The Economist

JANUARY 17TH–23RD 2015

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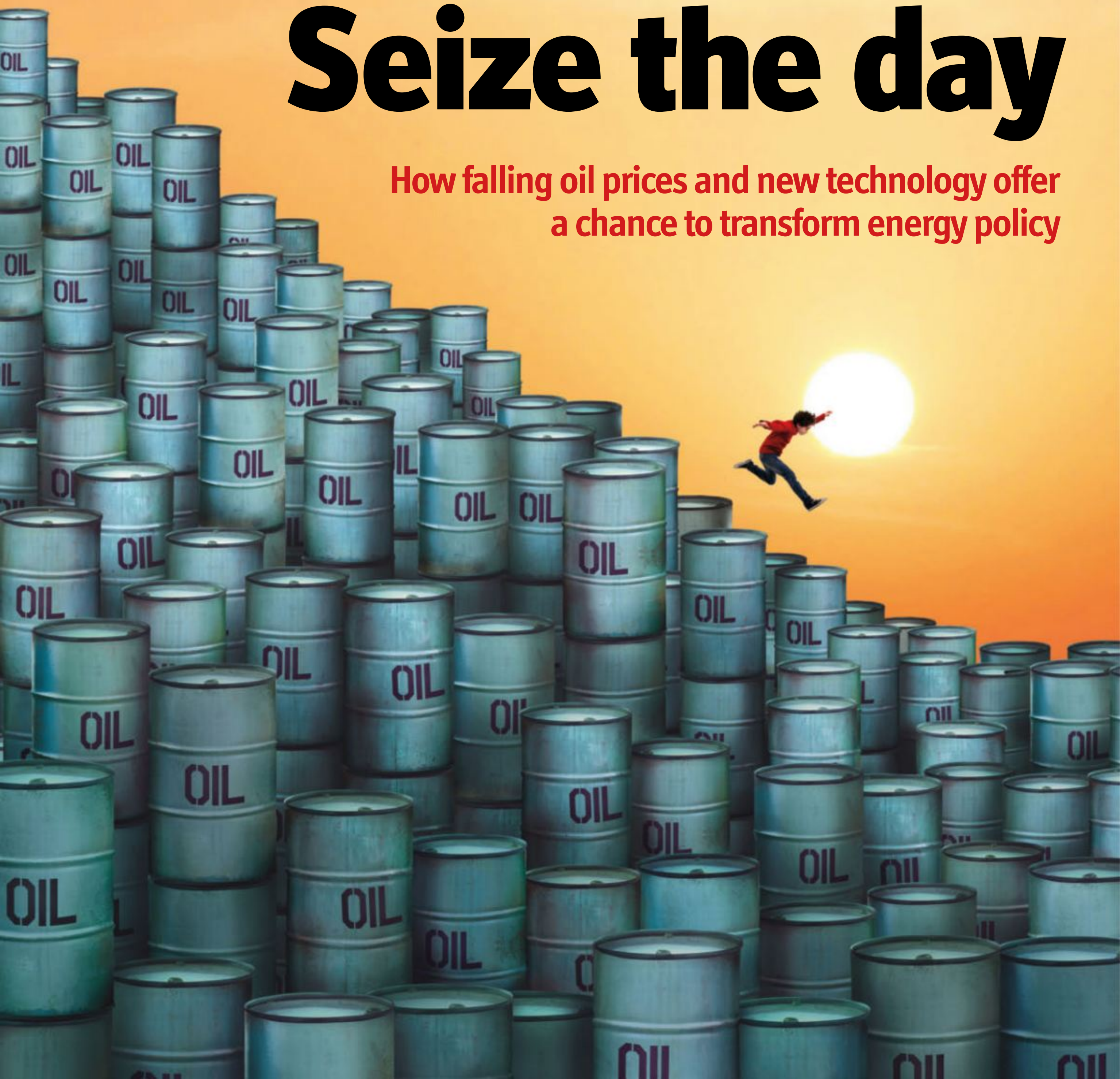
Seize the day

How falling oil prices and new technology offer a chance to transform energy policy

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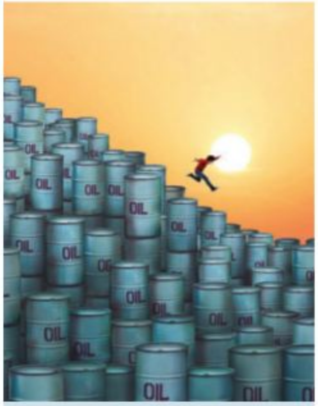

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Economist.com/print

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The Economist

Volume 414 Number 8921

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

Editorial offices in London and also:
Atlanta, Beijing, Berlin, Brussels, Cairo, Chicago, Hong Kong, Johannesburg, Lima, Los Angeles, Mexico City, Moscow, New Delhi, New York, Paris, San Francisco, São Paulo, Singapore, Tokyo, Washington DC

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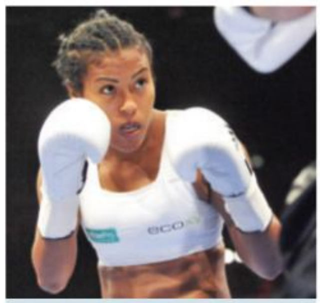

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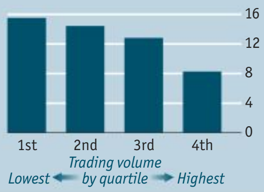

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Subscription for 1 year (51 issues)

United States	US$160
Canada	CN$165
Latin America	US$338

Principal commercial offices:
25 St James's Street, London SW1A 1HG
Tel: 020 7830 7000

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

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

60/F Central Plaza
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Politics

The latest issue appeared of *Charlie Hebdo*, the satirical magazine in **France** that was murderously assaulted by two Islamist terrorists, with a cover depicting a cartoon of the Prophet Muhammad. Its print run of 3m sold out within hours. Two days after the attack on *Charlie Hebdo* four hostages held by another Islamist at a Jewish supermarket were killed. Extra police were deployed across France to protect possible targets. Paris staged a 1.6m-strong protest march against extremism attended by dozens of world leaders.

Abu Hamza, an Egyptian-born radical Islamist cleric, who for years fought his extradition from Britain to America, was sentenced to life in prison by a court in New York for supporting terrorism. One of the attackers in Paris is thought to have been mentored by an associate of Mr Hamza.

Croatia unexpectedly elected Kolinda Grabar-Kitarovic, the right-wing candidate, as president. She narrowly defeated the left-wing incumbent.

The **European Parliament** voted to allow national governments to decide whether to permit the growth of more genetically modified crops in their own territory. Britain, Spain and some others are expected to do so, but most countries will retain their blanket bans.

Ukraine's purported ceasefire was shattered by renewed fighting in the south-east and a rocket attack on a bus that killed 12 people. A peace summit called by the Germans that was supposed to take place in Kazakhstan was cancelled.

Presidential authority

Barack Obama used his executive powers again to try to curb greenhouse-gas pollutants, this time announcing that the government would seek to cut **methane emissions** from the energy industry by 45% by 2025 from their levels in 2012. Methane accounts for around 9% of America's planet-cooking emissions.

Hackers calling themselves "CyberCaliphate" briefly took over the **social-media** channels of US Central Command, which runs America's military operations in the Middle East. They declared support for Islamic State and posted threats, urging American troops to "watch their back". The Pentagon described it as little more than a "prank", but the cyber-attack came just as Mr Obama was outlining plans to crack down on the theft of personal data.

Mitt Romney indicated that he is seriously considering running again for president, having denied for months that he was interested. He is talking to his old campaign donors about another bid, his third.

Rapid thaw

The United States said that **Cuba** has released 53 political prisoners, fulfilling a promise it made as part of an agreement to normalise relations. Some Cuban dissidents claimed that not all the prisoners on the list had actually been freed.

Moody's cut **Venezuela's** credit rating to the lowest level used for countries that are not actually in default on their loans. The country's economy is suffering from the slump in the price of oil, its main export. Shortages of consumer goods have pushed up inflation and led to lengthy queues at shops.

A prosecutor in **Argentina** alleged that the country's president, Cristina Fernández de Kirchner, tried to cover up the role of Iran in the bombing of a Jewish community centre in Buenos Aires in 1994, which killed 85 people. The prosecutor, Alberto Nisman, said that a controversial agreement with Iran in 2013 to set up a commission to look into the massacre was the result of secret negotiations and claims that officials offered to export grain to Iran in exchange for oil to ease Argentina's energy deficit.

Haiti's parliament was dissolved after the mandates of several senators expired, leaving the president, Michel Martelly, free to rule by decree. A prolonged dispute between him and the opposition over a delay in elections, and over an electoral law that would allow them to be held, has sparked violent protests in Port-au-Prince, the capital.

Colombia's president, Juan Manuel Santos, offered to negotiate a ceasefire with the leftist FARC guerrilla army. The FARC has already declared a unilateral ceasefire to help peace negotiations. The government has until now refused to reciprocate, fearing that the guerrillas would use a truce as an opportunity to re-arm.

A common enemy

In a sign of improving relations between the two countries, **Afghanistan** arrested five suspects in the December bombing of an army school in Peshawar in **Pakistan** that killed 150 people, most of them pupils at the school.

The government of **Japan** approved a record defence budget of ¥5 trillion yen ($42 billion) in the face of a perceived challenge from China. The money will be spent on early-warning aircraft, patrol aircraft and amphibious vehicles. The defence minister, Gen Nakatani, said that the increased spending was needed because of the "changing situation" around Japan.

Release date

An appeals court in **Egypt** overturned the conviction of Hosni Mubarak for fraud and ordered a retrial. Mr Mubarak was overthrown as president during the Arab spring. This was the last charge keeping him behind bars.

The **Nigerian** government was accused of indifference over the Islamist insurgency that is sweeping the north-east of the country, after reports emerged of a massacre carried out by Boko Haram, a jihadist group, in the village of Baga. It is thought that at least 150 people, even as many as 2,000, may have been killed. Goodluck Jonathan, the president, has yet to say a word about the carnage, though he has condemned the attacks in Paris.

Saudi Arabia flogged **Raif Badawi**, a liberal blogger, in public for setting up a website that threatens the "general security" and insulting Islamic figures. Mr Badawi's sentence calls for him to be flogged 50 times a week for 20 weeks as part of a ten-year prison sentence. Human-rights groups called on world leaders, many of whom marched in Paris this week in defence of free speech, to condemn the punishment.

At least 72 people died after drinking contaminated beer at a funeral in **Mozambique**. Officials said the lethal homemade brew had been poisoned with crocodile bile, a fatal substance that is supposed to be disposed of after a crocodile dies.

Business

Markets breathed a sigh of relief after a senior legal adviser to the European Court of Justice decided that a programme created by the **European Central Bank** to buy government bonds of countries where yields have shot up, though "unconventional", came under its monetary-policy remit. That programme has not yet been used, but a different legal finding would have led to much uncertainty about whether the ECB could launch an expansive round of government-bond purchases across the euro zone, which it might announce at its next meeting on January 22nd.

The Swiss central bank shook markets when it scrapped the **Swiss franc's** link to the euro. In 2011, when investors flocked to the franc as a haven from the euro, the Swiss National Bank set a ceiling above which it would not let the franc rise. That is no longer justified, it said, because the euro has since depreciated and "divergences between the monetary policies of the major currency areas have increased significantly". The franc soared after the announcement.

The Reserve Bank of India cut its benchmark interest rate for the first time in two years, by a quarter of a percentage point to 7.75%. Inflation has fallen in **India**, giving the bank more leeway for a shift in monetary policy to boost growth.

Disinflationary pressures

Britain's annual **inflation** rate fell to 0.5% in December, the first time it has been more than a percentage point below the Bank of England's target of 2%. With an election due in May, George Osborne, the chancellor, made sure to contrast low inflation in Britain, which he affirmed as a benefit to households, with "damaging deflation" in the euro zone.

One factor behind Britain's falling inflation rate is the plummeting **oil price**, which has reduced the cost of petrol for motorists. Brent crude dropped to below $47 a barrel this week after the oil minister of the United Arab Emirates reiterated that OPEC was in no mood to cut production.

Meanwhile, underlining the repercussions of cheap oil on energy companies, **Royal Dutch Shell** cancelled plans for a $6.5 billion petrochemicals project in Qatar because it is "commercially unfeasible" in the "economic climate prevailing" in the industry. **BP** announced big job cuts in its North Sea operations.

Copper comes a cropper

The general rout in commodity prices spread to **copper**, knocking the share prices of some big mining companies. The price of copper has fallen by 12% since the start of this year. One reason is that China, the biggest importer, has produced a string of weak data.

The World Bank cut its estimate for **global growth** this year to 3%, down from an earlier projection of 3.4%. It shaved 0.7 of a percentage point off the forecast for the euro zone, which it now thinks will grow by 1.1%. The bank said that the outlook is "uncertain", as the recovery has been "sputtering" in the euro area and Japan and that there is little sign of a return to the hot growth in emerging markets that helped pull the world economy out of the last crisis.

Nagging concerns about the world economy prompted investors to pile into safe **government bonds**, pushing the yields on ten-year debt issued by Japan, Germany and others to record lows. The yield on US Treasury ten-year notes was at its lowest since 2013.

The **rouble** slid to its lowest point since its rally in mid-December. Over the past year Russia's central bank has spent $76 billion trying to prop up the currency.

American employers added 252,000 workers to the payrolls in December. Nearly 3m **jobs** were created in the United States last year, the most since 1999. But **retail sales** fell, dashing hopes that the Christmas shopping season had been a bumper one.

Another Wall Street titan launched an attack against the Dodd-Frank financial reforms. **MetLife**, America's biggest life insurer, is suing regulators for designating it as "systemically important", making it subject to close supervision by the Federal Reserve. The company argues that its classification as systemically important is "arbitrary and capricious".

Not for the tax benefits

Shire, a British drugs company, agreed to buy **NPS Pharmaceuticals**, which is based in New Jersey, for $5.2 billion. Shire was targeted in a tax-inversion takeover by America's AbbVie last year, until the US Treasury introduced curbs on such deals.

Boeing delivered 723 jets to airlines in 2014, beating **Airbus**, which supplied 629, for the third consecutive year. Airbus booked more net orders however—1,456 compared with Boeing's 1,432. Both companies are anxious to build through their mounting backlog of orders.

Other economic data and news can be found on pages 88-89

With confidence to the future

From Regional to the World Leaders: Kazakhstan's State Fund Samruk-Kazyna transforming it's business to become an active investor

Kazakhstan's Sovereign Wealth Fund "Samruk-Kazyna" managing the largest strategic state assets worth more than $90 billion is in a big way to review the business strategy including approaches to investment and asset management.
Already launched Transformation program is an initiative of large-scale changes of the Fund and its subsidiaries. As a result, "Samruk-Kazyna" shift from the current business model as an administrator of assets transferred by the state to the role of an active investor. In addition to business processes optimization, the transformation program envisions attraction of foreign investors, sale of non-core assets and investment portfolio optimization, as well as a comprehensive reorganization and streamlining of the Fund's operations. Particular attention will be paid to more efficient use of capital.

These measures will result in operating costs reduction of 20% by 2017, and Samruk Kazyna's economic value added will generate more than $11.2 bn for Kazakhstan's economy in the next six years.

Transformational reforms are actively executed by The Fund: the Corporate Governance Code approved by the end of the 2014 focuses on the management of Group companies as private organizations and intended the use OECD's high standards in this area, improvement of Fund's investment activities. In addition, the Fund is performing privatization –
it transfers 106 companies to the private sector, created as part of government initiatives to diversify the economy and the development of new industries. This will allow, on the one hand, to reduce the presence of the state in the business, on the other – give the opportunity to the Fund to focus on the most important strategic directions.
For more information about the transformation of the Fund please follow the link -
http://sk.kz/page/transformatsija
Details about privatization available at web-page of the program -
http://privatization.sk.kz/en

Joint-Stock Company "Sovereign Wealth Fund "Samruk-Kazyna"
Block B, 8 Kunayev street,
010000, Astana, Republic of Kazakhstan
Office: +7 7172 554 002, 554 001, 552 630

"Samruk-Kazyna Contract" ltd.
Block B, 8 Kunayev street,
010000, Astana, Republic of Kazakhstan
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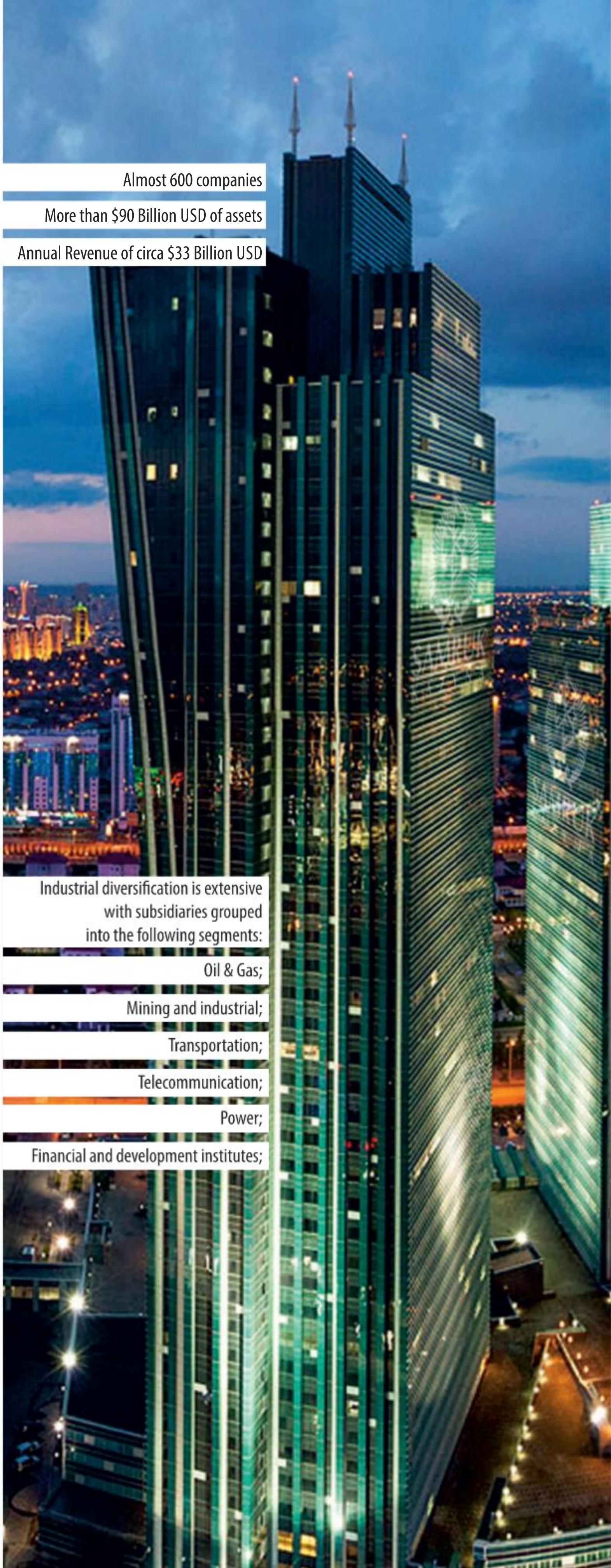

Seize the day

The fall in the price of oil and gas provides a once-in-a-generation opportunity to fix bad energy policies

MOST of the time, economic policymaking is about tinkering at the edges. Politicians argue furiously about modest changes to taxes or spending. Once in a while, however, momentous shifts are possible. From Deng Xiaoping's market opening in 1978 to Poland's adoption of "shock therapy" in 1990, bold politicians have seized propitious circumstances to push through reforms that transformed their countries. Such a once-in-a-generation opportunity exists today.

The plunging price of oil, coupled with advances in clean energy and conservation, offers politicians around the world the chance to rationalise energy policy. They can get rid of billions of dollars of distorting subsidies, especially for dirty fuels, whilst shifting taxes towards carbon use. A cheaper, greener and more reliable energy future could be within reach.

The most obvious reason for optimism is the plunge in energy costs. Not only has the price of oil halved in the past six months, but natural gas is the cheapest it has been in a decade, bar a few panicked months after Lehman Brothers collapsed, when the world economy appeared to be imploding. There are growing signs that low prices are here to stay: the rising chatter of megamergers in the oil industry (see page 59) is a sure sign that oilmen are bracing for a shake-out. Less noticed, the price of cleaner forms of energy is also falling, as our special report this week explains. And new technology is allowing better management of the consumption of energy, especially electricity. That should help cut waste and thus lower costs still further. For decades the big question about energy was whether the world could produce enough of it, in any form and at any cost. Now, suddenly, the challenge should be one of managing abundance.

Clean up a dirty business

That abundance provides the potential for reform. Far too many economies are littered with the detritus of daft energy policies, based on fears about supply. Even though fracking has boosted America's oil output by two-thirds in just four years, the country still bans the export of oil and restricts exports of natural gas, a legacy of the oil shocks of the 1970s—and a boondoggle for American refiners and petrochemical firms. Congress also keeps handing out money to Iowa's already coddled corn farmers to produce ethanol and has not reviewed generous subsidies for nuclear power despite the Fukushima disaster and ruinous cost over-runs at new Western plants. Instead, it has spent four long years bickering about whether to allow the proposed Keystone XL pipeline to Canada's tar sands. In Europe the giveaways are a little different—billions have gone to wind and solar projects—but the same madness often prevails: Germany's rushed exit from nuclear power ended up helping boost American coal and Russian gas.

The most straightforward piece of reform, pretty much everywhere, is simply to remove all the subsidies for producing or consuming fossil fuels. Last year governments around the world threw $550 billion down that rathole—on everything from holding down the price of petrol in poor countries to encouraging companies to search for oil. By one count, such handouts led to extra consumption that was responsible for 36% of global carbon emissions in 1980-2010.

Falling prices provide an opportunity to rethink this nonsense. Cash-strapped developing countries such as India and Indonesia have bravely begun to cut fuel subsidies, freeing up money to spend on hospitals and schools (see page 70). But the big oil exporters in the poor world, which tend to be the most egregious subsidisers of domestic fuel prices, have not followed their lead. Venezuela is close to default, yet petrol still costs a few cents a litre in Caracas. And rich countries still underwrite the production of oil and gas. Why should American taxpayers pay for Exxon to find hydrocarbons? All these subsidies should be binned.

What a better policy would look like

That should be just the beginning. Politicians, for the most part, have refused to raise taxes on fossil fuels in recent years, on the grounds that making driving or heating homes more expensive would not only annoy voters but also hurt the economy. With petrol and natural gas getting cheaper by the day, that excuse has gone. Higher taxes would encourage conservation, dampen future price swings and provide a more sensible way for governments to raise money.

An obvious starting point is to target petrol. America's federal government levies a tax of just 18 cents a gallon (five cents a litre)—a figure that it has not dared change since 1993. Even better would be a tax on carbon. Burning fossil fuels harms the health of both the planet and its inhabitants. Taxing carbon would nudge energy firms and consumers towards using cleaner fuels. As fuel prices fall, a carbon tax is becoming less politically daunting.

That points to the biggest blessing cheaper energy brings: the chance to inject some coherence into the world's energy policies. Governments have a legitimate role in making sure that energy is abundant, clean and secure. But they need to learn the difference between picking goals and deciding how to reach them. Broad incentives are fine; second-guessing scientists and investors is not. A carbon tax, in other words, is a much better way to reduce emissions of greenhouse gases than subsidies for windmills and nuclear plants.

By the same token, in the name of security of supply, governments should be encouraging the growth of seamless global energy markets. Scrapping unfair obstacles to energy investments is just as important as dispensing with subsidies. The more cross-border pipelines and power cables the better. America should approve Keystone XL and lift its export restrictions, while European politicians should make it much easier to exploit the oil and gas in the shale beneath their feet.

This ambitious to-do list will drive regiments of energy lobbyists potty. But for the first time in years it is within the realm of the politically possible. And it would plainly lead to a more efficient and greener energy future. So our message to politicians is a simple one. Seize the day. ■

Sri Lanka's new president

An auspicious moment

An extraordinary election result gives the country a chance to heal deep wounds

SRI LANKA'S astrologers are probably not among those celebrating the country's election result. It was after consultation with some of their profession that Mahinda Rajapaksa, the president, called an election for January 8th 2015, two years ahead of schedule. This turned out to be a big mistake. Mr Rajapaksa had ruled since 2005 and, along with his family, several members of which occupied the country's most powerful posts, had given the impression of settling into power for eternity. To his astonishment, his countrymen did not relish this prospect and turfed him out. He seems to have explored the possibility of a coup, but the attorney-general, chief justice and, crucially, the army, were not game.

For Sri Lankans, Mr Rajapaksa's defeat is excellent news. It is a triumph for democracy after a long drift towards corrupt authoritarianism. The new president, Maithripala Sirisena (pictured), is the first leader in two decades to have the backing of Tamils and Muslims as well as a large number of the country's Sinhalese majority (see page 37). This will help him in the task of bringing about reconciliation still lacking six years after the end of a brutal civil war in which tens of thousands of Tamil civilians were killed along with the Tamil Tigers.

That will be the central issue of Mr Sirisena's presidency, and it is a highly contentious one. Drawing huge crowds in Sri Lanka this week, Pope Francis called for the "pursuit of truth". Many have gone further, demanding that the Rajapaksas and senior army officers be investigated and tried for war crimes.

That is not likely to happen. Mr Sirisena, briefly defence minister at the end of the civil war, said in his campaign that he would not go after Mr Rajapaksa for war crimes. It would also be wrong for Sri Lanka. The loyalty of the army, which has been remarkably supportive of democracy during this transition, would be tested, and trials would impede the search for truth and reconciliation.

Mr Sirisena should focus on those goals. The investigation that Mr Rajapaksa ordered into the end of the war descended into farce and only increased the bitterness of the bereaved. Mr Sirisena should establish one that can bring the country closure. And he should end the army's repressive occupation of the Tamils' northern homeland and return seized property to its rightful owners.

Mr Sirisena's other priority should be to reverse the slide towards dictatorship. Mr Rajapaksa had increased the powers of the presidency at the expense of those of the parliament. Changing direction will be hard in his promised 100-day programme, not least because he needs a two-thirds parliamentary majority to alter the constitution before taking the changes to the country in a parliamentary election he plans to call in April. He should make a start by shifting powers to the prime minister and strengthening parliamentary oversight.

What the neighbours think

Asia's great powers will be divided about Sri Lanka's election result. India's prime minister, Narendra Modi, will be delighted. Under the previous president, Sri Lanka had formed a close alliance with India's geopolitical rival, China. At the same time, the suffering of Sri Lanka's Tamils angered southern Indian Tamils. China, which has been building a grandiose array of often ill-considered infrastructure in Sri Lanka, faces the consequences of cutting murky deals with dodgy leaders who get turfed out when voters see how massive corruption is undermining their country.

As for the West, it should offer to rebuild the ties that were broken under Mr Rajapaksa. Sri Lanka has struck a blow for democracy. It deserves generous help. ■

Counter-terrorism

Going dark

Just as the threat of terrorism is increasing, the ability of Western security agencies to defeat it is declining

OVER the past decade Western security agencies have been remarkably successful in keeping jihadist terrorists at bay. Put it down to diligence, surveillance technology, financial resources, the manageable numbers of potential terrorists and, often, good luck. The spooks have foiled complex plots, such as the one in 2009 to bring down airliners in mid-Atlantic. They have brought a steady stream of would-be terrorists before the courts. Occasionally, loners and misfits have succeeded in carrying out attacks, such as the bombing of the Boston marathon and the beheading of a British soldier in London, both in 2013. But until the murders in Paris last week, most people would have had Islamist terrorism low on their list of concerns. But counter-terrorism is getting harder for three reasons.

The first is a consequence of the collapse of several Arab countries, above all the unending civil war in Syria and the rise of Islamic State (IS). This week, the head of the European police agency estimated that up to 5,000 European Union citizens had joined the jihadists' ranks, many of whom would return home as hardened fighters. Furthermore, the ascendancy of IS has presented a challenge to al-Qaeda. The brothers who carried out the *Charlie Hebdo* murders appear to have been operating under orders from the Yemen branch of the terrorist net- ▸▸

work, Al-Qaeda in the Arabian Peninsula, well-known for wanting to take the fight to the "far enemy" in the West.

The second is that commando-style assaults, such as the one in Paris, are easy to plan and thus hard to disrupt. They may not kill as many people as blowing up an aircraft, but the "propaganda of the deed" is achieved by paralysing ordinary life in a big city and dominating 24-hour news channels.

Third, Western spooks say they are losing the technological edge that has enabled them to monitor the communications of potential terrorists. Tech companies are competing in their efforts to provide their customers with unbreachable privacy through sophisticated and sometimes "default" encryption. The heads of both America's FBI and Britain's MI5 have complained about their inability to prevent suspects from "going dark"—dropping off the radar screen of surveillance. David Cameron has promised to legislate to give his spies a back door into British phone and internet services.

Liberty v security, once again

The first two of these developments present all sorts of practical difficulties for Western governments, but no great issues of principle. Making it more difficult for jihadists to get into Syria in the first place depends upon co-operation that neighbouring states, especially Turkey, are either unwilling or unable to give. De-radicalisation once the jihadists are back home is a nice idea, but will only sometimes succeed. Refusing citizens re-entry has been abandoned, for example by Britain, because making people stateless is against international law. Commando raids or lone-wolf attacks may be harder to guard against than more complex plots. But with good intelligence even the majority of those have been thwarted.

That leads on to whether the intelligence will be good enough in the future and thus the much more ideological question of how to balance liberty against security. Libertarians in Silicon Valley and elsewhere point out that the spooks, especially in America, have a record of exceeding their powers, lying about what they are up to and suborning their supervisors. On the other hand, it is clear that intelligence services are being left behind in a privacy arms race between tech companies. A recent meeting between executives of Apple and British spy chiefs only demonstrated the gulf between them.

Both sides should give way quickly. The tech firms must come to terms with the fact that every previous form of communication—from the conversation to the letter to the phone—has been open to some form of eavesdropping: they cannot claim their realm is so distinct and inviolate that it can imperil others' lives, especially as the number of people who need to be monitored is in the thousands. And it is far better to agree to some form of standard now, rather that wait for an atrocity plotted behind impenetrable walls to be unleashed: if that happens the Dick Cheneys and Donald Rumsfelds of the future will be setting the rules.

The place where liberals should fight—and the spooks should concede—is over supervision and due process. Surveillance of individuals should require approval by independent judges, not by politicians. Accountability requires a supervisory bias towards making public as much of what the security agencies do as possible. Spies have to be able to spy; but the powers they are given must be used in ways that are both proportionate and necessary. ■

The sliding euro

Heading for parity

A tumbling currency reflects Europe's dismal prospects; it is a second-best route to curing them

THIS week marked a milestone in the history of Europe's single currency. On January 14th the value of the euro slipped to $1.17, the rate at which it was introduced on January 1st 1999. Back then, the fledgling currency weakened fast, hitting parity with the dollar in early 2000 and plunging to $0.83 by October of the same year. The slump in the euro's value suited no one: the European Central Bank (ECB) worried about inflation from rising import prices; other countries fretted about declining competitiveness. So the world's big central banks undertook a programme of co-ordinated intervention to stem the euro's fall.

This time round the euro's slide has been more gradual, but it is likely to prove more persistent. Parity with the dollar is quite plausible this year. Both politics and economics are undermining the currency.

The immediate threat is from the political side—and uncertainty about the consequences of the Greek elections on January 25th. The damage of Grexit, though lower than in 2012, would still be huge (see page 73). At the moment, such an event seems unlikely. Syriza, the far-left party that looks like winning the largest number of seats, insists it wants to stay in the currency (as do the vast majority of Greeks). Germany's government, too, is full of soothing noises about the inviolability of the euro. Nonetheless, the risks of an accidental exit are uncomfortably real. From a higher minimum wage to a halt to privatisation, the policies that Alexis Tsipras, Syriza's leader, is proposing will worsen Greece's public finances—and require more sleights of hand to keep Greece in conformity with the rescue packages that determine its ability to stay in the euro (see page 53). Even if Greece stays in, wary investors may decide to ditch their euro exposure, pushing the single currency down further.

More important are the economic fundamentals and the plausible European policy responses. Deflation has set in (prices across the single-currency area fell by 0.2% in the year to December) and, with Germany's economy wobbling, the region's growth prospects look ever feebler. Yet despite the darkening picture there is no sign of boldness from politicians. There are no big ideas to kickstart the single market or to boost investment. Instead, all eyes are on the ECB and its willingness to create money to buy sovereign bonds.

On January 14th a preliminary decision by the European Court of Justice declared the buying of sovereign bonds by the ECB to be legal. This should make it easier for the central bank

to begin a programme of large-scale bond purchases. Such quantitative easing (QE) could start before the end of the month. In America QE helped boost share prices and drove down borrowing costs for companies. Given the underdeveloped state of Europe's capital markets, the main way QE is likely to banish deflation is through a weaker euro. Imports will cost more while exporters—and the economy—will get a boost.

Parable of weakness past

QE would be better than no QE, both for Europe and the rest of the world. Everyone would gain if the euro area avoids a renewed descent into crisis. But if the euro falls even further, Europe will most likely come to rely ever more on exports for its growth. The region already saves a lot more than it invests: thanks to Germany's insistence on austerity in peripheral economies and its refusal to boost investment at home, the euro area's current-account surplus has surged to 2.5% of its GDP. That is a huge shift: for most of the single currency's 16-year history, the region was in balance. If the euro falls to parity with the dollar even as domestic spending stays weak, that surplus is likely to grow larger still. At some point the currency's weakness will cause tensions with others, particularly the Americans.

The euro's rise and fall is a sorry parable, whose lesson is the cost of avoiding hard choices. When times were good, Europe's leaders avoided structural reform. In the crisis, they always did just enough to stave off disaster, but not enough to avert deflation and stagnation. A weaker currency will help, but is far less good than a balanced European recovery based on healthy investment and spending at home. ■

Lessons from Haiti's earthquake

A march around the institutions

In future disasters the West should not treat the victims or the government like bystanders

FEW countries have suffered an earthquake so devastating, or have been less prepared for such a calamity. The quake that struck Haiti on January 12th 2010 killed perhaps 200,000 people—no one is sure how many—left 1.5m homeless and caused economic damage equivalent to 120% of the country's GDP. A cholera epidemic compounded the misery. These disasters called forth the biggest-ever outpouring of humanitarian relief, worth some $9.5 billion in the first three years after the quake. The well-wishers vowed, in the words of Bill Clinton, who helped co-ordinate their early efforts, to "build back better". Yet five years later, the country is little better off than it was before the disaster—and in some ways it is worse.

The most visible devastation has largely been cleared away. Only about 85,000 people are still stuck under plastic in displacement camps. But many of the rest have moved to makeshift dwellings in slums without sanitation. Port-au-Prince, the overcrowded capital of an over-centralised country, is more jammed than ever. If another earthquake hits, the death toll might be even higher. Corruption, shoddy infrastructure and political instability discourage private investment, which Haiti desperately needs to bring down unemployment and raise its pitiful wages. A ferocious battle between the president, Michel Martelly, and the opposition came to a head on January 12th, when parliament's mandate expired (see page 35). This leaves Mr Martelly free to govern by decree, which will do nothing to reassure Haitians or investors.

How did so many humanitarians bearing so much cash accomplish so little? The failure to "build back better" contains lessons for those who would rush to help when disaster strikes an impoverished country.

Haiti before the quake, though not quite a failed state, was a fragile one. A tortured history has stunted its institutions. It took a slave revolt and payment of crippling reparations to free Haiti from France. America marched in to enforce payment of debts in 1915 and did not fully withdraw until 32 years later. Many senior officials died in the quake that flattened the capital in 2010, further enfeebling the state.

But the rescuers did little to build up Haiti's capacity to govern itself. Less than 10% of spending for relief and recovery went through government agencies. That is chiefly because many officials were corrupt and obstructive. The government demanded big fees to allow in medicines, vehicles and other relief supplies, for example. Local NGOs received even less. Foreign aid agencies set up a logistics compound where they held meetings in English. That helped them co-ordinate with one another but left Haitian organisations in the cold.

This spurning of Haiti's institutions came at a high cost. Eager to impress donors at home, aid agencies built clinics, but the government was left without money to pay doctors and nurses. Foreign contractors saw far more of their money than did local businesses. The mistrust of officialdom was understandable, but experience in other poor countries shows that it is possible to funnel money through governments while strengthening their ability to monitor how it is spent.

It could have been better

"Non-traditional" donors such as Venezuela did not circumvent Haiti's government. Some of the money from its PetroCaribe programme, which lets participants buy oil with credit on subsidised terms and invest the profits from reselling it, was usefully spent on infrastructure. But this encouraged Haiti to accumulate debt. Should Venezuela, whose economy is suffering from the slump in oil prices, withdraw its subsidy, Haiti now risks disaster. The country needs grants, not more debt.

The progress from being a fragile state to becoming a functional one is inevitably slow. The World Bank reckons that even the fastest reformers require 15-30 years to move from Haiti's level of institutional development to Ghana's. Yet today's political crisis suggests that Haiti may be moving in the wrong direction. Outsiders can do little to stabilise democracy in the country. But the 2010 tragedy could have been an opportunity to work through its institutions rather than around them, making them stronger. Unfortunately, Haiti's friends did not make the most of it. ■

The right to free speech

SIR – Those who defend the alleged "right to offend" must do better ("Terror in Paris", January 10th). They suppose that rudeness and derision are legitimate expressions of our feelings in an arms-length society. Such boorishness becomes cruel and vicious when it assumes a public aspect. What are such opinions intended to do to the targets of their spleen? They can only make their victims angry and alienated.

Yes, we must describe and criticise those who behave badly, who seek to impose their will by coercion, violence or propaganda; we must speak the truth as we see it. But ridicule, derision, mockery and caricature have not achieved any good in any of the conflicts that have occurred in my lifetime. Religion was the target of the journalists at *Charlie Hebdo* who were so horribly killed. But whatever anyone's view of religion's philosophical underpinnings and practical failures, its tenets include examination of one's own faults as well as observation of those of others and a desire for reconciliation.

