

This protein, as its name suggests, stimulates production of interferon, an antiviral molecule. Absence of interferon made the cells lining the girl's respiratory tract more vulnerable to flu infection. It also meant that when such infection happened, her immune system, lacking its first line of defence, unleashed an inflammatory reaction so big that it was itself damaging. This inflammation caused the ARDS.

All very unfortunate for the girl concerned, then—though she survived and remains healthy (regular vaccination keeps her influenza-free). But Dr Casanova thinks her case is of wider significance, for he has now identified 30 other people with genetic faults similar to those of his first patient. He estimates, on this basis, that about one person in 10,000 has impaired interferon production caused by genetic errors.

That may not sound like much but it would, he calculates, be enough to account for the incidence rate of the most severe cases of seasonal influenza (as opposed to the epidemic sort which emerges from time to time). It could also explain accumulating evidence that some entire families seem particularly vulnerable to flu. His observations therefore have implications for the developing field of personalised medicine, in which people's genomes are taken into account when their risks of disease are examined or their treatment is prescribed. Researchers working in that field have not, previously, looked for genetic effects on rates of infection. Dr Casanova's work suggests that perhaps they should. ■

Predicting earthquakes

The chickens are restless

Animals really may be able to sense when a tremor is about to happen

SEISMOLOGISTS tend to greet the idea that some animals know when an earthquake is coming with a sizeable degree of scepticism. Though reports of odd animal behaviour before a quake date back at least as far as ancient Greece, the data are all anecdotal. They are also subject to vagaries of the human psyche: "confirmation bias" ensures that strange behaviour not followed by earthquakes gets forgotten, and "flashbulb memory" can, should an earthquake strike, imbue quotidian animal antics with great import after the fact. The US Geological Survey—arguably the world's authority on earthquakes—undertook studies in the 1970s to find out if animals really did predict them, but came up empty-handed. However, the latest data, just published in *Physics and Chemistry of the Earth*, are not just anecdotal.

I think he's trying to tell us something

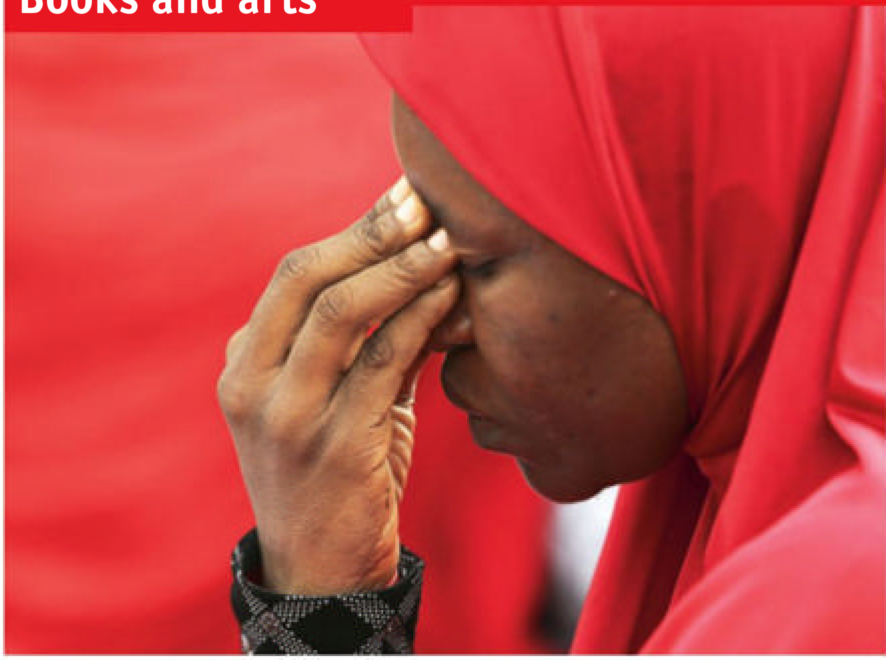
Friedemann Freund of San Jose State University, in California, and his colleagues considered the earthquake of magnitude seven that hit north-eastern Peru in August 2011. They found that, by coincidence, the nearby Yanachaga National Park had in the month running up to the quake been using nine so-called camera traps. These are employed to track the movements of rare or skittish animals, silently snapping pictures (for example, that above, of a paca) when motion sensors are triggered.

Well ahead of the tremor, the traps recorded up to 18 animals a day, but that number began to drop off steeply as the earthquake approached. In the five days immediately before it, the traps snapped just three animals. The park's fauna, it seems, had stopped moving around.

Dr Freund believes that what animals sense before earthquakes is airborne electric charge. The idea is that the subterranean grinding of stressed rock which precedes a quake stores charge (not unlike that built up by scuffing shoes across a carpet), some of which then flows to the surface, where it ionises molecules in the air. The varying electric field involved in this phenomenon should be detectable from afar.

The team therefore studied data from two very-low-frequency (VLF) receiving stations in Peru, looking for perturbations of the signals. Sure enough, large disturbances occurred in the two weeks prior to the quake.

The correlation of these several facts is, of course, no guarantee of causation. Dr Freund will have his work cut out to persuade the wider world that what the VLF receiver detects is what animals are sensing, and that it is indicative of an impending quake. But he now has something concrete to work with. It may yet turn out that for millennia, furry and feathery forecasters really were trying to tell human beings something.



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Boko Haram

Bringers of sorrow

The story of Nigeria's jihadists and the mayhem they have sown across four different countries

Boko Haram: Inside Nigeria's Unholy War. By Mike Smith. *I.B. Tauris; 233 pages; $29 and £18.99*

"YES, Western education is forbidden," said the shirtless man with the bandaged arm. "Any type of knowledge that contradicts Islam, Allah does not allow you to acquire it." It was July 2009, and the speaker was Mohammed Yusuf, the leader of a group of then little-known jihadists. The setting was a hasty interrogation that followed Yusuf's capture after a brief uprising in north-eastern Nigeria sparked by a clash with policemen. A few hours later he was executed by security forces.

Rather than focusing on the usual subjects of such conversations—locations of weapons and quantities of soldiers, say—the interrogation took the form of a theological debate between two Muslims. Details of the encounter, which was recorded on video, shed much light on the contradictory and messianic world view of Yusuf, the founder of a group that has since become familiar to the wider world as Boko Haram, a name that loosely translates as "Western education is forbidden". That the group takes exception to such teaching is all too plain. Last year it kidnapped more than 200 girls from a school in Chibok in north-eastern Nigeria that used Western teaching principles.

Boko Haram does profess a commitment to learning, but of a specific sort. Members prefer it to be known as "Jama'atu Ahlis Sunna Lidda'awati wal-Jihad", which in Arabic means "People Committed to the Propagation of the Prophet's Teachings and Jihad". In its early days the group emphasised teaching rather than killing. Yet it took a radical, violent turn soon after Yusuf's brutal death.

In the five years since, Boko Haram has spread havoc across parts of Nigeria, Niger, Cameroon and Chad. More than 10,000 people have been killed in related violence and as many as 1.5m driven from their homes. By the end of 2014 the group had conquered large tracts of three of Nigeria's north-eastern states and had declared its intention to form a caliphate. More recently, it has proclaimed its allegiance to Islamic State (IS), a jihadist group that holds sway over parts of Syria and Iraq.

We don't need no education

Much has been written about extremist groups such as IS and al-Qaeda, which directly threaten Westerners at home or abroad. But little is understood about Boko Haram, its leaders and its beliefs. This is partly because it has made little effort to explain itself to the wider world, unlike jihadists such as IS who reach out to potential recruits using social media, and partly because journalists are unable to enter territory it controls safely. Moreover, its limited regional focus means that most Western intelligence agencies have viewed it as posing little international threat.

This book by Mike Smith, a journalist, sheds light both on its crackpot ideas—Yusuf insisted that the world was flat and that rain was made by God—and on the deep contradictions faced by people who propose to return to a sixth-century lifestyle. When asked why he had computer equipment and hospital facilities at his home, Yusuf replied, "These are technological products. Western education is different. Western education is westernisation."

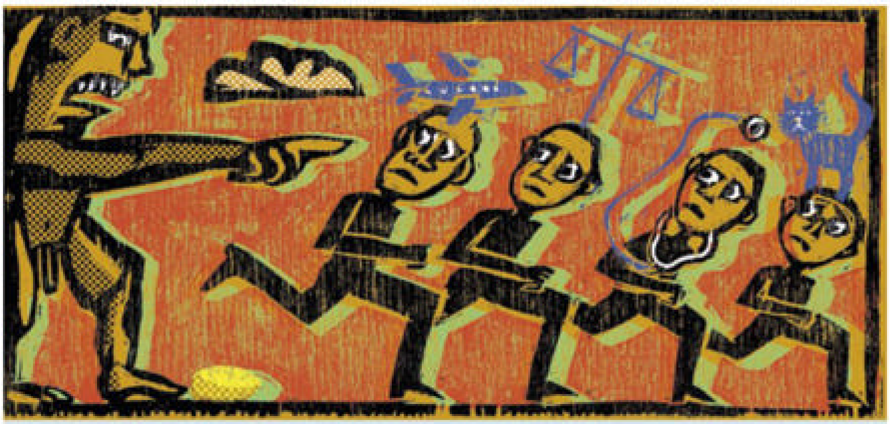
Yusuf's successor, Abubakar Shekau, is a particularly enigmatic figure who is known largely through the brief videos his group has released. In one he justifies selling into slavery the schoolgirls kidnapped in Chibok: "Allah says I should sell. He commands me to sell." Each time Nigerian forces claim to have killed him, new videos emerge, though security officials question whether the same person appears in all the grainy images.

Boko Haram has played an important role in Nigeria's forthcoming presidential election, which has been rescheduled for March 28th. The vote was postponed by six weeks because the army said it could not guarantee the security of polling stations. The government's inability to counter the jihadists has eroded its popularity. Assistance from Chad, new arms and better-trained troops have brought some military successes against Boko Haram. But the political response has been ham-fisted, as Mr Smith's book cogently explains.

Initially the government sat largely idle as a small band of jihadists progressed steadily from pinprick assassinations to attacks on police stations and finally to the wholesale takeover of towns and army ▸▸

bases. When galvanised into action, Nigerian troops acted brutally towards villagers in the north-east of the country, abducting and killing those suspected of supporting Boko Haram.

A staccato tone means the book can at times read too much like a piece of over-length, wire-agency journalism. Readers are left with an unclear understanding of why Boko Haram acts as it does. But they do get a vivid impression of the horrors associated with the group and the campaign against it, thanks to Mr Smith's reporting—the book's main strength. He describes seeing the rotting bodies of civilians killed by jihadists, which had been collected from the roadside and dumped by the police and army in the grounds of a hospital in Maiduguri, a northern town, and vigilantes armed with swords and magical charms trying to defend their villages. Considering the dearth of information available, this is a commendable first draft of history. ■



Nigerian fiction

Fathers and sons

The Fishermen. By Chigozie Obioma. *One; 304 pages; £14.99. To be published in America next month by Little, Brown*

PART *Bildungsroman*, part Greek tragedy, "The Fishermen" may be the most interesting debut novel to emerge from Nigeria this year. It recounts the story of an Igbo family of four brothers who grow up in a small town in the south-west of the country. Their father is strict, but proud: he wants one to be an airline pilot, another a lawyer, the third a family doctor. The youngest, nine-year-old Benjamin, who loves animals, will be a professor. The townspeople laugh at the paterfamilias and his dreams, but he swats them off like mosquitoes. No loafing for his sons.

Shortly after the father's bosses at the Central Bank of Nigeria send him to take on a job in another town, though, the boys begin to go astray. "His established routine of composure, obedience, study, and compulsory siesta—long a pattern of our daily existence—gradually lost its grip…Then we broke free." The boys bunk off school and head down to the river to fish.