CANON R.H.W. ARGUILE
Wells-next-the-Sea, Norfolk

SIR – You presented a contradictory case, arguing that there should be no limits on free speech, "self-imposed or otherwise", unless it "directly incites violence". But that would make those who are so incensed by a person's opinions that they react violently the final arbiters on free speech. Following your logic *Charlie Hebdo*'s cartoons did incite violence and so should not have been published. These are very real limits. Read Stanley Fish's work, "There's no such thing as free speech: and it's a good thing too".

MARION GAMAN
Sydney

SIR – It is right to defend freedom of speech and expression. Yet in France and other European countries limits are put on the rights of Holocaust deniers, not for inciting violence, but simply for expressing an opinion. France also does not allow Muslim women to cover their face in public, which limits their freedom of expression.

Holocaust deniers should be confronted with facts and perhaps scorn, but not jail and the threat of state force. Women should be able to dress however they choose.

HENRY LOH
Petaluma, California

SIR – Unless we seek to understand the motivations and perceived injustices of the terrorists there is no end in sight. Our response to terror should be thoughtfully analytical and should not, as in the past, be reflexive or reactionary. As Alexis de Tocqueville put it, when "the past no longer illuminates the future, the spirit walks in darkness".

DIRK MEERSTADT
London

Liberia is doing OK

SIR – Ebola will indeed have a long-lasting impact on the most affected countries ("After the passing", January 3rd). In Liberia it may usher in some positive changes, as well. The crisis has shown that Liberians can move away from the dependency syndrome. In the countryside I found a spirit of self-help, as people and local officials undertook community education, the collection of bodies and the building of isolation facilities, often with minimal funding.

Senatorial elections were conducted peacefully on December 20th and the difficult decision on whether to proceed was resolved following a consultative process that took into account the associated health risks. These are signs of a growing confidence among Liberians in their capacity to negotiate challenges and to keep the peace. They are particularly timely as the UN mission in Liberia resumes its military drawdown and prepares to phase out.

KARIN LANDGREN
Special representative of the UN secretary-general
Monrovia, Liberia

Saving Soho

SIR – You painted a downbeat picture of London's Soho ("So long, Soho", January 3rd). The transformation of parts of the area reflect society's changing appetites, but its vibe as an edgy bit of town and a place to have fun have not been lost. Soho continually reinvents itself. We have seen seedy sex shops, businesses that have been displaced by the internet, replaced with pop-up shops and new artisan retailers like those in Ham Yard. These meet the needs of consumers, residents and businesses in true Soho style, rather than simply allowing an internet age to whitewash the high street.

COUNCILLOR JONATHAN GLANZ
Westminster City Council
London

SIR – Plans in the 1970s to build elevated highways, a conference centre and offices in Covent Garden were defeated by activists. It is now one of the most successful areas in London. But it is doubtful whether that kind of NIMBY revolt would succeed today as the government's planning policy has deprived residents and local authorities of many tools to curb developers' excesses.

DAVID KANER
London

Prisoner exchange

SIR – To read that George Washington even considered executing a British prisoner-of-war is shaming for any American ("Perfidious America", December 20th). In all fairness, however, Americans basically stuck to the Enlightenment's laws of war regarding the treatment of prisoners during the revolution; the British did not. Some 10,000 American prisoners died from neglect. The British executed prisoners on the battlefield, or regularly starved or hung captives. In contrast, Washington ordered his troops to treat British and Hessian prisoners with humanity. Many astonished Hessians took American citizenship. Washington said, "Let them have no reason to complain of our copying the brutal example of the British army."

PHILIP HARDGRAVE
Lagunitas, California

SIR – As the great-great-great granddaughter of General Sir Charles Asgill I was naturally fascinated by your article. I see that your correspondent is a descendant of John Perryn, who, like Asgill, was present for the fateful drawing of lots on May 26th 1782 "to pick a British captain and send him to Philadelphia to be executed". The article was entirely accurate, a first in my experience, as I have found that most accounts are written from the American perspective and contain errors.

In 1786 Asgill wrote a letter about his experiences, which he penned in response to George Washington's correspondence on the affair that was being published in the *New Haven Gazette and Chronicle*. Sadly the letter was never published, but was sold a few years ago for $16,500.

ANNE AMMUNDSEN
Broadstairs, Kent

The wrong homonym

SIR – As a fan of crime fiction, I enjoyed your article on the research into forensic pathology done at a "body farm" ("Cold comfort farm", January 3rd). Presumably the "grizzly process of decay" that you mentioned occurs when bears molest the donated cadavers. A grisly end indeed.

ANDY MASLEN
Salisbury, Wiltshire ■

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Also in this section

After the atrocities

PARIS

The attacks on Charlie Hebdo and a kosher supermarket brought the French together. But the unity may not last

WHEN history comes to assess France's response to the Paris terror attacks of January 2015, it may judge them the moment that a battered nation returned to the values it was founded to protect. "France has lived up to its history," declared Manuel Valls, the prime minister, during a stirring speech to parliament on January 13th. But it was now "at war": "not against a religion" but "against terrorism, jihadism and radical Islamism."

Mr Valls's words, which earned him an astonishing standing ovation from left and right, came on the day when shock, horror and defiance gave way to national grief. The burial of the three police officers who died during three days of terror, from January 7th to January 9th, spoke to the entire nation: Ahmed Merabet, a Muslim man, Franck Brinsolaro, a white man, and Clarissa Jean-Philippe, a French-Caribbean woman all received the *Légion d'Honneur*, France's highest honour.

The attacks rocked France, and touched a nerve in the wider world, chiefly because the first target was a symbol of freedom in a country built on the principle of liberty. Twelve of the victims died at the offices of *Charlie Hebdo*, a satirical newspaper well known for its provocative cartoons lampooning politicians and religions. Four more perished at a kosher supermarket.

The first, spontaneous reaction was unity. Up to 4m people took peacefully to the streets across France on January 11th, with an estimated 1.6m in Paris alone. The "republican march" filled the capital's boulevards with children in pushchairs, students, pensioners, Catholics and Muslims. Home-made signs bore the words "*Je suis Charlie*", now a worldwide profession of free-speech faith. There was wit as well as defiance: nodding to Descartes, one banner read, "*Je pense, donc je suis Charlie*". The crowds applauded passing convoys of police and gendarmes. Leaders from across the world linked arms with each other and President François Hollande (though security kept them separate from the throng).

The attempt to understand

No one seemed more surprised by this outpouring than the French themselves. For young people, brought up in a world of on-demand consumerism, it seemed a moment of awakening: a week in which freedoms once taken for granted were shattered then reaffirmed. (The "survivors' issue" of *Charlie Hebdo*, pictured on the next page, sold out almost instantly on January 14th despite a huge print run.) And the nation found the global expressions of solidarity a gratifying reminder that its values still resonate around the world.

This week, as Mr Valls sent 10,000 soldiers to help protect schools, mosques, synagogues and media offices, and promised more resources for intelligence and policing, hard questions were emerging. The most pressing of these, in the European country that has supplied the most jihadists to the so-called Islamic State (IS) in Iraq and Syria, is understanding the path that takes young citizens from disillusion to terror.

Like other European countries struggling with high unemployment, France is not short of disaffected youths and petty criminals among whom jihadist recruiters have often thrived. It is home to Europe's biggest Muslim minority, its members found disproportionately in the grim high-rise housing estates of the *banlieues* that ring many French cities. Nearly three weeks of riots in these *banlieues* in 2005 illustrated the potential for violence among a French-born generation with a grievance.

Those responsible for the three most murderous home-grown terror attacks by French citizens since 2012 do indeed share histories of crime and violence, as well as unstable family life, on such rough estates. This was the case for Mohammed Merah, who shot dead seven people, including three Jewish children, in Toulouse in 2012, as it was for Mehdi Nemmouche, who murdered four people at a Jewish museum ▸▸

in 2014. Mr Nemmouche grew up in foster homes, like Chérif and Saïd Kouachi, the orphaned brothers who murdered 12 people at *Charlie Hebdo*. Amédy Coulibaly, who last week killed Ms Jean-Philippe, the policewoman, as well as the Jewish shoppers, was raised on one of the Paris *banlieue*'s most notorious estates. Like Mr Merah he served time for robbery before becoming drawn to radical Islam.

Yet, as Malek Boutih, a Socialist deputy, put it this week: "It's not just about poverty; social questions do not explain murder." Nobody knows what exactly pushes the aggrieved towards terror, or the newly devoted Muslim to *jihad*. Traditional networks have worked through hardline mosques and Islamic bookstores to recruit radicals and converts in the *banlieues*. Such links helped Saïd Kouachi, who was on the Americans' no-fly list, to travel for training by al-Qaeda in Yemen.

More recent "self-service" channels have also drawn some from the middle class to fight for IS. Recruited via the internet, Facebook and Twitter, aided by low-cost flights via Turkey, more than 1,200 are thought to have headed off to the war. Dounia Bouzar, who runs an early-warning centre for parents, says that the number of young girls, converts and those who know little about Islam is striking.

Schools for criminality

If there is a common thread among those who become jihadists, it seems to be the quest to transform small, angry lives into powerful ones. But there are other factors, too. Perhaps the most toxic is prison. Chérif Kouachi seems to have been radicalised during his time at Fleury-Mérogis prison south of Paris in 2005-06. A one-time pizza-delivery driver, he was jailed in a case involving the organisation of jihadists to fight Americans in Iraq. But prison hardened him further, particularly through links he made to Djamel Beghal, a jihadist convicted for attempting to bomb the American embassy in Paris in 2001. Mr Beghal connects Mr Kouachi to a third inmate, Mr Coulibaly, who boasted in a clandestine video filmed in 2007 that prison is "the best school for criminality". For his part, Merah, in Toulouse, spoke of experiencing "divine inspiration" behind bars.

Although the French do not collect ethnic statistics, some 60% of France's prison population of 68,000 is Muslim, according to a parliamentary report last year. The proportion is higher in big prisons near cities such as Paris, Lyon, Marseille and Strasbourg. Once inside, the message of moderate Islam dims. The report found only 178 Muslim chaplains working in prisons, next to almost 700 Catholic chaplains. "Many of these criminals arrive with little religious culture," says Farhad Khosrokhavar, a sociologist. "But the less you know about Islam, the more you are likely to be drawn to radicalised religion."

After prison comes politics. Chérif Kouachi's rage was first aimed against America, at a time when France vigorously opposed the invasion of Iraq. Since then France itself has attracted more Islamist fury. The country has successfully pushed back a jihadist incursion into Mali, and carried out air strikes on IS targets in Iraq.

Moreover, France is unapologetic about its secular rules, including its 2004 ban on wearing Muslim headscarves or other religious symbols in public institutions, as well as its criminalisation of hate speech and anti-Semitism. That this does not cover blasphemy, thanks to France's history of bloody anticlerical struggle which led to the separation of religion and state in 1905, is a point of anger among some Muslims. Some Muslim schoolchildren reportedly refused to observe the minute's silence for the terror victims last week.

Such points of controversy are readily exploited. The objective of IS, says Gilles Kepel of Sciences-Po university, "is to identify fractures within European society, and ▸▸

Mais jamais oublié

Anti-Semitism in France

J'accuse, eventually

PARIS

Belated attention for the dangers faced by French Jews

IN EARLY December 2014 three armed men broke into a flat in Créteil, south-east of Paris, tied up a young woman and her boyfriend, raped the woman, and robbed them both. "You Jews, you have money," they told the couple. A few days later, Bernard Cazeneuve, the interior minister, along with a thousand or so other people marched against anti-Semitism; President François Hollande called the attack "intolerable". But the event passed off to wider indifference.

Long before the recent supermarket attack, in which four Jewish men were killed, France's Jews have been concerned at what some see as the *banalisation* of anti-Semitism. Fatalities grab headlines, as did the kidnapping, torture and murder of Ilan Halimi near Paris in 2006, or the shooting in 2012 of seven people, including three Jewish children and a rabbi, at a Jewish school in Toulouse. Low-level anti-Semitism does not.

A vast French majority (89%) hold "favourable" views about Jews, according to a Pew Global Attitudes poll last year. Yet anti-Semitic acts nearly doubled in France in the first seven months of 2014, compared with the previous year. Two events prompted an uptick. One was a planned tour a year ago by Dieudonné M'bala M'bala, a stand-up comedian, whose hallmark is the inverted Nazi salute he called the *quenelle*. The government banned the performances on the ground of public security. The other surge followed a pro-Gaza rally last July that turned into a violent riot; cries of "Death to Jews" were reported.

Last week's terror attacks have prompted much introspection. Already, French Jews made up the single biggest contingent of emigrants to Israel in 2014, according to the Jewish Agency for Israel: 7,000 moved there, more than double the figure in 2013. In Paris on the eve of the march, Binyamin Netanyahu, the Israeli prime minister, said that "all the Jews who would like to immigrate will be warmly welcomed with open arms."

The government has now stepped up security outside synagogues and Jewish schools, as well as mosques. On January 14th Mr M'bala M'bala was arrested for condoning terrorism after he posted a message on Facebook saying "*Je me sens Charlie Coulibaly*" ("I feel like [the supermarket killer]"). In a speech the previous day Manuel Valls, the prime minister, condemned anti-Semitism, declaring that, without its Jews, "France would no longer be France".

Some Jewish leaders caution that leaving France would be ceding to terror. And many, including Mr Netanyahu, have acknowledged that on January 9th when a number of Jewish shoppers found refuge from Mr Coulibaly in a freezer, the man who led them to safety was a young Muslim.

strike at them, in order to pit people against each other." By this logic, he adds, it is not a coincidence that "integrated" Muslims were among last week's victims.

The great difficulty for French intelligence services, well aware of the radicalisation that takes place in prisons, is working out which potential targets to follow. Hundreds of people have had contact with Mr Beghal, says one police source; less than a third of them can be monitored. And last week's perpetrators were discreet. Mr Coulibaly was released from prison as recently as March 2014, having been considered a "model inmate", according to *Libération*, a newspaper. The tracking of his associates is ongoing; another suspect was arrested on January 12th in Bulgaria.

Even Marine

"It's not right to talk of an intelligence failure," says Camille Grand of the Foundation for Strategic Research. France already has robust intelligence and anti-terror powers, and strengthened them with new legislation last year. This turned individual terrorist intent into a criminal offence (previously the law required "association" with others); made it possible to confiscate passports of suspects trying to leave France if there is "serious reason" to suspect terrorist activity; and criminalised the condoning of terrorism. Mr Valls now promises to reinforce intelligence co-operation, and give services the "necessary means" to do their job. He has announced plans to isolate convicted jihadists in jail.

For now, French politicians have managed to keep up a spirit of national unity. Left and right broke into a rendition of "La Marseillaise" after Mr Valls's speech—the first time that has happened since 1918. Mr Hollande, previously the most unpopular president under the Fifth Republic, is likely to be strengthened. He went straight to *Charlie Hebdo* on the day; he has handled the aftermath with dignity. Mr Valls and his interior minister, Bernard Cazeneuve may also see their stature grow.

Yet the longer-run beneficiary is more likely to be Marine Le Pen, leader of the populist National Front. She has thrived on warnings about "Islamification", and came top in last year's elections for the European Parliament. After the terror attacks, she made an almost-statesmanlike declaration, urging the French not to confuse Islam with radicalism.

The left has not always taken an uncompromising stand towards radicalised Islam nor criminality in the *banlieues*. Mr Boutih, the Socialist deputy, this week accused local Socialist leaders of ignoring "gangsters and Islamo-Nazis" in order to secure calm in the *banlieues*. The harsh reality is that, however uplifting the outpouring of solidarity, Ms Le Pen's supporters will be quietly drawing their own conclusions about France and Islam. ■

Counter-terrorism

Getting harder

Western security agencies are losing capabilities they used to count on

ONCE the shock that a terrorist outrage generates begins to fade, questions start to be asked about whether the security services could have done better in preventing it. Nearly all the perpetrators of recent attacks in the West were people the security services of their various countries already knew about. The Kouachi brothers and Amédy Coulibaly were no exception; the Direction Générale de la Sécurité Intérieure (DGSI), France's internal security agency, and the police knew them to be radicalised and potentially dangerous. Yet their plot or plots, which probably involved more people and may have been triggered either by al-Qaeda in Yemen or the so-called Islamic State (IS) in Syria, went undiscovered.

There there may have been a blunder, and there will undoubtedly be lessons to be learned, just as there were in Britain after the 2013 murder of Fusilier Lee Rigby by Michael Adebolajo and Michael Adebowale, both of whom had featured in several prior operations by MI5, the internal-security agency. But it is worth reflecting on the extent to which Western security agencies have succeeded in keeping their countries safe in the 13 years since September 2001. And it is worth noting that their job looks set to get harder.

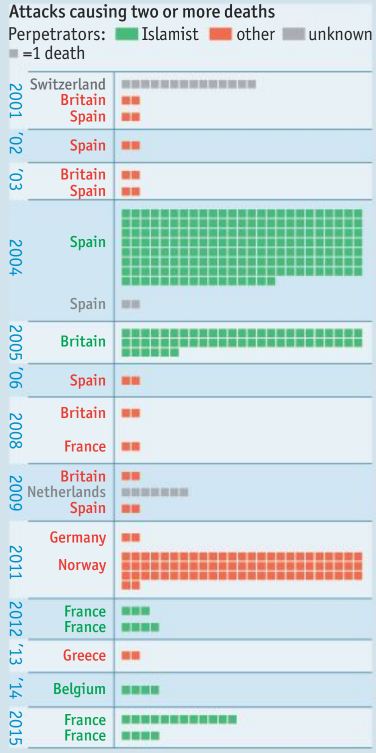
Europe has suffered many Islamist terrorist attacks in recent years, but before the assault on *Charlie Hebdo*, only two of them caused more than ten deaths: the Madrid train attack in May 2004 and the London tube and bus bombings 14 months later (see chart). This was not for want of trying; intelligence sources say they have been thwarting several big plots a year. Sometimes this has meant arresting the people involved: more than 140 people have been convicted of terrorism-related offences in Britain since 2010. But often plots have been disrupted in order to protect the public before the authorities have enough evidence to bring charges.

Three factors threaten this broadly reassuring success. The first is the break-up of states in the Middle East. The civil wars in Libya, Yemen and Syria mean there is a much broader range of places and groups from which threats can come than there was five years ago. And there has never previously been anything remotely on the same scale as IS in terms of financial resources, number of fighters, territory controlled, sophistication in its use of media and ability to radicalise young Muslims in

13 years of terror in western Europe

Political violence in western Europe

Sep 10th 2001-Jan 15th 2015



Attacks causing one death, cumulative total

Austria	1	Ireland	2
Belgium	1	Italy	3
Britain	14	Netherlands	3
France	5	Spain	9
Greece	5	Sweden	1

Sources: Global Terrorism Database, University of Maryland; press reports; *The Economist*

the West. Andrew Parker, the head of MI5, says that since October 2013 there have been more than 20 plots "either directed or provoked by extremist groups in Syria". In September 2014 Abu Mohammed al Adnani, an IS leader, told would-be recruits not to bother coming to Syria or Iraq but to launch attacks in their home countries.

Attempts to reduce the risks posed by fighters who join the wars in the Middle East and then return to Europe range from employment programmes (in Denmark) to banning their return unless they agree to be monitored and tagged (in Britain). But the sheer number of those returning makes it almost impossible to guarantee that all will be defanged.

A second problem for the security forces is that the nature of terrorist attacks has changed. Al-Qaeda, and in particular its Yemeni offshoot al-Qaeda in the Arabian Peninsula, is still keen on complex plots involving explosions and airliners. But others prefer to use fewer people, as in commando-style raids such as the one on *Charlie Hebdo* and "lone-wolf" attacks that are not linked to any organisation. IS has called for attacks on soft targets in the West ▸▸

by any means available—one method is to drive a car at pedestrians, as in Dijon on December 21st last year.

At any one time MI5 and DGSI will each be keeping an eye on around 3,000 people who range from fairly low-priority targets—people who hold extremist views that they may or may not one day want to put into practice—through those who have attended training camps or been involved in terrorist activity in the past to those who are thought likely to be actively plotting an attack. But only a small number at the top are subjected to "intensive resource" surveillance. The amount of monitoring available for the others, particularly those towards the bottom, varies widely. This provides holes for smaller plots to get through. And a smaller plot can still be large in its outrage—see the decapitation of Fusilier Rigby—and in its body count. Anders Breivik killed 77 Norwegians in 2011 with no co-conspirators at all.

Even when there are identified co-conspirators, though, it is getting harder to tell what they might be up to. This is because of the third factor that is worrying the heads of Western security agencies; the increasing difficulty they say they have in monitoring the communications within terrorist networks. The explosion of often-encrypted new means of communication, from Skype to gaming forums to WhatsApp, has made surveillance far more technically demanding and in some instances close to impossible. Apple's latest mobile operating system comes with "default encryption" and Google's Android is about to follow suit. In such systems the companies do not have access to their customers' passwords and therefore cannot provide security agencies access to messages even if the law requires them to. They say that they are simply responding to the demands of their users for privacy, but the heads of the security agencies see the new approach as, at least in part, a response to what Edward Snowden, a contractor for America's intelligence services, revealed about their abilities in 2014.

The tech firms are very different from the once-publicly owned telephone companies that spooks used to work with, which were always happy to help with a wire tap when asked. Some, especially some of the smaller ones, have a strong libertarian distrust of government. And technology tends to move faster than legislation. Although the security agencies may have ways into some of the new systems, others will stymie them from the modern equivalent of steaming open envelopes.

The citizens of the West have grown used to the idea that their security services can protect them from the worst that might happen. Faced by a new range of threats and with countermeasures apparently of rapidly declining effectiveness, that may be about to change. ■

The reaction across Europe

Solidarity, for now

AMSTERDAM, BERLIN AND COPENHAGEN

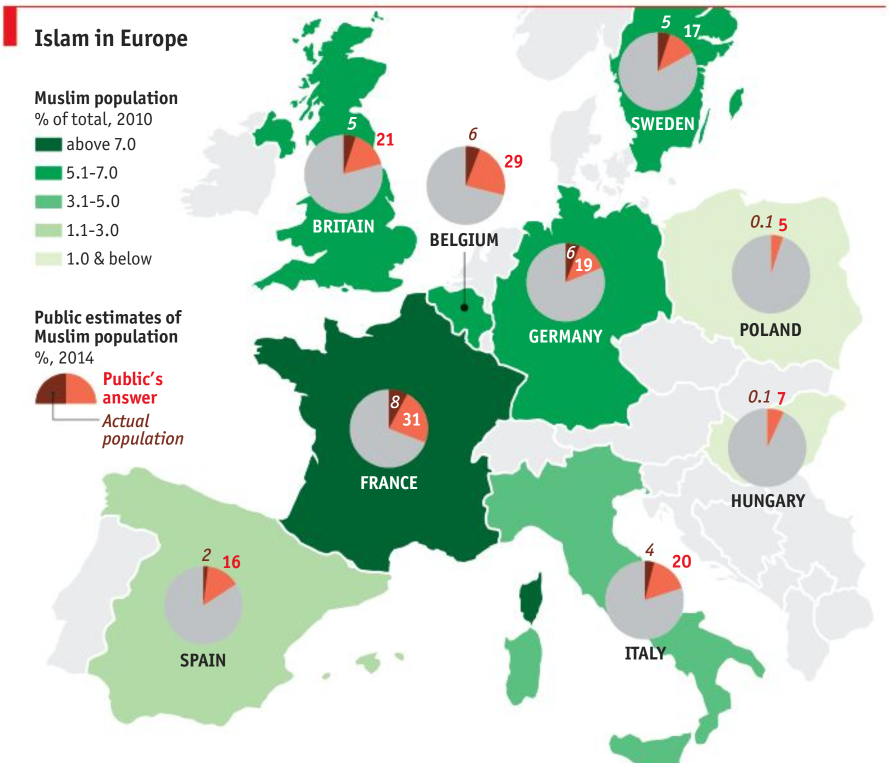
A backlash against European Muslims would play into the hands of the killers.

"ISLAM is part of Germany." When Christian Wulff, then president of Germany, voiced that sentiment in 2010 it was controversial. The fact that the Pegida movement has brought people on to the streets every Monday for the past three months to protest against the "Islamisation" of Germany shows that it is far from universally accepted. But when Angela Merkel, Germany's chancellor, repeated the claim at a rally on January 11th, it felt as though she was expressing the spirit of the nation in the aftermath of the attacks in Paris. "I am the chancellor of all Germans," Mrs Merkel went on, clearly including her 4m Muslim compatriots.

The responses of most European leaders to the Paris attacks resembled that of Mrs Merkel. Yet anxiety over terrorism has risen across the continent. As the glow of righteousness dissipates, right-wing populists and others will have a chance to exploit both that specific worry and a more general unease about Muslims which fears of terror serve to strengthen. Any success they have will fit perfectly into the agenda of the sort of people who plan murders like those in Paris. Nothing serves the jihadist cause as well as stoking up distrust of their co-religionists.

Nigel Farage, the leader of the increasingly popular UK Independence Party, channelled such concerns when he talked of a "fifth column" in the wake of the Paris attacks. Unlike some European parties of the far- and populist-right, UKIP has not been noted for its stance on Islam. The targets of its nativist ire have tended to be immigrants from eastern Europe, along with the idea of Britain being part of the European Union. But the vision of Britain it likes to promulgate harks back to a time when the country was home to far fewer Muslims. That taps into the concerns of a growing number of voters; the proportion of Britons who said that the country would lose its identity if more Muslims moved in rose from 48% in 2003 to 62% in 2013.

By way of contrast, the Dutch populist, Geert Wilders, and his Party for Freedom (PVV) are overtly anti-Islamic, having brought anti-Muslim xenophobia into mainstream politics a decade ago. The response to the Paris attacks in the Netherlands, though, has not been quite what the party's lead in the opinion polls might sug- ▸▸



Sources: Pew Research; Ipsos Mori

Mrs Merkel shows solidarity

gest. In 2004, when Theo van Gogh, a Dutch film-maker and provocateur, was murdered in an attack that the massacre at *Charlie Hebdo* brings to mind, the reaction was a divisive backlash against Islam that helped launch Mr Wilders's career. This time was different: Muslims and non-Muslims alike turned out for demonstrations of solidarity. Even Mr Wilders was comparatively conciliatory; he warned people against attacking mosques, saying they should be "safe places".

The quiet on the Dutch right, however, is unlikely to last, says Chris Aalberts, an expert on the PVV. In the longer term Mr Wilders is well placed to exploit renewed popular anxiety about Muslim radicalism. Provincial elections are due in March, and the PVV could raise its share of the vote as high as 20%.

Cartoons and conspiracies

In Denmark, too, the *Charlie Hebdo* attack had a precedent in the fierce conflict over caricatures of Muhammad published by *Jyllands-Posten*, a newspaper, in 2005. Interestingly, this time the Danish political establishment uniformly affirmed the need to protect free expression, but *Jyllands-Posten* itself declined to reprint *Charlie Hebdo*'s cartoons, citing security risks. Denmark has one of Europe's strongest anti-Muslim parties, the Danish People's Party, which won the European Parliament elections last May with 26% of the vote. In the aftermath of the Paris attacks one of its MPs called for closing a mosque he accused of radicalism.

Even in countries with less history of organised anti-Islamic political action the fault lines are showing. Italy's 1.5m Muslims are more diverse and often better integrated than those elsewhere, with many hailing from Albania rather than north Africa, and the country's political culture has more room for religiosity. Yet the new leader of the anti-immigrant Northern League party, Matteo Salvini, used the attacks to denounce Islam in general as "dangerous" and "not a religion like the others" at a protest against the building of a mosque outside Milan.

And then there is Germany. January 12th saw Pegida get its biggest turnout yet, and a majority of Germans perceive Islam as a "threat", according to a study by the Bertelsmann Foundation, a think-tank. Some leaders of the new populist Alternative for Germany party have flirted with Pegida's agenda, which appeals most to the old and in regions where hardly any Muslims live. But others prefer to stick to the party's original anti-euro message, leaving Germany without a political voice for anti-Islamic feelings. And this week was not the first when marchers backing an open society outnumbered Pegida's—merely the most notable.

One European country, meanwhile, may have discovered a way to avoid painful debates over Islam and integration. In Russia the state-controlled tabloid press is telling its readers the *Charlie Hebdo* attack was a false-flag operation by the CIA. ■

The Muslim response

When nuance is hard to hear

Many condemnations; some caveats

THE mayor of Rotterdam, Ahmed Aboutaleb, is a Muslim of Moroccan descent and Dutch directness. "If you don't like it here," he advised his co-religionists in a television interview after the attack on *Charlie Hebdo*, "because some humorists you don't like are producing a newspaper…you can sod off."

In his condemnation of the terror in France Mr Aboutaleb was in line with Europe's Muslim leaders. With the exception of a small number who claimed that the attack was a put-up job, they were virtually unanimous in their castigation. Many made the point that, though purportedly carried out in the name of Islam and its messenger, the attacks were deadly assaults on both. "Nothing is more immoral, offensive and insulting against our beloved prophet than such a callous act of murder," the Muslim Council of Britain said in its statement.

But few people were as robust as the mayor in their defence of free speech. And few said what many non-Muslim Europeans wanted to hear: that the Islamic world in general, as opposed to a few fanatics, had nurtured a violent ideology, and that it had a special duty to set about cleaning it up.

The reaction of Europe's Muslim establishment could be summed as "sadness, solidarity with the victims, plus a rejection of the idea that Islam was ultimately responsible," according to Jonathan Laurence, a Boston College professor who keeps in close touch with Islamic organisations across the continent. And caveats abounded. Few in Europe were as open in blaming the victims as one sheikh in Saudi Arabia, who followed up his condemnation with the clarification that "all those who try to ignite our anger are responsible for the consequences". But some level of caveat was not uncommon.

Tariq Ramadan, an Oxford professor born in Switzerland to Egyptian parents, is probably the most influential Muslim voice in Anglophone and Francophone Europe. His condemnation was unequivocal—"our principles and values…have been betrayed and tainted"—but he stood by the view that he previously expressed in a debate with *Charlie Hebdo*'s editor Stéphane Charbonnier (see obituary, page 90): the paper had been wrong to publish cartoons of the Prophet because it piled insult on a community that was already "stigmatised".

Mr Ramadan also pointed out that demands for free speech were being made in an "inconsistent" way, because more was asked of Muslims than of others. In 2008, *Charlie Hebdo* had laid off a cartoonist whose reaction to the betrothal of President Nicolas Sarkozy's son to a Jewish woman had been deemed offensively anti-Semitic. "The double standard is troubling, to say the least." Like many others, Mr Ramadan also stressed that violent deaths in other places must be deplored no less than those in France: "We are reacting emotionally because 12 people were killed in Paris, but there are hundreds being killed day in, day out in Syria and Iraq, and still we send more bombs…"

Still, life in a European democracy can change people's ideas. Inayat Bunglawala used to be spokesman for the Muslim Council of Britain, and backed its demand for a "religious-hatred" law designed to shield Muslims from offensive speech or even sharp theological debate. Now, he says, his views have changed completely: the cost of seeing and hearing things you don't like is more than outweighed by the benefit of being able to say anything you want.

The roots of jihadism

A struggle that shames

CAIRO

Islamist violence stems much more from recent history than from the faith's essentials

MANY in the West take the Paris attacks as evidence that Islam needs reform, or indeed a full-on Reformation. They should be careful what they wish for. The reforming of religions is a messy business, and does not necessarily make them gentler or more biddable. Indeed the jihadists from whom the Paris murderers took their lead see themselves as reformers, tasked with a mission to strip their faith of centuries of arcane jurisprudence and non-Islamic practice and bring it back to its fiercer, truer original form.

Their goal is nothing like the tempering outcome hoped for by those calling for a Reformation along the line of Europe's five centuries ago, but the process has at least one similarity. As in the religious wars that followed on from Europe's Reformation, the worst of the violence perpetrated by jihadists has been felt by their co-religionists. Most of the victims of resurgent Islamic fundamentalism have been Muslims.

Islam has never acknowledged a separation of religion from the state: from the time of the Prophet both developed together. The challenge of reconciling this with the workings of the post-colonial states set up in the Middle East during the 20th century has proved a difficult one. It is made more so when those modern states fall into a despotism which combines political repression with economic stagnation. Such stagnation is particularly hard on the young people who make up most of the population in most Arab countries. It leaves them without the money to start a family and deprived of a sense that their life has much meaning outside religion.

To the religious, Islam cannot be blamed for these miserable conditions. Hence the argument that, rather than mimic the modernised West, and rather than allow it to intervene in their affairs, as it has done through much of recent history, Muslims should create new forms of politics and government proper to their faith. The Islamists who hold such ideas take their faith as providing ultimate guidance not just in the personal realm but in the social and political realms, too.

For those in the Shia branch of Islam, the high-water mark of such feelings was the Iranian revolution of 1979, which turned a somewhat repressive modernising monarchy into a thoroughly repressive theocracy. Political Islamists of the Sunni strain, frequently marginalised, oppressed or manipulated by authoritarian rulers, do not yet have any comparable landmark.

Salafis, Sunnis who take their name and inspiration from the *salaf*, the Prophet's original followers, have played on these grievances. Decades ago some of them reformulated *jihad*—a term which means struggle of various sorts—as a justification of political violence. Combined with the view that apostasy merits death the idea of *jihad* has been used to justify everything from the assassination of Anwar Sadat, Egypt's president, in 1981 to the slaughter of Syrian and Iraqi Muslims who neglect to pray five times a day, or smoke, or disagree with any other part of the perverse interpretation of Islam favoured by the so-called Islamic State (IS).

From Peshawar to Paris

The first great growth opportunity for modern jihadism came with the Soviet invasion of Afghanistan in 1979. After fighters backed by Saudi Arabia, Pakistan and America expelled the enemy they found new targets, with those who created al-Qaeda taking a new interest in the "far enemy": America and the rest of the West.

In attacking America in 2001, and thus provoking a new invasion of Afghanistan and, later, Iraq, al-Qaeda created an environment where the sort of jihadism it inspired could spread much further than before. Fed by ideology, opportunity and the ready availability of frustrated young men holding their lives cheap the conflagration shows no signs of abating or lessening in its depravity. From Nigeria (see page 48) to Pakistan, the month that saw 17 slain in Paris saw hundreds more killed elsewhere (see chart).

In many minds IS has now overtaken al-Qaeda as the most notorious current exponents of jihadism. Although IS shares much of its forerunner's ideology, it is far less discriminating about whom it kills; even al-Qaeda's leaders have criticised its brutality. And although its leaders call for killing in the West, their main aim is ruling the territory of a new caliphate.

The ability of Sunni Islamists to pick and choose religious concepts and take them out of context is partly down to the absence of respected religious authority in Sunni Islam. Nearly every Shia bows to one of a handful of Grand Ayatollahs, but Sunni institutions such as Cairo's al-Azhar have limited authority. And the internet allows the masses of alienated youth to listen to the most radical preachers rather than the imam at their local mosque. State attempts to control preachers only increase mistrust of them. Scholars trying to set Islamic teachings in their historical or cultural context, whose work might inspire ways of better accommodating political Islam to the contemporary world, find themselves drowned out.

The relative prosperity, peace and democracy of Muslim-majority countries such as Indonesia show that today's Islam can be tolerant. And there may be positive signs amid the bloodshed in the Arab world—from the popular distrust signalled by Egypt's rejection of the Muslim Brotherhood, an Islamist group that briefly ruled after the 2011 revolution, to the way that Ennahda, Tunisia's Islamist party, relinquished power after recent elections. But most scholars reckon that the factors behind jihadism will only abate when the region's Muslim-majority societies become prosperous and politically and socially free. None of the Arab world's leaders are making much progress towards that. ■

A month of terror worldwide

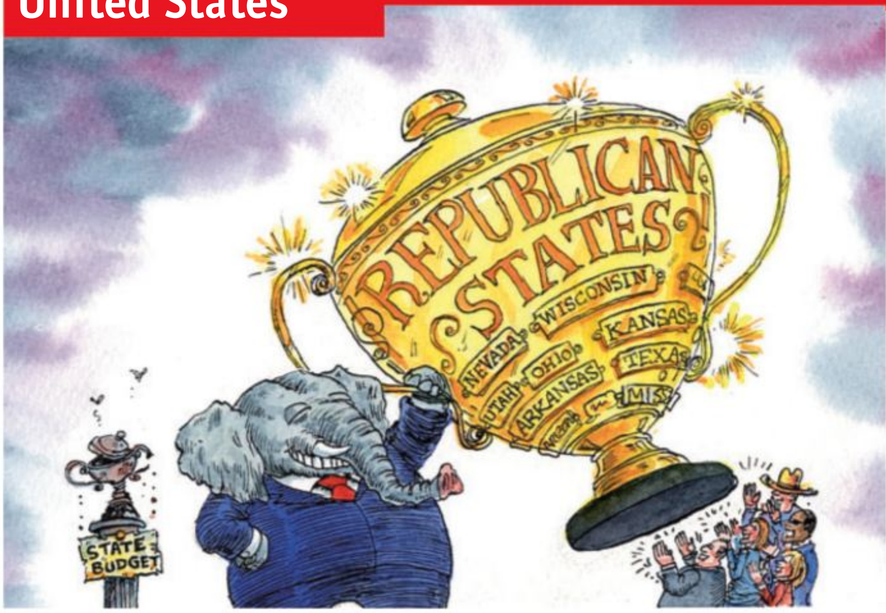
Selected terrorist attacks by Islamist groups

Europe · Middle East · Africa · Asia/Oceania

	Date	Location	Group considered responsible*	Primary method	Number of dead
DECEMBER 2014	15th	Sydney, Australia	Unknown affiliation	Gun attack	2
	16th	Peshawar, Pakistan	Taliban	Gun attack	148
	16th	Rada'a district, Yemen	Unknown affiliation	Suicide-bombing	25
	18th	Gumsuri, Nigeria	Boko Haram	Gun attack	32
	22nd	Gombe, Nigeria	Boko Haram	Bombing	20
	24th	Madaen, Iraq	Unknown affiliation	Suicide-bombing	33
	25th	Mogadishu, Somalia	Shabab	Gun attack	9
	26th	Mozogo district, Cameroon	Boko Haram	Unknown	23
JANUARY 2015	3rd	Baga, Nigeria	Boko Haram	Gun attack	150
	7th	Sana'a, Yemen	Unknown affiliation	Suicide-bombing	37
	7th	Paris, France	AQAP	Gun attack	12
	8th	Paris, France	Unknown affiliation	Gun attack	1
	9th	Paris, France	Unknown affiliation	Gun attack	4
	10th	Maiduguri, Nigeria	Boko Haram	Suicide-bombing	19
	10th	Tripoli, Lebanon	Nusra Front	Suicide-bombing	7
	11th	Potiskum, Nigeria	Boko Haram	Suicide-bombing	4
	13th	Gombe, Nigeria	Unknown affiliation	Suicide-bombing	2

Sources: Press reports; *The Economist*

*Including claims of responsibility



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The state of the states

Republicans in charge

WASHINGTON, DC

The GOP has more clout in the states than at any time since the 1920s

ON ELECTION nights, the results for state legislatures get short shrift. Americans want to know who won the presidency or which party controls Congress, not whether the Kentucky state Senate turned red. But those not paying attention to recent down-ballot results have missed something big. Republicans now dominate government at the state level (see map). Bolstered by victories in last year's mid-term elections, they hold 31 state governorships, to the Democrats' 18. (Alaska's governor, Bill Walker, is an independent, although he was a Republican until 2013.)

Republicans now control both chambers in 30 state legislatures, while the Democrats control 11 and eight are split. In 24 states Republican power is unchecked—meaning they control the legislature and the governorship. The party has not had this much clout in the states since the 1920s.

When a clutch of new Republican governors took office four years ago, they acted on their conservative impulses, cutting taxes, trimming welfare and restricting abortion. Scott Walker of Wisconsin became a Republican hero for taking on the public-sector unions: he made state employees chip in more for their pensions, ended the automatic deduction of union dues from their wages and barred unions from collective bargaining over issues other than pay. The tax cuts of Sam Brownback, the governor of Kansas, were so bold as to earn an unwieldy nickname: Brownbackonomics. Both Mr Walker and Mr Brownback won re-election last year, while Republicans nabbed governorships in Democratic states like Illinois, Maryland and Massachusetts. But the tide of conservative legislation may be ebbing. With many states facing big fiscal challenges, Republican governors have adopted a more moderate tone when laying out their agendas for 2015.

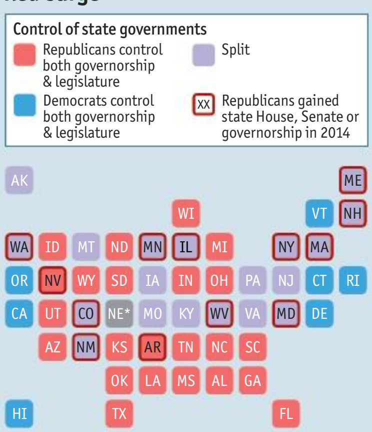
Take Mr Walker, who has described a proposal to make Wisconsin a "right-to-work" state—ie, to ban deals that make it compulsory for workers at a private company to join a union—as a "distraction". Faced with a $2.2 billion budget gap over the next two years, the governor has largely abandoned talk of cutting taxes. Republicans hold large majorities in both legislative chambers, but they support such fiscal prudence.

Presidential ambitions may be tempering Mr Walker's conservative zeal, but other Republican governors are following suit. In Arizona, which also faces a budget shortfall, Doug Ducey has scaled back his campaign promise to cut income taxes. Gary Herbert of Utah has told lawmakers to consider raising petrol or sales taxes to pay for highway repairs. Illinois finds itself in the deepest hole of any state, so Bruce Rauner has warned his constituents that they will all need to sacrifice.

To the newly-elected, Mr Brownback now serves as a cautionary tale. His business- and income-tax cuts, signed in 2012 and 2013, were the most ambitious of any state. He wanted to close loopholes to pay for this, but the legislature refused, leading to an enormous loss of revenue. After a hoped-for economic boom did not materialise, Standard & Poor's, a credit-rating agency, downgraded Kansas's debt, declaring its budget "structurally unbalanced". Mr Brownback barely eked out a victory last year. In his inaugural address this month he acknowledged that the state has economic problems, but claimed "the solutions are principally cultural and moral".

John Kasich, the governor of Ohio (who may also be gearing up for a presidential run), has been more pragmatic. Since taking office in 2011 he has balanced the state's budget while cutting taxes and red tape. He also picked a fight with public-sector unions, and lost. That spurred him to adopt a more conciliatory approach. Having won re-election by over 30 points last year, he now wants to cut income taxes even more—but he would pay for it by raising ▸▸

Red surge



*Nebraska has a Republican governor and a nonpartisan state legislature

Source: National Conference of State Legislatures taxes on energy companies, which has incurred the wrath of some on the right.

Mr Kasich has faced fiercer criticism from conservatives for having accepted federal Obamacare dollars to expand Medicaid, the public health programme for the poor, in 2014. But he may have been ahead of the curve. Last month Bill Haslam said he hoped to make Tennessee the tenth state with a Republican governor to expand the programme. (His plan must still pass the legislature.) Five others are thinking about it. Some want to incorporate ideas like cost-sharing or job-training requirements, which would provide political cover. Drew Altman of the Kaiser Family Foundation, a research outfit, predicts that eventually "most, if not all" of the remaining states will find some way to accept the extra cash and expand Medicaid.

Schoolyard brawl

A more difficult test for pragmatic governors is "Common Core", the national education standards that have been adopted by over 40 states since 2010. Several governors (both Republicans and Democrats) have had to beat back efforts to kill the standards, which activists denounce as federal overreach or poor policy. Some governors, like Bobby Jindal in Louisiana, have withdrawn their support. States run by potential presidential candidates, such as Mr Jindal, seem most likely to backtrack. The issue is already dogging Jeb Bush, a pragmatic former governor of Florida who supports Common Core and has his eyes set on the White House.

With just seven states under complete Democratic control, it is easy to forget about the party's governors. But most have also set aside ideology to pursue practical agendas. In California Jerry Brown has held the line on spending, even as the state's university system clamours for cash. Instead of introducing new programmes, Mr Brown has focused on dealing with the state's long-term debts. In New York, Andrew Cuomo has vowed to tackle inequality and improve education. He has already upset teachers' unions by signalling that he wants to increase the number of charter schools and make it easier to fire bad teachers.

The states are not devoid of ideological conflict. Twenty-five are suing Barack Obama over his refusal to deport certain groups of illegal immigrants. Others are considering voter-ID requirements, drug tests for welfare recipients and further curbs on unions. A host of anti-abortion bills have been filed: Republicans are trying to build on the 231 new restrictions adopted since 2010, according to the Guttmacher Institute, a pro-choice think-tank. Many legislatures are also wrestling with gay marriage; 14 states still do not allow it. But on fiscal issues, at least, tight budgets restrain the radicals of the right. ■

The 2016 field

Romney returns

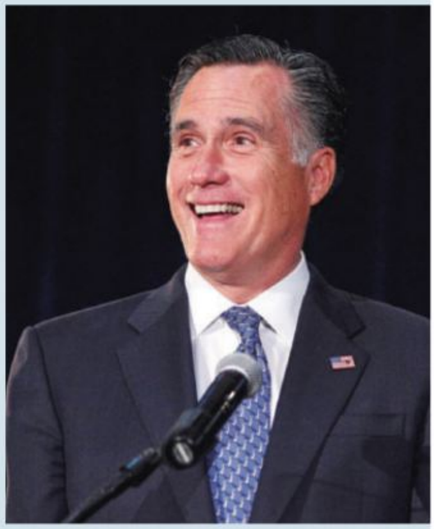
WASHINGTON, DC

The list of possible Republican candidates grows longer and more familiar

WHEN a man wishes to run for president, he no longer announces the fact to voters, or chooses an issue on which to take a stand. Instead, he lets a group of donors know that he is "exploring" the possibility of a bid, as if the campaign trail were some inaccessible region inhabited by polar bears. For Mitt Romney, who told donors on January 9th that he might run again, after months of scoffing at the idea, it is hardly unfamiliar terrain. Should he give it a go, 2016 would see the third Romney presidential campaign (not counting his father's).

Why Mr Romney—a decent man who in 2012 was pounded by adverts painting him as a heartless capitalist and careless pet owner, then denounced as useless by fellow Republicans when he lost—should want to make another attempt on the presidency is a puzzle. Perhaps the best explanation was given by another explorer: because it is there. In very early polling, Mr Romney tops a list of possible Republican candidates so long that it is sometimes quicker to mention who is not running. The likely Democratic nominee, Hillary Clinton, currently looks a formidable opponent for any of them, but she has hardly been tested yet and, if she runs, will get little campaigning practice in her party's primary.

Also in Mr Romney's favour is his surname. He would begin any campaign with the sort of recognition that costs many millions of dollars. More important, his name is not Bush, which polling suggests is not a popular one among independent voters. Republicans last won the White House without a Bush on the ticket in 1972. But if feelings were to harden against Jeb Bush, the former governor of Florida and a fellow 2016 explorer, it would create some space on the business wing of the party, which thought it had found a winner until Chris Christie, the governor of New Jersey, got into a kerfuffle over a bridge and saw his state's bonds downgraded.



Because the last time was such fun

Were that gap to open, one of Mr Romney's immediate tasks would be to write a campaign book. Even for a life as lively as his, a third autobiography may seem like overkill. Though he is a self-described turnaround specialist, a Romney presidency seems unlikely. But that's what they said about Ronald Reagan, whose first two bids also failed.

Higher education

Zero tuition

NEW YORK

Will Barack Obama's plan for free community college make a difference?

ASHLEY MARTINEZ studies accounting at LaGuardia Community College in New York. She is also the mother of a toddler and worries about the cost of textbooks and daycare. She is exactly the type of person Barack Obama is trying to help with a new proposal to make at least two years of community college free.

Mr Obama says 9m students could benefit from his plan, which will feature in his state-of-the-union address on January 20th. If all 50 states go along with it, a typical full-time community-college student could save $3,800 a year, he claims. Students must maintain a 2.5 grade-point average (a C+) to qualify. Uncle Sam would cover 75% of the cost; the states would pick up the rest. The White House says the tab will be $60 billion over ten years.

Community colleges are publicly funded local institutions that offer vocational courses or prepare students to transfer to a four-year university. Mr Obama calls them "essential pathways to the middle class" and praises their flexible schedules: "They work for people who work full-time. They work for parents who have to raise kids full-time. They work for folks who have gone as far as their skills will take them and want to earn new ones, but don't have the ▸▸

capacity to just suddenly go study for four years and not work."

Tuition is typically $3,300 per year—far less than at a university. Quality varies. Some courses are excellent; others are out of date or ill-matched to the local job market. Only 20% of full-time students at community colleges earn an associate's degree within three years—and it is supposed to take two.

The president's scheme might encourage Americans who were deterred by the price tag to study. But for many students, including Ms Martinez, community college was already free or nearly so. Financial aid averages around $5,000 per student, per year. Anyone from a family that makes less than $24,000 a year also qualifies for a Pell grant of up to $5,730 a year—a scheme that Mr Obama has expanded.

Mr Obama's new plan is loosely based on the Tennessee Promise, a state programme backed by both Republicans and Democrats. It is also similar to a scheme in Chicago (see next article). However, a Republican Congress is unlikely to fund another federal spending spree, even if the cost to taxpayers is only $6 billion a year (4% of the federal education budget). Lamar Alexander, a former secretary of education and now a Republican senator representing Tennessee, says he would like to expand the Tennessee Promise, but thinks such programmes should be left largely to the states, not the federal government.

If Mr Obama's proposal were to become law, it could have perverse effects, critics argue. States might cut direct funding to community colleges and put all their cash into aid to students, since this would attract three federal dollars for every one they spend. Colleges might then raise fees to absorb the extra cash. (University tuition has soared as the federal government has made student loans cheaper.)

One area where Republicans and Democrats agree, however, is that the forms families must fill in to apply for student financial aid are too complicated. "It's been a while since I filled it out, but I understand there's more than 100 questions on it," marvelled Mr Obama on January 9th. A new bill seeks to simplify matters.

Also this week, both Mr Alexander, who heads the Senate education committee, and Arne Duncan, the education secretary, laid out their ideas for how to reform the No Child Left Behind Act, a law that makes federal funds for primary and high schools conditional on testing pupils every year. Mr Duncan called the law "tired" and "prescriptive". He wants to keep the tests but give states more flexibility. Mr Alexander thinks there may be too many tests, a belief shared by teachers' unions. A compromise is possible. Indeed, with Republicans controlling Congress and Mr Obama in the White House, that is the only way anything much will change. ■

Chicago's schools

Hard work rewarded

CHICAGO

Rahm Emanuel's school reforms are working

"NO FAMILY should go to the poorhouse because they are giving their kid a crack at the American dream," said Rahm Emanuel on January 9th. Chicago's mayor was presenting his plans for education at Kenwood Academy, a high school on the city's South Side.

On the same day in Tennessee, President Barack Obama announced plans to exempt qualified students from tuition fees at community colleges. The White House had taken a leaf out of Chicago's book, said Mr Emanuel, who last October introduced the Chicago STAR Scholarship, which pays the community-college tuition fees of the best graduates from Chicago's public-school system.

Mr Emanuel wants more students to enroll in a college and take courses (and, if they pass, get credits) while still in their last year of high school, which helps to reduce their tuition costs later. With the help of a donation of $500,000 over three years from General Electric, the programme will grow from almost 2,500 students to more than 6,000 next year. Kenwood Academy has more students in the programme than any other high school in Chicago.

Some of the toughest decisions Mr Emanuel had to make in his first term concerned schools. He demanded merit pay for teachers and a longer school day (Chicago's was only 5 hours 45 minutes) and earmarked for closure 50 half-empty schools in poor districts. Teachers went on strike for the first time in 25 years, but Mr Emanuel got the longer day and the closures went ahead in 2013. The teachers kept their seniority-based pay system.

Mr Emanuel ploughed some of the money saved by closures into charter schools, which made him even more unpopular with the teachers' unions. But charter schools have worked well in Chicago. The Noble Network, which already runs 16 charter high schools with 10,000 pupils and plans to have 20,000 by 2020, has an attendance rate of 94% (compared with 73% for Chicago public schools) and a drop-out rate of only 0.4% (compared with 4.7%). It also gets better results on the ACT, a college-readiness test. It has an even higher percentage of minority students (98% compared with 92% at Chicago public schools), and slightly less public funding.

Rosa Alanis, the principal of Golder College Prep, one of the Noble network schools, says all her pupils have a teacher as a designated adviser, whom they see twice every school day. Attendance and performance are the advisers' responsibility, so they go to great lengths to ensure their charges show up, dress properly in their uniform of grey trousers and blue sweaters, and work hard. Ms Alanis herself looked after a group of 13 "challenging" boys. In one case she even drove to a pupil's house to get him to come to school. He was still in his pyjamas, but obeyed.

Mr Emanuel is keen on charter schools, but he didn't mention them when he presented his second-term plans for education. Instead he promised to put Wi-Fi in all classrooms, and to ensure that every family would be within three miles of a high school offering some special focus, such as science or the International Baccalaureate. Presumably, he did not want to annoy those who think that charter schools leave public schools in the dumps. In fact, competition has prodded public schools to shape up a bit. The drop-out rate has gone down and ACT scores have slightly improved, albeit from a very low level. ■

Let me teach you some new words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Gambling and poverty

Of slots and sloth

SILETZ RESERVATION, OREGON

How cash from casinos makes Native Americans poorer

ON A rainy weekday afternoon, Mike Justice pushes his two-year-old son in a pram up a hill on the Siletz Reservation, a desolate, wooded area along the coast of Oregon. Although there are jobs at the nearby casino, Mr Justice, a member of the nearly 5,000-strong Siletz tribe, is unemployed. He and his girlfriend Jamie, a recovering drug addict, live off her welfare payments of a few hundred dollars a month, plus the roughly $1,200 he receives annually in "per capita payments", cash the tribe distributes each year from its casino profits. That puts the family of three below the poverty line.

It is not ideal, Mr Justice admits, but he says it is better than pouring hours into a casino job that pays minimum wage and barely covers the cost of commuting. Some 13% of Mr Justice's tribe work at the Chinook Winds Casino, including his mother, but it does not appeal to him. The casino lies an hour away down a long, windy road. He has no car, and the shuttle bus runs only a few times a day. "Once you get off your shift, you may have to wait three hours for the shuttle, and then spend another hour on the road," he says. "For me, it's just not worth it."

Mr Justice's situation is not unusual. After the Supreme Court ruled in 1987 that Native American tribes, being sovereign, could not be barred from allowing gambling, casinos began popping up on reservations everywhere. Today, almost half of America's 566 Native American tribes and villages operate casinos, which in 2013 took in $28 billion, according to the National Indian Gaming Commission.

Small tribes with land close to big cities have done well. Yet a new study in the *American Indian Law Journal* suggests that growing tribal gaming revenues can make poverty worse. The study looks at two dozen tribes in the Pacific north-west between 2000 and 2010. During that time, casinos owned by those tribes doubled their total annual take in real terms, to $2.7 billion. Yet the tribes' mean poverty rate rose from 25% to 29%. Some tribes did worse: among the Siletz poverty jumped from 21.1% to 37.8%.

Experts offer several explanations. Drug and alcohol abuse are rampant on reservations, so many tribal members find it hard to hold down a steady job. Poor health is another problem: Native Americans have high rates of obesity and diabetes, which are often aggravated by a lack of good medical care. More than 14% of Native Americans are in poor or fair health, according to the Department of Health and Human Services, compared with 10% of the overall population. Some 27% of Native Americans under 65 lack health insurance, compared with just 17% of Americans. "A lot of people in these communities are suffering," says Greg Guedel, a Seattle-based attorney who wrote the study.

All play and no work

Native American tribes experiencing an increase in poverty, 2000-10, %

Source: "Sovereignty, Economic Development and Human Security in Native American Nations" by W. Gregory Guedel

But the biggest problem may be the way casino profits are sometimes disbursed. Per capita payments have grown as gaming revenues have risen. "These payments can be destructive because the more generous they become, the more people fall into the trap of not working," says Ron Whitener, a law professor, tribal judge and a member of the Squaxin Island Tribe in Washington state. Of the 17 tribes in the study that handed casino profits directly to members, ten saw their poverty rates rise. Of the seven tribes that did not, only two saw such an increase (see chart).

Per capita payments range from as little as a few hundred dollars a year to more than $100,000. In some tribes, members receive 18 years of per capita payments in a lump sum when they turn 18. "There are a lot of very successful car dealerships around reservations that make their money off 18-year-old[s]," adds Mr Whitener.

One very small tribe in the study, Jamestown S'Klallam in northern Washington, has eliminated poverty entirely. That tribe does not issue any per capita payments and has used its casino profits to diversify into other businesses, such as harvesting huge molluscs for export to China. Squaxin Island, which reduced its poverty rate from 31.4% in 2000 to 12.4% in 2010, used casino profits to get into cigarette manufacturing about ten years ago. Leaders of the Siletz tribe, by contrast, allot 40% of the casino's net revenues to per capita payments and only 17% towards economic development. Of the tribes surveyed, the Siletz has one of the highest poverty rates.

Direct payments are popular, so tribal leaders are reluctant to cut them. And some experts think they help. "I get terribly annoyed by folks who suggest that Natives become lazy once they have a little guaranteed income," says David Wilkins, a professor of American-Indian studies at the University of Minnesota. He says he doesn't hear that argument used often against rich non-Natives with trust funds. Perhaps he has never seen the film "Arthur".

Kevin Goodell, a 51-year-old Siletz tribal member, works on the tribe's forestry crew. It had several job openings last year—but no qualified applicants, according to Mr Goodell. He says he tried to get young people interested, but they told him they didn't want to work in the woods. With free housing and health care, "a lot of people have figured out a way to use the system to survive," he says. "Why get a job if you don't need one?" ■

The curse of easy money

Cyber-security

Sharing is caring

SAN FRANCISCO

Barack Obama wants Congress to bolster cyber-security

ON JANUARY 12th hackers calling themselves the "CyberCaliphate" briefly took over the Twitter and YouTube accounts of US Central Command (Centcom), which oversees America's military operations in the Middle East and south Asia. The intruders posted a series of messages in support of Islamic State before they were booted off the social-media feeds.

The episode was an embarrassment rather than a grave threat to America's security. But it was yet another reminder, after the humiliating attack on Sony Pictures Entertainment, that hacking has become a huge headache (see chart). This week Barack Obama unveiled proposals to counter the threat.

Among them is a national data-breach law, requiring companies that have been hacked to reveal it within 30 days if personal data may have gone. Fans hope this will pre-empt the patchwork quilt of state laws governing breach reporting, which Scott Vernick of Fox Rothschild, a law firm, calls a "costly legislative soup" (see also our business section, page 63).

Another proposal would make it easier for companies to share intelligence about digital threats with the government. Speeding up this flow matters. Hackers often use the same methods on many targets. So if knowledge of their techniques travels swiftly and counter-measures are developed fast, their efforts can be frustrated.

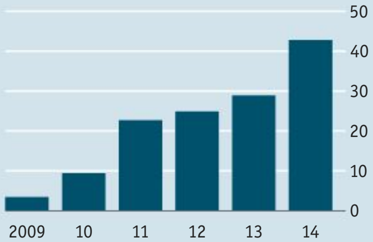
Many industries have set up bodies that help companies alert each other to new threats. But experts say firms are still wary of sharing, in case it leads to lawsuits from customers and antitrust watchdogs. A previous congressional attempt to give them greater legislative protection failed because it did not do enough to protect people's data. Privacy activists worry that data shared as part of threat intelligence will be scooped up by the National Security Agency (NSA), whose appetite for information was highlighted by Edward Snowden's blockbuster revelations.

Mr Obama wants companies to give their data to the Department of Homeland Security, not the NSA. Chris Finan, a former cyber-security aide in the White House, says this shows that the president wants information to flow into an agency whose job is to protect America's critical infrastructure, rather than a spy agency.

That may reassure some folk, but there needs to be clarity about how this information is shared within government. The proposal sensibly tries to protect privacy by recommending that unneeded personal information is stripped out of threat intelligence before it is shared and demanding strict controls on the use of what remains. But the devil will be in the details.

Hackers rising

Security incidents* reported each year in a global survey of 9,700 business executives, m



*Any incident that threatens computer security, such as a data breach or an attempt to steal passwords

Source: PwC

This initiative and the mooted federal data-breach law may be partly aimed at heading off a dispute with Europe over privacy rules that could hamper trade. Current EU data-protection laws prohibit the transfer of personal data to countries with weak privacy regimes, and European officials are hinting that America's is not up to snuff. New legislation later this year could well create an EU-wide system for threat-intelligence sharing and require breach notifications for a broad swathe of industries, too. If Mr Obama's proposals survive the congressional sausage machine, America and Europe could end up with similar approaches to the hacking plague. ■

The Silk Road trial

Bitcoin buccaneers

WASHINGTON, DC

One Dread Pirate is on trial; what about the others?

MOST internet entrepreneurs dream of transforming an industry. On January 13th, one who may have done just that went on trial in federal court in Manhattan, accused of drug-trafficking, money-laundering and operating a criminal enterprise. Ross Ulbricht, a 30-year-old Texan physics graduate, is accused of being "Dread Pirate Roberts", the founder and administrator of the Silk Road. This was the first website to make it possible to buy and sell illegal drugs online openly and with relative anonymity. His trial will raise questions not only about the extent and nature of cybercrime, but also about the limits of government snooping necessary to prevent it.

The Silk Road was shut down by the FBI at the end of 2013. It worked by combining two new technologies: Tor, which allows people to host websites without revealing where they are based, and bitcoin, a decentralised online currency which offers a close digital alternative to a bag of unmarked banknotes. On the site, buyers and sellers could trade with remarkable discretion. Over two years, deals generated 9.5m bitcoin in sales (worth $1.8 billion today, though the exchange rate has fluctuated wildly) and over 600,000 bitcoin in commission. That is enough booty to make Blackbeard throw away his cutlass and pick up a mouse.

The prosecution has already produced evidence that Mr Ulbricht was Dread Pirate Roberts. They argue that he left a digital trail, administering the Silk Road through unencrypted connections and using his personal e-mail address to look for technical help. More sensationally, they allege that he not only set up the site, but sought to defend it violently. As the Dread Pirate, Mr Ulbricht is accused of paying for the assassinations of several people who threatened the site, including one former employee. None of these murders seems to have happened, but they prevented Mr Ulbricht from being granted bail after his arrest in 2013.

Mr Ulbricht says he was framed: the real Dread Pirates remain at large. His lawyers also claim that the FBI may have used illegal methods to identify and seize the Icelandic server on which the Silk Road was hosted, and from which much of the evidence comes. The FBI says the site contained a vulnerability which revealed where it really was, despite Tor. But several technical specialists think this implausible. Sadly for Mr Ulbricht, it may not matter much. In a ruling in October, a judge concluded that since he has not admitted any legal interest in the Silk Road server, he is unable to claim under the Fourth Amendment that it was illegally searched, and so the evidence from the server is admissible however it was found. This, the judge admitted, "might appear to place Ulbricht in a catch-22". If he admits to an interest in the server, he would weaken his defence at his trial; if he doesn't, he has no chance of getting the evidence against him dismissed.

Mr Ulbricht's defence, which has been generously funded by online donations, is thus likely to focus on the strength of the evidence linking him to the online activities of Dread Pirate Roberts. Nonetheless, cyber-criminals—as well as other users of the dark web—will be watching closely. Since the Silk Road was taken offline, several similar market-places have been started, and many closed by the authorities. But it is still far from clear whether police forces can crack the anonymity given by technology such as Tor, or how deeply they can legitimately snoop on the web to uncloak the hosts of criminal networks. ■

Lexington | Love, tax and wedlock

The high marriage rates of the 1950s are not coming back

AT THE start of a new Congress everything seems possible. Republicans have spent much of 2015 on bucolic retreats, pondering how to remake America. One rather ambitious idea is to repair both the budget and the country by supporting marriage. Most mothers under 30 are not married to the fathers of their children. Pledging to take care of each other for richer, for poorer is more and more the preserve of college-educated folks for whom poverty is theoretical. Senators Marco Rubio and Mike Lee have a proposal to change child tax credits to promote marriage; Senator Tim Scott is interested too. Congresswoman Lynn Jenkins says that ending marriage penalties will be part of any tax reform proposals from the House.

When marriage is hitched to politics the result is usually muddled thinking. Social conservatives think that lax attitudes to sex, a decline in manliness, short skirts and a hundred other things have chipped away at a sacred institution. The Heritage Foundation, a think-tank with a "Marshall Plan for Marriage", recently puffed a study suggesting that online pornography was the cause of the rot. People who reckon culture is to blame often propose economic solutions, from getting rid of marriage penalties to using public policy to promote wedlock. Thus some conservatives, who tend to assume that the government mucks up everything it tries, are nonetheless arguing that it can revive the traditional family. Leftish Democrats, meanwhile, think that marriage has been undermined by rising inequality, and especially the low wages of unskilled men, which make them less attractive as mates. They tend to argue that marriage, unlike practically every other social problem, cannot be fixed by government.

Both these views are confused. There are indeed marriage penalties in the tax code and in the welfare system: a single mother who marries a man with a job can lose all kinds of means-tested benefits. But there are also some marriage bonuses, and the tax code is so complicated that few Americans know whether tying the knot will mean they owe the taxman more or less. The federal government has made $114 billion-worth of pro-marriage fiddles to tax laws in the past decade with nothing much to show for it. And there is no evidence from decades of marriage-promotion programmes that the government can persuade people to get or stay hitched, a finding that will not surprise anyone who has ever actually been married.

As for the notion that inequality is to blame, that is muddled too. Most of the increase in income inequality has been at the very top of the scale: it is hard to see how the vast pay packet of a hedge-funder in New York changes the intentions of someone waiting tables in Utah. Though the wealthy are much more likely to wed than the poor, the relationship between money and vows is not clear-cut. Lots of people who decided to marry a few generations ago were poorer than those who choose not to today. Nor did marriage rates decline in the 1920s, when the surge in stock prices gilded the incomes of rich Americans. This tangle over inequality blinds Democrats to the possibility that causation may run in the opposite direction: that unwed parents raise poorer children. Isabel Sawhill of the Brookings Institution, a think-tank, calculates that returning marriage rates to their 1970 level would lower the child-poverty rate by a fifth. This omission may be deliberate: Democrats are reluctant to offend unmarried women, 60% of whom voted for the party's candidates in 2014.

A debate about marriage should begin by acknowledging that the high rates of the 1950s and 1960s were a peak rather than the norm. The marriage rate in America has only recently dipped below where it was at the end of the 19th century, according to Andrew Cherlin of Johns Hopkins University. Reviving marriage rates of the 1950s, an era looked on fondly both by conservatives (who remember an America as wholesome as its cereal adverts) and by liberals (who recall an age when well-paid jobs were available for people with few qualifications) would require reviving some of that decade's less jolly features too.

Shame and the single girl

First among them would be the glares of disapproval directed at loose women who had children before they were married. As late as the 1960s children thus brought into the world would have "illegitimate" stamped on their birth certificates. Many families were so ashamed of their unwed pregnant daughters that they were sent to places such as the Florence Crittenton homes, run by a charity founded to reform prostitutes, where they could give birth in secret and put their babies up for adoption: at least 25,000 mothers lost contact with their children this way every year.

Next on the list would be to bring back the huge difference between male and female wages that made marriage such a good financial bet for women. In the post-war years, an American working man could expect to double his earnings between the ages of 25 and 35, while women's wages were flat, according to Stephanie Coontz, a historian of marriage. It is no coincidence that the decline in marriage has accompanied the improvement of women's prospects in the workplace. It might be possible to increase the economic muscle of men relative to women, by giving tax breaks for possessing testicles, say, or discriminating in favour of men in college admissions. But it would be a terrible idea.

A stable, loving two-parent family may be the optimal way to raise children, but to mourn the retreat of marriage is also to regret two of the most welcome social changes of the past half-century. Those who would use the tax code to promote marriage "have a hard time putting themselves in someone else's shoes", says Adam Getz, a single father of two who helps to organise gatherings for single parents and their children in Virginia. Very few of the group wanted to be single, adds Mr Getz: in most cases singledom was forced upon them. Altering the tax code to the disadvantage of people like him will not change that. ■

Also in this section

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Haiti

Unhappy anniversary

PORT-AU-PRINCE

Five frustrating years later, an earthquake-torn nation searches for stability

FOR five years since an earthquake, known in Creole as the *goudougoudou*, struck Haiti on January 12th 2010, the capital's cinemas have lain in ruins. The loss of hundreds of thousands of lives, the uprooting of 1.5m people and post-quake cholera outbreaks are obviously more traumatic for a nation of 10m that is among the poorest on earth. But the rebuilt Cinéma Triomphe near the centre of Port-au-Prince, with a gleaming red sign and a glass atrium, could have been a symbol of progress. Until last month, that is, when protesters threw rocks through its windows.

Such discouraging stories are ubiquitous. Despite a $10 billion rescue and recovery effort launched amid a shower of goodwill, the job looks half-done. Only 85,000 people remain in "tent cities", but many who have found new digs live in ramshackle temporary developments sprawling up hillsides. The capital's new airport works well, but in the city centre new multi-storey government ministries remain empty concrete hulks; parliamentary offices nearby are in port-a-cabins in front of a stinking market. Few traffic lights work, and motorbikes and tap-tap buses wage war at every junction with the fancy SUVs of "the Republic of NGOs."

Politics remains as chaotic as the traffic. Despite international promises to help Haiti build better governing institutions, municipal and parliamentary elections are three years overdue. This is partly because President Michel Martelly, a former *compas* singer who took office in 2011, did not offer concessions to parliament to pass voting legislation, thinking his personal popularity would enable him to call the shots. It is also because, in a winner-takes-all society like Haiti's, historical, racial and ideological grievances continue to poison politics.

By grim coincidence, the fifth anniversary of the quake was the day the political crisis forced parliament to shut down. So many senators' mandates had expired that it became impossible to muster a majority. Mr Martelly became a de facto one-man ruler. His enemies were quick to invoke the hated Duvalier dictatorships, to which some members of his family were linked.

On January 11th he struck a last-minute agreement with many opposition parties to create an independent council to organise elections in 2015, which some observers see as grounds for optimism. The United States has backed him. However, loyalists of the left-wing ex-president, Jean-Bertrand Aristide, whose party did not sign the accord, have staged weeks of rowdy demonstrations calling for Mr Martelly's resignation. These may intensify now that he is ruling without the restraint of parliament. Even if they remain small in number, the sight of protesters dancing around burning tyres and running from tear gas undermines the image of political stability that Haiti needs to bring in foreign investment and create badly needed jobs.

Three factors, above all, exacerbate the problems. First, much of the international aid on which the country is so reliant has bypassed the Haitian government, businesses and institutions, missing a chance to help strengthen them, according to the IMF. In 2013 the Washington-based Centre for Economic and Policy Research calculated that only 0.7% of more than $2 billion of planned spending by the United States Agency for International Development (USAID) had gone to Haitian institutions since the quake. Most had gone to contractors in and around Washington.

What's more, donors who had legitimate concerns about corruption and capacity constraints in Haiti were overconfident about their own skills. The United States, for example, promised to kick-start business development in northern Haiti by building a port linked to a new industrial park. The port is years behind schedule, undermining the whole project. A foreign businessman in Haiti says that if international donors had merely agreed to build a sewage system in Port-au-Prince, the benefit would have been more enduring.

Second, aid has been dwindling for three years and is now drying up. Some of this is because of donor fatigue and pressing demands elsewhere. The UN, which has had troops in Haiti to provide security since 2004, has been reducing the number for three years. Venezuela, which has been a big benefactor via its PetroCaribe fund for subsidised oil, is running out of money. According to the IMF, PetroCaribe accounts for 84% of Haiti's foreign debt. It says a sudden stop in PetroCaribe financing would cause a "severe fiscal and balance-of-payments adjustment", hitting ▸▸

public investment and growth.

The economy is Haiti's third disappointment. The tourism industry is weak, and Haiti has among the most expensive electricity in the Caribbean. Income tax amounts to just 2.5% of GDP, in part because almost a quarter of the population earns less than $1.24 a day, the threshold of absolute poverty.

Though Mr Martelly's government says it is "open for business", it has no reliable investment figures and has gone through four finance ministers since 2010. A pro-business prime minister, Laurent Lamothe, was forced to step down last month to ease the political crisis.

Yet on some measures Haiti has made progress. Extreme poverty is less than it was in 2000. School enrolment has increased. Murders related to organised crime have ebbed. Though there has been little improvement in the ease of doing business, NGOs such as TechnoServe, which helps small firms, say exports of mangoes and other agricultural products have benefited from better infrastructure (largely financed by PetroCaribe). Technology start-ups such as Surtab, which makes a low-cost tablet, have provided a big dose of national pride, as well as a small source of relatively well-paid jobs.

To create more such businesses, officials say that Haiti needs to court its diaspora rather than foreign governments. Remittances amount to more than a fifth of GDP, but bringing talented Haitians back home would help even more than their cash. Haitians living abroad know how badly the country needs stable politics to nurture its economy. That is why there is pressure on Mr Martelly to hold elections this year. Until Haiti's warring politicians start playing by democratic rules, its recovery from the calamitous earthquake will be incomplete. ■

Bello | The dragon and the gringo

Latin America's shifting geopolitics

TIME was when cash-strapped Latin American governments would turn to the IMF for the bitter medicine of its bailouts. No longer. Over the past dozen years the supercycle of rising commodity prices has swelled the region's coffers, while even the most fiscally incontinent autocrat has been able to count on the Chinese chequebook.

Now the bonanza is over. Commodity prices are back to their trough of the great recession of 2008. And the bank manager in Beijing is learning to say no. With queues outside sparsely stocked supermarkets in Caracas and investors fearing a default on his country's foreign debt, Venezuela's president, Nicolás Maduro, flew to China this month to beg for emergency cash. All he got was an apparent repackaging of an existing $20 billion in credits for long-term investments.

Mr Maduro's trip coincided with a meeting of Latin American foreign ministers in Beijing on January 8th and 9th. President Xi Jinping, who has visited Latin America in each of the past two years, told his guests that by 2019 he wants to see a doubling of China's trade with the region (it rose from $10 billion in 2000 to $257 billion in 2013), and a similar rise in investment. Ecuador's Rafael Correa, another visitor, is a more prudent petrocrat, having responded to the fall in oil prices with a budget cut. He came away with fresh loans totalling $7.5 billion.

But China has now made it clear that it is not prepared to be an unconditional lender of last resort to deadbeats, even if they claim political affinity, as Mr Maduro does. According to Margaret Myers, a China specialist at the Inter-American Dialogue, a think-tank in Washington, Chinese officials have begun to keep a close eye on how Venezuela spends their loans. Worries about default are surfacing in Chinese publications, she says.

The maturing of China's relations with Latin America coincides with other geopolitical shifts in the region. Venezuela's aspiration to create an anti-American alliance has foundered with its economy. Plunging oil revenues cast doubt over subsidies to 17 Caribbean and Central American countries that assured it a solid voting block in international organisations. Brazil's claim to regional leadership is also in abeyance. Dilma Rousseff began her second term on January 1st with a weak mandate, facing a fiscal squeeze and a disabling corruption scandal at Petrobras, the state oil company.

Barack Obama, though mainly for domestic reasons, is doing much to assuage Latin American grievances against the United States. His decision, announced last month, to normalise relations with Cuba and to loosen the embargo against the communist island was widely applauded. So was his earlier immigration reform by executive action. Mr Obama has downplayed the "war" on drugs (which some Latin Americans complained was a war against them). Further evidence of his administration's new appetite for taking the initiative in the region is a Caribbean "energy summit", to take place in Washington on January 26th. It is aimed at deploying multilateral loans, technical help and private investment as an alternative to Venezuelan subsidy. The administration is also mobilising aid for Central American countries facing drug violence.