One day, by the riverbank, they encounter the town's madman, Abulu. The man "was robed from head to toe in filth". His face was scarred, his lips dried and cracked, his back caked "with a dripping mess…His veiny penis hung limply like trouser rope. His legs were bursting with taut varicose veins." Abulu slept in marketplaces, unfinished buildings, rubbish dumps, open sewers and under parked cars before moving permanently into a truck that had crashed into an electric pole, killing an entire family. From there he would venture out to St Andrew's Cathedral where he was once caught clinging onto the colourful statue of the Madonna, "humping against it, moaning, while people gathered". Knowing this story, the boys on the riverbank throw a mango at him. As they turn to run away, he begins to shout: one of the brothers will kill another.

Chigozie Obioma will start teaching at a creative-writing school in Nebraska later this year. In a first novel full of deceptive simplicity, lyrical language and playful Igbo mythology and humour, he uses the madman's apocalyptic vision for the family as a way of conjuring up Nigeria's senseless body politic. Even a child can tell that this is no way to run a country. And yet for Benjamin, a narrator caught up in tragedy, there is also redemption. This is an impressive and beautifully imagined work.

The story of Polaroid

Land of hope and glory

A Triumph of Genius: Edwin Land, Polaroid, and the Kodak Patent War. By Ronald Fierstein. *American Bar Association; 644 pages; $35 and £22.99*

"LIKE visiting a shrine," is how Steve Jobs described a meeting with Edwin Land. The founder of Apple adored Land, the co-founder of Polaroid, a pioneer of instant photography that with its mix of innovation, aesthetics and focus on consumer utility was in many ways the Apple of its day. Land was not only "one of the great inventors of our time", according to Jobs. "More importantly, he saw the intersection of art and science and business and built an organisation to reflect that." Like Jobs, the adopted boy to whom he became a sort of father figure, Land was driven, sometimes to the point of obsession, a demanding taskmaster and occasionally difficult to deal with.

Land's relative obscurity today reflects the fact that the inventions for which he was best known were rendered largely obsolete by the very digital revolution that made Jobs into a business hero and cultural icon. The demise of film, linked to the rise of digital photography and mobile phones with top-quality cameras, contributed to Polaroid's bankruptcy in 2001 and that of its old rival, Kodak, 11 years later.

Yet as Ronald Fierstein's book demonstrates, Land was truly a great, both as an inventor and a businessman. After dropping out of Harvard, he was still only 19 when he filed for his first patent in 1929, for a "sheet polariser" that he created in an effort to reduce glare from car headlights. By his death in 1991, he was responsible for 535 patents, beaten only by Thomas Edison and Elihu Thomson, the men whose companies merged in 1892 to form General Electric. Some of his inventions helped America in the second world war: airmen in the *Enola Gay* observed the nuclear mushroom cloud over Hiroshima through Polaroid goggles.

Land was eminently quotable. Mr Fierstein lists several "Landisms" that give a flavour of the man. "If you are able to state a problem…then the problem can be solved." "Optimism is a moral duty." "What the physical sciences teach the social sciences is how to fail without a sense of guilt." "If anything is worth doing, it's worth doing to excess."

The core of the book is Polaroid's patent-infringement lawsuit against Kodak, the then-dominant firm in the photographic-equipment business, which ironically had been Polaroid's first significant ►►

customer back in 1934. After Kodak launched a camera allowing pictures to be developed instantly in 1976, Polaroid sued, alleging that this infringed several patents underlying its long-established instant camera. Following a lengthy trial, in which Land was an articulate and decisive witness, Kodak was eventually found guilty of violating most of the patents cited by Polaroid and, in 1991, accepted a bill for compensation of $925m, still the largest fine ever paid in a patent lawsuit.

Mr Fierstein, a member of Polaroid's legal team, provides far too much detail about the court battle, as old soldiers reminiscing of past triumphs are wont to do. Readers unfamiliar with Land should read the final two chapters first, for the context that makes the story of his life not only fascinating but significant. The successful lawsuit against Kodak marked a turning point in American corporate law, which had become weak in its enforcement of patents.

Today, courts are typically keen to uphold patents. Last month Apple was told to pay $533m in compensation for patent violations relating to its iTunes music software. Indeed, there is a growing body of opinion that the patent regime is now too strong, encouraging "patent trolls" who buy patents in order to bring lawsuits based on their violation, and so discouraging innovation. In the 1950s, a similar anti-patent movement argued that teams were responsible for most innovation and did not need the incentive of a patent to encourage their creativity.

In a much-cited speech in 1959, Land was dismissive of this view, insisting that the individual inventor still mattered and needed the incentive that a prospective patent provided. This provoked widespread debate about the role of intellectual property and earned Land the sobriquet "Champion of Patents". Today's critics should think about his concluding words: "There are a thousand new fields ready to be opened. Only a handful of these will be explored by large corporations, leaving many areas untouched. Without the protection of the patent system, young scientific entrepreneurs cannot be counted on to develop the rest." ■

Snapshot judgment

Improving government

Delivery man

How To Run a Government So that Citizens Benefit and Taxpayers Don't Go Crazy. By Michael Barber. *Allen Lane; 336 pages; £16.99*

WHEN Sir Michael Barber, a monkish former teacher, emerged as head of the Delivery Unit that Tony Blair launched in 2001 to ensure that individual government departments implemented reforms, he appeared at a press briefing armed with a massive flip chart and a volley of statistics. This newfangled approach was roundly mocked as "deliverology". But Sir Michael embraced the term, which describes a semi-science that takes the schemes and dreams of ministers and turns them into reality with as few disasters as possible.

Public-service reform had long relied on ministers mixing political passions and good intentions in the hope that the combination would magically coalesce into good results. That governments across the rich and developing worlds now seek help from experts on reforms shows how much more respectable deliverology has become. In 1995 Mark Moore's classic, "Creating Public Value", focused minds in the Clinton administration by laying out the conditions for improving America's public institutions. Inspired by that book Sir Michael, now head of education practice for the Pearson Group (part-owner of *The Economist*), has set out to establish some dos and don'ts for reformers, based on his British experience and a later, peripatetic career advising foreign governments.