So will the United States start to recover the ground it has lost in the region? One test will come at the Summit of the Americas in Panama in April, the first such gathering that Cuba's Raúl Castro will attend. Mr Obama wants the summit to discuss democracy and human rights. Latin America is now prepared to have that discussion, says Andrés Rozental of the Mexican Council on Foreign Affairs, a think-tank. "It may not be the most public part of what happens in Panama, but it will be part of it," he says.

Both Chinese and American officials deny that they are competing for influence in Latin America. But that is what it looks like. To left-of-centre governments, China's offer of loans, investment (especially in infrastructure), scholarships and non-interference in politics remains attractive. Against that, the United States offers an appeal to shared values and access to what is still the world's biggest market and its best source of technology.

These do not have to be mutually exclusive. And in both cases, there are frictions. China sucks up Latin America's commodities and undercuts its manufacturers. A Chinese investor is building an environmentally damaging canal on neo-colonial terms in Nicaragua. Some of Mr Obama's initiatives are hostage to the Republican-controlled Congress. But after a decade in which China seemed to carry all before it in Latin America, at least the United States has now started to compete in this new *Gran Juego*.

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Sri Lanka's election

Ask Siri

COLOMBO

The new president promises a new leaf for politics

MANY Sri Lankans are still gobsmacked by an election on January 8th that ended nine years of presidential rule by Mahinda Rajapaksa, a strongman appearing to settle in for the long term. Replacing him is Maithripala Sirisena (pictured), until recently the health minister, who won 51.3% of the votes on a record turnout of 81.5%. Mr Sirisena was backed by Sinhalese unhappy about inflation, corruption and the Rajapaksa dynasty, as well as by minority Tamils, Muslims and Christians worried by repression since the end of the civil war or by the weak rule of law.

Mr Rajapaksa conceded defeat early on January 9th. Some in Mr Sirisena's camp claim that was an act, and that Mr Rajapaksa first explored whether the attorney-general, chief justice and heads of the army and police would agree to cancel the election—in effect, a coup attempt. Mr Rajapaksa denies it, saying that he had "always bowed down to the people's verdict".

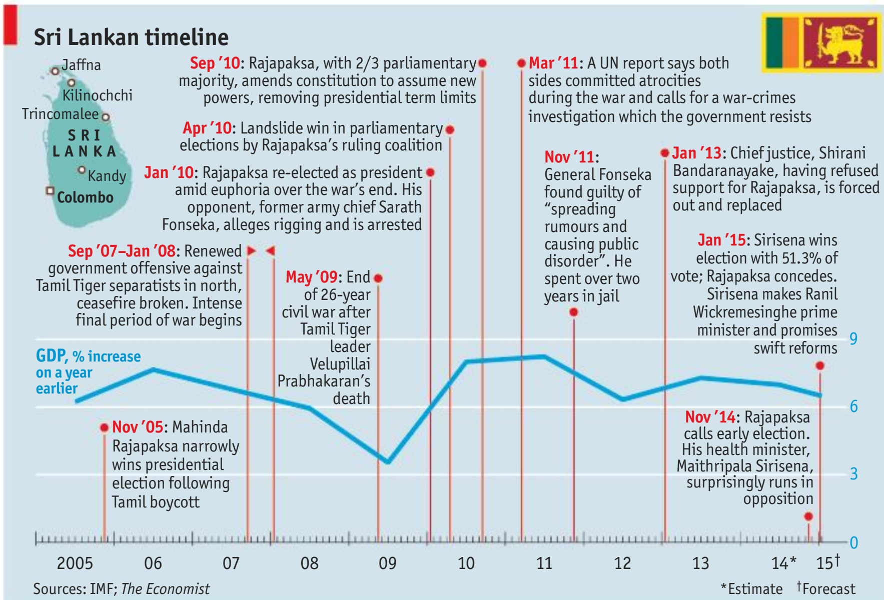
Coup talk may explain Mr Sirisena's hasty swearing-in on January 9th and his appointment, minutes later, of Ranil Wickremesinghe as prime minister. Mr Wickremesinghe has twice held that post before. A behind-the-scenes operator, he may prove stronger than the president. The smallish cabinet they formed on January 12th is likely to expand as former supporters of Mr Rajapaksa defect.

An early priority for Mr Sirisena is fulfilling his promise of constitutional change within 100 days. He wants to tame a presidency that Mr Rajapaksa made nearly paramount, especially after a constitutional amendment in 2010 that did away with presidential term limits and with independent commissions to appoint bureaucrats, judges, police and electoral officers. Reversing the amendment would empower Parliament and the prime minister.

Habits of sycophancy will widen support for the new rulers. The state-run press, especially, toadied up to Mr Rajapaksa and is already fawning upon Mr Sirisena. Parliamentarians fiercely loyal to the old government now flock unashamedly to the new. One defector this week breezily dismissed his former boss as a mere "dead body in the house".

Yet much remains in flux. Until the dust settles, it is not obvious whether constitutional reform can follow; nor whether the chief justice, ultraloyal to Mr Rajapaksa, can be replaced with someone better. Both, in theory, require support from two-thirds of Parliament. Just possibly the chamber could reconvene as a constitutional assembly, as happened in 1972, allowing some reforms to be pushed through with only a simple majority.

Meanwhile, the victorious coalition could come under strain. On January 15th Mr Rajapaksa was poised to lose control of the Sri Lanka Freedom Party, but he can yet sow division. He never seriously sought national reconciliation after ending the 26- ▸▸



year civil war in 2009, though he rebuilt much of the Tamil-dominated north. Since his defeat he has tried stirring nationalist sentiment, blaming his defeat on Muslim and "Eelam" (ie, secessionist Tamil) voters; his implication is that the majority Sinhalese were betrayed. An observer in Colombo worries that such talk could provoke "very ugly" hostility towards minorities.

Parliamentary elections are likely in April or May. Ahead of those, the new government must judge how much to concede to Tamil allies without alienating Sinhalese. Tamils blame Mr Rajapaksa for the deaths of perhaps 40,000 northerners late in the war. Now they expect Mr Sirisena to let civilians evicted by the army return to their land. They also want sympathetic figures put in key posts in the north, and an end to surveillance and intimidation.

No war-crimes trials are looming. During the campaign, Mr Sirisena said he would not order the prosecution of Mr Rajapaksa, aware how unpopular that would be among the Sinhalese and the army. And his own spell at the war's end as (a largely toothless) defence minister may add to his reluctance. In any case, most Tamils inside Sri Lanka see reconciliation as more important than trials. (A large Tamil diaspora is more strident.)

Still, a rigorous inquiry into events at the end of the war would be valuable. From afar, the UN is already conducting one and will now seek the access to the country it has been denied. Sri Lanka could improve on its own "Lessons Learnt and Reconciliation Commission", which whitewashed the war crimes. Someone should probe persistent rumours about mass graves under army-controlled land in the north.

Amid the political drama, Pope Francis arrived on January 13th. Christians make up only 7.4% of the population, yet he drew large crowds, telling Sri Lankans that confronting wartime atrocities would help reconciliation. In Colombo, the capital, he called for the "pursuit of truth, not for the sake of opening old wounds, but rather as a necessary means of promoting justice, healing and unity". The idea of a South African-style truth and reconciliation commission could be resurrected.

Other foreigners wonder whether foreign policy will be redirected. Sri Lanka's diplomatic and economic ties to China are deep: in September President Xi Jinping visited and promised many development projects, adding to an estimated $6 billion or more in loans already dispensed. India dislikes the chumminess, all the more furiously after spotting a Chinese navy submarine twice visiting Colombo. If Mr Sirisena now signalled warmer ties with India, that would also please Western powers wary of China's regional influence. On several fronts, Sri Lanka's new rulers have much to change. ■

Central Asia and Russia's crisis

Contagion

BISHKEK

As the rouble plunges, Central Asia feels the pain

EVEN in the fat years, when Russia's oil-fuelled economy guaranteed her son a job, Enjegul Kadyraliyeva struggled to survive on the dollars he sent home to her in Kyrgyzstan. Now she fears she will have to feed her grandson on the loose change she earns selling dried yogurt balls and lollipops on the pitted streets of Bishkek, Kyrgyzstan's capital.

Russia's economic crunch and a falling rouble—a consequence, exacerbated by economic mismanagement, of sharply lower global oil prices—worry millions of Central Asians who depend on relatives working in the former imperial power to send money home. According to the World Bank, remittances are equivalent to a third of GDP in Kyrgyzstan and almost half in Tajikistan. As the Russian currency sinks, the amount guest workers are able to remit, usually in dollars, falls too. Remittances to Uzbekistan fell by 9% in the third quarter of 2014 compared with a year earlier, according to central-bank statistics in Russia. One analyst believes remittances to Tajikistan are a fifth lower than a year earlier.

Regional growth has been revised downwards again and again in recent months. Central Asian currencies have also fallen. On January 1st Turkmenistan, a secretive state that is rich in gas, devalued the manat by 19%. Thanks partly to weak exchange rates, Kyrgyzstan and Tajikistan, the two poorest post-Soviet countries, face double-digit inflation. The rouble, admittedly, has fallen much further—by half in the past year. That makes Central Asian goods uncompetitive in Russia, the largest market for most of the region's five economies. Uzbekistan's car exports to Russia are 35% lower than a year ago. A Tajik selling imported nuts and dried fruit in Moscow says his profit margins have gone.

As for Central Asian labourers in Russia, some of their leaders expect about a quarter to return home. The prospect of hundreds of thousands of unemployed young men flooding these weak states should terrify Central Asia's graft-prone governments, which do little to create jobs and rely on emigration to ease social pressures. In 2009, in the previous financial crisis, remittances to Kyrgyzstan fell by 28% and men returned home. That set the scene a few months later for the violent overthrow of the country's elected president-turned-dictator, Kurmanbek Bakiyev.

Yet despite the obvious risks of being yoked to the Russian economy, Kyrgyzstan is rushing to strengthen ties with Russia by joining the Eurasian Economic Union (EEU), an intended counterweight to the European Union. Dominated by Russia, the EEU is a customs union of former Soviet states whose rules came into effect on January 1st. Even Kyrgyzstani officials expect the country's membership—to be finalised by May—to double unemployment. Aktilek Tungatarov, head of the International Business Council, a business lobby in Bishkek, says: "People are very anxious about the upcoming integration. Our leaders cannot explain what the benefits are." Central Asian businesses say it will continue to be hard to break into the Russian market, while many Central Asians think the union is an attempt by President Vladimir Putin of Russia to reinstate the Soviet Union, in effect. Kazakhstan is a co-founder of the EEU and its only Central Asian member. But the union got off to a bumpy start. Trade with Russia fell

Is dad coming home?

Politics in Afghanistan

Cabinet joiners

KABUL

Fingers crossed, a government at last

AFTER more than three months of squabbles and infighting, President Ashraf Ghani and his chief executive, Abdullah Abdullah, have at last unveiled a list of ministers to be approved in parliament. The cabinet is the first fruit of the two former rivals' agreement in September to form a government of national unity, after a disputed presidential election. The much-mocked delay, which has led to a sharp drop in Mr Ghani's approval ratings, even encouraged the Taliban to chime in on Twitter to the effect that perhaps the cold weather in Kabul, the capital, had frozen the cabinet.

In truth, with two people at the helm, twice the number of campaign loyalists had to be placated, while seeking a reasonably broad cabinet representation by ethnicity, geography and even sex involved much horse-trading. The outcome is, on the whole, a surprisingly young cabinet largely free of the influence both of power-wielding warlords and the notoriously corrupt—both legion under Hamid Karzai, Mr Ghani's predecessor. Mr Abdullah got an almost equal share of the ministries, including the powerful Ministry of the Interior.

None of the appointed ministers has cabinet experience, though some faces are familiar. The interior minister, Nur ul-Haq Ulumi, now in his 70s, was a general in the communist era. The foreign minister, Salahuddin Rabbani, is a former ambassador and chair of the High Peace Council, which tries to negotiate with factions of the Taliban; his well-known father, a former president, was assassinated in a suicide bombing in 2011. Despite Mr Ghani's enthusiasm for equality of the sexes, only three women are among the 25 ministerial nominees. One, Najiba Ayoubi, who gets women's affairs, is a journalist and former employee of Save the Children, an NGO. The two others take information and higher education.

Mr Ghani must now get parliament to approve the cabinet. In the past, that has meant buying votes and currying favour. If Mr Ghani really is serious about battling corruption, he will have to find other means to persuade parliament. Eager though he is to start working, he may not have finished haggling quite yet.

But as soon as the cabinet is in place, Mr Ghani will at last be able to focus on getting things done. The list is long. The economy is a shambles. The drawdown of NATO troops has emboldened insurgents, who are killing Afghan soldiers and police in record numbers. And corruption remains endemic. Finding a cabinet may come to seem the easy bit.

by a fifth last year (by contrast, trade with China is growing fast). The two countries bicker over Russia's meddling in Ukraine.

Kyrgyzstan's prime minister, Djoomart Otorbaev, says there is "no alternative" to the country joining the EEU. For almost two decades, traders in Kyrgyzstan took advantage of WTO membership to import cheap Chinese goods and re-export them to other post-Soviet countries, including Russia. The EEU's barriers put an end to that. "The old model does not work any more," says Talant Sultanov, director of Kyrgyzstan's National Institute for Strategic Studies, a government think-tank. He says Kyrgyzstan has to learn how to manufacture, which will be hard.

Meanwhile, Russia wants to expand the EEU and set its stamp on it. Roughly half of Tajikistan's working-age males labour in Russia, along with as many as 6m Uzbekistanis. On January 1st Russia began requiring migrants from non-EEU members to sit Russian history and language tests. Moscow's city government has tripled the amount foreign workers from outside the EEU must pay for work permits. These are not-so-subtle hints. ■

Paternalism in South Korea

Banned praise

SEOUL

An antiquated law against communists limits free speech

BY ALMOST any measure, South Korea is a thriving liberal democracy. It has held free and fair elections since 1987. Raucous, if peaceable, protests routinely fill its streets. But one measure is far from liberal: its National Security Law punishes, with up to seven years in prison, anyone who praises the gangster regime to the north. The law was adopted in 1948 to safeguard the new country from communist infiltration from North Korea. Under Park Geun-hye, the country's conservative president who took office in 2013, 119 were arrested on suspicion of breaking the law in her first year. The continued use of such draconian powers has prompted calls from the UN to abolish them.

South Korea is still technically at war with the North, six decades after an armistice was signed. Many conservatives say that, given the unpredictability of the regime of Kim Jong Un, the law's continued use is justified. In a new-year address this week, Ms Park described it as "an essential law that ensures minimum security in the case of a unique weakness".

Shin Eun-mi pays a price for liking beer

Fresh instances continue to justify it, say its supporters. Last year Lee Seok-ki, a member of the United Progressive Party (UPP), a minor hard-left grouping, was sentenced to 12 years in prison on charges of plotting a pro-North rebellion to overthrow the government. In December the constitutional court disbanded the UPP, stripping its five other MPs of their seats in the National Assembly. The order was the first of its kind since 1958, when the South was in effect a dictatorship.

Ms Park greeted the judgment as a "historic decision that strongly protects liberal democracy". Few true progressives have any sympathy for Mr Lee's nastier views; he helped rig his own party's elections and tried to purloin confidential military documents. Yet it is hard to see how he poses a real threat to national security either. And the UPP was one of the few political groups actively promoting peaceful reunification—supposedly a national tenet.

The triumph of vigilance over free speech has tended to damage the cause of the South's real progressives. They are often vilified as *jongbuk*, or pro-North sympathisers, for opposing the conservative order. Last week an American born in South Korea, Shin Eun-mi, was deported for allegedly praising North Korea during a lecture tour about her visits there. She riled conservatives by saying that North Korea's beer tasted good, that its rivers were clean and that its people were warm-hearted—hardly controversial propositions to most visitors to the North. Though Ms Shin claims no political motive, she was joined on her tour by Hwang Sun, a former leftist politician who gained notoriety for giving birth by Caesarean section in Pyongyang, the North's capital, on the anniversary of the founding of its Workers' Party. Ms Hwang was arrested this week for praising the North Korean regime.

Ms Shin's travelogue was even listed as recommended reading by the South's ministry of culture as recently as 2013. It is now being removed from libraries. At times her views on the North come across as naive. Yet such accounts also help to show a more human, even humdrum, side to the North Korean monolith than most South Koreans hear about. ■

Coup-politics in Thailand

Yingluck in the dock

An ousted prime minister faces impeachment. Is it for show?

LAST year many thousands of red-shirted protesters gathered in Bangkok's streets to back the prime minister, Yingluck Shinawatra. In May she was overthrown in an army coup. And on January 9th only a handful of her supporters risked the wrath of the ruling junta by gathering outside the rubber-stamp parliament where impeachment proceedings against her had begun. Ms Yingluck can expect a five-year ban from politics, and perhaps eventually a jail sentence, if the National Legislative Assembly (NLA) finds her guilty of corruption and negligence during her three years in office. Her impeachment risks upsetting the delicate calm that has prevailed in Thailand since the coup.

Yingluck greets her impeachers

The focus of the hearings, which may last several weeks, is a hare-brained and hugely costly rice-subsidy programme that aimed to boost the incomes of poor farmers. Their votes had contributed to a parliamentary landslide for Ms Yingluck's party, Pheu Thai, in 2011. Her government pledged to pay farmers twice the market rate for their crop, hoping to recoup the costs by hoarding stockpiles in an effort to push up prices internationally. Farmers piled fertiliser on to their fields; gangs sold rice to the government that was smuggled in from Cambodia and elsewhere; and exports collapsed as international buyers found cheaper supplies in India and Vietnam. At one point Thailand's warehouses held 18m tonnes of rice, equivalent to about half the annual global trade in the commodity; losses to the exchequer may amount to over $15 billion, the junta says.

The scheme was plainly a disaster. But in truth Ms Yingluck's impeachment has more to do with long-running efforts by Bangkok's royalist elites to dismember Pheu Thai—and in particular to eradicate the influence of Yingluck's brother, Thaksin Shinawatra, a populist former prime minister who was deposed by the army in 2006 but who still dictates the party's policies from self-imposed exile in Dubai. Thaksinites have long claimed that going after Ms Yingluck for corruption targets them unfairly. The legality of impeaching a prime minister who has already left office is also questionable, and it does not help that the impeachment process is based on a constitution that the army dislikes and has suspended.

The hearings are a sideshow for a junta that knows they carry some risk for it. For all its oppressiveness and self-interest, the junta has wanted to appear conciliatory since seizing power eight months ago. Its representatives hold just over half of the seats in the NLA (it handed the rest to the Bangkok establishment) and many seem not to favour Ms Yingluck's hounding, however much they may dislike the Shinawatra clan. The army presumably has a higher priority, that of preserving order—and its own influence—in the royal succession that will follow the death of King Bhumibol, Thailand's ailing 87-year-old monarch. Impeaching the now-powerless Ms Yingluck, and thus further inflaming her red-shirted supporters, could complicate this task.

Yet for the time being the threat of impeachment is useful to the generals. It is probably helping to placate Thailand's traditional ruling classes, who may well consider mounting anti-coup protests if they feel their interests are being ignored. Furthermore, Mr Thaksin's camp has lately asked Pheu Thai supporters to comply with the generals' request to abstain from political activity, leaving some hardliners feeling abandoned. Rumours abound that Mr Thaksin is quietly negotiating with the generals, presumably in order to get Ms Yingluck off the hook but perhaps also to safeguard that part of his immense fortune that is still in the country. Pavin Chachavalpongpun, a Thai academic at Kyoto University, thinks the government may try to string out the hearings as a vexation and a bargaining chip.

Siamese twins

That this strategy could bear fruit says much about Pheu Thai's failure to outgrow the grip that Mr Thaksin holds on the party. Only a very small number of party bigwigs seem to have what it takes to build bridges with Bangkok's powerful elites; Chadchat Sittipunt, an engineering professor and briefly Thailand's transport minister, is probably among them. But on the whole it is remarkable how little thought many in Pheu Thai have put to life without Ms Yingluck, let alone Mr Thaksin, one political scientist thinks.

Impeaching Ms Yingluck will require three-fifths of NLA members to vote in favour. Those who do not favour impeachment could still carry the day, if only because ongoing efforts to redraft Thailand's constitution promise a subtler and more durable means of limiting Pheu Thai's power. Proposals already in circulation suggest the junta is likely to plump for a lower house elected by proportional representation and by a nominated senate. That ought to keep out any populist party—or enable any government that overreached itself to be turfed out. Another clause could allow for an army man to stay on as prime minister, as was the case throughout much of the 1980s. Hobbling the Thaksinites in this manner would require patience—a virtue that Thai politics admittedly lacks. ■

Banyan | The Hindutva rate of growth

Narendra Modi finds his economic ambitions jeopardised by his party's ideology

ON SHOW this week was the Narendra Modi much of the world cheered for when he became India's prime minister last year: dynamic, reformist, business-minded, pragmatic. Presiding over the "Vibrant Gujarat" summit in that state's capital, Gandhinagar, he boosted his "Make in India" campaign to turn the country into a manufacturing hub. The two-yearly summit was an occasion to show off his success in developing Gujarat in his 13 years as its chief minister. The foreign VIPS on hand gushed. John Kerry, America's secretary of state, hoped the Gujarat experience could be "extrapolated" to the rest of India. Mr Modi, he said, was a "visionary prime minister".

It seems churlish and irrelevant to recall that a decade ago America refused Mr Modi a visa because of his failure to prevent appalling communal violence, mostly directed at the Muslim minority, in Gujarat in 2002. Those who raised the pogrom during last year's election campaign were seen as missing the point. The bloodshed was in the past; Mr Modi campaigned not as a sectarian firebrand, but as an energetic, honest and strong leader who could whisk India out of the decade-long doldrums of rule by a jaded and corrupt Congress party. That, most believe, is why his party, the Bharatiya Janata Party (BJP), won the election.

Mr Modi's problem is that not all in the BJP seem to see it that way. It is the party of India's centre-right—socially conservative and economically liberal—but it is also the political wing of the Rashtriya Swayamsevak Sangh (RSS), a mass organisation inspired by "Hindutva", or Hindu nationalism. Some BJP members are driven by this ideology as much as by Mr Modi's modernising zeal. Indeed, they are already proving an obstacle to it.

Even as he was talking to the great and the good, the BJP was grappling with what to do about one of its MPS, Sakshi Maharaj, who this month said that every Hindu woman should have at least four children "to protect the Hindu religion". Not only does this flout government policy; it panders to an atavistic fear that Hindus are producing fewer children than Muslims. And he is not alone. A party colleague this week went one better and advocated five children per Hindu woman.

When the BJP was last in power nationally, from 1998-2004, it was at the head of a broad coalition. It faced core Hindutva demands, to end the special constitutional status of the Muslim-majority state of Jammu & Kashmir; to introduce a federal ban on cow slaughter; to do away with the separate personal law that applies to Muslims; and to build a temple in the northern city of Ayodhya over a mosque demolished by Hindus who believed it to trespass on a Hindu holy site. At that time the BJP had to forsake such ideas as politically impracticable. Today, however, the BJP government can govern without the votes of "secular" parties in the lower house of Parliament. The RSS is enjoying a resurgence, and its ideologues have the wind at their backs.

Last month Parliament was stalled by a stand-off over religious conversion. The BJP argues that the issue merely provided a handy pretext for Congress obstructionism, but its activists have made it a topic of debate. At issue is a law that would ban "forced" religious conversion. Their passion stems from the notion that India—Hindustan—is in essence a Hindu country. It has become religiously diverse not through immigration (as have the United States and Europe), but through conversion. Hindu-nationalist historians argue that Hindus were lost through coercion or bribery. Conversion under the Mughals was at swordpoint, while Christians bought believers. And, the ideologues argue with little evidence to back the claim, it is still going on. Bizarre claims are made about "love *jihad*"—a Muslim campaign to woo Hindu women into abandoning their birthright through marriage. And Christian missionaries still proselytise. So Hindu activists are arranging "reconversion" ceremonies for Indian Muslims and Christians—though since traditionally you are born a Hindu rather than become one, and any proposed law would not be meant to block Indians from returning to their supposed Hindu roots, it is called *ghar wapsi* or "homecoming".

The whole idea is offensive and rather threatening to Indian Muslims and Christians, and so is highly contentious. Mr Modi has reportedly tried to rein in the hardliners and to persuade them to get with the economic programme. But he has not spoken out in public on the issue, even though it has become a political distraction and, in Parliament, an actual hindrance—and that seems odd. Few doubt the election victory last year was a personal one: he is more popular than his party. Surely that should give him the right to crack the whip?

His reticence may be tactical. When Mr Modi was shunned internationally after 2002 and hemmed in by a Congress-led government in Delhi, it was the BJP's right wing and RSS activists that stayed with him and provided the platform for his campaign. He is in their debt, and also needs them to keep getting the vote out in state and national elections. But another explanation for Mr Modi's silence is that he agrees with them, if not with their methods. He, after all, is an RSS veteran, steeped in its teachings.

Notes on nationalism

To his Western fans, that would make Mr Modi rather like two of his contemporary Asian leaders. One is China's Xi Jinping. From a Western perspective Mr Xi is pursuing many admirable aims—rooting out corruption and tackling difficult economic reforms. What a pity that this is accompanied by intensified political repression! The other is Mr Modi's friend Shinzo Abe of Japan. Again, foreigners like the promised economic reforms but wish he would not pander to the Japanese right as it tries to airbrush history. But maybe, for all three men, the contradictions the West sees do not exist. They all want to make their countries great again. Economic reform is the means to a nationalist end; and, for Mr Modi, nationalism is of the Hindu variety. ■

Ethnic minorities

Don't make yourself at home

BEIJING

Uighurs and Tibetans feel left out of China's economic boom; ethnic discrimination is not helping

CHINA is urbanising at a rapid pace. In 2000 nearly two-thirds of its residents lived in the countryside. Today fewer than half do. But two ethnic groups, whose members often chafe at Chinese rule, are bucking this trend. Uighurs and Tibetans are staying on the farm, often because discrimination against them makes it difficult to find work in cities. As ethnic discontent grows, so too does the discrimination, creating a vicious circle.

Breaking this circle is crucial to China's efforts to defuse unrest in Xinjiang, Tibet and Tibetan-inhabited areas of other provinces, which collectively account for nearly one-third of China's land area. In Xinjiang, Uighur grievances have triggered numerous outbreaks of violence. On January 12th, in what appeared to be the latest such example, six people were shot dead after allegedly attacking police in Shule, a town near China's border with Central Asia. Uighurs are a Turkic-speaking, mostly Muslim, minority who number about 10m in Xinjiang. In 2000, 80% of them were farmers; ten years later 83% of them were.

There has been far less violence in Tibet, but separatism in the region is no less a headache for China's leaders. There are more than 6m Tibetans in Tibet and four neighbouring provinces. The proportion of farmers fell only slightly between 2000 and 2010, from 87% to 83%. Some prefer to stay in the fields. But many others feel excluded from the benefits enjoyed by the ethnic Han Chinese, who make up more than 90% of China's population. Neither Uighurs nor Tibetans enjoy ready access to the job market that has drawn tens of millions of Han to cities in recent years. They are unwelcome, and they know it.

In 2010 about 1% of Tibetans had settled outside the provinces that encompass their homeland, and less than 1% of Uighurs had migrated from Xinjiang, according to census data compiled by Ma Rong of Peking University. Many of the migrants are either officials or in government-sponsored education programmes. The rate of voluntary exodus from Xinjiang and Tibetan areas is slowing considerably.

Part of the problem is linguistic. Uighurs and Tibetans brought up in the countryside often have a very poor grasp of Mandarin, the official language. The government has tried to promote Mandarin in schools, but has encountered resistance in some places where it is seen as an attempt to suppress native culture. In southern Xinjiang, where most Uighurs live, many schools do not teach it.

But discrimination is a big factor, too. Even some of the best-educated Uighur and Tibetan migrants struggle to find work. Reza Hasmath of Oxford University found that minority candidates in Beijing, for example, were better educated on average than their Han counterparts, but got worse-paying jobs. A separate study found that CVs of Uighurs and Tibetans, whose ethnicities are clearly identifiable from their names (most Uighurs also look physically very different from Han Chinese), generated far fewer calls for interviews.

Government programmes help some Uighurs, Tibetans and other minorities get a better education; affirmative-action policies can boost their chances of going to university. One scheme, known as the Xinjiang Class, sends thousands of Uighurs as well as Han Chinese from Xinjiang every year to other parts of China to complete their schooling. But it also encourages them to return to Xinjiang to work among Uighurs. Official figures suggest that 50% end up going back to Xinjiang. Timothy Grose of Rose-Hulman Institute of Technology in Indiana found that most he interviewed would have preferred not to.

One 25-year-old university graduate from the Xinjiang Class describes her months of difficulty in getting a job in Beijing, before landing one at a foreign-owned company. A large Chinese IT firm rescinded a job offer without explanation on the Friday before she was to start work. Another job interviewer then told her she should go back to Xinjiang. Mr Grose reports that some Xinjiang Class members are put off jobs by being told that they cannot be provided with halal meals.

A rash of terrorist incidents involving Uighurs has not helped. In September the central government stressed the importance of "urban ethnic work", telling city officials not to adopt a "closed-door" policy to minorities, but also not to take a "laissez-faire attitude". James Leibold of La Trobe University writes that such confused instructions reflect "a growing realisation that mingling might increase ethnic tensions and conflict".

The government has made token efforts to create job opportunities for Uighurs on the coast, sending busloads of them to work in factories. But employers are wary. In June 2009 in the southern city of Shaoguan in Guangdong province, a brawl between Uighur and Han Chinese workers at a toy factory left two Uighurs dead and dozens injured. This fuelled ethnically charged riots that erupted a few days later in Urumqi, the capital of Xinjiang, in which about 200 died.

Just being a Uighur can draw police attention. In November, while President Barack Obama and other world leaders were in Beijing for a summit, police tried (unsuccessfully) to persuade the landlord of the Xinjiang Class graduate to evict her, saying Uighurs were not welcome. "Sometimes I feel alone," says the former student. "I feel like I don't know who I am; where I belong." ■

Macau

Chips down

MACAU

Struggling with a gambling addiction

THE fire that sent clouds of smoke billowing from the roof of the Galaxy casino complex on Macau's glitzy Cotai strip on January 8th had an ominous look about it. Since the tiny enclave's gaming industry, once a monopoly, was opened to competition in 2002, it has rapidly become the world's biggest. It is now seven times larger than that of Las Vegas, thanks mainly to visitors from the Chinese mainland where betting is banned. The boom has given the sleepy former Portuguese colony the world's fourth-highest GDP per head. Nearly half its output is linked to gaming.

Yet Macau's "casino capitalism" is, like the Galaxy's unfinished roof, looking charred. Having risen remorselessly, betting revenues declined by 2.6% in 2014. In December they plummeted by 30% year-on-year. The economy, too, shrank in the third quarter. The downturn will be hard to reverse.

China's economic slowdown is one reason for the end of the boom. A casino attendant says a smoking ban has also deterred punters. (Around him, many seats are empty; under-employed croupiers stare vacantly, while a handful of smokers puff forlornly in a corner room.) But the biggest factor is China's sweeping crackdown on corruption. Many of the high-rollers from the mainland gamble with the proceeds of dodgy deals. Macau's government has supported the crackdown by curbing transactions involving China UnionPay, a state-owned firm whose payment cards are widely used on the mainland and at Macau's casinos (often to circumvent the mainland's currency controls). Visas have been harder to obtain. Chinese big-spenders, fearful of being spotted by anti-corruption officers, have grown wary of Macau.

China's president, Xi Jinping, is among those who say Macau should diversify. That would make sense to some of Macau's 630,000 people, who see an irksome side to their city's popularity. The city attracts about 30m visits a year, most of them from the mainland (Hong Kong receives well over 50m, but it is far larger). Demand from mainlanders has pushed up property prices to increasingly unaffordable levels for many Macanese, exacerbating inequality and stoking discontent. But finding new money-spinners will be difficult, as Macau has little manufacturing and none of Hong Kong's prowess in trade and finance.

Many are still betting on gambling. Eight new casino complexes are in the works, promising almost to double the supply of hotel rooms on the strip. They might attract more visitors of the ordinary kind, who would try out the casinos but also spend money on other attractions. As licence renewals loom, Macau is forcing operators to invest in non-gaming activities, such as conferences and shows. But opening dates for new facilities are being delayed. As any hardened gambler knows, it can be difficult to kick the habit. ■

Tobacco

Butt out

BEIJING

Tobacco leaf is the last farm product to be relieved of price controls

WHEN China started opening up in 1978, its first economic reforms included raising the prices it paid to farmers for their crops. The decision, not surprisingly, led to bumper harvests. Controls on procurement prices for most farm products were eventually scrapped—but not on tobacco leaves. Only this year, nearly four decades later, will the government at last stop fixing their price.

Even as market reforms swept the countryside under Deng Xiaoping, the government kept its grip on the hugely lucrative tobacco industry. Tobacco companies remained exclusively in state hands. Prices of the leaf were set in order to assure farmers of an income and dissuade them from switching to other cash crops. Local governments wanted to boost tobacco farming, not least because of the taxes it yielded. Centuries-old taxes on every other crop were abolished in 2006, but not those on tobacco. The southern province of Yunnan derives nearly 80% of local revenue from the crop. The cigarette industry stuffs the central government's coffers too, accounting for over 7% of its revenues.

Soaring demand for tobacco products has helped to keep the system (sort of) working. China's 5m tobacco farmers now produce more than 3m tonnes of tobacco a year, 43% of the world's total—more than the combined output of the next nine tobacco-producing countries. China is home to a third of the world's smokers, most of them men. Thanks to low sales taxes, cigarettes have become more than twice as affordable since 1990.

But even in the tobacco industry, command economies have their weaknesses. Yields per hectare have increased more slowly than for other crops, partly because government incentives have unintentionally spurred tobacco-growing on land unsuited to the leaf. Because sales are assured and prices set, farmers produce too much low-quality tobacco, says Teh-Wei Hu of Berkeley School of Public Health in America. Though Chinese leaves are on average cheaper per kilogram than American and Brazilian varieties, they are also inferior.

In theory, abandoning price controls should encourage large-scale farming and help improve quality, says Mr Hu. But it will be hard for tobacco to find a market price because there is still only one legitimate buyer: the Chinese National Tobacco Company. Prices will remained distorted by production quotas and the tax on crop sales. (The leaf accounts for only a small proportion of the price of a cigarette, so smokers will notice little difference.) Ultimately, tobacco will not find its real price until the government butts out of the market.

The Economist

SPECIAL REPORT
ENERGY AND TECHNOLOGY
JANUARY 17th 2015

Let there be light

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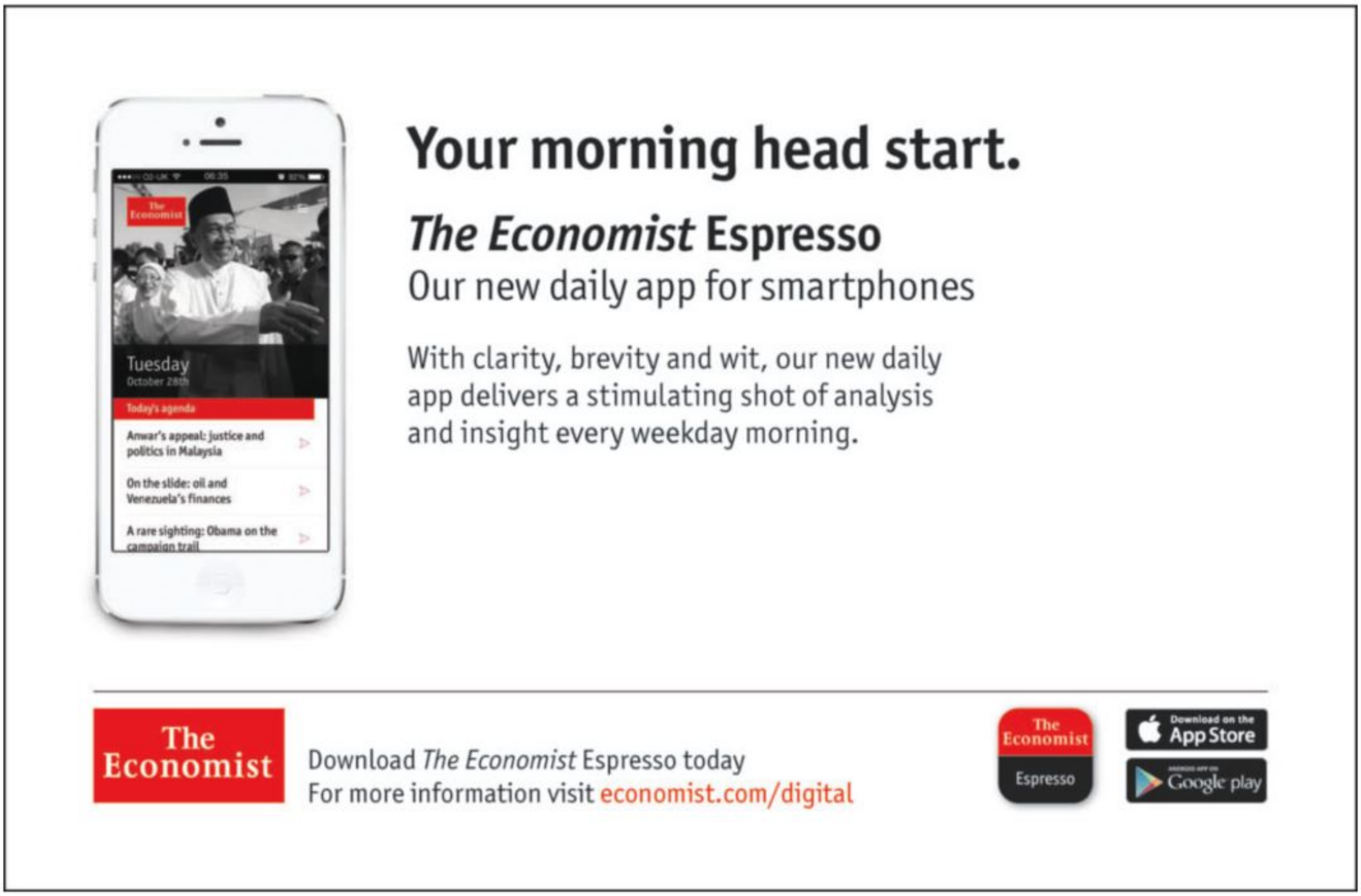

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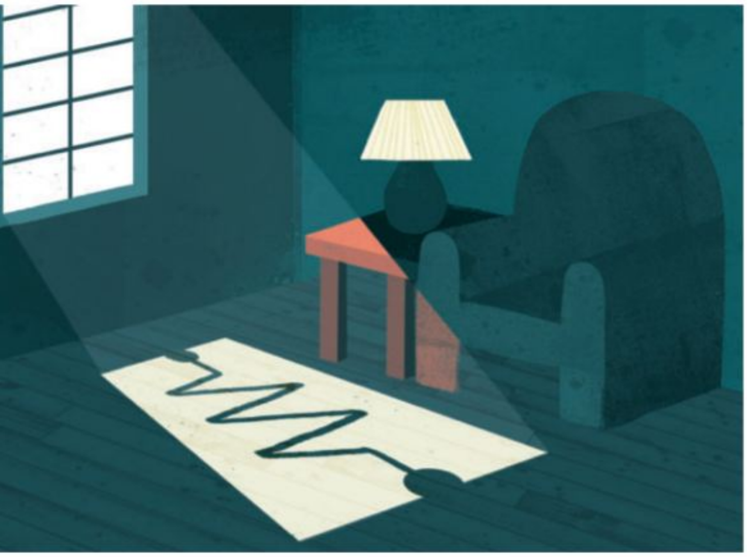
Let there be light

Thanks to better technology and improved efficiency, energy is becoming cleaner and more plentiful—whatever the price of oil, says Edward Lucas

A CAREFUL OBSERVER might note the chunky double glazing on the elegant windows and the heat pump whirring outside the basement entrance. From the outside the five-storey house in London's posh Notting Hill district looks like any other. Inside, though, it is full of new technologies that aim to make it a net exporter of power. They exemplify many of the shifts now under way that are making energy cleaner, more plentiful, cheaper to store, easier to distribute and capable of being used more intelligently. The house in Notting Hill is a one-off, paid for by its green multimillionaire owner. But the benefits of recent innovations can be reaped by everybody.