"How To Run a Government" follows Sir Michael's earlier tome, "Instruction To Deliver", and is more expansive and better written. He describes a meeting at Chequers, the prime minister's country residence, in 2001, where he compiled a checklist of "how to turn strategy into delivery", a phrase reminiscent of Bertolt Brecht's definition of communism as "the easy thing that is difficult to do". It consisted of what might seem plonkingly obvious questions: "Are you absolutely clear what the Government wants to achieve?", "Are you absolutely clear what Government's role is?" and "Are you confident that your preferred approach can be delivered?".

The most intriguing examples of deliverology that follow show what happened to such endeavours when exposed to political crossfire. "Those who don't want a given target will argue that it will have perverse or unintended consequences," Sir Michael says, "most of which will never occur." Yet some unintended results do cause trouble, and the naivety of the true believer sometimes peeps through Sir Michael's prose. He cites a bitter row in the early 2000s over hospital waiting times, and blames staff who held back from admitting patients because the target criterion was only judged once people were through the hospital doors. "One wonders at the professional ethics of the staff involved in such an abuse," he says. Wonder one might: but a group of people being asked to deliver a target they resist are very likely to find ways to disrupt it.

Overall, though, the author emerges as a wilier operator now than in his graph-and-PowerPoint days, and his advice can be refreshingly ruthless. Campaigns to win over doubters are of limited use, he thinks. Getting results is more likely to defeat opponents than making nice with them. Data on progress are the best defence—ideally data outside a government's control.

An instructional tone is alleviated by wry insights and a fondness for Russian literature; suitable solace for frustrated change-seekers. Politicians, Sir Michael reflects, oscillate between the conviction that they alone have the answer to complex problems and a resignation reminiscent of one of the characters from Boris Pasternak's novel, "Doctor Zhivago", who was in such a hurry to establish "the failure of the efforts he made".

The lesson is that doggedness and consistency are more use to the deliverologist than popularity. Sir Michael's 57 rules for success range from the commonsensical—"Review the capacity of your system to deliver agreed goals"—to the controversial—"Successful markets and effective government go together", which has as many exceptions as proofs around the world. Yet this account of a potentially dry subject has an uplifting brio to it. The combination of big data, a more sophisticated understanding of how to shape and scale reforms, and judicious use of markets make it "perfectly possible to run a government so that citizens benefit", Sir Michael reckons. As for the title's hope that "taxpayers don't go crazy", people should not hold their breath. A more achievable aim is that public-service reforms fare well enough for them to find something else to go crazy about instead. ■

Contemporary classical music

Works of Glass

Words Without Music. By Philip Glass. *Liveright; 432 pages; $29.95. Faber & Faber; £22.50*

PHILIP GLASS is probably the world's most famous living composer. He is known to many as a minimalist, since much of his music is highly repetitive, and he is a prolific film-score creator whose music was used in "Leviathan", a controversial Russian movie from 2014. His new autobiography shows him to be a decent writer, too.

The book avoids detailed analyses of compositions. Instead, Mr Glass discusses the broad influences—academic, cultural and personal—on his approach to music. In this respect the early chapters are the most illuminating. He was born 78 years ago into a Jewish family in Baltimore, where his father ran a record shop in a down-at-heel neighbourhood. Ben Glass was a fearsome man, who was later to disown his son after he married a gentile. He was "very physical and muscular" and would beat up people who tried to steal his records. But he passed his love of music on to Philip, who would sit, unnoticed, at the top of the stairs, while his father listened to Schubert, Shostakovich and Bartok late into the night. By the time Philip was 15, he had become the classical-music buyer for the shop.

Getting crotchety

After escaping Baltimore, Mr Glass moved with a fashionable crowd. A cast of characters, including literary notables such as Allen Ginsberg and Doris Lessing, flit in and out of the story. Yet though his friends were glamorous, his day-to-day life was not. Music paid so badly that he often sidelined it in favour of pursuits that were more lucrative. For years Mr Glass was a plumber. Even after he made his name with "Einstein on the Beach", an opera that was a roaring success at New York's Metropolitan Opera in 1976, he still drove taxis in the city. (He quit cabbing only in 1978 to write "Satyagraha", an opera about Mahatma Gandhi.)

Too much of this book focuses on Mr Glass's non-musical life. He spends the best part of two pages describing how he learned the ideal way to install a toilet. Chapters describing his travels in Asia are unnecessarily detailed with banal observations (such as how he avoided "dysentery problems" on Indian trains by eating bananas, tangerines and peanuts).

Mr Glass offers some entertaining stories about his music-making with Ravi Shankar, a renowned sitar-player who could also be a trying co-worker. When the two decided to make some film music together, Mr Glass learned at the last moment that there was to be no score. Instead, Shankar watched a scene, and then composed the music on the spot. Mr Glass was supposed to transcribe it for the other musicians—but soon realised that his technique, honed at Juilliard, an elite conservatory in New York, was unsuitable for Indian music. His efforts to get help from Shankar were unsuccessful—and amusing in retrospect.

From the chaos of working with Shankar, the story nips to Paris, where Mr Glass studied technique with Nadia Boulanger. Boulanger taught many well-known musicians. (Virgil Thomson, one of them, remarked: "Every town in America has a drugstore and a student of Boulanger.") Her regime was brutal. Western music has seven clefs—the pitches at which music is written. Within the first month, Mr Glass had to master all of them. When he made a little mistake in a composition—hidden fifths between an alto and bass part!—Boulanger screamed at him. When he announced his departure from Paris, though, she wept.

Mr Glass's autobiography is no triumph. It is too long, and even with 400 pages at his disposal he barely has the space to discuss his work of the last three decades. But despite its flaws, it is an unpretentious and often funny account of the life of a remarkable man. ■

Restaurant guides

Chefs' specials

Where Chefs Eat: A Guide to Chefs' Favourite Restaurants. By Joe Warwick. *Phaidon; 975 pages; $24.95 and £14.95*

DEDICATED restaurant guides have been around for over a century. One of the oldest, the Michelin Guide, relies on anonymous experts, and more recent models, such as TripAdvisor, reflect consumer comments. Such is the variety of information that the curious diner must wonder where to begin. The restaurant-critic slot in newspapers in Britain, for example, is often treated as a place for writers to entertain rather than advise. The profusion of web content also makes it difficult to know whom to trust.

"Where Chefs Eat" does something different, by serving up the advice of prominent culinarians. So, if you're considering where to dine in, say, Paris, René Redzepi, Denmark's best-known chef, mentions Le Chateaubriand, which he calls "a restaurant of the future", and Pierre Gagnaire, a Frenchman with three Michelin stars, suggests Kifuné—"a hot spot for the Japanese crowd".

The author, Joe Warwick, co-founded the "World's 50 Best Restaurants" awards; "Where Chefs Eat" is rather more encyclopedic. Its 3,250 recommendations are culled from the responses of 630 international chefs, many of them household names. Its usefulness derives from its culinary eclecticism, stretching from Korean street food at K-Bar in Reykjavik to La Bicyclette, a sandwich joint in the botanical gardens in Rio de Janeiro.

Restaurant guides are useful when they offer more than just a listing. Michelin now has a comment for every place. Most of the entries in Mr Warwick's book have a few words from the recommending chef. But some are more starkly factual, which makes it impossible to assess their merits. Take Aqua in Wolfsburg, one of the finest places in Germany with three Michelin stars. The entry merely says it is formal, expensive and worth the travel, which could describe thousands of restaurants around the globe. In London, La Trompette and Andrew Edmunds are both described as affordable and smart-casual, but diners would want to know that the former has a Michelin star and the latter the city's cheapest fine-wine list.

Still, the guide is to be commended for extending the range of options for adventurous diners. Because of its international spread (more than 70 countries), it will appeal mainly to regular travellers. The app is handier than a tome of a book the size and weight of a family Bible.

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AYENSU STARCH COMPANY LIMITED ("ASCO")

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Government of Ghana ('GoG") acting through the Ministry of Trade and Industry ("MoTI") has appointed PwC to assist with the revitalisation of ASCo as part of efforts to enhance the status of ASCo as a leading cassava processing company in West Africa and to improve the economic prospects of Bawjiase and its surrounding communities.

GoG through MoTI is inviting prospective bidders to acquire 70% of the shares of ASCo. Interested parties are invited to submit sealed bids to acquire 70% shares of ASCo. The deadline for the submission of the sealed bids is **Friday, 10 April 2015** at **12 noon.**

Sealed bids should be marked **CONFIDENTIAL – PROJECT YUCA** and addressed to;

THE COUNTRY SENIOR PARTNER
PRICEWATERHOUSECOOPERS (GHANA) LIMITED
NO. 12 AIRPORT CITY, UNA HOME, 3RD FLOOR
AIRPORT CITY, ACCRA, GHANA

ATTENTION: ERIC NIPAH

For enquiries and sale documents please contact **Kingsford Arthur** or **Kwesi Arhin** at the PricewaterhouseCoopers (Ghana) Limited office at No. 12 Airport City, Una Home, 3rd Floor, Airport City, Accra. T: +233 (0) 302 761 500 F: +233 (0) 302 761 544