That makes a welcome change from the two issues that have dominated the debate about energy in the past few decades: scarcity and concerns about the environment. Modern life is based on the ubiquitous use of fossil fuels, all of which have big disadvantages. Coal, the cheapest and most abundant, has been the dirtiest, contributing to rising emissions. Oil supplies have been vulnerable to geopolitical shocks and price collusion by producers. Natural gas has mostly come by pipeline—and often with serious political baggage, as in the case of Europe's dependence on Russia. Nuclear power is beset by political troubles, heightened by public alarm after the accident at Japan's Fukushima power station in 2011. Renewables such as wind and solar—beneficiaries of lavish subsidies—have so far played a marginal role. The main worries were whether enough energy would be available for power generation, transport, heating, cooling and industry; and if so, whether it would cook the planet.

Now new factors are in play. Technological change has broken the power of the Organisation of the Petroleum Exporting Countries (OPEC) to keep the oil price high. Hydraulic fracturing ("fracking") and horizontal drilling have turned America into a big oil producer, with 4m barrels a day coming from sources which used to be deemed "unconventional". The boom in producing oil and gas from shale has yet to spread to other countries. America enjoys some big advantages, such as open spaces, accommodating laws, a well-developed supply chain and abundant finance for risky projects. So far it has refrained from exporting its crude oil or natural gas, but exports of liquefied natural gas (LNG) will start this year. Increased trade in LNG will create a more global gas market and greater resilience of supply, undermining Russia's pipeline monopoly in Europe. America is already exporting lightly refined oil.

An increase in supply, a surprising resilience in production in troubled places such as Iraq and Libya, and the determination of Saudi Arabia and its Gulf allies not to sacrifice market share in the face of falling demand have led to a spectacular plunge in the oil price, which has fallen by half from its 2014 high. This has dealt a final blow to the notion of "peak

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ACKNOWLEDGMENTS

In addition to the people cited in this report, the author would particularly like to thank Simon Daniel of Moixa, Edward Osterwald of CEG Europe, Laura Sandys MP and Magda Sanocka of the IEA; also Thomas Baker, David Gee and Frank Klose of BCG; Satish Kumar, Dave Nichol and Cass Swallow of Schneider Electric; David Walker, Will Gifford and Peter Vaessen of DNV; Tim Emrich and Jonathan Gaventa.

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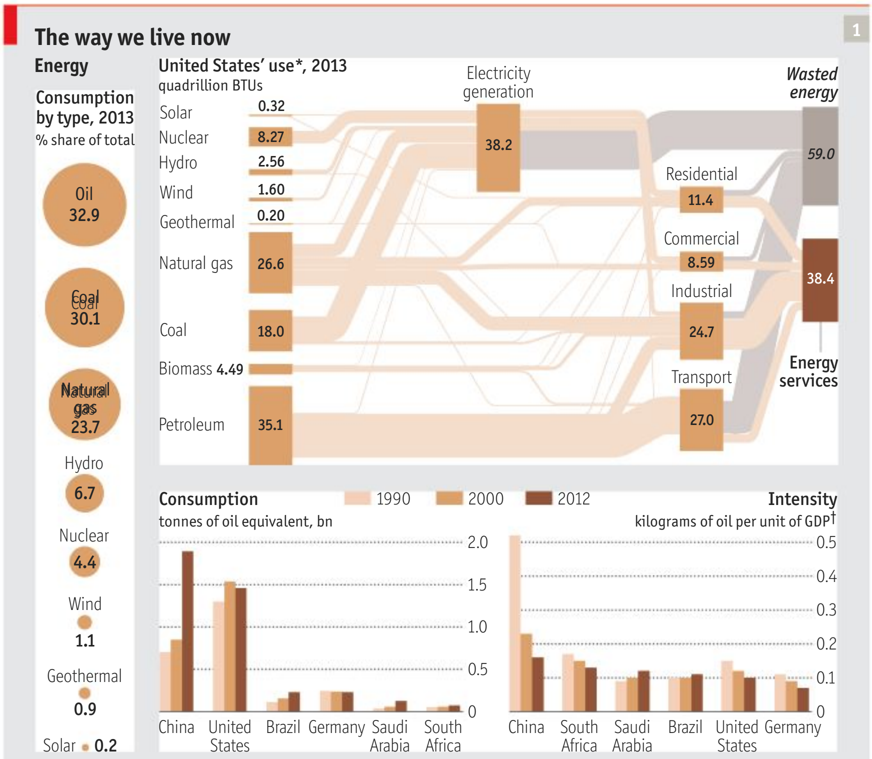


Sources: BP; Sanford C. Bernstein; LLNL; Enerdata
*Estimate †Purchasing-power parity

oil". There is no shortage of hydrocarbons in the Earth's crust, and no sign that mankind is about to reach "peak technology" for extracting them. But the fall has created turmoil in financial markets as energy companies lay off workers and cut or delay investment projects.

The implications are more complicated than the headlines suggest. For a start, low prices do not instantly cause supply curbs or make investment dry up. Even costly projects do not stop pumping when the oil price falls. Fracking is a small-scale business. New projects can be halted quickly and restarted when the price picks up. American frackers are now the world's swing producers, reacting to price fluctuations in a way that was once the prerogative of the Saudis. On a 15- to 25-year time horizon, today's slide in the oil price needs to be set against the likely long-term trend. Futures markets are betting that the oil price will be back to $90 per barrel in the early 2020s.

For now, though, low oil prices put money in consumers' pockets and give a bit of breathing space to governments, making it easier to cut fossil-fuel subsidies (and perhaps even tax carbon emissions). In 2013 some $550 billion was spent on subsidising fossil fuels, a policy of extraordinary wrongheadedness that favours the rich, distorts economies and aggravates pollution.

A bigger question on many minds is the effect of rock-bottom oil prices on the shift towards low-carbon energy. Solar, wind and other renewables have recently benefited from unprecedented investments: an average of $260 billion a year worldwide over the past five years. Long, and wrongly, decried as mere boondoggles, they have begun to show real commercial promise in places as diverse as India, Hawaii, and parts of Africa where the climate is favourable, costs are low and other sources of power are expensive. Renewables capacity is rising even as subsidies are falling. China, for example, has already installed nearly half the 200 gigawatts (GW) of wind power it had been planning for 2020, so it is sharply cutting back the subsidies it introduced in 2009.

But the relationship is not always straightforward. Renewable electricity mainly competes with gas- and coal-fired power stations, not with oil. In North America, low oil prices may, paradoxically, lead to higher natural gas prices. Less fracking means there will be less of the associated gas that is produced along with shale oil. More broadly, much of the support for renewables has been political, and there is little sign that this is changing. Worries about climate change continue to ensure that clean energy enjoys strong political support in many developed countries. Whereas shares in oil companies have in recent months fallen along with the price, the S&P Global Clean Energy Index, which covers the industry's 30 biggest listed companies, has barely budged.

The economics—and particularly the whopping subsidies of the past decade paid out in countries such as Germany and Britain—remain contested. Solar and wind are intermittent, so they are truly useful only if the power they produce can be stored; otherwise they need back-up capacity, typically from fossil-fuel sources. Dieter Helm, an energy expert at Oxford University, says that subsidies for primitive green technology, such as the current generation of solar panels, have been a "colossal mistake". It would have been much better, he argues, to invest in proven technologies such as electrical interconnectors (linking Britain and Norway, for example) and support research into new kinds of solar power, such as films that can be applied to any outside surface and technologies that use a wider chunk of the spectrum.

Bits of the green-energy world are wilting under the impact of low oil prices. Some biofuels have become less attractive. The same is true for electric cars, which currently make up less than 1% of America's light-vehicle fleet. Bloomberg New Energy Finance reckons that with petrol at $3.34 a gallon ($0.87 per litre), that share could rise to 9% by 2020. With petrol at $2.09, it would go up to just 6%. At the same time countries and companies thinking of switching from oil-fired power generation to renewables may reconsider. Saudi Arabia, for example, was planning to invest $110 billion in 41 GW of solar capacity by 2032, but may now want to think again.

Take the long view

Yet the long-term trend is clear. In particular solar electricity, and ways of storing it, are getting ever cheaper and better, as this special report will show. Sanford C. Bernstein, a research firm, sees "global energy deflation" ahead. Most of the investment decisions in the fossil-fuel industry are taken a decade or two ahead. The International Energy Agency (IEA), an intergovernmental organisation often criticised for its focus on fossil fuels, says the world will need to stump up about $23 trillion over the next 20 years to finance continued fossil-fuel extraction, but the prospect of much cheaper solar power and storage capabiliy may put investors off. The story may be not so much what falling oil prices mean for clean energy than what the prospect of clean energy will mean for the oil price.

Old energy industries are changing too. Gas will become more abundant and easier to trade. Even coal, the most widely used and so far most polluting fossil fuel, is not inherently dirty. It does not need to be burned but can be cooked instead to produce methane, which can then be used as a fuel or in petrochemicals. Modern coal-fired plants, though pricey, are far cleaner than the belching monsters of the past. The heat they produce is used, not wasted as in many traditional power plants. The emissions are scrubbed of the oxides (of nitrogen and sulphur) that eat away at bodies and buildings. In some projects—albeit for now on a tiny scale—the CO_2 is also captured for storage or use. Such improvements could make coal as relatively clean as other fossil fuels, though they make commercial sense only if the rules are tilted in their favour. But if the price of such techniques comes down and the cost of pollution goes up, clean coal could be competitive.

Nuclear power, in theory, is a source of cheap, dependable, constant electricity. In practice it is too costly for private investors to back without government guarantees, and its perceived danger makes it unpopular in some European countries and in Japan. One of several flaws in Germany's *Energiewende*—supposedly a big shift to green technology—was the hurried abandonment of the country's nuclear capacity. Besides, many of the world's existing nuclear power stations will have to close in the coming two decades. Barring a political shift or a technological breakthrough—perhaps in small, mass-produced nuclear plants—it is hard to see the fortunes of nuclear energy reviving.

Demand for energy is likely to hold up for some time yet, mainly thanks to rapid economic growth in emerging economies. The IEA predicts that over the next 25 years it will rise by 37%. Yet increasing efficiency in energy use and changes in behaviour have meant that the hitherto well-established link between economic growth and energy use is weakening.

More for less

America's economy, for example, has grown by around 9% since 2007, whereas demand for finished petroleum products has dropped by nearly 11%. In Germany household consumption of electricity is now lower than it was in 1990. Global demand used to rise by 2% a year, but the rate is slowing. Even emissions in China, the world's largest and dirtiest energy consumer, may peak by 2030, thanks to huge investments in new clean-coal power generation, nuclear and renewable energy and long-distance transmission lines. Simon Daniel, an energy expert, sees two conflicting trends: on one hand greater efficiency, local production and storage, on the other increased consumption from the billions of new devices that will be hooked up to the "internet of things".

On current form the emissions from oil, gas and coal would, on most models, make it impossible to keep the rise in global temperatures below 2°C by the year 2100; the most likely outcome would be a 4°C rise, which has prompted calls for most of the world's remaining hydrocarbons to be left in the ground. The IEA estimates the investment needed for "decarbonising" future electricity production alone at an astounding $44 trillion. The best hope of avoiding that much warming is a huge increase in energy efficiency.

One big component of that task will be to adapt the existing stock of buildings. Amory Lovins, one of the foremost prophets of energy efficiency and founder of Rocky Mountain Institute, a think-tank and consultancy based in Colorado, believes that the scope for improvement remains huge. He has long preached that proper building design and energy storage can eliminate the need for air-conditioning and space heating in most climates, and illustrates this by growing bananas in his own house, on a windswept mountainside in Colorado where winter temperatures can drop to −44°C. Eliminating the heating system for his house, he says, saved more money than he spent on insulation and fancy windows. His optimism is slowly winning converts.

Despite all the obstacles, pretty much all the technology the world needs for a clean, green future is already available. As A.T. Kearney, a consultancy, notes in a recent report for the World Energy Council, a think-tank: "Energy-efficiency potentials combined with renewable-energy sources and shale-gas potentials provide an abundance of energy that can be made accessible with currently available technologies."

Transmission costs for electricity are plunging, thanks to solid-state technology, which makes efficient direct-current circuitry safer and more flexible. Power grids which were previously isolated can now be connected: one audacious plan involves a 700-mile, £4 billion ($6 billion) link between Britain and Iceland. Such projects are costly up front, but offer big long-term savings from cheaper power, better storage and increased resilience.

More effective management of supply and demand also offers scope for big savings, as this special report will show. Sensors can now collect vast amounts of data about energy use, and computer power and algorithms can crunch that information to offer incentives to customers to curb consumption at peak times and increase it when demand is low. At the same time business models which can turn a profit from thrifty energy use are developing, and capital markets are waking up to their potential.

That splendidly energy-efficient house in Notting Hill demonstrates just how much can be done right now, even if it does not yet come cheap. Its owner, Michael Liebreich, founded a business called New Energy Finance, which he sold to Bloomberg, a financial-information company, in 2009. He has spent tens of thousands of pounds on making his home thrifty, resilient and productive.

The house is no stranger to energy revolutions. In 1865 its original builders installed a state-of-the-art delivery and storage system: a coal hole in the pavement, sealed by a handsome cast-iron hatch. Gas and then electric lighting, central heating and hot water came later. But the revolution under its current owner is the biggest yet. Despite the airtight insulation the rooms feel airy. Specially designed chimney cowls suck stale, moist air from the house while a heat exchanger keeps the thermal energy indoors.

The house now requires remarkably little input of energy. Gas and electricity bills for a dwelling of this size would normally run to at least £3,500 ($5,500) a year, but once everything is in place the owner expects not only to spend nothing but to receive a net payment for the electricity he produces. On the roof is a large array of solar panels which deliver two kilowatts (kW) of electricity on sunny days. Another source of power is a 1.5kW fuel cell in the former coal bunker. It runs on gas, with over 80% efficiency—far more than a conventional power station or boiler. The electricity from these two sources powers the household's (ultra-frugal) domestic appliances and its low-energy lighting, as well as a heat pump (a refrigerator in reverse) that provides underfloor heating. A water tank stores surplus heat. Spare electricity is fed back into the grid.

Mr Liebreich does not claim that his house is easily copied, but he insists that through "thinning mist" the future is visible. "The only things that are inherently costly are the thermodynamic process and resource depletion—for everything else costs have come down, are coming down and will come down in future," he says. In short, most of the forces changing the energy market are pushing in the right direction. ■

Renewables

We make our own

Renewables are no longer a fad but a fact of life, supercharged by advances in power storage

AT FIRST SIGHT the story of renewable energy in the rich world looks like a waste of time and money. Rather than investing in research, governments have spent hundreds of millions of pounds, euros and dollars on subsidising technology that does not yet pay its way. Yet for all the blunders, renewables are on the march. In 2013 global renewable capacity in the power industry worldwide was 1,560 gigawatts (GW), a year-on-year increase of more than 8%. Of that total, hydropower accounted for about 1,000GW, a 4% rise; other renewables went up by nearly 17% to more than 560GW. True, after eight years of continuous increase, the amount invested dropped steeply in 2012 amid uncertainty about future subsidies and investment credits. But thanks to increased efficiency, less money still bought more power.

Measuring progress is tricky: the cost of electricity from new solar systems can vary from $90 to $300 per megawatt hour (MWh). But it is clearly plummeting. In Japan the cost of power produced by residential photovoltaic systems fell by 21% in 2013. As a study for the United Nations Environment Programme notes, a record 39GW of solar photovoltaic capacity was constructed in 2013 at a lesser cost than the 2012 total of 31GW. In the European Union (EU), renewables, despite a 44% fall in investment, made up the largest portion (72%) of new electric generating capacity for the sixth year running.

The clearest sign of health in the renewables market is smoke-clogged China, which in 2013 invested over $56 billion, more than all of Europe, as part of a hurried shift towards clean energy. China's investment included 16GW of wind power and 13GW of solar. The renewable-power capacity China installed in that year was bigger than its new fossil-fuel and nuclear capacity put together.

Whether or not it represents good value for money in all circumstances at the moment, renewable energy has become a serious part of the energy mix. In 2013 Denmark's wind turbines provided a third of the country's energy supply and Spain's a fifth. Some worries are abating. Though power from solar and wind is intermittent, nature often cancels out the fluctuations: sunny days tend not to be windy, and vice versa.

Both forms of generation have their fans, but solar seems to be pulling ahead of wind. Wind technology is running up against the laws of physics: it is hard to see great new gains in siting, or in the design of bearings and blades. And wind turbines are widely considered unsightly and noisy. Solar panels, by contrast, can be surprisingly attractive. Instead of featuring serried ranks of black rectangles, the latest designs look like glittering autumn leaves captured in glass.

Solar flare

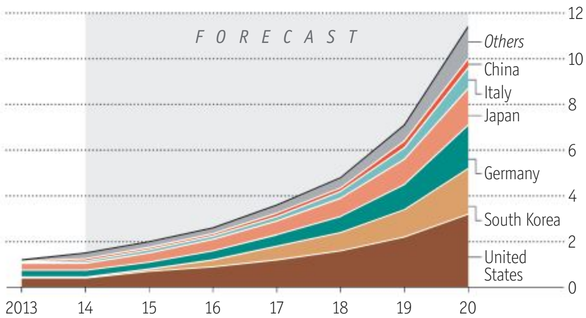
The main reason for the growth in solar energy, though, is innovation, not aesthetics. It comes in two forms. The smaller (accounting for around a tenth of existing solar capacity) is thermal storage, in which sunlight is concentrated as heat, for example in molten salt. That can be used to produce steam for power turbines. After some slack years this form of renewable energy is enjoying a renaissance.

Investment in the second, more widespread form of solar energy, electricity produced by photovoltaic (PV) cells, fell back in 2013 after ten years when average annual growth was around 50%. Yet in the same year total global capacity added in solar electricity exceeded that in wind for the first time. Solar received 53% of the $214 billion invested worldwide in renewable power that year. It still provides only a sliver of the world's energy, and even by 2020 it will make up just 2% of global electricity supply. But the pace of change is remarkable, with more solar capacity installed since 2010 than in the previous four decades.

Along with worries about pollution from other fuels, the biggest boost to solar—both in the rich and the emerging world—is its plummeting cost. In a recent report on solar electricity the IEA noted that the cost of solar panels had come down by a factor of five in the past six years and the cost of full PV systems, which include other electronics and wiring, by three. The "levelised cost" (the total cost of installing a renewable-energy system divided by its expected energy output over its lifetime) of electricity from decentralised (small-scale) solar PV systems in some

What's in store 2

Worldwide energy storage, gigawatts



Source: Bloomberg New Energy Finance

Cost apart, the biggest problem with renewables has always been storing the electricity they produce

markets is "approaching or falling below the variable portion of retail electricity prices", says the report. The IEA expects the cost of solar panels to halve in the next 20 years. By 2050, it predicts, solar will provide 16% of the world's electric power, well up from the 11% it forecast in 2010. At times of peak demand in places such as Hawaii, where electricity would otherwise come from oil-fired power stations, solar electricity produced by unsubsidised large installations is already competitive. Sanford C. Bernstein, a research firm, reckons that in the right conditions solar, measured by thermal units produced, is already cheaper than both oil and Asian LNG, despite the recent dip in the oil price.

Paint me a power station

Such forecasts are largely based on existing technologies. New solar technology, known as "third generation", stacks layers of photovoltaic material to capture a much broader section of the spectrum, including invisible parts such as infra-red. Such cells could be printed from graphene (an ultra-light form of carbon) on a 3D printer. There will no longer be a need for solar panels on rooftops. Instead, any man-made surface could be turned into a solar panel with films and paint. In a pilot project in the Netherlands, solar electricity is being generated by a newly built road. Dieter Helm, the Oxford-based energy expert cited earlier, believes that solar power will become so cheap that energy will no longer be seen as scarce.

Other forms of "distributed" generation which provide power for flexible local use and storage are also coming up fast. Domestic fuel cells, for instance, are common in energy-hungry Japan. Such fuel cells can run off the gas grid. Its pipes, notes David Crane, the boss of NRG, an American power company, are simpler, cheaper and less vulnerable to rough weather than the poles and wires of the electric grid. Households can turn their gas into electricity on the spot. That may end up cheaper and more reliable.

Some of that gas could come from waste products instead of fossil sources. America's oldest brewery, Yuengling in Pennsylvania, has installed a combined-heat-and-power (CHP) plant, fuelled by methane produced from waste, which provides 20% of the brewery's energy needs. In Ukraine, which is trying to become independent of Russian natural-gas supplies, the European Bank for Reconstruction and Development is financing a 2.25MW biogas plant at a sugar refinery near Kiev. In Britain the first self-powered sewage works came into operation in October 2014, at a saving of £1.3m ($2m) a year. And biogas now accounts for one-tenth of gas consumption in China, where 42m households turn their animal and human waste into methane.

Cost apart, the biggest problem with renewables has always been storing the electricity they produce. That gave a big advantage to incumbent power companies, which could afford large capital investments in generation and storage. For domestic consumers, the power produced from solar panels on the roof is of limited use if they cannot store it, because they still have to buy from the grid in the evening when they need it most. But if intermittent energy can be stored, its economics are dramatically improved: the cost of installing capacity remains the same but the cost per kilowatt hour shrinks.

The easiest storage is someone else's. In regimes with "net metering" rules, common in some green-minded places including 43 American states, the energy utility is obliged to buy renewable power from small-scale producers at the same price at which it sells its own electricity. That is a startlingly good deal for the producer, less so for the company. But it applies only to small amounts of power and is unlikely to last.

Meanwhile breakthroughs in storage are creating other options. Businesses and households can store cheap, home-generated electricity as thermal energy. An American company called Ice Bear sells a device which makes ice at night with cheap electricity (and in cooler temperatures), then uses it to cool air in the daytime, saving energy and money.

All these technologies are becoming cheaper and more practical, and in some countries are boosted by generous subsidies. Germany rebates 30% (an average of €3,300, or $4,000) on the cost of a solar-plus-battery household system, and offers low-interest credit for the rest. California has legislation in place under which a third of its energy must come from renewable resources by 2020. The state has told its three large utilities to provide 1.3GW of storage capacity. Around 85MW of this is likely to be used by small providers with solar panels.

Bloomberg New Energy Finance (BNEF) has done the sums for a German household planning to install a 5kW solar system and a battery with 3kWh of storage capacity at a cost of around €18,000 ($22,000). The solar panels would cut the household's power consumption by roughly 30%; adding the storage system could increase the saving to as much as 80%. At the current cost of the equipment, and assuming no rise in electricity prices, the return on the investment would be barely 2%. But on more realistic assumptions—a continuing rise in electricity prices of 2% a year and a big fall in the cost of solar capacity and storage—the rate of return could be a juicy 10% or more.

The Gigafactory, which will build batteries for the Tesla electric-car company, aims to cut the cost of battery storage towards what many see as a crucial benchmark: $100 per kWh against $250 now. That will bring the price of an electric car close to parity with that of a conventional one, maybe even before the end of this decade, hints Elon Musk, the CEO. But better batteries will have other advantages too. One is that electric cars, when not being driven (which is 95% of the time, research suggests), can be used for storage. And batteries that are being displaced by more efficient versions can play a part in domestic storage.

The storage business is booming. Navigant, a consultancy, reckons that in 2014 alone projects amounting to 363MW were announced. BNEF estimates that by 2020 some 11.3GW will be installed, 80% of it in America (chiefly California), Germany, Japan and South Korea, and that investment in storage by then will be running at $5 billion a year.

The biggest advantage of storage is that it dispenses with the most inefficient part of the power industry: the generating capacity that is held in reserve to meet peaks of demand. In the state of New York, for example, one-fifth of the generating capacity runs for less than 250 hours a year. By some counts, a megawatt of storage replaces roughly ten megawatts of such generating capacity—an irresistible saving.

In rich countries new forms of storage and generation are eating away at the model that has sustained the electricity industry since the days of Thomas Edison. In parts of the developing world where there are no incumbents, they offer the best chance for whole populations to get any power at all. ■

Africa

A brightening continent

Solar is giving hundreds of millions of Africans access to electricity for the first time

FOR THE WORLD'S 1.2 billion poorest people, who are facing a long and perhaps endless wait for a connection to mains electricity, solar power could be the answer to their prayers. A further 2.5 billion are "underelectrified", in development parlance: although connected to the grid, they can get only unreliable, scanty power. That blights lives too. The whole of sub-Saharan Africa, with a population of 910m, consumes only 145 terawatt hours of electricity a year—less than the 4.8m people who live in the state of Alabama. That is the pitiful equivalent of one incandescent light bulb per person for three hours a day.

In the absence of electricity, the usual fallback is paraffin (kerosene). Lighting and cooking with that costs poor people the world over $23 billion a year, of which $10 billion is spent in Africa. Poor households are buying lighting at the equivalent of $100 per kilowatt hour, more than a hundred times the amount people in rich countries pay. And kerosene is not just expensive; it is dangerous. Stoves and lamps catch fire, maiming and killing. Indoor fumes cause 600,000 preventable deaths a year in Africa alone. But candles or open fires are even worse—and so is darkness, which hurts productivity and encourages crime.

Africa's population will nearly double by 2040. The electrical revolution now under way there, and in other poor but sunny places, is coming just in time for all those extra people. It is based on three big technological changes, all reinforcing each other.

The first is the collapsing cost of solar power. The second is the fall in the price of light-emitting diodes (LEDs). These turn electrical power almost wholly into light. Traditional bulbs are fragile and emit mostly heat. The new LED lamps are not only bright and durable but now also affordable. But lamps are needed at night, and solar power is collected in the daytime. So the third, crucial revolution is in storage.

Fleecing the poor

All in all, the capacity needed to produce a watt of solar power (enough to run a small light), which in 2008 cost $4, has come down to $1. The simplest solar-powered lamps cost around $8. That is still a lot for people with very little money, but the saving on kerosene makes it a good investment. Better light enables people to study and work in the evening. As well as powering a lamp, a slightly larger solar system can charge a mobile phone, for which users in poor countries often pay extortionate amounts. Russell Sturm of the International Finance Corporation (IFC), the part of the World Bank group that works with the private sector, cites kiosks in Papua New Guinea where customers pay for each bar of charge shown on the phone's screen—at a cost than can easily reach a stonking $200 per kWh.

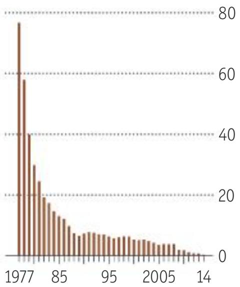
Sales of devices approved by the IFC/World Bank's Lighting Africa programme are nearly doubling annually, bringing solar power to a cumulative total of 28.5m Africans. In 2009 just 1% of unelectrified sub-Saharan Africans used solar lighting. Now it is nearly 5%. The IEA rather cautiously estimates that, thanks to solar power, 500m people who are currently without electricity will have at least 200 watts per head by 2030.

But lighting and charging phones are only the first rungs on the ladder, notes Charlie Miller of SolarAid, a charity. Radios can easily run on solar power. Bigger systems can light up a school or clinic; a "solar suitcase" provides the basic equipment needed by health workers. A Ugandan company called SolarNow has a $200 low-voltage television set that runs on the direct current (DC) used by solar systems. A British-designed fridge called Sure Chill needs only a few hours of power a day to maintain a constant 4°C. A company in South Africa has just launched solar-powered ATMs for rural areas with intermittent mains power.

Other companies offer bigger systems, for $1,500 and upwards, which can power "solar kiosks" and other installations

Sunny outlook 3

Price of crystalline-silicon photovoltaic cells, $ per watt



Source: Bloomberg New Energy Finance

that enable people to start businesses. Beefed up a bit more, these systems can replace diesel generators that will power stores and workshops, mill grain, run an irrigation pump or purify water. At an even larger scale they become mini-grids. A $500,000 aid-funded project in Kisiju Pwani, once one of the poorest villages in Tanzania, uses 32 photovoltaic solar panels and a bank of 120 batteries to provide 12kW of electricity, enough for 20 street lights and 68 homes, 15 businesses, a port, the village's government offices and two mosques.

Three main problems have yet to be resolved. One is quality. Poor consumers mulling a $100 investment need to be sure that their purchase will be robust. The IFC and other aid outfits are running a scheme to verify manufacturers' claims. Second, makers of mass-market appliances, used to mains electricity, have been slow to rejig their products to run on the low-voltage direct current (DC) produced by renewable energy sources and batteries. Mr Sturm says the industry is waiting for the "holy grail": a cheap, efficient and reliable DC fan.

The third and biggest constraint is working capital. It typically takes five months from paying the manufacturer to getting paid by the customer. Some companies are coming up with ingenious hire-purchase schemes for bigger systems to spread the cost. Others offer "solar as a service", where the customer pays monthly for the power, with maintenance thrown in.

Some experts see solar as a second-best solution. It can improve lives but not power an economy. But grid connections in poor countries are scarce and unreliable, and developing them would take too long, especially in remote rural areas where the poorest live. Besides, the power industry's old business model of delivering through the grid over long distances is in retreat everywhere, including in rich countries. ■

New business models

All change

The power industry's main concern has always been supply. Now it is learning to manage demand

THE BASIC MODEL of the electricity industry was to send high voltages over long distances to passive customers. Power stations were big and costly, built next to coal mines, ports, oil refineries or—for hydroelectric generation—reservoirs. Many of these places were a long way from the industrial and population centres that used the power. The companies' main concern was to supply the juice, and particularly to meet peaks in demand. Most countries (and in America, regions) were energy islands, with little interconnection to other systems.

That model, though simple and profitable for utilities and generators, was costly for consumers (and sometimes taxpayers). But it is now changing to a "much more colourful picture", says Michael Weinhold of Siemens, a big German engineering company. Not only are renewables playing a far bigger role; thanks to new technology, demand can also be tweaked to match supply, not the other way round.

As a result, the power grid is becoming far more complicated. It increasingly involves sending power at low voltages over short distances, using flexible arrangements: the opposite of the traditional model. In some ways the change is akin to what has happened in computing. A 2010 report for BCG, a consultancy, drew a parallel with the switch from mainframes and terminals to cloud storage and the internet.

Traditional power stations and grids still play a role in this world, but not a dominant one. They have to compete with new entrants, and with existing participants doing new things. One example is the thriving business of trading what Mr Lovins of Rocky Mountain Institute has named "negawatts": unused electricity. The technique is known as "demand response"—adjusting consumption to meet supply, not the other way round.

Flattening the peaks

The most expensive electricity in any power system is that consumed at peak time, so instead of cranking up a costly and probably dirty power station, the idea is to pay consumers to switch off instead. For someone running a large cooling, heating or pumping system, for example, turning the power off for a short period will not necessarily cause any disruption. But for the grid operator the spare power gained is very useful.

This has been tried before: in France, after a heatwave in 2003 that hit the cooling systems of nuclear power stations and led to power shortages. In response, big energy consumers agreed to cut their power consumption at peak times, in exchange for generous rebates. The Japanese have installed 200,000 home energy-management systems that do something similar on a domestic scale. But new technology takes it to another level, allowing a lot of small power savings from a large number of consumers to be bundled together.

In South Africa companies can sell such spare power themselves, through a company called Comverge. Elsewhere consumers earn rebates either from their own power company or from a third-party broker which manages their consumption. In Austin, Texas, for example, 7,000 households have signed up for a scheme in which they get an $85 rebate on an internet-enabled thermostat, such as the Nest, which costs $249. This has other benefits for them too, such as allowing them to control their home heating and cooling remotely. But it also means that the power company, Austin Energy, can shave 10MW from its summer peak demand, typically between 3pm and 7pm.

Nest is selling its programmes all over North America, and more recently in Britain too. Customers of its "Rush Hour Rewards" programme can choose between being given notice a day in advance of a two- to four-hour "event" (meaning their thermostat will be turned down or up automatically) or being told ten minutes ahead of a 30-minute one. This can cut the peak load by as much as 55%. In another scheme customers agree to a change of a fraction of a degree over a three-week period.

At an auction in May 2014 at the PJM interconnection, America's largest wholesale electricity market, 11GW of "negawatts" were bid and cleared, replacing capacity that would have come from conventional power stations. In other words, instead of buying in capacity from power stations that operate only to meet peak demand, it was paying customers not to use electricity at that time. In 2013 PJM took $11.8 billion off electricity bills through demand response and related efficiency savings. The figure for 2014 is likely to be $16 billion.

NRG, America's biggest independent power company, is also moving into the market. David Crane, its chief executive, ad- ▸▸

mits that some consumers find the idea of saving power "un-American", but thinks that for companies like his the "mindless pursuit of megawatts" is a dead end. In 2013 NRG bought a demand-response provider, Energy Curtailment Specialists, which controls 2GW of "negawatts", for an undisclosed sum.

The big question for demand-response companies is the terms on which they compete with traditional generators, which argue that markets such as PJM are starving the power system of badly needed investment. For example, FirstEnergy, a company in Ohio, suspended modernisation plans at a coal-fired plant which failed to win any megawatts in the auction for 2017-18. Such plants are viable only if utilities are paying top dollar for peak electricity—a cost which is eventually passed on to the consumer. Companies like FirstEnergy hope that the Supreme Court will overturn a ruling by the Federal Energy Regulatory Commission that negawatts be treated like megawatts in capacity auctions. These worries are already spooking the market. EnerNOC, which bundles together small energy savings from many different customers to offer negawatts, has seen its share price fall by half since May.

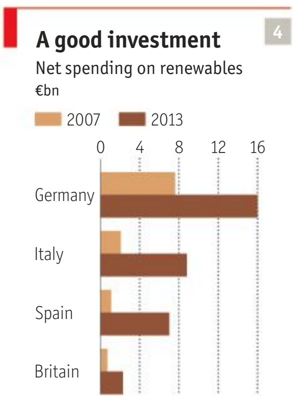
Sara Bell, who represents Britain's demand-response companies, notes a market failure: the same companies that generate power also supply it. She argues that their interest is selling at peak demand and peak prices—which is the opposite of what a customer would want.

In any case, the days of the vertically integrated model of energy supply are numbered, observes Dieter Helm. Thanks to abundant solar power, he argues, the energy market increasingly resembles the economics of the internet, where marginal costs are zero. That "undermines the very idea of wholesale electricity markets". The future model will be much more fragmented. Independent generators, plus new entrants, are already "revolutionising the way electricity is sold and used"; new technologies will make the 21st-century model even more different. "No wonder many of the energy giants of the past are already in such trouble," he says.

No longer so useful

The combination of distributed and intermittent generation, ever cheaper storage and increasingly intelligent consumption has created a perfect storm for utilities, particularly those in Europe, says Eduard Sala de Vedruna of IHS, a consultancy. They are stuck with the costs of maintaining the grid and meeting peak demand, but without the means to make customers pay for it properly. Their expensively built generating capacity is oversized; spare capacity in Europe this winter is 100GW, or 19% of the constituent countries' combined peak loads. Much of that is mothballed and may have to be written off. Yet at the same time new investment is urgently needed to keep the grid reliable, and especially to make sure it can cope with new kinds of power flow—from "prosumers" back to the grid, for example.

To general surprise, demand is declining as power is used more efficiently. Politicians and regulators are unsympathetic, making the utilities pay for electricity generated by other people's assets, such as rooftop solar, to keep the greens happy. At the same time barriers to entry have collapsed. New energy companies do not need to own lots of infrastructure. Their competitive advantage rests on algorithms, sensors, processing power and good marketing—not usually the strong points of traditional utilities. All the services offered by these new entrants—demand response, supply, storage and energy efficiency—eat into the utilities' business model.