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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*	2015†	latest	latest	2015†	rate, %	latest 12 months, $bn	% of GDP 2015†	% of GDP 2015†	10-year gov't bonds, latest	Mar 25th	year ago
United States	+2.4 Q4	+2.2	+3.2	+3.5 Feb	nil Feb	+0.3	5.5 Feb	-410.6 Q4	-2.2	-2.5	1.90	-	-
China	+7.3 Q4	+6.1	+7.2	+6.8 Feb	+1.4 Feb	+1.5	4.1 Q4§	+213.8 Q4	+2.1	-2.9	3.34§§	6.21	6.20
Japan	-0.8 Q4	+1.5	+1.1	-2.9 Jan	+2.4 Jan	+1.0	3.6 Jan	+40.1 Jan	+1.7	-7.0	0.31	119	102
Britain	+2.7 Q4	+2.2	+2.6	+1.2 Jan	nil Feb	+0.5	5.7 Dec††	-163.0 Q3	-4.3	-4.4	1.64	0.67	0.61
Canada	+2.6 Q4	+2.4	+2.1	+4.3 Dec	+1.0 Feb	+1.1	6.8 Feb	-39.3 Q4	-2.5	-1.7	1.35	1.25	1.12
Euro area	+0.9 Q4	+1.3	+1.3	+1.2 Jan	-0.3 Feb	nil	11.2 Jan	+313.3 Jan	+2.4	-2.2	0.23	0.91	0.72
Austria	-0.2 Q4	+0.4	+1.3	-0.1 Jan	+0.8 Feb	+1.3	5.5 Jan	+2.4 Q3	+2.4	-2.2	0.40	0.91	0.72
Belgium	+1.0 Q4	+0.7	+1.2	+0.9 Jan	-0.4 Feb	+0.4	8.5 Jan	+8.0 Sep	-0.1	-2.5	0.48	0.91	0.72
France	+0.2 Q4	+0.3	+0.9	+0.6 Jan	-0.3 Feb	+0.1	10.2 Jan	-19.7 Jan‡	-1.1	-4.2	0.50	0.91	0.72
Germany	+1.5 Q4	+2.8	+1.6	+0.8 Jan	+0.1 Feb	+0.2	6.5 Feb	+290.4 Jan	+7.1	+0.7	0.23	0.91	0.72
Greece	+1.2 Q4	-1.5	+1.8	+0.1 Jan	-2.2 Feb	-0.9	26.0 Dec	+1.7 Jan	+2.7	-3.4	10.98	0.91	0.72
Italy	-0.5 Q4	-0.1	+0.5	-2.2 Jan	-0.1 Feb	nil	12.6 Jan	+40.3 Jan	+1.6	-3.0	1.34	0.91	0.72
Netherlands	+1.0 Q4	+1.8	+1.3	-1.5 Jan	+0.1 Feb	+0.5	8.9 Feb	+91.5 Q3	+9.1	-2.0	0.32	0.91	0.72
Spain	+2.0 Q4	+2.7	+2.0	-2.0 Jan	-1.1 Feb	-0.7	23.4 Jan	+0.7 Dec	+0.5	-4.5	1.29	0.91	0.72
Czech Republic	+1.2 Q4	+1.5	+2.9	+2.9 Jan	+0.1 Feb	+0.2	7.5 Feb§	+1.4 Q4	-0.4	-1.7	0.46	24.9	19.8
Denmark	+1.3 Q4	+1.7	+1.6	-1.2 Jan	+0.2 Feb	+0.7	5.0 Dec	+21.1 Jan	+5.8	-3.0	0.34	6.81	5.40
Hungary	+3.4 Q4	+3.2	+2.4	+7.5 Jan	-1.0 Feb	+1.0	7.4 Jan§‡‡	+5.7 Q3	+4.6	-2.6	3.15	273	225
Norway	+3.2 Q4	+3.7	+1.0	-1.1 Jan	+1.9 Feb	+1.4	3.7 Dec‡‡	+42.5 Q4	+11.3	+7.5	1.49	7.84	6.03
Poland	+2.8 Q4	+2.8	+3.3	+4.9 Feb	-1.6 Feb	+0.4	12.0 Feb§	-5.5 Jan	-2.0	-1.4	2.25	3.73	3.03
Russia	-0.3 Q4	na	-3.8	-1.4 Feb	+16.7 Feb	+13.4	5.8 Feb§	+56.6 Q4	+4.6	-2.3	12.10	57.4	35.5
Sweden	+2.6 Q4	+4.6	+2.3	+0.8 Jan	+0.1 Feb	+0.2	8.4 Feb§	+35.7 Q4	+5.6	-1.3	0.39	8.49	6.40
Switzerland	+1.9 Q4	+2.4	+1.0	+2.7 Q4	-0.8 Feb	-0.7	3.2 Feb	+49.1 Q4	+7.6	+0.3	-0.08	0.96	0.88
Turkey	+1.7 Q3	na	+4.1	-2.3 Jan	+7.5 Feb	+6.9	10.9 Dec§	-42.9 Jan	-4.2	-1.7	8.27	2.59	2.22
Australia	+2.5 Q4	+2.2	+2.6	+3.3 Q4	+1.7 Q4	+1.7	6.3 Feb	-40.1 Q4	-2.8	-2.3	2.33	1.27	1.09
Hong Kong	+2.2 Q4	+1.5	+2.5	-3.7 Q4	+4.6 Feb	+3.3	3.3 Feb‡‡	+5.6 Q4	+1.8	+0.1	1.41	7.75	7.76
India	+7.5 Q4	+4.0	+7.0	+2.6 Jan	+5.4 Feb	+6.0	8.8 2013	-27.4 Q4	-1.6	-4.1	7.77	62.4	60.2
Indonesia	+5.0 Q4	na	+5.1	+5.0 Jan	+6.3 Feb	+5.2	5.9 Q3§	-26.2 Q4	-3.0	-1.8	7.23	12,980	11,384
Malaysia	+5.8 Q4	na	+5.5	+7.0 Jan	+0.1 Feb	+3.1	3.1 Jan§	+15.2 Q4	+3.4	-4.7	3.89	3.67	3.30
Pakistan	+5.4 2014**	na	+5.7	+1.1 Jan	+3.2 Feb	+4.6	6.2 2013	-3.5 Q4	-0.7	-5.1	9.30†††	102	97.2
Singapore	+2.1 Q4	+4.9	+3.1	+0.9 Jan	-0.3 Feb	+0.4	1.9 Q4	+58.8 Q4	+22.6	-0.3	2.17	1.37	1.27
South Korea	+2.7 Q4	+1.1	+3.7	+1.8 Jan	+0.5 Feb	+1.5	4.6 Feb§	+92.8 Jan	+5.7	+0.5	2.18	1,102	1,080
Taiwan	+3.3 Q4	+4.8	+3.8	+3.3 Feb	-0.2 Feb	+1.0	3.7 Feb	+65.3 Q4	+12.3	-1.2	1.54	31.2	30.5
Thailand	+2.2 Q4	+7.1	+3.9	-1.3 Jan	-0.5 Feb	+1.3	1.1 Jan§	+14.2 Q4	+2.3	-1.9	2.59	32.5	32.6
Argentina	+0.4 Q4	+0.1	+0.6	-2.1 Jan	— ***	—	6.9 Q4§	-5.1 Q4	-1.1	-3.1	na	8.80	8.01
Brazil	-0.2 Q3	+0.3	nil	-5.2 Jan	+7.7 Feb	+7.2	5.3 Jan§	-89.8 Feb	-4.1	-4.9	13.07	3.20	2.31
Chile	+1.8 Q4	+3.8	+3.0	+5.8 Jan	+4.4 Feb	+3.6	6.2 Jan§‡‡	-3.0 Q4	-1.5	-2.0	4.36	621	558
Colombia	+3.5 Q4	+2.9	+3.9	-2.5 Jan	+4.4 Feb	+3.9	10.8 Jan§	-16.2 Q3	-6.1	-2.1	6.92	2,544	1,979
Mexico	+2.6 Q4	+2.7	+2.8	+0.3 Jan	+3.0 Feb	+3.7	4.4 Jan	-26.5 Q4	-1.8	-3.4	5.68	15.0	13.1
Venezuela	-2.3 Q3	+10.0	-3.2	+0.8 Sep	+68.5 Dec	+65.9	7.9 Jan§	+10.3 Q3	-1.8	-15.1	11.18	6.29	6.35
Egypt	+6.8 Q3	na	+3.9	-5.3 Jan	+10.6 Feb	+9.7	12.9 Q4§	-5.8 Q4	-1.4	-10.7	na	7.63	6.96
Israel	+3.3 Q4	+6.8	+3.5	+0.6 Jan	-1.0 Feb	-0.2	5.6 Jan	+9.0 Q4	+4.8	-3.0	1.52	3.94	3.48
Saudi Arabia	+3.6 2014	na	+2.5	na	+2.1 Feb	+2.8	6.0 2014	+120.1 Q3	-1.1	-9.7	na	3.75	3.75
South Africa	+1.3 Q4	+4.1	+2.4	-1.5 Jan	+3.9 Feb	+5.2	24.3 Q4§	-19.1 Q4	-4.9	-3.7	7.62	11.9	10.7