Source: IHS

For an illustration, look at Hawaii, where solar power has made the most inroads. On a typical sunny day, the panels on consumers' rooftops produce so much electricity that the grid does not need to buy any power from the oil-fired generators that have long supplied the American state. But in the morning and evening those same consumers turn to the grid for extra electricity. The result is a demand profile that looks like a duck's back, rising at the tail and neck and dipping in the middle.

The problem for the state's electricity utilities is that they still have to provide a reliable supply when the sun is not shining (it happens, even in Hawaii). But consumers, thanks to "net metering", may have an electricity bill of zero. That means the utilities' revenues suffer, and consumers without solar power (generally the less well-off) cross-subsidise those with it.

Rows about this are flaring across America. The Hawaiian Electric Power Company, the state's biggest utility, is trying to restrict the further expansion of solar power, telling new consumers that they no longer have an automatic right to feed home-generated electricity into the grid. Many utilities are asking regulators to impose a fixed monthly charge on consumers, rather than just let them pay variable tariffs. Since going completely off-grid still involves buying a large amount of expensive storage, the betting is that consumers will be willing to pay a monthly fee so they can fall back on the utilities when they need to.

Consumers, understandably, are resisting such efforts. In Arizona the utilities wanted a $50 fixed monthly charge; the regulator allowed $5. In Wisconsin they asked for $25 and got $19. Even these more modest sums may help the utilities a bit. But the bigger threat is that larger consumers (and small ones willing to join forces) can go their own way and combine generation, storage and demand response to run their own energy systems, often called "microgrids". They may maintain a single high-capacity gas or electricity connection to the outside world for safety's sake, but still run everything downstream from that themselves.

Some organisations, such as military bases, may have specific reasons to want to be independent of outside suppliers, but for most of them the main motive is to save money. The University of California, San Diego (UCSD), for example, which until 2001 had a gas plant mainly used for heating, changed to a combined-heat-and-power (CHP) plant which heats and cools 450 buildings and provides hot water for the 45,000 people who use them. The system generates 92% of the campus's electricity and saves $8m a year. As well as 30MW from the CHP plant, the university has also installed more than 3MW in solar power and a further 3MW from a gas-powered fuel cell. When demand is low, the spare electricity cools 4m gallons (15m litres) of water for use in the air-conditioning—the biggest load on the system—or heats it to 40° to boost the hot-water system. Universities are ideal for such experiments. As autonomous public institutions they are exempt from fiddly local rules and from oversight by the utilities regulator. And they are interested in new ideas.

Places like UCSD not only save money with their micro-grids but advance research as well. A server analyses 84,000 data streams every second. A company called ZBB Energy has installed innovative zinc-bromide batteries; another company is trying out a 28kW supercapacitor—a storage device far faster and more powerful than any chemical battery. NRG has installed a rapid charger for electric vehicles, whose past-their-prime batteries are used to provide cheap extra storage. And the university has just bought 2.5MW-worth of recyclable lithium-ion iron-phosphate battery storage from BYD, the world's largest battery manufacturer, to flatten peaks in demand and supply further.

In one sense, UCSD is not a good customer for the local utility, San Diego Gas & Electric. The microgrid imports only 8% of its power from the utility. But it can help out when demand elsewhere is tight, cutting its own consumption by turning down air-conditioners and other power-thirsty devices and sending the spare electricity to the grid.

UCSD is one of scores of such microgrids pioneering new ways of using electricity efficiently and cheaply through better design, data-processing technology and changes in behaviour. The IEA reckons that this approach could cut peak demand for power in industrialised countries by 20%. That would be good for both consumers and the planet. ■

Energy efficiency

Invisible fuel

The biggest innovation in energy is to go without

THE CHEAPEST AND cleanest energy choice of all is not to waste it. Progress on this has been striking yet the potential is still vast. Improvements in energy efficiency since the 1970s in 11 IEA member countries that keep the right kind of statistics (America, Australia, Britain, Denmark, Finland, France, Germany, Italy, Japan, the Netherlands and Sweden) saved the equivalent of 1.4 billion tonnes of oil in 2011, worth $743 billion. This saving amounted to more than their total final consumption in that year from gas, coal or any other single fuel. And lots of money is being invested in doing even better: an estimated $310 billion-360 billion was put into energy efficiency measures worldwide in 2012, more than the supply-side investment in renewables or in generation from fossil fuels.

The "fifth fuel", as energy efficiency is sometimes called, is the cheapest of all. A report by ACEEE, an American energy-efficiency group, reckons that the average cost of saving a kilowatt hour is 2.8 cents; the typical retail cost of one in America is 10 cents. In the electricity-using sector, saving a kilowatt hour can cost as little as one-sixth of a cent, says Mr Lovins of Rocky Mountain Institute, so payback can be measured in months, not years.

The largest single chunk of final energy consumption, 31%, is in buildings, chiefly heating and cooling. Much of that is wasted, not least because in the past architects have paid little attention to details such as the design of pipework (long, narrow pipes with lots of right angles are far more wasteful than short, fat and straight ones). Energy efficiency has been nobody's priority: it takes time and money that architects, builders, landlords and tenants would rather spend on other things.

In countries with no tradition of thrifty energy use, the skills needed are in short supply, too. Even the wealthy, knowledgeable and determined Mr Liebreich had trouble getting the builders who worked on his energy-saving house to take his instructions seriously. Painstakingly taping the joins in insulating boards, and the gaps around them, seems unnecessary unless you understand the physics behind it: it is plugging the last few leaks that brings the biggest benefits. Builders are trained to worry about adequate ventilation, but not many know about the marvels of heat exchangers set in chimney stacks.

Snug as a bug in a rug

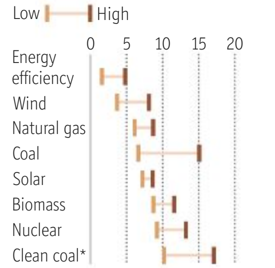
For new buildings, though, energy efficiency is becoming an important factor. The 99-storey Pertamina Energy Tower being built in Jakarta, for example, will be so thrifty that wind, solar and geothermal energy can meet all its power needs. "Energy-plus" buildings can even harvest energy from their environment and inhabitants and export it. Like cars, new buildings are typically much more efficient than the ones they replace.

But old cars are scrapped more often than old houses. The biggest problem in energy efficiency is adapting existing buildings. Circle Housing, a large British housing association, has 65,000 dwellings, with tenants whose incomes are typically below £20,000 ($32,000) a year, low by British standards. Annual energy bills in the worst properties can be a whopping £2,000, so Circle is knocking some of the houses down. Their replacements bring the bills down to about £450. In new "passive houses",

Take your pick 5

Energy costs in the US

2009-14 average, US cents per kWh



Source: American Council for an Energy-Efficient Economy

*Integrated gasification combined cycle

built from mass-produced prefabricated energy-efficient components at roughly the same cost as ordinary ones, bills fall to £350. The inhabitants have to get used to not opening windows, which wastes heat and upsets the ventilation system. But Europe already has 30,000 such buildings, and more are on the way.

For Circle's existing stock, with bills averaging £1,240 a year, "energy champions"—tenants who are trained to help others with similar housing and lifestyles—offer simple tips (switching off appliances, turning down thermostats) that save an average of £250 a year. Helping tenants shop around for good deals on gas and electricity saves another £150. But after that it gets much more expensive. Refitting a house with double glazing, cavity-wall and loft insulation, a heat pump and an energy-efficient boiler may save another £150, but requires an investment of £3,000 to £8,500. In most houses and offices, saving £3 a week is not worth a lot of hassle. Tenants do not want to invest in properties they do not own, and landlords do not really care how much their tenants pay for their energy. Besides, better insulation may simply mean that people wear lighter clothes indoors rather than turn the heating down.

One answer to this market failure is to bring in mandatory standards for landlords and those selling properties. Another involves energy-service companies, known as ESCOs, which guarantee lower bills in exchange for modernisation. The company can develop economies of scale and tap financial markets for the upfront costs. The savings are shared with owners and occupiers. ESCOs are already a $6.5 billion-a-year industry in America and a $12 billion one in China. Both are dwarfed by Europe, with €41 billion ($56 billion) last year. Navigant Research, the consultancy, expects this to double by 2023.

That highlights one of the biggest reasons for optimism about the future of energy. Capital markets, frozen into caution after the financial crash of 2008, are now doing again what they are supposed to do: financing investments on the basis of future revenues. The growth of a bond market to pay for energy-efficiency projects was an encouraging sign in 2014, when $30 billion-40 billion were issued; this year's total is likely to be $100 billion.

Solar energy is now a predictable income stream drawing in serious money. A rooftop lease can finance an investment of $15,000-20,000 with monthly payments that are lower than the customer's current utility bill. SolarCity, an American company, has financed $5 billion in new solar capacity, raising money initially from institutional investors, including Goldman Sachs and Google, but now from individual private investors—who also become what the company calls "brand ambassadors", encouraging friends and colleagues to install solar panels too.

The model is simple: SolarCity pays for the installation, then bundles the revenues and sells a bond based on the expected future income stream. Maturities range from one to seven years. The upshot is that the cost of capital for the solar industry is 200-300 basis points lower than that for utilities.

A virtuous circle is emerging which is confounding the doomsters. It rests on five elements. The first is abundant energy, above all from new solar technology: a sliver now, but also a dagger in the heart of the fossil-fuel industry. The grid parity which Hawaiian rooftops offer today will be possible in many more locations in future—and not just on rooftops in direct sunlight, but from any surface in daytime. That shapes the future investment climate. The price of fossil fuels will always fluctuate. Solar is bound to get cheaper.

The second part of the circle is storage. Batteries are getting cheaper, more powerful and more prevalent, for example in electric cars. So, too, are other ways of storing energy, such as warm water and ice. That deals with the biggest disadvantage of solar power, its intermittent nature. Some of this may be achieved through big interconnectors that can shift power to countries with the right geography for hydro-electric generation. But even more important may be the aggregation of lots of small-scale storage.

That reflects the third element: distribution. Consumers are now in a position to be small producers and storers of energy. That creates resilience in the network, along with greater efficiency and more innovation. Perhaps fuel cells will become smaller and cheaper, making up a network of micropower stations wherever the gas pipelines run. Perhaps they will remain toys for the rich. But whereas innovation in the power network of the past—big, centralised and regulated—was slow, in the new, decentralised grid of the future it will move ever faster.

The price of fossil fuels will always fluctuate. Solar is bound to get cheaper

The fourth part of the circle is intelligence. The internet has made it possible for its users to generate, store and manage data efficiently. Now processing power and algorithms will do the same for electricity. Whether that comes from smart meters which manage consumption in the home or from individual smart devices programmed to maximise their efficiency remains to be seen. Given the risk of cyber-attacks, security will need serious thought. But overall the grid is getting smarter, not dumber.

The fifth and final part is finance. Business models for new energy systems are now proven, both in the rich world and in emerging economies. A wave of money is breaking over the old model, sweeping away incumbents. If they and their friends in government try to hold it back, everyone will suffer. ■

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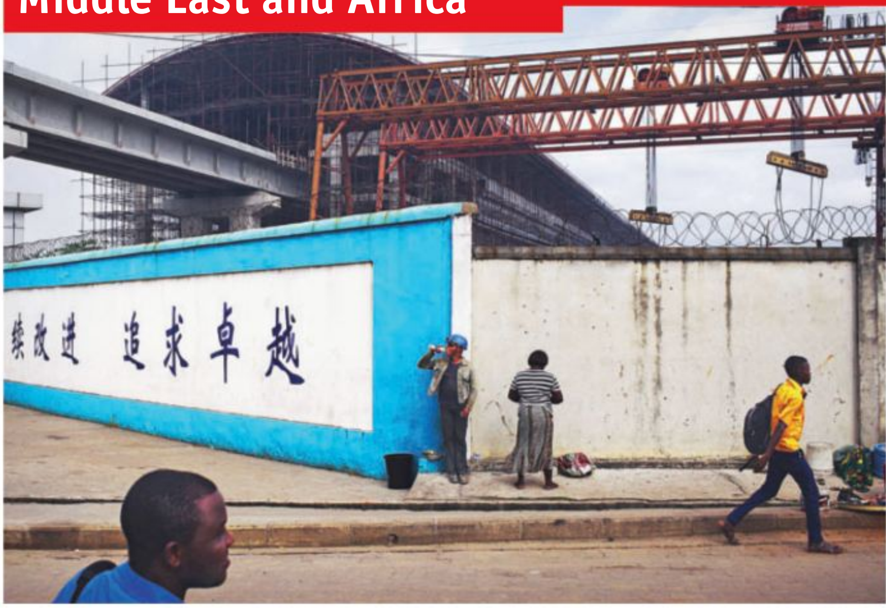

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China in Africa

One among many

NAIROBI

China has become big in Africa. Now for the backlash

ACROSS Africa, radio call-in programmes are buzzing with tales of Africans, usually men, bemoaning the loss of their spouses and partners to rich Chinese men. "He looks short and ugly like a pygmy but I guess he has money," complained one lovelorn man on a recent Kenyan show. True or imagined, such stories say much about the perceived economic power of Chinese businessmen in Africa, and of the growing backlash against them.

China has become by far Africa's biggest trading partner, exchanging about $160 billion-worth of goods a year; more than 1m Chinese, most of them labourers and traders, have moved to the continent in the past decade. The mutual adoration between governments continues, with ever more African roads and mines built by Chinese firms. But the talk of Africa becoming Chinese—or "China's second continent", as the title of one American book puts it—is overdone.

The African boom, which China helped to stoke in recent years, is attracting many other investors. The non-Western ones compete especially fiercely. African trade with India is projected to reach $100 billion this year. It is growing at a faster rate than Chinese trade, and is likely to overtake trade with America. Brazil and Turkey are superseding many European countries. In terms of investment in Africa, though, China lags behind Britain, America and Italy (see charts).

If Chinese businessmen seem unfazed by the contest it is in part because they themselves are looking beyond the continent. "This is a good place for business but there are many others around the world," says He Lingguo, a sunburnt Chinese construction manager in Kenya who hopes to move to Venezuela.

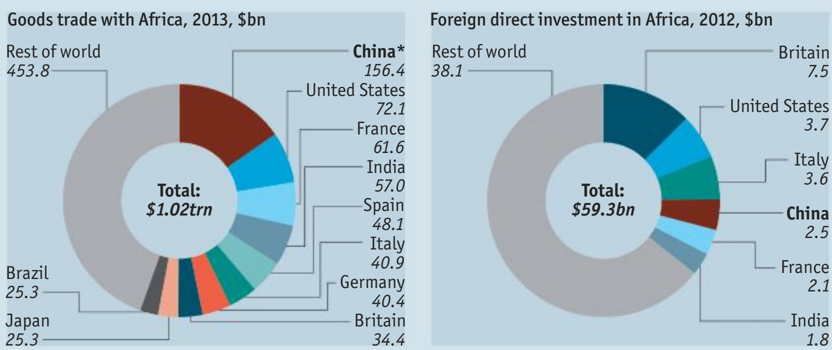
A decade ago Africa seemed an uncontested space and a training ground for foreign investment as China's economy took off. But these days China's ambitions are bigger than winning business, or seeking access to commodities, on the world's poorest continent. The days when Chinese leaders make long state visits to countries like Tanzania are numbered. Instead, China's president, Xi Jinping, has promised to invest $250 billion in Latin America over the coming decade (see Bello, page 36).

The growth in Chinese demand for commodities is slowing and prices of many raw materials are falling. That said, China's hunger for agricultural goods, and perhaps for farm land, may grow as China's population expands and the middle class becomes richer.

Yet Africans are increasingly suspicious of Chinese firms, worrying about unfair deals and environmental damage. Opposition is fuelled by Africa's thriving civil society, which demands more transparency and an accounting for human rights. This can be an unfamiliar challenge for authoritarian China, whose foreign policy is heavily based on state-to-state relations, with little appreciation of the gulf between African rulers and their people. In Senegal residents' organisations last year blocked a deal that would have handed a prime section of property in the centre of the capital, Dakar, to Chinese developers. In Tanzania labour unions criticised the government for letting in Chinese petty traders.

Some African officials are voicing criticism of China. Lamido Sanusi, Nigeria's former central bank governor, says Africa ▸▸

The scramble in Africa



Sources: UNCTAD; IMF

*Including Macau and Hong Kong

is opening itself up to a "new form of imperialism", in which China takes African primary goods and sells it manufactured ones, without transferring skills.

After years of bland talk about "win-win" partnerships, China seems belatedly aware of the problem. On a tour of the continent, the Chinese foreign minister, Wang Yi, said on January 12th that "we absolutely will not take the old path of Western colonists". Last May the prime minister, Li Keqiang, acknowledged "growing pains" in the relationship.

China has few political ambitions in Africa. It co-operates with democracies as much as with authoritarian regimes. Its aid budget is puny. The few peacekeepers it sends stay out of harm's way. China's corporatist development model has attracted few followers beyond Ethiopia and Rwanda. Most fast-growing African nations hew closer to Western free-market ideas. In South Sudan, the one place where China has tried to flex its diplomatic muscle, it has achieved embarrassingly little. Attempts to stop a civil war that is endangering its oil supply failed miserably.

Chinese immigrants in Africa chuckle at the idea that they could lord it over the locals. Most congregate in second-tier countries like Zambia; they are less of a presence in hyper-competitive Nigeria. Unlike other expatriates, they often live in segregated camps. Some thought, after a decade of high-octane engagement, that China would dominate Africa. Instead it is likely to be just one more foreign investor jostling for advantage. ■

Drugs smuggling in Africa

The Smack Track

NAIROBI

East African states are being undermined by heroin smuggling

EXPERTS are calling it the African "Smack Track": a circuitous route to smuggle heroin from Afghanistan to Europe, passing through east Africa. Two drug busts in November, netting 712kg of the stuff, closed a record year for heroin seizures off the coast of Kenya. The haul is less a sign of improved policing and more evidence of the growing importance of the route.

The largest seizure took place in April, when an Australian warship found more than a tonne of heroin hidden among sacks of cement on a dhow in international waters. As routinely happens on the high seas, the drugs were dumped overboard, while the crew and vessel were allowed to go. The discovery, with an estimated street value of $240m, was equivalent to all the heroin seized off east Africa between 1990 and 2009.

Most heroin from Afghanistan travels to Europe by two main routes: a northern one through Central Asia and a western one via Iran. The minor "southern route" through east Africa has existed since the 1980s, but last year's seizures—totalling some 3,500kg, according to the UN Office on Drugs and Crime (UNODC)—point to a growth in traffic.

Alan Cole of UNODC says the shift was caused by "improved law enforcement in central Europe and the conflict in Syria". Stricter border-security checks along the Balkan Route, combined with the increasing risk of getting caught up in expanding wars in the Middle East have made the overland passage less attractive.

Instead smugglers have taken to the seas. Shipments of heroin are unloaded from dhows and cargo ships off the shores of Kenya and Tanzania, and taken ashore on small speedboats. They are then broken up into still smaller packages before being "muled" to Europe from international airports in Kenya and Ethiopia. Sometimes they are consolidated and sent by lorry to South Africa for onward shipping. Some of the heroin enters the African market to feed nascent demand, particularly in Zanzibar, Mombasa and Dar es Salaam, where heroin use is slowly rising. Heroin is also smuggled to consumers in South Africa and Nigeria.

In Kenya and Tanzania criminal gangs with close ties to political and security elites control the trans-shipment. The risk is that state institutions will be hollowed out or, worse still, that states could be captured by transnational criminal networks. A 2011 research paper by the International Peace Institute, a think-tank in New York, said the foundations of the Kenyan state were "under attack" from such gangs.

That same year America designated seven people, including the then Kenyan MP, John Harun Mwau, as "narcotics kingpins" under legislation that freezes the American assets of alleged drug lords and denies them access to the American financial system. Mr Mwau denies the charge and claims America is trying to seize his profitable supermarket businesses.

Last summer President Uhuru Kenyatta issued orders for a seized ship, and its cargo of heroin, to be towed out to sea and blown up—against the protestations of Mombasa's chief magistrate and a ruling from the High Court, which was hearing the trial of nine crew members arrested on the vessel. The *MV Al Noor*, a rusting vessel, had set off from the Makran coast in south-west Pakistan and was intercepted by Western naval forces patrolling the Indian Ocean to deter Somali pirates and interdict smugglers of people.

Western countries worry about the parallel with the cocaine-smuggling trade that developed in west Africa in the mid-2000s. As authorities clamped down on the trans-Atlantic cocaine route the smugglers shifted southward to west Africa, where weak states were easily subverted and drugs money has fuelled endemic corruption. Countries including Ghana, Mali and Senegal became—and remain—key trans-shipment points for South American cocaine bound for Europe. Some is also routed through South Africa. Tiny, poor, coup-prone Guinea-Bissau has been branded Africa's first "narco-state". ■

The insurgency in Nigeria

Blind to bloodshed

LAGOS

Nigeria's politicians ignore the horrors of Boko Haram

THE militants came early in the morning, surrounding the Nigerian village of Baga. They killed the men, sending soldiers and civilians running for their lives. Among them was Yakaka Abubakar and her three children, who fled across the border to Niger. "The fighters ordered the women to leave the village after they burned it," she recounted. "Everywhere were dead bodies of men, women and even children."

It is hard to tell how many people died. Amnesty International, a lobby group, cited reports that "as many as 2,000 civilians were killed"; the army, which often underestimates casualties, belatedly claimed the real figure was 150. Satellite pictures suggest widespread destruction. The attack may be the bloodiest yet by Boko Haram, a jihadist group that has taken over swathes of north-eastern Nigeria.

What is clear, though, is that despite the horror, Nigeria's rulers treat the war with indifference. President Goodluck Jonathan ►►

was quick to condemn the "monstrous" terrorist attack against *Charlie Hebdo* in Paris. But as *The Economist* went to press, he had not uttered a word about Baga.

His lieutenants argue that he cannot speak out because details of the attack are still hazy (it took the army more than a week to give a casualty figure amid international furore). Others note that atrocities like these happen on a near-daily basis. Baga is far from being unique.

But there may be more cynical motives, too. Nigeria is due to hold elections on February 14th. Talking about the siege would draw attention to the government's failure to curb the insurgents. The issue is particularly sensitive because Mr Jonathan, a southerner, is standing against a northern former army general, Muhammadu Buhari, who is tough on security.

The race is the tightest in the history of Nigerian civil rule. The main parties politicise the insurgency, hurling mutual accusations of incompetence and complicity. But for the moment the government seems more concerned with winning the election than with forming and financing a coherent anti-insurgency strategy.

Things are likely to get worse with the approach of the elections, often a time of violence in Nigeria. Some civil-rights activists worry that already-stretched army forces will be withdrawn from the north-east—either to protect polling stations around the country, or to help stuff the ballot boxes. ■

The siege in Gaza

Cold misery

GAZA

Gaza is sinking amid hostility from Israel, Egypt and its Palestinian brethren

THE winter storms that whip in from the Mediterranean bring new misery to Gaza. In districts flattened during last summer's war with Israel, families huddle beneath plastic tarpaulins amid the rubble. When aid agencies arrive with supplies they scuffle for blankets. Those still with homes stay in bed to keep warm because there is little electricity. At the border passage to Israel, the sick and dying lie on stretchers for hours before the metal gates, seeking admission for treatment that their hospitals cannot provide for lack of medicines or equipment. The businesses that survived the bombardment are mostly idle because of Israel's export restrictions, and Egypt's closure of smuggling tunnels.

Gaza has been broken by three Israeli offensives in five years; eight years of economic blockade; one-party rule by Hamas, an armed Islamist group; and a distant Palestinian president, Mahmoud Abbas, who has largely forsaken the territory that he lost to Hamas in 2007. The rickety social system that somehow held Gaza together is falling apart.

A host of initiatives to release the chokehold have come to nothing. Last summer Ismail Haniyeh, the then Hamas prime minister, formally surrendered his bankrupt enclave to a "unity government" under Mr Abbas's Palestinian Authority. But the power-sharing agreement left Hamas's forces in charge of security, so Mr Abbas was always distrustful. He dithered over forwarding funds from Qatar to pay the salaries of Gaza's civil servants. Those appointed by Hamas were told to step down and reapply for their jobs, subject to Fatah's vetting

Hamas's employees show up for work even though they have received only three partial salary payments in 18 months. "We won't let Gaza collapse," insists an officer manning Hamas's passport-control office. But protests, often by unpaid workers, have increased threefold since September. On January 13th policemen stepped aside to let protesters burst into a cabinet meeting. "We spent our last shekels two months ago," apologised one of Mr Abbas's officials in Gaza, fending off protesters. Bombs explode next to cash machines.

Efforts to persuade Egypt's strongman, Abdel-Fattah al-Sisi, to relax the border restrictions have also failed. A proposal to open the Rafah crossing for three days collapsed after militants in neighbouring Sinai killed an Egyptian border guard, in a campaign of jihadist violence that, Egyptian officials claim, is being fuelled in part by radicals in Gaza.

Israel's prime minister, Binyamin Netanyahu, has proven similarly resistant to pressure. Last summer's ceasefire has not lived up to the promise that the blockade would be lifted and billions of dollars provided for reconstruction. Israel broke off negotiations on re-opening the borders; Hamas has nothing to show but destruction and 2,100 dead for its recourse to guns and rockets. Last month Israel let in a tenth of the amount of cement the UN says Gaza needs daily to rebuild; even so, the Palestinians lack the money to buy it.

Hamas's once-sober security forces behave more erratically. Hamas's military arm, the Qassam Brigades, intermittently stages brazen armed parades, replete with locally manufactured drones. Hamas banned rallies by Mr Abbas's Fatah movement to mark its 50th anniversary, stripping organisers down to their underpants. Fatah leaders woke up early one morning recently to the sound of bombs detonating at the gates of their villas, and the few ministers still in Gaza have received death threats on their mobile phones.

Gaza's children dream of escape. At weekends, their parents take them to visit from afar the sole crossing to Israel. "Daddy, why don't we become Christian?" asks Walid, an eight-year-old boy, after hearing that Israel let his Christian classmates visit Bethlehem for Christmas. In recent months Israel has arrested about 20 boys trying to clamber across the border. Real prison, says Walid's father, might be better than life in the open jail of Gaza. And if shot? Well, he laughs, a quick death is better than the slow one on offer. ■

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Russia's battered economy

Hardly tottering by

MOSCOW

The Russian economy will take a long time to recover. It badly needs structural reforms that it is unlikely to get

JUDGING by the lack of economic news in Russia's media, a crisis has arrived. Just as in Soviet days, state television does not report facts, it conceals them. The official picture is dominated by the war in Ukraine (fuelled by America), Ukraine's economic collapse (ignored by America) and Russia's achievements in sport, ballet and other spheres (envied by America). But whereas television does not mention the economy, ordinary Russians have been busily changing roubles into dollars, buying anything that has not gone up in price and making contingency plans.

In the first two weeks of the year, when Russia was on holiday, the rouble fell by 17.5% against the dollar. Inflation is up into double figures. The price of oil, Russia's main export, has slid below $50 a barrel, prompting economists to revise their forecasts down. GDP is now expected to contract by between 3% and 5% this year. Russia's credit rating is moving inexorably towards junk.

The government's Zen-like calm betrays a lack of strategy. Russia's president, Vladimir Putin, is shown on television receiving positive reports from regional governors. Yet the fall in oil prices to below $50 a barrel will cost the state budget, which was calculated on the basis of $100 a barrel, 3 trillion roubles ($45 billion), or 20% of planned revenues, according to Anton Siluanov, the finance minister. He was already planning to lop 10% off the budget, but may now have to cut further. Even if pensions and salaries are raised by 5%, double-digit inflation means that real incomes will decline for the first time since Mr Putin came to power in 2000.

The Kremlin hopes to ride out the crisis, as it did in 2008-09 when GDP contracted by 7.5%. Then the government was able to stimulate demand by increasing public spending and saving indebted firms. It no longer has that option. Russia's reserves are lower than they were four years ago and may last only for a year and a half, at best. Worse, the government has lost credibility. An increase in interest rates to 17% in December was intended to defend the rouble, but it has not worked. Russians have lost faith in the currency and are starting to withdraw deposits, argues Natalia Orlova, chief economist at Alfa Bank.

The rouble's fall would have been even greater had it not been for the Kremlin telling exporters to sell foreign-currency revenues while also warning large firms not to buy. Yet whatever liquidity the Central Bank supplies to Russian banks, the money finds its way into the foreign-currency market, putting more pressure on the rouble. Any injection of liquidity may thus end up not stimulating domestic demand but merely increasing capital outflows. The only way to support the rouble is to limit the provision of liquidity to banks; but that in turn would put banks under pressure. German Gref, the head of Sberbank, Russia's largest state bank, is reportedly warning that a currency crisis could become a "massive" banking crisis.

Faced with capital outflows and falling oil prices, lack of access to foreign markets and its own demographic problems, Russia is unlikely to come out of this crisis fast. Its hope that devaluation would spur import substitution, as after the 1998 default, and so drive growth is unrealistic. At the time Russia was substituting basic goods that could be produced on spare, outdated equipment left behind by the Soviet economy. The things that Russia imports today cannot rapidly be replaced domestically. That would demand investment which few are willing to risk.

Alexei Kudrin, a former finance minister, and Evsey Gurvich, an economist, argue that Russia's economy cannot be repaired by monetary or fiscal measures. Even weak institutions are a secondary issue. At the heart of Russia's malaise is the weakening of market forces and suppression of competition, which means there is no longer much of a market economy. The expansion of the state means that, although Russia no longer has Gosplan, its economy is dominated by state or quasi-state firms whose revenues depend not on their economic efficiency but on political contacts. Skewed incentives as well as corruption and a lack of property rights have forced the most efficient companies out of the market, strengthening the position of parasitic and badly managed state firms. Falling oil prices have revealed these defects, not caused them.

As Mr Kudrin and Mr Gurvich explain, Russia's exceptional growth between 1998 and 2008 was essentially imported: it was down to easy money, brought about by rising oil prices and cheap credit. This fuelled consumption that was satisfied by imports and an increase in domestic output. The ▸▸

government was busy redistributing rents rather than restructuring or modernising the economy. Private firms and the Kremlin opted for quick profits rather than long-term investments. Even in 2009 the government's goal was to minimise the political fallout of the financial crisis, rather than to make the economy more competitive.

Russia's only way out now is to restructure the economy in order to restore the role of markets. Twenty-five years ago this transition was made possible by the collapse of the Soviet Union and change in the Kremlin. In an implicit message to Mr Putin, Mr Kudrin argues that it could now be managed under this presidency, but with a different government. Mr Putin is unconvinced. Even as he ponders his options, the economy continues to slide, whatever the television may not say. ■

A new Croatian president

Barbie wins

A grumpy electorate turfs out the incumbent

IN THE fight between Squid and Barbie, Barbie won. Squid is the nickname of Ivo Josipovic, Croatia's incumbent centre-left president, who lost a run-off election on January 11th; Barbie is the nickname of Kolinda Grabar-Kitarovic, the right-wing candidate and a former foreign minister and senior NATO official. Ms Grabar-Kitarovic won, but she inherits a country that is sharply divided.

Her victory was by a whisker, confounding pollsters who had all predicted a win for Mr Josipovic. Croats voting in Hercegovina and in the diaspora helped her. But the poll was also a test of how voters feel ahead of a general election later this year. The answer: they are fed up.

In the first round in December, Ivan Vilibor Sincic, a 24-year old populist who rails against banks, the European Union, NATO and Croatia's elite, took 16% of the vote. His support base is akin to those for the far-left Syriza in Greece and the Five-Star movement in Italy. Mr Sincic called on his backers to spoil their ballots in the second round—and over 60,000 did (almost twice Ms Grabar-Kitrovic's winning margin).

Mr Josipovic lost largely because the Social Democratic-led government had failed to drag Croatia out of recession. The economy has been shrinking or stagnant since 2009; even joining the EU in mid-2013 has not lifted it. Unemployment was 9% in 2008 but is now 19%, with youth unemployment running at over 45%. Ever more people with education and skills are leaving. Ms Grabar-Kitarovic promises to tackle the economy, although as president she will have little power.

She promises to be the president of all Croats. Yet a churlish prime minister, Zoran Milanovic, has declared that his centre-left government is all that stands between the people and the return of "that criminal group", meaning the right-wing opposition Croatian Democratic Union (HDZ) that backed Ms Grabar-Kitarovic. His angry rhetoric mirrors that of Tomislav Karamarko, HDZ's leader, who rails against the "Yugonostalgics" of the left.

Mr Karamarko may become Croatia's next prime minister, but he does not seem to want an election before December. Some say this is because HDZ has little idea how to cure the sick economy. According to Will Bartlett, of the London School of Eco- ▸▸

Grabar-Kitarovic: Barbie for short

Ukraine's economy

On the edge

Without a lot more Western help, Ukraine faces default

THE Ukrainian economy would rather forget 2014. But 2015 may be little better: GDP is still shrinking. Gas payments, defence and support for the hryvnia, which lost half its value in 2014, have bled the government dry. Foreign-currency reserves fell by a quarter in December, leaving just $7.5 billion, equivalent to only five weeks' worth of import cover. The central-bank head talks of a "full-blown financial crisis". Some $11 billion of debt repayments loom in 2015. That includes a $3 billion Russian bond which falls due in December, but contains an early-repayment provision if Ukraine's debt-to-GDP ratio exceeds 60%. Bond yields are soaring: Moody's, a rating agency, calls the chances of a Ukrainian default "exceedingly high".

Official statistics should come out soon, but the 60% limit has almost certainly been breached. Russia says it can demand repayment, though it insists it does not want Ukraine to default. If Russia called the bond, other creditors could also demand immediate repayment. The threat is a useful negotiating tool for the Kremlin. In any case, Ukraine needs more help. The European Union is offering €1.8 billion ($2.1 billion); America is pledging $2 billion. Yet minimum estimates put Ukraine's financing gap this year at $15 billion. The war in the east eats up $10m a day, according to Ukraine's president, Petro Poroshenko. And far from abating, it is hotting up: rebel shelling of a bus near Donetsk this week killed 12 people.

The West's reluctance to offer more money reflects mounting frustration over Ukraine's haphazard reform efforts. After the election in October politicians took a month to form a coalition government, causing the IMF to put its programme on hold. Some progress has been made, including simplifying the tax code. But energy remains unreformed. The budget for 2015 was passed only at 4:30am on December 29th. The IMF is back in Kiev trying to revive its programme.

Default would sap domestic confidence in Ukraine's leadership and roil the currency markets again. George Soros, a financier, is arguing for aid before reforms and promoting a $50 billion package. Such a sum has little chance of being found, but he raises a big question about Ukraine's importance. A Ukrainian collapse would prove Mr Putin's contention that Western promises mean little and that change in the post-Soviet world leads only to pain. The West may soon have to decide: what is Ukraine worth?

Europe and GMOs

Gently modified

The EU lifts its ban on GM crops

EUROPE has long been defiantly GM-free. The Americas and most of Asia grows the stuff without fuss. But crops whose genes have been modified in some way may not (with a few exceptions) be grown in the European Union. Until now. On January 13th the European Parliament lifted the EU-wide ban, instead allowing national governments to impose their own restrictions. The plan has already been approved by governments, so the change should come into force this spring.

It will still not be a breakthrough for GMOs, as most European governments remain firmly against them. In the past, they would not (in theory) have been able to stop GM crops being grown on their soil if the EU approved them—and the EU was supposed to consider scientific evidence in its ruling. Now governments will be free to impose national bans for almost any reason.

Eight GM modified crops await EU approval but only one variety of maize (corn) has been grown commercially. Some countries may now allow more. These include Britain, which does a lot of plant science, and Spain, which has over 130,000 hectares of GM maize. In the rest of the world GM crops are spreading and GM vegetables are appearing. America has approved a new modified potato. Europeans may soon learn what the lack of fuss is all about.

nomics, there is little room for manoeuvre. A big devaluation is out of the question, he says, because many company and household loans are in foreign currency. The European Commission holds veto power, as Croatia is under its excessive-deficit procedure. The education system cries out for reform as it churns out graduates for an economy that cannot generate jobs. Little attempt has been made to slim a bloated and sclerotic public administration.

It is assumed that Mr Milanovic's government will lose in December. But Dejan Jovic, a political scientist who once worked for Mr Josipovic, says that, if the Social Democrats play up their modest successes, and if a period of cohabitation with Ms Grabar-Kitarovic runs smoothly, Croats may decide they don't want a big change. Enough voters may be put off by the 1990s-style nationalism of Mr Karamarko to produce a hung parliament and a broad-based coalition. Given its dire economy, it is amazing that Croatia holds together as well as it does. ■

European energy policy

Only connect

BRUSSELS

The European Union heads into battle with national governments on energy

ENERGY, the European Commission believes, should flow freely to and between EU members. So Maros Sefcovic, the energy commissioner, has two adversaries. One is Russia, which is trying to keep its chokehold on gas supplies to eastern Europe. The other is EU national governments and their state-owned companies. They like the clout of national energy markets and dislike the way that cross-border trade in gas and electricity erodes it.

On Russia, the EU has made progress. It has avoided, so far, any cuts in gas supplies this winter. Despite more Russian bluster this week, Mr Sefcovic is baby-sitting an agreement on bills and debts that the EU helped to broker between Ukraine and Russia. It has pushed his native Slovakia to send gas eastward to Ukraine, reversing the usual flow. The EU is pressing Ukraine to reform its energy business, in particular to put gas meters on the border with Russia rather than rely on measurements taken at pumping stations inside the country. Many see a lack of meters as a prime source of corruption.

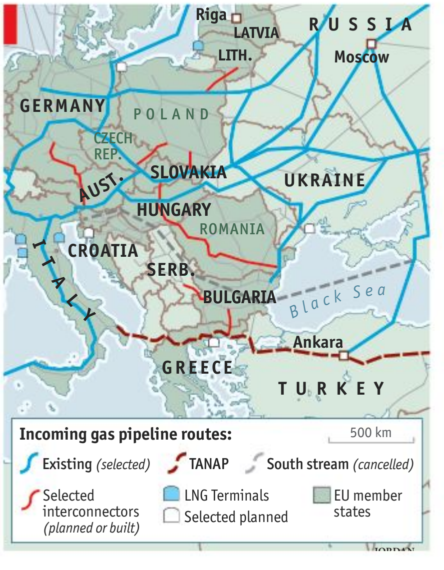
The EU has also faced down the Kremlin over South Stream, a highly political planned gas pipeline under the Black Sea and across the Balkans. The commission ruled that South Stream as originally proposed was illegal: the same company is not allowed both to run the pipeline and to own the gas it pumps. Russia urged those countries in which it has some sway, such as Austria, Bulgaria and Croatia, to defy the commission, but in vain. So Russia's president, Vladimir Putin, abruptly cancelled the project in December.

A smaller, EU-backed pipeline called TANAP is going ahead, but this will not help countries left stranded by the collapse of South Stream, notably Hungary and Bulgaria. Mr Sefcovic is trying to assist both. He is pressing Croatia to build a liquefied natural gas (LNG) terminal and allow the gas to flow to Hungary. A new LNG terminal in Lithuania has already won that country a better gas price from Russia. But the best way to help vulnerable countries is to build pipelines and electricity cables between them, and ensure that they work in both directions.

Promoting such "interconnectors" will be a big priority in the planned energy union, an EU project that Mr Sefcovic will outline at a meeting in Riga on February 6th. So far progress has been patchy, not least because of Russian influence: Bulgaria's puzzling lack of interconnectors with Greece and Serbia is an example. But electricity interconnectors should be more widespread, too. In 2002 the EU set a goal to members that electrical interconnectors should make up at least 10% of national capacity. But several countries have lagged behind in meeting this target, now set for 2020. And some countries, such as France, positively dislike cross-border power flows. Cheap wind-generated electricity from Spain would derail the French nuclear industry's business model.

The energy union aims to make Europe greener, safer, cheaper, thriftier and more modern. But headaches abound. There is plenty of money to pay for new projects, but they take far too long—the average time for EU infrastructure projects is ten years, says Mr Sefcovic. And the business models are still unclear. Interconnectors are hard to finance because, when they are effective at equalising prices, they may not be used much, or even at all.

The trickiest issue over energy policy is not on Mr Sefcovic's desk, but on a colleague's. The competition commissioner, Margrethe Vestager, must decide soon whether to proceed with a prosecution of Gazprom, the Russian gas giant, for abusing the rules of the single market through its country-by-country pricing and other practices. Tensions with Russia over Ukraine held back this action last year. But having seen Mr Putin blink over South Stream, the commission may think it is a good time to show who is in charge. ■



Charlemagne | The era of Syriza

A populist election win need not spell disaster for Greece—or for the euro zone

EUROPE'S leaders are often accused of having learned nothing from the euro crisis. But if the run-up to Greece's election on January 25th has proved anything, it is that politicians have become masters in the dark arts of expectation management. Syriza, a far-left party which polls suggest is likely to win, tells voters it will end the era of austerity, while assuring German taxpayers that it seeks no quarrel with them. German officials quietly tell reporters they are prepared to see Greece leave the euro, while professing the opposite in public. Any vaguely relevant remark by a European Union politician is multiply parsed for subtext or double meaning. Greeks may be forgiven for thinking they need a degree in game theory to decide how to vote.

After six years of recession, five under the tutelage of the hated "troika" (the European Commission, the European Central Bank and the IMF), Greece's future in the euro is again in question. Alexis Tsipras, Syriza's fiery young leader, promises a panoply of feel-good policies, including tax cuts and a public-sector hiring spree, and a slashing of Greece's debt load, which stands at over 170% of GDP. But such pledges seem at odds with those made by Greek governments in exchange for the bail-outs that have kept Greece in the single currency. Greek bond yields have spiked, and there are worrying signs of deposit outflows from banks.

Nobody really wants "Grexit", least of all Greeks: 74% say they want to stick with the euro. An exit would be painful and costly (see Free Exchange). But unlike in 2012, when Syriza narrowly lost an election to the centre-right New Democracy party, the Germans and others hint that this time the euro zone is reasonably well placed to cope with a Greek departure. A bail-out mechanism is in place, Europe's banks are in better shape and, after most private bondholders accepted a whopping haircut in 2011, over three-quarters of Greek debt is in "official" hands, reducing fears of contagion. Foreign investors are better able to distinguish among euro members. Bond yields outside Greece have remained flat throughout the latest turmoil.

Does this mean the risk posed by Greece is now commensurate with its tiny share (2%) of euro-zone GDP? Sadly not. Grexit would still shatter the illusion that membership of the currency is irreversible. In the medium to long term that would make the euro a riskier proposition, opening the door to speculative attacks on other euro members. Make no mistake, says a senior EU official: Grexit "would be a disaster". But for it to be avoided, there will need to be compromise on both sides—perhaps more on Greece's. European officials insist they will countenance no reversal of Greece's main fiscal and structural reforms, partly for fear of emboldening anti-austerians elsewhere. Nor will they accept another debt write-off. At best Mr Tsipras might win more lenient terms for its repayment, notably a further extension of maturities—which already stretch far into the future.

There are solid grounds for thinking a deal is possible. Since 2012 Mr Tsipras has become more sensible and his Syriza more professional. He has tightened party discipline. And polls suggest Syriza may have to rely on the support of a more moderate party to govern; that could help Mr Tsipras reach agreement. For their part, troika officials are mulling an extension of the bail-out to provide time for talks. Mr Tsipras has clambered to the top of Greek politics by promising a rupture with the old ways, but in the end may sign up to a classic European fudge.

European officials had hoped to avoid a Syriza-led government. But it should be no surprise if a country that has seen a 25% fall in output, unemployment at 26% and over one-third of the population at risk of poverty rejected those who have overseen such misery. The Germans and others have often displayed a tin ear to the suffering caused by the austerity-first policies they have pushed (Mr Tsipras refers to "fiscal waterboarding"). The surprise is that a radical alternative has not emerged before.

What took you so long?

Still, Europe's establishment is right to worry. The chances of an accident are real. Mr Tsipras must sell a deal to the more militant members of his party, some of whom were never convinced by the euro. Syriza's leaders are inexperienced negotiators, and their pre-election contacts with some creditors have been slim to nonexistent. Worse, the latest phase of Greece's euro-zone bail-out expires at the end of February, and various bond repayments are due soon afterwards. That leaves little time for Mr Tsipras and his merry band of neophytes to reach an accommodation.

Just as Greece's treatment within the euro zone was never about Greece alone, today its politics resonates well beyond its borders. Podemos, an anti-austerity outfit that has emerged from nowhere to top the polls in Spain, explicitly allies itself with Syriza; its leader, Pablo Iglesias, frames the Greek election as a tussle between Mr Tsipras and Angela Merkel, Germany's chancellor. Podemos's platform is barmy and its leaders, a ragtag of anti-capitalists and Hugo Chávez fans, are not, to put it mildly, ready to govern. But by shaking up a creaky two-party system they may have already performed a valuable service for Spaniards.

One sorry legacy of the euro crisis has been a weakening of the bonds of democratic legitimacy between rulers and ruled. The euro zone has only just begun to grapple with the tensions of a monetary union not backed by a political one. And Mr Tsipras looks more likely to fall back on socialist shibboleths than to tackle Greece's pernicious clientelism and corruption. But if a Syriza victory gives Greeks the sense that they have at least a small influence on their own destiny, that could go some way to repairing the damage of the past few years. For their part, Europeans might consider themselves lucky that their first serious joust with populism has a chance of avoiding disaster. ■

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Oxford v Cambridge

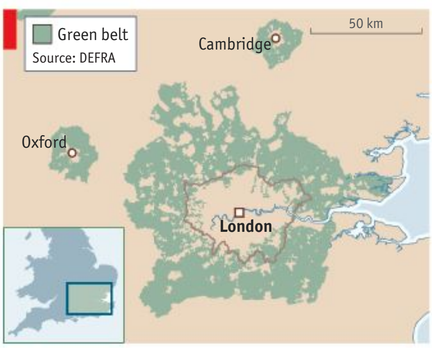
Trailing in its wake

OXFORD

How and why the fortunes of England's two ancient university towns diverged

THEIR rivalry is most vividly expressed each spring, when two boats splash up the River Thames. They compete for brilliant academics and for the aura of intellectual superiority that draws the cleverest students to their colleges. But Cambridge and Oxford also compete in more prosaic ways—as cities and as economies, as places to live and to set up businesses. And here there is no real competition.

Over the past few years Cambridge has added many more workers, highly educated residents and well-paid jobs than Oxford (see chart). Last October 40 Oxford councillors, academics and business leaders went to Cambridge to see how it handles urban problems such as housing and transport. That provoked joshing from the Cambridge local press about its rival going "back to school", but also a frank acknowledgment of how far the cities' fortunes have diverged. "Cambridge is at least 20 years ahead of Oxford," admits Bob Price, the leader of Oxford City Council.



Both cities are wealthy and pretty. They are both about 60 miles from London, along fairly good train lines. Both are constrained by large "green belts" in which it is almost impossible to build houses. Both have Labour-led city councils. But there are big differences between Oxford and Cambridge, too—in topography, regional politics and priorities—and these help to explain the gap in performance.

Whereas the land around Cambridge is flat and boring, much of Oxfordshire is rolling and gorgeous. It attracts wealthy, powerful residents who want to keep it that way. Oxford is surrounded by four different districts, run by Conservative politicians who do not all want to see an expansion of the city onto their land. Nor do they regard Oxford's economic growth as their priority. Cambridge is surrounded by just one district, Tory-led South Cambridgeshire, whose councillors know on which side their bread is buttered.

In 2014 an assessment commissioned by the city council from URS, a consultancy, found that Oxford needed to build up to 32,000 new houses by 2031. The city says it has space for only about 10,200 of these, so the rest should be spread among the four rural districts. They question the numbers and say Oxford has not done enough to build in the city. They cannot see that Oxford's unmet housing need holds back the prosperity of the whole county, laments Mr Price.

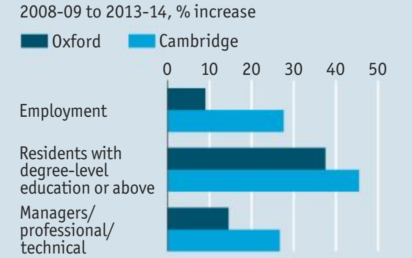
Companies complain that the exorbitant cost of housing is making it hard to hold onto workers. In 2014 the average Oxford home cost 11.3 times average local earnings. That is the biggest discrepancy in Britain: the average is 5.8 times. Each day 46,000 people commute into the city, which has a population of 150,000. And yet local businesses have not managed to persuade local politicians to deal with their problems.

Cambridge, with 125,000 people, is quite different. Decades ago a few visionary academics proposed that the city should convert its boffinry (and especially its comparative strength in the sciences) into wider regional prosperity. In the 1970s Trinity College opened the Cambridge Science Park; the St John's Innovation Centre followed in 1987. A whole ecosystem emerged, combining local government and business and then investors, all driven by the university. This success has also created housing and transport pressures, and property is expensive in Cambridge, too. But Cambridge built 1,020 homes in 2014—three times as many as in 2009. Oxford built just 60 last year.

Cambridge's most recent housing plan, published in conjunction with South Cambridgeshire council, is for 14,000 new homes in the city and 19,000 in the county. There is some opposition to this—but, says Lewis Herbert, head of Cambridge City ▸▸

Over-achievers

2008-09 to 2013-14, % increase



Source: Nomis

Council, because only 3% of the new houses will be in the green belt, so far most parties have signed on. "The key to preserving the green belt is getting the other stuff right," he says. He is pouring money into improving transport links and other infrastructure for the surrounding area, assisted by a "city deal", a central-government scheme that gives large dollops of cash to local authorities that boost growth.

The University of Oxford has not been as forward-looking as its ancient rival, although Mr Price says he has seen a change under the current vice-chancellor, Andrew Hamilton. The university is now much more involved in decision-making, he says. Like local businesses, it has realised, belatedly, that the housing shortage affects its ability to attract world-class academics as well as technicians and cleaners.

What the city, and the county, now need is someone to provide a strategic overview and then to bang heads together to push it through. None of the districts in Oxfordshire is big or powerful enough to do so. Some politicians point to the example of Manchester, where 10 local councils have joined together, creating efficiencies financially and in urban planning. But they are all part of a single metropolis.

It is just possible that, if the councils cannot work out a solution, Westminster might intervene and merge the city, district and county levels to form a unitary regional government. "Working better together now will build a strategic defence against being forced into unitary government," argues Keith Mitchell, a retired head of Oxfordshire County Council.

More broadly, Oxford's travails go to the heart of the problems with England's planning system. "Development is seen as a bad thing in this country and planning is there to stop it," says David Rudlin, a planner whose design for solving Britain's housing woes won the Wolfson prize, a prestigious economics award. He says Cambridge is doing much better, though even it could learn from a place like Freiburg, a German university town that has used town extensions and trams to solve similar problems. What is needed is an overhaul of both the planning system and the green belt policy. But it does not require a DPhil from the University of Oxford to see how difficult that is going to be. ■

Politics and the media

Dodgy Dave

David Cameron is smart to duck a TV debate—but not right

BRITONS have admired America's televised presidential debates since the first, between John F. Kennedy and a sweaty Richard Nixon, aired in 1960. But it took them half a century to adopt the practice. Though politicians often flirted with the idea, and broadcasters nagged, the more plausible of the party leaders (typically the incumbent) always vetoed it, sensing that he or she had more to lose than to gain. This deadlock broke in 2010 because Gordon Brown, the then-prime minister, was so unpopular that he was willing to gamble. David Cameron, leader of the opposition Conservative Party, was delighted. He had spent months agitating for the contest (pictured below), accusing Mr Brown of "dithering" and "bottling".

Now prime minister, it is Mr Cameron's turn to dither and bottle. On October 13th a consortium of broadcasters proposed three televised debates ahead of this May's election. One would pit him against Ed Miliband, the Labour Party leader. Another would add Nick Clegg of the Liberal Democrats. A third would also include Nigel Farage of the right-wing UK Independence Party (UKIP). The prime minister prevaricated, then insisted that he would participate only if the Greens, like UKIP a small party that has surged in opinion polls, could take part too. Unpalatable to Labour—because the Greens could split the left-wing vote—and to broadcasters (who do not like to be pushed around) that is as close as Mr Cameron could come to refusing to take part.

Spot the ball

On January 14th the leaders of Labour, UKIP and the Liberal Democrats all wrote to Mr Cameron urging him not to "deny the public the opportunity to see their leaders debate" out of self-interest. They encouraged the broadcasters to hold the debates regardless, leaving the prime ministerial podium empty if he continued to stall. In Parliament, Mr Miliband called him "chicken", to clucking from the Labour benches.

Mr Cameron's foot-dragging is indeed self-interested. Voters tend to favour him as prime minister over Mr Miliband by a factor of two to one. As Philip Cowley, a political scientist at Nottingham University, has put it, the Labour leader will outperform expectations merely if he "comes on stage and doesn't soil himself on camera"—let alone if he puts in the strong performance of which he sometimes shows himself capable.

The prime minister also knows that Mr Farage demolished Mr Clegg with blokeish aphorisms when the two went on television to debate Britain's place in the EU last year. That encounter served a sort of cosmic justice. Mr Clegg had enjoyed a brief surge of popularity after the first leaders' debate in 2010—partly because he smiled and looked into the camera, but mostly because, fresh-faced and seemingly far from the reins of power, he made his grander rivals look stale. Last year Mr Farage was the coming man. The UKIP leader could prevail in a four-man debate, which would help his party peel more right-wing voters away from the Tories.

That does not make the prime minister's objection to excluding the Greens wrong on principle. That left-wing party now routinely polls ahead of the Lib Dems and won its first parliamentary seat four years before UKIP. Natalie Bennett, its leader, deserves a podium.

But nor does it make Mr Cameron's stalling noble. A well-run televised debate makes people pay attention to the election: the first one in 2010 drew 10m viewers. They are much better at teasing out politicians' views than the tedious round of speeches, press conferences and staged visits to supporters' houses that comprise a debate-free campaign. Britons should have the chance to see their leaders battle—as Mr Cameron argued so forcefully just five years ago. ■

Bagehot | Mightily different

Britons face a stark electoral choice. It is a pity so few seem aware of it

MANY Britons seem not to have noticed, but on May 7th they will have an epic choice. Vote Conservative in the general election and they will be signing up for an eye-watering shrinkage of the state; thus, the Tory prime minister David Cameron argues, to restore sanity to the public finances and preclude the throttling tax rises that would otherwise follow. Vote Labour and they will pitch for much lighter cuts and a programme of intervention in the economy intended to make it fairer and more productive and so obviate, the party's leader Ed Miliband claims, the need for much future borrowing. But this would also mean much less reduction in a deficit currently running—even after four years of growth—at close to £100 billion ($152 billion) a year.

This is a disparity worthy of comparison with left-right struggles of yore. The Tories promise to close the deficit within three years, which, they estimate, would require annual savings of £33 billion—most of which they would find by cutting spending. Half of this would come from slashing benefits; the rest would come from whacking the budgets of departments, such as justice and the police, which, under the current Tory-led government, have already been much reduced. By 2020, these departments would have seen their budgets cut by a staggering 41% in a decade. Labour's deficit-reduction plans are by comparison so mild it is amazing how controversial they are within the party.

It has pledged to produce a surplus on the current account by the end of the next parliament. Assuming Britain continues investing around £25 billion in capital projects, Labour would have to make savings of around £7 billion a year. Some of this would probably come from tax rises; Mr Miliband has already announced plans to squeeze bankers and owners of expensive houses, albeit to make more cash available for the National Health Service. The rest, he intimates, without giving details, would come from slighter welfare and departmental cuts.

These offers recall Britain's last big tax-and-spend election, in 1992. Now as then, the Tories warn of an impending Labour "tax bomb"; Mr Cameron, who worked on the 1992 campaign as a ruddy-cheeked apparatchik, talks of dusting down some of his old slogans. Now as then, Labour says the Tories will wreck public services. But that historical comparison, though apposite, does too little justice to the momentousness of this year's choice. Ahead of the 1992 election, the greatest annual divergence between the Tory and Labour borrowing plans represented around 1% of GDP (for the year 1994-95), and that was largely accounted for by the windfall the Tories were counting on from privatisation. Otherwise the two parties' plans were broadly the same. By contrast, the additional borrowing that would take place if Labour wins this year's election could amount to around £170 billion of extra debt by 2030, according to the Institute for Fiscal Studies. On an annualised basis, Labour's additional borrowing up to 2020 would represent up to 2.3% of GDP. That is an enormous difference between the two parties, on the issue of pre-eminent national importance. So it is extraordinary that many voters do not yet seem to have woken up to it.

As the recovery has unfolded, over the past year or so, immigration has displaced the economy as the issue most voters care about most. The fortunes of insurgent fringe parties—chiefly the UK Independence Party and the Greens—who have nothing serious to say about the public finances have continued to rise. Meanwhile the Tories, instead of getting the bounce from the recovery they expected, have remained stuck in the polls. Labour has declined gently. Britain's two parties of government—and sole custodians of the biggest question in British politics—are now level-pegging with barely 65% of the vote between them.

Their shrinkage reflects the fortunes of established parties across the Western world. Yet the fact that so many British voters appear so unexercised by an argument of such colossal significance is also an indictment of both the Tories and Labour. It signals their failure to offer a compelling vision to make sense of fiscal plans so complicated that even Bagehot, who is paid to follow such things, finds it hard to do so.

Despite wasting too much time on more peripheral issues, such as immigration, the Tories have at least explained why less spending—their aim is to shrink the state's claim on national income to around 35%—is imperative for deficit reduction. They have done much less to allay the concerns this has raised over the long-term viability of public services, however, which is one reason their ratings have not risen. A Tory cabinet minister acknowledges the problem: "You could argue there's a missing vision of what a 35% state should look like". He also holds out no hope of this being fixed before the election: it is simply too late.

They forgot the vision

Labour's failure is more abject. Mr Miliband's long campaign to slam the Tories as cold-hearted state-wreckers has not merely distracted him from his own programme for a future Britain, but also warped it. It has led him to devise a litany of statist fiddles in energy, labour, financial services and other markets largely uninformed by the tight fiscal circumstances in which even a Labour government would find itself. This has bruised his credibility and made some of his ideas—for example, to expand apprenticeships—look unrealistic. Belatedly, he has sought to undo the damage; this week Labour voted for a new law mandating fiscal constraint that it had derided as a gimmick. But it is similarly too late for the Labour leader to change a reputation won by four years of puerile left-wing posturing.

In short, neither big party has done enough to explain itself to voters at a time when they are unprecedentedly averse to their charms. A hung parliament and coalition rule is the likely result. And with that comes a waning chance of either the Tories' or Labour's starkly different economic vision ever being realised. ■

Also in this section

Ransomware

Your money or your data

Dick Turpin rides again—as a digital highwayman

WHEN internal e-mails and unreleased films from Sony were leaked late last year, it was the origin of the hack (perhaps North Korea) and the embarrassing details (withering comments on film stars) that made the news. Less remarked was that the hackers had offered the media giant the chance to avoid the leak by acquiescing to its demands, which have not been made public.

Such cyber-hold-ups are on the rise globally and go far beyond big firms. More typical is the story of an Italian architectural draughtsman who turned to Digital Forensics Bureau, a computer-security firm in Turin, after unwittingly downloading "ransomware"—a virus that encrypted all his files and posted an onscreen message demanding cash to unlock them. Neither he nor the firm succeeded in cracking it. Faced with losing every file from his 14-year career, he capitulated, paid up and received a decryption key by e-mail.

Ransomware is here to stay, says Troels Oerting of Europol's European Cybercrime Centre. The emergence of bitcoin, a digital cryptocurrency that can be used anonymously, is a big part of the reason. Most ransoms must be paid in it, and ransom notes typically explain how to buy it. Other online options such as PayPal require a credit or debit card, or a bank account, making them riskier for criminals.

Many of the extortionists are from Russia; its authorities are uninterested in hunting them down. Their victims are everywhere. In Australia alone, estimates the Australian Crime Commission, a government agency, between August and mid-December around 16,000 individuals, firms and government bodies paid a total of A$8m ($7m) after downloading ransomware. Not all victims get their data back: some refuse to pay, and just as 17th-century highwaymen sometimes took first money and then lives, their digital equivalents can renege on promises to unlock files.

Ransomware programmers keep ahead of antivirus software by continually tweaking their code. Last year Europol and the Dutch National High-Tech Crime Unit warned that ransomware "kits" were available online, complete with tips on hiding profits from the authorities. And tricking people into downloading ransomware via an e-mail attachment is not the only approach. Extortionists often pay associates to post "malvertising" banner ads that lure traffic to websites that can take control of visiting computers, says a Parisian security researcher known as Malekal.

Until recently a victim with some technical skill might have been able to work around ransomware code, says Paolo Dal Checco of Digital Forensics Bureau. Now speedy innovation by attackers means victims are usually outgunned. In June a team led by the FBI seized computers that had been distributing CryptoLocker, a piece of ransomware. Specialists cracked it and created DeCryptoLocker, a free decryption service. But CryptoWall, an immune version, quickly appeared. In September Nixu Corporation, a Finnish IT-security firm, found a way to disable particularly fierce ransomware called TorrentLocker—but within weeks its makers had fixed the weakness that the firm had spotted.

According to Gregg Housh, an online marketer who is close to Anonymous, a hackers' collective, the average ransom has fallen from about $800 in the past few years as extortionists have found the sweet spot where their victims simply pay up. In October Maria Grazia Mazzolari, an official in Bussoleno, a small town in northern Italy, paid a €510 ($644) ransom herself when the authorities balked at using taxes to reward criminals. Shortly afterwards the sheriff's office in Dickson County, Tennessee, paid $572 to recover thousands of files. Ransoms have fallen even further in Paris, says Eric Larchevêque. Most victims who buy bitcoin at La Maison du Bitcoin, his shop, spend between €160 and €275.

Daylight robbery

Estimating the profits from any type of cybercrime is tricky. But even though ransoms are falling, the new Dick Turpins are raking it in. To collect ill-gotten gains in bitcoin, they must give a bitcoin-account number: anyone can view transactions, though not the holder's identity. Accounts used by whoever held Bussoleno to ransom racked up $109,400-worth of bitcoin in the next eight days.

Ruses used by 17th-century travellers, such as hiding valuables, hiring guards and picking routes with care, have echoes today. Web-users should back up files, use antivirus software and firewalls, and avoid suspicious attachments and sites. But now, as then, the unwary and unlucky fall victim—and many see no choice but to pay. ■

Violence in sport

Fair game?

Courts are increasingly being asked to rule on injuries inflicted during games

IF YOU punch someone in the face and knock him unconscious, you generally risk jail. But if you deliver the blow in a boxing ring, you will be a hero: as an English judge wrote in 1993, boxing "stands outside the ordinary law of violence because society chooses to tolerate it".

Boxing is extreme: competitors win by hurting each other. But other contact sports, and those using dangerous implements such as bats and hard balls, can also injure and kill. The death of Phillip Hughes in November was a sad example. Though he died after a rock-hard, fist-sized object was thrown towards him, no one was prosecuted. As a batsman playing cricket, he fell victim to an accident, not a crime.

Playing sport is not licence for anarchy. Murder on the football pitch is still murder. But rather than passing clear laws, common-law countries have set the boundaries of the carve-out for sports via prosecutorial discretion and a few close-call cases. Those boundaries can shift with social norms. Sometimes they are extended: Norway has just ended its ban on professional boxing (see box). In most countries, though, they are likely to narrow—with potentially large consequences. Players, teams and leagues could find themselves legally liable for injuries once regarded as routine. And if the public turns away from dangerous games, huge industries such as American football could vanish.

The basic principle that makes violence in sports legal is consent. Just as people consent to allow surgeons to cut them open, athletes consent to allow other athletes to harm them. But governments sometimes outlaw consensual acts, both in sport and outside it. In the 1800s most European countries and American states banned duelling with guns and bare-knuckle boxing. In 1993 a group of British men were convicted for assault after carrying out consensual sadomasochistic acts: the judges ruled that consent was not a defence to charges of actual bodily harm.

For the pastimes that states have decided to allow, it is often unclear exactly which types of contact athletes consent to. Courts have generally sought to distinguish violence intrinsic to a sport from behaviour outside the norm. But a game's formal rules cannot legalise conduct that would otherwise be forbidden, and are often surprisingly unhelpful: much of what they explicitly punish (such as excessive tackling in soccer) is banned precisely because it occurs so often, and can thus be considered part of the sport.

The criteria courts have used are whether an athlete intended to hurt a victim, whether serious harm resulted, whether the type of attack was prohibited by the sport and whether it occurred when play was suspended or terminated. When all are met, criminal prosecution is likely. In 2001 James Butler, an American boxer, approached his opponent after losing a bout, ostensibly to congratulate him. Instead, he punched him in the jaw with an ungloved fist. His rival collapsed and was out of action for nine months; Mr Butler served four months in jail. (He is now serving a longer sentence for killing a man with a hammer.)

When a sport bans a particular form of violence but tolerates it in practice, the jurisprudence is less consistent. Both fist-fighting and hitting opponents with sticks are officially banned in ice hockey. But fists are widely accepted, whereas sticks usually lead to long suspensions. Canadian courts have made the same distinction. The two players in the National Hockey League who have been convicted of assault used their sticks in intentional attacks, though one served a single day in jail and the other was merely given probation.

Criminal courts are generally closed to cases where violence occurs in direct connection with play. But as awareness of the dangers of contact sports grows, so may judges' willingness to hear claims for civil liability. The trend started in 2006 when Jarrod McCracken, a rugby player in Australia, won A$97,500 ($73,400) in a suit against two players who ended his career with a "spear tackle", and their team. (They picked him up and dropped him on his head.) In 2013 America's National Football League reached a $765m settlement (likely to be increased after a judge overturned it for being too stingy) with former players over brain damage, setting a precedent that leagues can be held liable for previously unknown health risks to which players could not have consented.

Another precedent could come from Magomed Abdusalamov, a Russian boxer who may never walk or talk again after a bout in 2013. His family is suing the venue, the firm that promoted the event, the referee, a state official and the ringside doctors, on the grounds that the fight should have been stopped sooner and that he was not given appropriate care. As more injured players turn to the courts, judges will increasingly have to rule on which sporting risks are acceptable—and perhaps even which sports. ■

Laws on boxing

Bouncing back

More countries are allowing professional boxing, despite the risks

FIRST Sweden in 2007, then Cuba in 2013, and now Norway have left the small club of countries that ban professional boxing. The centre-right coalition in power since 2013 promised to cut taxes and red tape—and to let Norwegians indulge in pastimes its predecessors deemed too dangerous, including cheaper wine and spirits, jetskis and Segways. And last month 33 years without pro boxing came to an end, leaving Iceland with the Nordic region's sole boxing ban.

Health concerns lay behind the Norwegian ban. (Cuba had considered the violence—and prize money—incompatible with Marxism.) The World Medical Association has long called for the sport to be outlawed everywhere. But Norway's pugilists are delighted, as they can fight at home and earnings will rise.

A champ unable to throw a punch in her own country probably did more than a new government's reforming zeal to end the ban. Cecilia Braekhus (pictured), a former champion kickboxer, turned to the sport in 2003. Undefeated in her 27 pro matches to date, in September she became the first Norwegian, and first woman, to hold all major world-title championships in her class (welterweight). In 2012 she was named Norway's sports personality of the year. A favourite of the country's sports pages and tabloid press, she freshened up boxing's battered image—and made it a symbol of the fightback against the Nordic nanny state.

Cecilia Braekhus packing a punch

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BP

Blood in the water

The oil giant's troubles could make it a takeover target, especially if the price of crude keeps falling

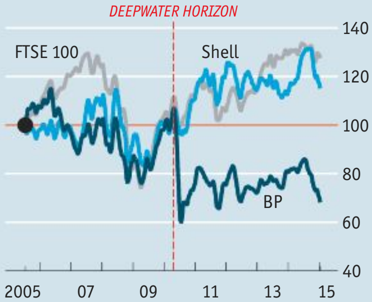
INVESTORS in BP are a patient bunch, and well rewarded for it. Britain's third-largest company pays generous and reliable dividends, making it a mainstay of many private and institutional portfolios. But in the run-up to the oil giant's quarterly results on February 3rd, some investors are jittery. Although BP's dividend yield is a juicy 5.8%, its shares have fallen by a fifth over 10 years, greatly underperforming the broader market (see chart) and making total shareholder returns slightly negative. This is mainly because of the Deepwater Horizon disaster in the Gulf of Mexico in April 2010, which cost 11 lives and a stonking $43 billion (and maybe more) in fines, legal bills, compensation and clean-up.

BP has slimmed since then. It has sold more than $40 billion of assets, cutting its size by a third, as it continues to fight (and mainly lose) lawsuits and appeals. Now cheap oil is adding a new edge to its woes. Until recently BP made plans based on an oil price of $100 a barrel. When it announced its latest $1 billion restructuring plan in December, it tried to reassure investors that its investment plans assumed an oil price of $80, but with a fallback level of $60. The price was $65 then. Now it is below $50. As we went to press on January 15th BP was announcing further job cuts.

Not only does existing capital spending (an annual $24 billion-plus) look unaffordable, but those generous dividends—the top priority—will gobble cash. An institutional shareholder wonders if BP may resort to paying next month's dividend in new shares (or "scrip"). "They are being overwhelmed by events," he says.

Below par

Share prices, July 15th 2005=100*



Source: Bloomberg *30-day moving average

So the chances have grown that one of BP's rivals will seek to capitalise on its weakness and bid for it. Although its value has fallen sharply, its market capitalisation is still $107 billion, so the list of possible buyers is short. The most talked-about potential suitors are Exxon Mobil (market value $380 billion) and Shell ($197 billion), with Chevron ($196 billion) as a possible "white knight" merger partner to fend off the other two. There are some state oil and gas firms big enough to afford BP (the Saudi, Qatari or Kuwaiti ones, say), but none seems to be in shopping mood just now.

All the firms involved decline to comment. But it is easy to see some advantages to a takeover by Exxon. The two companies fit, in that Exxon's American business is smaller than its international operations. And BP, though nominally British, is strongest in America. Exxon has lots of cash and low borrowing costs. It did a good job of absorbing Mobil, another rival, in 1999. Moreover, the biggest blight on the BP share price is its American lawsuits. It has handled these badly. Exxon, with its unrivalled political clout, might do better.

Another attraction is BP's nearly 20% stake in Rosneft, Russia's biggest and best-connected oil company. Rosneft is in trouble: heavily indebted, cut off from Western capital markets by sanctions, and bailed out by the Russian state in December. But for a far-sighted outsider, Russia's oil and gas reserves are hard to ignore. BP has made a lot of money there so far. Sanctions forced Exxon, which has deep ties with Russia, to cancel its Arctic drilling project with Rosneft. Buying BP could offer a way back in. It would take a brave boss to do this; but Exxon's Rex Tillerson is made of stern stuff.

Perhaps the strongest reason for a takeover is not BP's plight, but the oil industry's general gloom. The S&P Global Oil index has performed only marginally worse than BP over the past 10 years—it is up just 2.6%. All the big energy companies were wrestling with rising costs and falling reserves even before the oil-price fall. Now they are grappling with its consequences. Mergers offer a chance to cut costs and save money. Prices are low. BP, now fit, lean and ▸▸

cheap, is not best placed to go shopping itself. So it could be on someone else's list.

BP wants to stay independent. Its bosses believe they have done well since 2010, ending an era of bloat, excessive ambition and corner-cutting on safety. Any buyer would have to surmount some big obstacles. Britain's former imperial oil company has close ties to the establishment. A sale to an American buyer would mean a political row, in an election year.

It is also uncertain that Exxon would be able to solve BP's remaining American lawsuits. The biggest headaches are in Louisiana, a state where outsiders tend to fare poorly, whether they are foreigners or just from out of state. Many legal wheels have turned since Barack Obama ostentatiously referred to BP as "British Petroleum" in what some saw as opening the hunting season on the company. One would have to believe that the American legal system was open to influence from politics and money to think that switching ownership would help. Some might say it is, but Exxon would hesitate to argue that case publicly. Boards are usually nervous about buying a company embroiled in lawsuits.

You can't be sure of Shell

Nor does the idea of Shell taking over its old partner and rival look quite so attractive when examined in detail. BP's former chief executive, Lord (then John) Browne, did once consider a merger, at a time when his company was top dog. Shell is now the stronger party. It has a solid balance-sheet, and there are some attractive synergies and cost savings to be had.

But big, hostile bids are not the Anglo-Dutch company's style. It has a lot on its plate. Its big bets on gas and Alaskan drilling are not going well. Whereas BP sold assets when oil prices were high, Shell is now scrambling to do the same at a time when takers are few. This week it had to scrap a huge petrochemicals project in Qatar.

Melding together the two firms' cultures might be no easier than if Exxon were the buyer. BP has never quite shed its imperial ways, including a climate in which employees feel nervous about bringing the boss bad news. Shell is an engineering-driven company, which sees itself as flatter and more collaborative. Anti-monopoly worries would require complicated and risky untangling of downstream assets—and in hard times.

The risks and costs of trying to buy BP, and then absorbing it, may be enough to make potential predators think twice about having a go right now. And there are plenty of other oil firms they could buy, that would not come with BP's baggage. But if the oil price stays low, or if BP's condition worsens for other reasons, all bets are off. The company has changed a lot in the past decade. To guarantee its independence it will have to do even more now. ■

Information technology

Computing, fast and slow

IBM is not about to go down, but life in the cloud will be tough

SOME ingredients are missing: the ping-pong table, cheap furniture, and inappropriate T-shirts. But otherwise this could be a shared workspace for internet start-ups: people sit around long tables and in front of large screens; others lounge on bright orange couches; the walls are full of sticky notes saying things like "I'm happy" or "be yourself"—the products of a brainstorming session.

However, this office in a building in central London belongs to IBM, an information-technology giant long known for its buttoned-down culture and blue business suits. The new "interactive experience lab" is one of four, soon to be ten, such places where teams of employees from IBM and its customers jointly think up new online services and apps. Such projects, the firm hopes, will help it grow again.

IBM's revenue has declined, year-on-year, for ten straight quarters. Its recent third-quarter figures were particularly disappointing: sales were $22.4 billion and earnings per share $3.68, both well below analysts' expectations. One reason was that IBM had decided to pile on the bad news: it also scrapped its long-held goal of reaching earnings per share of $20 for 2015. When the firm reports fourth-quarter earnings on January 20th, analysts expect the numbers to look better, since global demand for IT appears to have strengthened.

It will take more than a quarter to get IBM back on track, however. The company is not about to go belly up, as it seemed about to in the early 1990s after corporate

IBM's Rometty dives into the cloud

IT buyers had shifted from mainframes to more distributed forms of computing, such as PCs and servers. But the industry is going through another wrenching change, which is in some ways more challenging: instead of owning computers, businesses are increasingly renting computing services in the cloud. Not just the technology is on the move, but everything around it.

To understand the depth of this shift, consider mainframe computers. These, combined with related software and services still generate 24% of IBM's revenues and 35% of its profits, according to Toni Sacconaghi of Sanford C. Bernstein, a research outfit. Mainframes are a prime example of what consultants call "systems of record". Banks, for instance, use them to manage customer accounts. But to keep the mainframe relevant, on January 13th IBM launched a new model, which is more of a "system of engagement". One machine can process 30,000 transactions a second, and analyse and encrypt data in an instant. Such features come in handy in the age of the cloud and its corollary, mobile computing: people increasingly do their banking and many other things on smartphones.

As corporate IT opens up to the outside world, the way in which it is developed, sold and used is changing too. Power is flowing from hardware engineers to software developers, the best of whom are in great demand. It is no longer mostly chief information officers (CIOs) who hold businesses' purse strings; by 2017 chief marketing officers will spend more on IT than their CIOs, reckons Gartner, a market-research firm. Customers are no longer willing just to buy the latest technology; they want to pay for specific results, for instance for sales increases achieved by using analytics software.