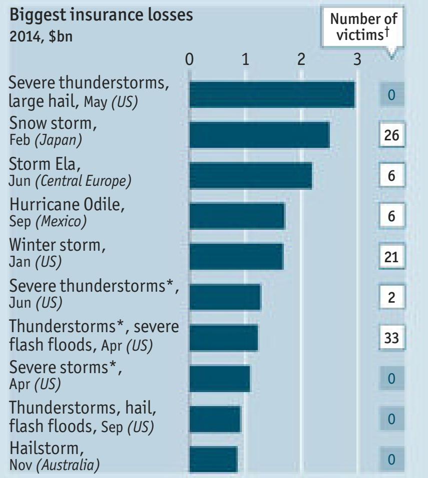
Source: Haver Analytics. *% change on previous quarter, annual rate. †*The Economist* poll or Economist Intelligence Unit estimate/forecast. §Not seasonally adjusted. ‡New series. **Year ending June. ††Latest 3 months. ‡‡3-month moving average. §§5-year yield. ***Official number not yet proven to be reliable; The State Street PriceStats Inflation Index, Jan 35.9%; year ago 26.04% †††Dollar-denominated bonds.

Markets

	Index Mar 25th	% change on one week	% change on Dec 31st 2014 in local currency	% change on Dec 31st 2014 in $ terms
United States (DJIA)	17,718.5	-2.0	-0.6	-0.6
China (SSEA)	3,836.7	+2.3	+13.2	+13.0
Japan (Nikkei 225)	19,746.2	+1.0	+13.2	+13.7
Britain (FTSE 100)	6,991.0	+0.7	+6.5	+1.8
Canada (S&P TSX)	14,929.4	-0.2	+2.0	-5.6
Euro area (FTSE Euro 100)	1,218.6	+0.2	+17.5	+6.7
Euro area (EURO STOXX 50)	3,684.0	+0.4	+17.1	+6.3
Austria (ATX)	2,523.4	+1.7	+16.8	+6.1
Belgium (Bel 20)	3,745.1	+0.5	+14.0	+3.5
France (CAC 40)	5,021.0	-0.2	+17.5	+6.7
Germany (DAX)*	11,865.3	-0.5	+21.0	+9.9
Greece (Athex Comp)	794.6	+7.7	-3.8	-12.7
Italy (FTSE/MIB)	23,145.1	+2.6	+21.7	+10.5
Netherlands (AEX)	491.6	-1.0	+15.8	+5.2
Spain (Madrid SE)	1,163.3	+3.8	+11.6	+1.3
Czech Republic (PX)	1,043.2	+1.2	+10.2	+1.3
Denmark (OMXCB)	826.7	+0.6	+22.4	+10.8
Hungary (BUX)	20,106.1	+8.6	+20.9	+15.9
Norway (OSEAX)	662.6	+0.4	+6.9	+2.3
Poland (WIG)	54,138.3	+1.4	+5.3	+0.5
Russia (RTS, $ terms)	882.1	+4.9	+7.1	+11.6
Sweden (OMXS30)	1,694.4	-0.6	+15.7	+6.9
Switzerland (SMI)	9,188.3	-0.7	+2.3	+6.1
Turkey (BIST)	82,649.2	+3.4	-3.6	-12.4
Australia (All Ord.)	5,937.1	+2.2	+10.2	+5.8
Hong Kong (Hang Seng)	24,528.2	+1.7	+3.9	+3.9
India (BSE)	28,111.8	-1.8	+2.2	+3.4
Indonesia (JSX)	5,405.5	-0.1	+3.4	-1.4
Malaysia (KLSE)	1,819.1	+1.2	+3.3	-1.5
Pakistan (KSE)	31,086.5	-1.4	-3.3	-4.6
Singapore (STI)	3,419.0	+1.7	+1.6	-1.6
South Korea (KOSPI)	2,042.8	+0.7	+6.6	+6.5
Taiwan (TWI)	9,667.8	+0.1	+3.9	+4.8
Thailand (SET)	1,512.8	-1.2	+1.0	+2.1
Argentina (MERV)	11,166.2	-1.0	+30.2	+25.1
Brazil (BVSP)	51,858.3	+0.6	+3.7	-12.8
Chile (IGPA)	19,006.8	+0.8	+0.7	-1.2
Colombia (IGBC)	9,970.2	-0.1	-14.3	-20.0
Mexico (IPC)	43,631.0	-1.6	+1.1	-0.2
Venezuela (IBC)	5,027.3	+6.9	+30.3	na
Egypt (Case 30)	9,198.5	-3.0	+3.0	-3.4
Israel (TA-100)	1,411.2	+1.5	+9.5	+7.7
Saudi Arabia (Tadawul)	8,868.1	-3.3	+6.4	+6.5
South Africa (JSE AS)	52,313.0	+0.2	+5.1	+2.6

Natural disasters

Some 12,700 people died as a result of natural or man-made disasters last year, the lowest number since 1986, according to Swiss Re, an insurer. Pay-outs from insurance companies fell by a fifth to $35 billion. But the number of natural disasters rose, as thunderstorms caused damage in America and Europe. This is a continuation of a trend. Insured losses from storms have grown by an average of 9% a year since 1990. Rich countries dominate the list of highest insured losses in 2014, in part because the developing world has less property to underwrite. The year's biggest humanitarian disaster was caused by an earthquake in the Chinese province of Yunnan, in which 731 people perished.



Source: Swiss Re *Incl. large hail, tornadoes †Dead or missing

Other markets

Other markets

	Index Mar 25th	% change on one week	% change on Dec 31st 2014 in local currency	% change on Dec 31st 2014 in $ terms
United States (S&P 500)	2,061.1	-1.8	+0.1	+0.1
United States (NAScomp)	4,876.5	-2.1	+3.0	+3.0
China (SSEB, $ terms)	308.6	+1.5	+6.3	+6.1
Japan (Topix)	1,592.0	+0.6	+13.1	+13.6
Europe (FTSEurofirst 300)	1,587.0	-0.2	+16.0	+5.3
World, dev'd (MSCI)	1,756.5	+0.1	+2.7	+2.7
Emerging markets (MSCI)	976.2	+2.0	+2.1	+2.1
World, all (MSCI)	428.3	+0.3	+2.7	+2.7
World bonds (Citigroup)	888.7	+1.8	-1.5	-1.5
EMBI+ (JPMorgan)	706.2	+2.5	+2.1	+2.1
Hedge funds (HFRX)	1,244.4§	+0.3	+2.1	+2.1
Volatility, US (VIX)	15.4	+14.0	+19.2	(levels)
CDSs, Eur (iTRAXX)†	56.6	+9.6	-18.0	-25.5
CDSs, N Am (CDX)†	64.5	+3.3	-5.6	-5.6
Carbon trading (EU ETS) €	7.0	+3.1	-4.2	-13.1

Sources: Markit; Thomson Reuters. *Total return index. †Credit-default-swap spreads, basis points. §Mar 24th.

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

The Economist commodity-price index

2005=100

	Mar 17th	Mar 24th*	% change on one month	% change on one year
Dollar Index				
All Items	140.4	144.2	-0.4	-16.5
Food	157.4	160.6	-2.1	-20.4
Industrials				
All	122.7	127.2	+1.9	-10.6
Nfa†	117.3	120.9	-0.1	-22.2
Metals	125.0	129.9	+2.7	-4.9
Sterling Index				
All items	173.1	176.4	+3.4	-7.3
Euro Index				
All items	164.6	164.4	+3.5	+5.5
Gold				
$ per oz	1,148.6	1,190.7	-0.6	-9.2
West Texas Intermediate				
$ per barrel	43.2	47.0	-3.1	-52.8

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.

Of gods and men

Sir Terry Pratchett, creator of the Discworld universe, died on March 12th, aged 66

WHEN he was knighted in 2009, Terry Pratchett made a sword. It was the natural accoutrement for a man who, without one, resembled an amiable wizard kitted out by a Houston department store.

With a little help from friends, he dug 80 kilos of iron ore from a convenient field and built a kiln in the back garden. Together the team forged a sword that might have bisected a snowflake, had one drifted past.

It also had a hidden ingredient. Mixed in with the smelt were bits of meteorite, the stuff of thunderbolts. By this Sir Terry put himself on a par with Blind Io, chief of his Discworld gods. Io held the monopoly of throwing bolts about, and thus effortlessly lorded it over Annoia, goddess of Things That Stick in Drawers; Bibulous, god of Wine and Things on Sticks; Errata, goddess of Misunderstandings; and Reg, god of Club Musicians.

The disc-shaped world in which these gods were worshipped—or, more often, blamed—had been created by Sir Terry in 1983, though it had possibly existed from all eternity, borne steadily through space on the backs of four giant elephants standing on an immense dim-sighted turtle. It had swum into his mind as he wrote press handouts for the Central Electricity Generating Board, and by 1987 had proved so phenomenally popular that he left the board to fend for itself. His 40 Discworld novels made him Britain's bestselling author in the 1990s, and by this year he had sold 85m books in 37 languages: though not, to his disappointment, in Klatch or heathen Trob*.

The literati sniffed at his fantasies, but he gave as good as he got. He had no intention of writing literature, or adding to the piles already mouldering about. Instead he ornamented Discworld with Unseen University, which was never precisely Here or There, where faculty such as the Professor of Indefinite Studies had only to show up for meals, and where the Librarian was an orang-utan who, swinging through the shelves with his prehensile limbs, had reduced all existential inquiry to a craving for bananas.

Sir Terry had not been to university himself, Seen or Unseen. He had just about scraped through High Wycombe Technical High School. Astronomy was his passion, but his star-gazing was not backed up by being any good at maths. He learned instead—mostly from P.G. Wodehouse and H.G. Wells—that universes could be explored in other ways, and could be funny and dark and slyly topical, all at once.

So it was that he built the sprawling, unsewered metropolis of Ankh-Morpork and peopled its mazy alleyways with thieves, beggars, trolls, vampires, vegetarian werewolves and bemused tourists, as well as overworked wizards. People wondered how he was not overworked himself, producing two books a year. He simply loved doing it. Feature-film-makers and their bags of gold were regularly rebuffed; he was the only controller of this universe. (Just to prove it, he gave it eight colours of the spectrum, the eighth being fluorescent greenish-yellow-purple octarine, and let some characters move so fast that light stood red-faced in embarrassment.) His enormous cast of characters, once set in motion, would generally do what he wanted, give or take the odd axe malfunction.

Brandy with Tallis

Among those characters was Death. He had appeared in Sir Terry's childhood playing chess in "The Seventh Seal" on TV, and had not changed much since. When noticed, as humans tried not to, he had sparkling blue eyes, a glowing scythe and a white horse called Binky. His gathering of souls was untidy—the good fingered, the bad spared—and his life oddly endearing, with cups of tea and curries, and a rubber duck in his bath. He spoke IN CAPITALS, like a coffin lid slamming. In 1991 a New Death appeared with no nice features, but he soon tangled with that scythe.

Knowing Death as he did, Sir Terry was taken aback when in 2007 Binky came nuzzling at his door. He was diagnosed then with a form of early-onset Alzheimer's. As an optimist by nature, he determined to beat it; when, within a year, it had removed his power to write and type, he realised that might be too tall an order. But his anger was undiminished; and since he had always told Death what to do and where to go, he began to campaign loudly and publicly for the right to die when and how he liked. This was preferably not in a clinic in Switzerland, but in his garden, with his cat on his lap, an excellent brandy in his hand, and Thomas Tallis in the background. In the event he managed, unassisted, some of that; and also put the right-to-die debate in a useful forward gear.

Soon after his diagnosis it was rumoured, mostly in the *Daily Mail*, that he had found God. He thought this unlikely, since he could not even find his keys, for the existence of which he had empirical evidence. All the same, he admitted to hearing a voice that told him all was well; and to a feeling one February day, when the sunset reddened a ploughed field, that there was "an order greater than heaven". He knew then, he thought, "where the gods come from". But why not, like the gods and the universe he had created, from his own black-fedoraed head, and his own thunder-wielding hand? ■

* Spoken mostly by beTrobi sailors.