All this means that longer-established hardware firms such as IBM, HP, Oracle and SAP must rethink how they do business. They will have to offer a working environment that attracts younger people (such as IBM's design studios in London and elsewhere), develop new products together with their customers and become nimbler to keep up with more focused start-ups, says Ralf Dreischmeier of the Boston Consulting Group.

IBM had a late start mainly because it concentrated for far too long on its financial goals. Rather than getting ready for the new world, the firm continued to cut costs, buy back shares and shed lower-margin business, such as low-end servers and chipmaking. Things began to change in 2013 when it acquired SoftLayer, a cloud-computing provider. Last year it teamed up with two "new-tech" firms, Apple and Twitter, to develop mobile business apps and mine social-media data. IBM has also started to tweak its organisation. Earlier this month it created separate units for its fastest-growing businesses, such as data


I have sawdust collecting on everything but my dream.
I have buyers lining up and orders streaming in.
I have apps to sync my online sales with my bottom line.
And I have all the tools I need right there on my workbench.
I run on QuickBooks. That's how I OWN IT.
WAGNER WOODWORKS
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INTUIT QuickBooks.
OWN IT.

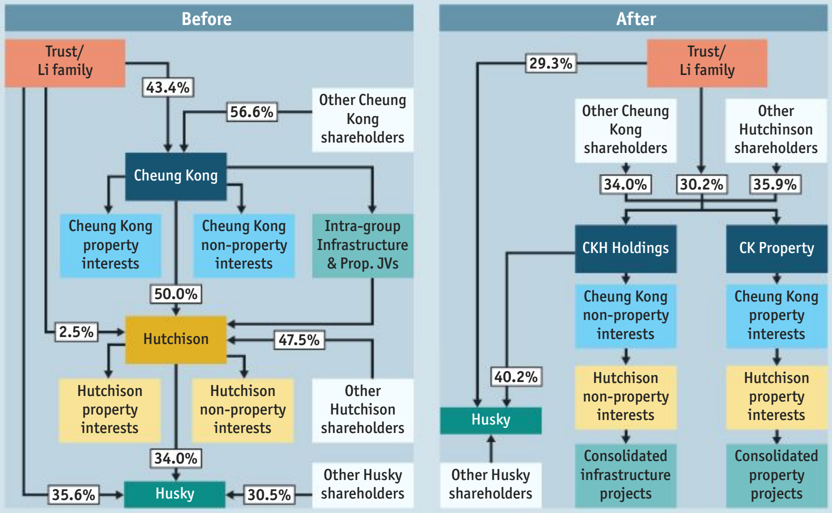
analytics, to make them more focused, the better to compete with upstart rivals.

Will these changes be enough? Steven Milunovich of UBS, a bank, thinks it will be another three to four years before IBM's new businesses, such as its cloud offerings, bring in more money than old ones, such as IT services. But he is optimistic that IBM will make it through this transition intact. And the firm's longer-term bets, such as Watson, an artificial-intelligence computer system, could still turn into something big. It continues to pump money into research: last year, for the 22nd year in a row, it was America's largest recipient of patents.

Other analysts imagine a more pessimistic scenario: IBM is increasingly held back by its legacy business; it becomes less profitable because cloud services offer lower margins than the more customised IT services IBM is used to providing; and it steadily loses customers to newcomers, such as Amazon's cloud-computing arm.

If this starts to look like it is happening, pressure will mount for Ginni Rometty, IBM's boss, to take more radical action. It is unlikely that the firm will break itself up, as its rival HP has decided to do: IBM's businesses feed too much on each other. But it could be forced to separate its old from its new businesses more clearly. Many of its clients are going for "two-speed IT", in which they separate their faster-moving and more innovative IT needs (data-crunching, say) from more basic services (payroll processing, for instance). To keep them, IBM may need to do the same. ■

The Li shuffle



Source: Morgan Stanley

Li Ka-shing

Superman sheds his concubines

SHANGHAI

Asia's most successful tycoon has many reasons for shaking up his empire

LI KA-SHING has long been Asia's premier dealmaker. For decades he has shrewdly been buying and selling holdings in energy, telecoms, retail and property. The value of his sprawling empire is now approaching $100 billion. His acumen has made the octogenarian Mr Li one of Asia's richest men, and earned him the nickname of Superman in his adopted home of Hong Kong.

Age has not wearied Mr Li's dealmaking nous, and now he has made himself instantly richer by announcing a plan to simplify his business empire's complex structure. At the moment, most of his assets are in two sprawling, listed conglomerates, Cheung Kong and Hutchison Whampoa. He also controls Husky Energy, a Canadian firm. Under the new plan (see diagrams), the two largest firms would be merged as CK Hutchison Holdings; then their various property holdings will be spun out into a firm called CK Property. The two new entities will also be listed but Mr Li will retain control, with roughly a 30% share in each. Other shareholders must now approve the plan.

Why is Mr Li shaking things up? One reason, says the firm, is to unleash value. The current holding structure is opaque, which investors dislike. It is also messy, as it lumps together property with other assets. Investors prefer pure-play property investments. So markets have penalised the two firms' shares. Cheung Kong has recently traded at a one-quarter discount to its net asset value, for example. Its shares and those of Hutchison rose sharply on news of the reorganisation plan.

Another reason given for the reorganisation is to make it easier for analysts to assess acquisitions the group makes. It is hard enough to understand how assets and revenues are transferred and allocated within Mr Li's empire as a whole; harder still to evaluate an acquisition in which Cheung Kong, Hutch and other bits of the group each end up with stakes in the target business. That, he recently joked, has made it difficult for outsiders to work out which entity is the first wife and which is a concubine. Now he promises there will be "no more concubines".

These explanations are reasonable, and the proposal has gone down well with investors. However, other factors may also be at work. Some see in the reorganisation an effort to weaken the grip of Canning Fok, Hutch's long-standing and formidable manager. This in turn may have something to do with succession planning. Mr Li has officially anointed his elder son Victor (aged 50) as his successor, and declared that he will finance the business ventures of his younger son, Richard (48).

Others note that the plan calls for a shift in the two new companies' registration to the Cayman Islands. This follows Mr Li's recent sales of a number of property and other holdings on the Chinese mainland. Mr Li vehemently rejects any suggestion that he is fleeing China, pointing out that many Chinese firms are registered overseas for reasons of tax efficiency. Perhaps so, but it is just possible that the reorganisation is also designed to put at least the international bits of Mr Li's empire out of the reach of politicians in Beijing. ■

American carmakers

Hypercars and hyperbole

DETROIT

After a few good years America's carmakers face a rapid U-turn

THE bravado of America's car industry is typified by the new Ford GT, the biggest star at the Detroit motor show. The superfast hypercar, unveiled on January 12th, demonstrates a self-confidence born of an incredible turnaround since 2009 when GM and Chrysler sought bankruptcy protection, and Ford narrowly avoided the same fate. But the GT also represents an escapist fantasy. America's booming market has hit a peak, and there will be far more to worry about than going from 0-60mph in a few seconds.

The jovial mood in Detroit may appear reasonable. Annual sales slumped to 10m vehicles in America in the depths of the financial crisis. The recovery has been swifter than anyone imagined. After gains of over 1m in each of the past four years, car sales hit 16.5m in 2014, the best since 2006. ▸▸

But the turbocharge is at an end.

Analysts and even some industry executives reckon that if there are further gains in sales, they will be modest for the next few years, despite cheap credit, cheap petrol and rising employment. Pent-up demand from drivers replacing old bangers is largely spent. Other trends are at work too—nowadays young people are reluctant to own a vehicle and cars are built to last, says Brian Johnson of Barclays bank.

Yet a few good years seem to have made America's carmakers forget that the bankruptcies and bail-outs of 2009 ever happened. Morgan Stanley, another bank, reckons that all the capacity taken out in the downturn, plus half as much again, will be added by 2016, significantly outpacing demand. Building more cars for a market that is close to standstill will inevitably mean a return to the old, bad habit of heavy price-discounting to shift stock.

Things could get ugly. Ford and GM have lots of cash to fight a battle of incentives. Chrysler has beefed up by merging with Fiat, and the group is seeking to boost its Italian brands' sales in America. The bumper profits the three Detroit carmakers have been enjoying could soon evaporate in a battle to maintain market share.

That battle will be all the fiercer thanks to foreign competitors. The big three dominated at home until cheap and reliable cars from Japan appeared on forecourts in the 1960s (see chart). Asian carmakers now account for two-fifths of all vehicles sold in America. Toyota, Nissan and Honda have been joined of late by Hyundai of South Korea.

The mighty Volkswagen of Germany—which revealed on the eve of the Detroit show that it had become the first carmaker to sell 10m vehicles worldwide in a year—is also making a renewed push in America, where it has hitherto struggled. Giving it a boost, judges at the show gave the North American Car of the Year award to the latest version of the VW Golf.

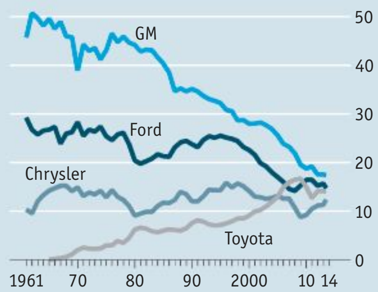
GM may also have sold close to 10m cars last year. But size isn't everything. VW gets much of its profits from its pricier Audi marque. America's big three would also like to sell more high-margin cars, but their premium brands lack pulling-power. The luxury-car market in America is dominated by Mercedes and BMW of Germany and Toyota's Lexus brand. Audi has bumped GM's Cadillac from fourth place. Ford's Lincoln is way behind; Fiat Chrysler lacks an American-made contender, though it is trying to make its Jeep brand into one. One consolation is that low oil prices are encouraging Americans to buy more gas-guzzling pickup trucks, at which the domestic firms excel.

The Detroit giants face as much uncertainty abroad as at home. Low oil prices may prompt some buyers to trade up to bigger models. But Morgan Stanley notes that 10m cars a year are sold in oil-exporting countries—whose sales will surely droop as their economies suffer. Ford was hit in the big, profitable Russian market after the West imposed sanctions over Ukraine. A collapsing oil price will compound the problem. It could also send Brazil back into recession, which would be especially bad for Fiat Chrysler.

GM and Ford say their chronically loss-making European operations are on the road to profitability—but they have been saying this for years. All three should be worrying about the recent signs that economic growth in China will be weak this year, following a sharp slowdown in 2014. No wonder the carmakers want to create a distraction with their flashy hypercars. ■

Run off the road

Manufacturers' share of US car market, %*



Source: WardsAuto.com *By unit sales

Cyber-crime and business

Think of a number and double it

Businesses would benefit from reliable information on cyber-crime's costs

CHICK-FIL-A, a fast-food chain, and Morgan Stanley, a bank, have in recent days joined a long list of big American companies to admit that their systems have been hacked into, putting customers' financial information at risk. But how many businesses suffer from cyber-crime, and how much it ultimately costs them, are huge unknowns. In part this is because much hacking goes undetected, and partly it is because businesses sometimes try to cover up breaches of data security, to avoid embarrassment. On January 12th President Obama launched a new drive to improve data security and privacy (see also page 33), to include a new Personal Data Notification and Protection Act. This would require companies to tell customers within 30 days of discovering that their information has been hacked into.

At the moment, Mr Obama noted, there is a patchwork of state-level laws that offer consumers scant protection. In the absence of a strong and well-enforced federal disclosure law, the losses businesses suffer from hacking are anyone's guess. Most of the numbers bandied about are from internet-security firms, and come accompanied by "a lot of hype", says Troels Oerting of the European Cyber-crime Centre, part of Europol, the European Union's policing agency. As a result, some businesses either overspend or misdirect their spending on data protection, he says, paying perhaps $100 for every $50 of losses prevented.

If there were more disclosure, and thus more information on the amount, types and costs of cyber-crime, companies would know better how to spend their information-security budgets. It would also be easier to work out what sort of insurance cover to buy. American firms' spending on cyber-liability cover jumped from $1.3 billion in 2013 to roughly $2 billion in 2014, says Andreas Schlayer, a senior underwriter at Munich Re of Germany.

Most American states have laws requiring some sort of disclosure of hacking attacks. But "a good portion" of firms still do not announce them for fear of damage to their brands, notes Mark Greisiger of NetDiligence, a Pennsylvanian cyber-security firm. European countries generally do not require disclosure, so even fewer firms there bother, says Costin Raiu of Kaspersky Lab, a Russian internet-security firm.

Firms that do acknowledge losses struggle to quantify them. In a survey last year of 4,881 security practitioners in 15 countries by the Ponemon Institute in Michigan, 35% of organisations subject to a successful intrusion were unsure of exactly which records the thieves had copied.

Even if it is known what information has been taken, calculating the cost is still hard. If a shipyard has details of a big contract negotiation stolen at the behest of a rival, how can it be sure it would not have lost the deal anyway? How will Sony Pictures measure the damage from having executives' e-mails, containing disparaging comments about its stars, released on the internet? A comprehensive and robust methodology for estimating such costs does not exist yet, says Roberto Baldoni, who heads a cyber-intelligence centre at La Sapienza University in Rome.

Dmitri Alperovitch, a founder of CrowdStrike, a Californian security firm, says that cyber-attacks appear to be picking up significantly but attempting to estimate the damage is futile. Most figures will be "wack", he says, "so we'd rather not play that game". Plenty of other outfits, however, do publish estimates.

Consider one from a 2014 study by the Centre for Strategic and International Studies, a think-tank in Washington, DC. Cyber-crime, it concluded, bleeds between $300 billion and $1 trillion from businesses worldwide each year. One of the study ▸▸

team says that good data were so scarce, they had joked about publishing the findings along with an online random-number generator that readers could click on until it produced an estimate to their liking. "That was a little depressing", he says.

The study was sponsored by McAfee, a large American seller of antivirus software. Its own 2009 calculation of the global cost to businesses produced the figure of more than $1 trillion. This was roundly derided as bloated, even by researchers who had provided McAfee with data from which the estimate was extrapolated. One of them, Eugene Spafford, a Purdue University computer scientist, said he was "really kind of appalled" by the exaggeration. McAfee republished the number in 2011. It still circulates.

Every crime's a cyber-crime

The weakness of many estimates is partly due to bogus definitions, says Ross Anderson, a security-engineering expert at the University of Cambridge in Britain. Tax returns and claims for insurance, welfare benefits and reimbursement for company travel are increasingly filed online. This has emboldened many to lump tax, insurance, benefit and expenses fiddles together with genuine cyber-crime and, "hey, ching!", produce enormous numbers, he says.

Surveying 1,000 voters about their preferences can often be a good predictor of an election outcome. Most cyber-crime estimates are based on surveys, too, but there is a big difference. Respondents are asked to provide speculative numbers rather than report preferences. This often leads to huge errors. Say that companies cumulatively producing a quarter of a percent of GDP reply to a cyber-crime survey. A single firm's exaggeration by $1m adds a bogus $400m to the tally when scaled up to reflect the entire national economy.

Firms which have suffered a loss, or suspect they have, are likely to be more willing to fill out a cyber-crime questionnaire than those with no such worries. So there is bound to be an inbuilt bias towards overestimating losses. A research paper from Microsoft, "Sex, Lies and Cyber-crime Surveys" concludes that "no faith" should be placed in numerical estimates derived by means of this multiplication trick.

Glimmers of hope for better estimates are on the horizon. Like the American administration, the European Union is also drafting legislation to compel firms to provide full and prompt information about hacking attacks. The effort put into quantifying the harm done will grow as insurance claims and lawsuits multiply. (Home Depot, an American hardware retailer, faces at least 21 suits over customer data it lost last year.) The losses that hackers cause to businesses may sometimes be exaggerated, but they are significant—and almost certainly growing. ■

South Korean consumers

Won over

SEOUL

Locals, fed up of paying over the odds, are shopping abroad

WHEN South Korean celebrities, eager to prove their patriotism, swapped their German BMW cars for home-grown Hyundais on television, during the Asian financial crisis in 1998, they rallied the whole nation behind domestic products. To wean South Koreans off their Coke and Pepsi, a local firm launched "815 cola", commemorating Korean liberation from Japan on August 15th 1945. American trainers were out, and hitherto uncool local brands were in. Hyundai's financial arm created a "Buy Korea" fund, to get South Koreans to invest in local companies; and in its first three months it attracted more than 12 trillion won (then $10 billion).

However, such appeals to patriotism seem to have run their course, and South Koreans have rediscovered their fascination for all things foreign. What has prompted them to rethink is a growing awareness of how much more they pay for things than foreigners do—and not just because of high tariffs—and how easy it has become to import cheap stuff.

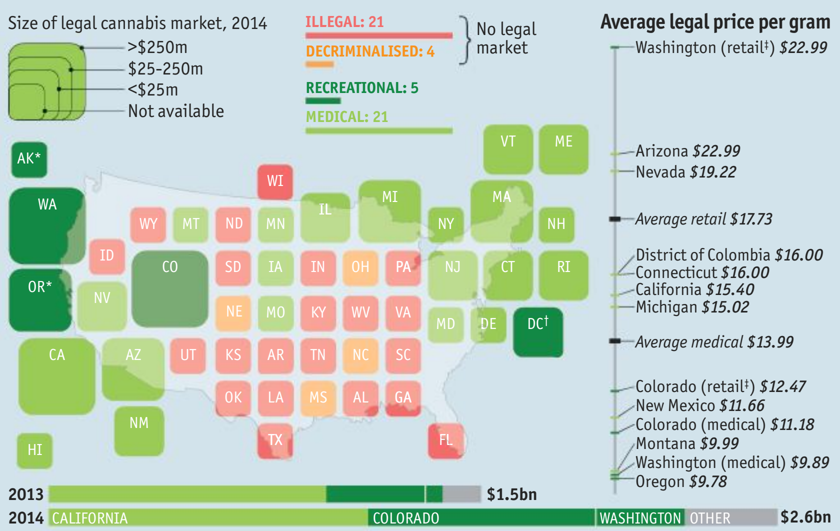
Take cars, for example: in September *MotorGraph*, a local trade magazine, conducted a poll of 1,800 South Koreans asking them why they hated Hyundai and its sister company, Kia. Almost half said they felt discriminated against in their home market. The Fair Trade Commission, a watchdog, is investigating a complaint from a parliamentarian that Hyundai is selling its new Genesis luxury saloon at a 13m-won markup at home compared with some export markets.

In 2013 Consumers Korea, a lobby group, surveyed how much 60 products cost in each of 15 rich countries. For more than half of them South Korea was in the top five priciest places. It was the third most expensive for Heineken beer, and the fifth for Chanel perfume. But most tellingly, all three South Korean products in the sample were more expensive in their home country than anywhere else.

South Koreans have been paying over the odds, especially for local goods, for decades. In the 1960s Park Chung-hee, a military strongman who oversaw an industrial boom, encouraged the overpricing of local products to subsidise exports, partly by sealing off the country to foreign brands. Even into the 1990s, buying Thai-made kitchenware or stationery from Japan ▶▶

The disunited state of cannabis

As Colorado celebrated a year of cannabis legalisation, Founders Fund, a venture-capital firm with $2 billion in assets that backed Facebook, has announced an investment in Privateer Holdings, a marijuana outfit behind names such as Leafly and [Bob] Marley Natural. Four states and Washington, DC, have now legalised recreational weed. A further 21 allow medical consumption under differing restrictions. Legal recreational and medical sales amounted to $2.6 billion last year, most of them in California and Colorado. That is just 6% of the estimated $40 billion still going to criminals (over $200 billion a year is spent on tobacco and alcohol). Cannabis venture capital was a tiny $104m in 2014 and opportunities remain limited because of federal restrictions. Full legalisation is perhaps five to ten years away. But investors beware: when it comes, the price of weed may fall.



Sources: ArcView Market Research; Leafly; *The Economist* *Retail market not yet operating †Possession only ‡Recreational (whose cultural products were banned in South Korea until 1998) was still considered a national betrayal.

Among the first signs that patriotic propaganda was losing its effectiveness came in 2009, when Apple launched the iPhone in South Korea. Samsung fought back by promoting its Omnia 2 mobile as "the pride of South Korea" and local media weighed in with negative reviews of its American rival. Yet Apple went on to seize a quarter of the country's smartphone sales in one year. More recently, a petition by local grocers last March, calling for a boycott of popular Japanese-branded products, such as beer and cigarettes, flopped.

In the past three years South Korea has implemented a series of trade-liberalisation deals with 50-odd other countries (including the European Union's member states). As a result of these, Koreans now have more choices than ever. In 2014, for the first time in many years, the value of imported European cars is thought to have exceeded the South Korean carmakers' combined export earnings. One in ten locals now owns a foreign car, up from about one in 100 a decade ago. Remarkably for a nation where anti-Japan sentiment runs high, Toyota's Camry saloon won the 2013 Korea Car of the Year Award.

South Koreans have discovered that they can save a fortune by shopping on foreign websites. They are clicking away merrily on Amazon and a Chinese counterpart, Taobao, buying clothes, toys and electronic gadgets, including "Made in Korea" ones. The value of direct buying from overseas doubled to 1.1 trillion won between 2011 and 2013. In 2014 the government doubled the maximum value of goods that can be shipped tax-free into the country from America, to $200, giving direct foreign purchasing a further boost.

The government has recognised that exclusive distribution deals, in which a small number of retailers control all sales of a branded product within the country, are also inflating the prices of some foreign-made goods in local shops. To try to bring down the cost of living, it has simplified online payments and introduced a system in which the customs service authenticates copies of those products imported by other distributors, undermining the exclusivity agreements. That again is increasing the pressure on locally made goods and local retailers.

With more on offer, South Koreans now shop chiefly for value: they are picky, discerning and resent being duped, says Han Sanglin, a business professor at Hanyang University in Seoul. And they are not shy about expressing their views. A group of students recently rode a makeshift raft held afloat only with packets of Korean-branded crisps, in protest at their meagre contents. They derided the puffed-up, near-empty packs as "nitrogen snacks".

The drink of patriots

South Korean firms argue that the products they sell to locals are often more sophisticated versions of those they export; and that their prices include delivery, installation and long warranties. But they are having to work harder to stop customers deserting them. Lotte, a big local retailer, will this year start opening a new type of outlet that sells foreign clothes at prices comparable with online shops'.

Having had an easy time in their home market for so long, many South Korean firms must now learn to be competitive. Jun Shin of the Seoul office of McKinsey, a consulting firm, says the country's successful cosmetics firms are good role models: they have long offered high-quality products at modest prices, and as a result they have managed to keep their foreign rivals at bay. ■

Airlines and the internet

Phantom flights

NEW YORK

The economics of air ticketing can produce some peculiarities

THERE are few better ways to draw attention to something than trying to have information about it taken down from the internet. Techdirt, a blog, dubbed this the "Streisand effect", for Barbra Streisand, a singer whose efforts to get a picture of her home removed encouraged 420,000 people to view it. If Orbitz, an online travel agent, and United Airlines continue their lawsuit against a college graduate whose website helps flyers find cheap fares, the phenomenon may need to be renamed.

Skiplagged, founded by 22-year-old Aktarer Zaman, hunts for "hidden-city tickets", cheap fares that result from a quirk in the economics of airlines' hub-and-spoke system, in which passengers often have to take connecting flights via a carrier's hub airports. In America's aviation market, competition is brutal. Since the costs of operating flights are mostly fixed (plane, fuel and crew), airlines must try to fill every seat, at whatever price the market will bear. However, this sometimes leads them to charge less for both legs of a connecting itinerary than for the first leg alone.

To understand how this peculiar situation can come about, suppose you wanted to get from Atlanta to Cincinnati on February 6th. Delta is the only airline that flies direct between these cities, and this week the lowest one-way fare it was offering for that date was $251. However, Delta was also offering flights from Atlanta to Dallas with a stop in Cincinnati for just $197. Why? Because two other airlines also fly direct from Atlanta to Dallas, so price competition on that route is especially fierce. However, there is little to stop those wanting to go from Atlanta to Cincinnati from reserving an Atlanta-Cincinnati-Dallas trip for $197 and simply ending their journey at the "hidden city" in the middle of their booking, saving $54.

Tools that expose price discrepancies usually improve price competition, which in general is good for overall economic well-being. But hidden-city ticketing is economically harmful. The first leg of the itinerary simply transfers wealth from the airline to the passenger; but the second leg creates a "deadweight loss": an empty seat that hurts both the airline (which loses the revenue it could have got by selling the seat separately) and other passengers (who might want to buy the seat but cannot). If everyone did this, airlines would surely have to raise prices on connecting itineraries, leaving consumers worse off.

The hidden-city caper should not be confused with another ruse, "fuel-dumping"—in which travellers add extra flights to their itineraries that they do not intend to take, to trick reservation systems into forgetting to add fuel surcharges. Like that tactic, hidden-city ticketing still exists only because it is rarely used. It is inconvenient to make use of it: passengers cannot check in any luggage, since this would be put onto the second flight that they will not be taking. It is sometimes necessary for them to buy separate one-way fares, since if they fail to turn up for any part of a round-trip itinerary, the rest will be cancelled. Airlines can also void the frequent-flyer miles of travellers who use the ruse.

Furthermore, until recently the trick was little-known. Skiplagged changed this by making hidden-city fares easy to find. It is unclear if the legal case United and Orbitz are bringing against Skiplagged would prosper if they persevere with it. And anyway, passengers can do the trick for themselves using Google's air-fare tool, Matrix. Pursuing the lawsuit will only encourage more people to give it a try. ■

Schumpeter | The network effect

Being a good networker pays off—but it requires skill as well as shamelessness

THE purported theme of the World Economic Forum (WEF) changes every year. At this year's gathering, on January 21st-24th, it will be "the new global context". Last time, it was "reshaping the world". But the forum's real theme is less ponderous, and more constant: the power of networking. Many people protest that they would rather devote their time to real work than to schmoozing. But the fact that more than 2,500 of the world's busiest people fly out to the small Swiss resort of Davos for the shindig each year is proof that schmoozing gets results. As a veteran of the WEF once put it, "contacts ultimately mean contracts."

Networking is not just for the elites. A study of staff at a range of German workplaces, carried out over three years by Hans-Georg Wolff and Klaus Moser of the University of Erlangen-Nuremberg, found a positive correlation between the amount of effort the workers said they put into building contacts—inside and outside their offices—and their pay rises and career satisfaction. "Networking can be considered an investment that pays off in the future," it concludes. Indeed, Reid Hoffman has become a billionaire by investing in a series of companies that have brought networking to the masses—Friendster, SocialNet and LinkedIn.

How does one make the most of a networking opportunity, whether it is in a charming village in the Swiss Alps or in the conference hall of a soulless hotel next to a motorway? A few people are natural networkers. Bill Clinton is the superman of this world. He wraps people in his psychic embrace, persuading them, momentarily, that they are the most important person in the world to him. A few business leaders are also naturals. For example, Goldman Sachs's boss, Lloyd Blankfein, has a knack of making people feel he has taken them into his confidence. But most people are more like Hillary than Bill; they have to work at it.

The first principle for would-be networkers is to abandon all shame. Be flagrant in your pursuit of the powerful and the soon-to-be-powerful, and when you have their attention, praise them to the skies. Academic research has found that people's susceptibility to flattery is without limit and beyond satire. In a study published in 1997, B.J. Fogg and Clifford Nass of Stanford University invited people to play a guessing game with a computer, which gave them various types of feedback as they played. Participants who received praise rated both the computer and themselves more highly than those who did not—even those who had been warned beforehand that the machine would compliment them regardless of how well they were doing. Yes, even blatantly insincere, computer-generated flattery works.

But shamelessness needs to be balanced with subtlety. Pretend to disagree with your interlocutor before coming around to his point of view; that gives him a sense of mastery. Discover similar interests or experiences. People are so drawn to those like themselves that they are more likely to marry partners whose first or last names resemble their own. Go out of your way to ask for help. Lending a helping hand allows a powerful person to exercise his power while also burnishing his self-esteem. In his time in the Senate, in 2005-08, Barack Obama asked about a third of his fellow senators for help and advice.

The second principle is that you must have something to say. Success comes from having a well-stocked mind, not just a well-thumbed Rolodex. It is tempting to treat the conference's official topic as a bit of a joke. Wrong. The more seriously you take it, the more you will succeed in your, and the gathering's, true purpose. Go to the main sessions and ask sensible questions. Reward the self-styled "thought leaders" in each session by adding them to your Twitter "follow" list. But don't get carried away. It is a mistake to lecture people on your own pet subjects, as this columnist has discovered. It is an even bigger mistake to question the shibboleths of the global elite. There is a case to be made that homogeneous organisations can do better than ones with diverse workforces, for example. But don't go there. The aim is to fit in by saying the right things, not to challenge the received wisdom.

The third principle is that you need to work hard at networking. Swot up in advance on the most important people who will be at an event. If you manage to meet them, follow up with an e-mail and a suggestion to meet again. Mukesh Ambani, the boss of Reliance Industries, one of India's largest conglomerates, makes sure that he is briefed on people he is about to meet, and asks them about their interests. Mark Tucker, the boss of AIA, one of Asia's biggest insurers, follows up conversations with detailed e-mails, sent at all times of the day and night. Julia Hobsbawm of Editorial Intelligence, a firm which coaches executives on how to network, says that it is like exercise and dieting. You need to incorporate it into your daily routine.

Brown-nosing ahead

Although successful networkers must be calculating, ruthless and shameless, they do better when they somehow make it all seem spontaneous, accidental even. One trick is to engineer "chance" meetings that get you closer to your prey. If he is a fitness fanatic, for example, be working out in the hotel gym when he arrives for his early-morning session. Another is to make sure the people you socialise with happen to be able to introduce you to people who are useful. One of the best guidebooks on this subject, by Keith Ferrazzi, is called "Never Eat Alone".

The perfect solution is to make networking a fundamental part of your job, perhaps by becoming some sort of ambassador for the company or maybe even by founding a global network of your own. In 1971 Klaus Schwab was a 32-year-old business professor, who might have spent his life publishing obscure academic articles. But instead Mr Schwab organised a meeting of European executives, which grew into the WEF. It now has an annual budget of $200m, and the bosses of the world's biggest firms pay tens of thousands of dollars each to rub shoulders with him. ■

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Global markets

A tangle of anxieties

As markets slide, investors should worry more about some price drops than others

ACCORDING to market lore January is a good month. As bourses open to greet the new year, investors funnel in new cash and share prices rise, creating a "January effect" which the savvy try to surf. But punters seeking a quick buck have been disappointed this year, with the main stockmarket indices in the G7 economies all down (see chart 1). Many have had their worst January since 2008. It is not just share prices that are tumbling; oil, gas and metals are falling too. There are many reasons for the rout, but the predominant one in recent days is a fear that the world economy, already feeble, is slowing yet more.

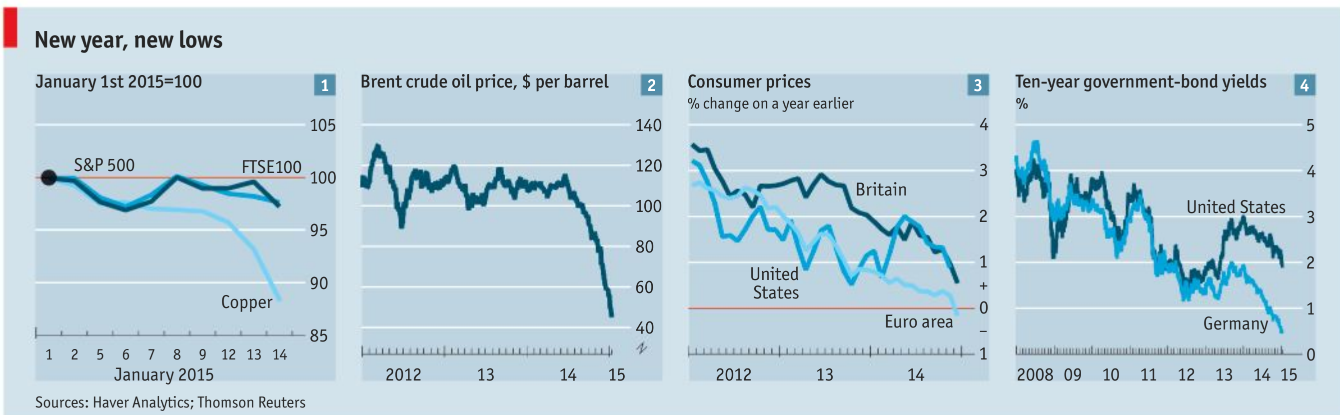
On January 13th the World Bank cut its prediction for global growth in 2015 from 3.4% to 3%. As in 2010, there are worries about a Greek exit from the euro zone (see Free exchange). But five years ago Germany's economy was expanding at close to 4%, and Brazil, Russia, India and China (the BRICS) boasted an average growth rate of 9%. That vigour has gone. In 2014 the German economy grew by just 1.5% and the BRICS have slowed to little over 5%.

Sagging demand and the fear of more weakness to come explains why the decline of many commodity prices has suddenly accelerated. Worries about China loom large, since almost half of the metals used by industrial firms—aluminium, copper, lead, nickel, tin and zinc—are bought by Chinese companies. Forecasts for China's growth are being pared back (the World Bank now expects growth of 7.1% in 2015). The result has been a market rout: the price of copper has plunged to a five-year low (see chart 1). And with anaemic demand sapping metals prices, mining companies have been hit hard: on January 14th shares of Glencore and Anglo American, FTSE-listed miners, both fell 9%.

Ominously, even hitherto strong economies are showing signs of weakness. In Britain business investment, previously a contributor to growth, is waning. In America retail sales for December were down 0.9% on the previous month, suggesting American consumers may be pulling in their horns.

One reason for this could be weak wage growth. Average pay is up a mere 1.6% in America and 1.4% in Britain over the past year. Despite a healthy pace of job creation and an unemployment rate down to 5.6%, average American wages fell in December.

But all this gloom must be set against some big reasons for cheer. The dramatic slump in the price of oil has far more to do with plentiful supply than unexpectedly weak demand. A year ago Brent crude, the global benchmark, stood close to $110 per barrel. Today it is below $50 (see chart 2). ▸▸



America's oil production has grown by more than half, pushing reserves to their highest level for this time of year for the past 80 years, according to America's government. Naturally, that surge in supply has weighed on the price.

The low-cost petrol, diesel and heating oil that should follow will be a tonic for consumers. If petrol prices drop by two-thirds as oil has done, an American family could save around $2,000 a year, equivalent to a pay rise of around 4.5%. Cheap oil also allowed India's central bank to cut rates in a surprise move on January 15th. Yet it risks tipping rich countries into deflation (see chart 3, on previous page).

The tension between reasons for optimism and pessimism is obvious in financial markets. Lower input costs and the fillip that cheaper fuel gives consumers ought to boost the profits both of firms that use energy intensively and those that sell to consumers. At the same time America's energy firms make up a big chunk of the stockmarket's capitalisation.

The VIX, a measure of expected volatility dubbed the "fear index", jumped on January 14th. Other measures of investor jitters are rising too. Gold prices are creeping up. And the yields on the bonds of countries deemed a safe bet have shrunk: ten-year German bunds pay less than 0.5%, a record low (see chart 4, on previous page).

There is huge uncertainty about what central banks will do next. Falling inflation calls into question expected rate rises this year in America and Britain in 2015. On January 15th the Swiss National Bank shocked markets by removing its ceiling for the franc, which promptly jumped 14% against the euro. This week a preliminary legal ruling helped clear the way for the European Central Bank to try quantitative easing. Whether sinking markets will win over the hawks on its board remains unclear. ■

Buttonwood | Drop of the pops

Beware of heavily-traded stocks

THERE are fashions for everything: clothes, hairstyles, video games and hashtags on Twitter. And that applies to stockmarkets as well. Who can forget the enthusiasm for TMT (technology, media and telecom) shares in the late 1990s?

A new paper* in the *Journal of Portfolio Management* suggests that this tendency may provide a strategy for outperforming the stockmarket, based on the popularity of individual stocks. The authors defined the most popular stocks as those that saw the most trading in their shares as a proportion of their market value. These are most likely to be the companies that are in the news, perhaps because they have a hot new product or because many analysts are recommending them.

For a time these stocks may benefit from the so-called momentum effect—a phenomenon whereby stocks that have recently risen in price continue to perform well in the short term (usually a matter of months). However, this popularity may drive such stocks up to excessive valuations from which future returns are bound to be disappointing (in other words, they inevitably lose momentum sooner or later).

The chart shows the annualised return of American stocks, based on their popularity over the preceding year. Over a period of more than 40 years, the paper finds, stocks in the least popular quartile outperformed those in the most popular segment by seven percentage points a year.

As a control, the authors combined the popularity measure with another well-known effect, related to the volatility of individual stocks. Stocks that are more volatile than the market (rising or falling 10% when the index moves 5%) are described as having a "high beta"; stocks that are less volatile than the market are "low-beta". Under the capital asset-pricing model that

Picking binners

Annualised return of US shares by previous year's trading volume 1972-2013, %

Source: Roger Ibbotson and Daniel Kim

is at the heart of academic finance, high-beta stocks should offer high returns to compensate for the higher risk. In fact, a 2011 study by GMO, a fund-management group, explains why low-beta stocks actually outperform their more volatile rivals over the long run.

The authors of the new paper combined the popularity and beta characteristics. They found that popularity was by far the dominant effect: whether a stock was popular was more important when determining its return than whether it was volatile. The same was true when controlling for other factors, such as the size of the company and the starting valuation.

The finding is significant. Academics have explained the long-term outperformance of small companies (the size effect) or those with below-average valuations (the value effect) in terms of compensation for extra risk. Small firms are more likely to go bust than large ones; cheap-looking stocks are usually cheap for a reason.

Both effects are thus theoretically compatible with the efficient-market hypothesis. But it is very hard to see how the momentum or popularity effects can be squared with the hypothesis, which supposes that all public information is already reflected in share prices and thus should be no help in determining future price movements.

The psychological reasons for the popularity effect are not hard to discern. Financial assets are not like other goods; when they rise in price, demand has a tendency to increase, not decrease. An investor who hears that a friend or neighbour had made money out of a particular stock will want to jump on the bandwagon. The authors of the paper quote Ben Graham, the doyen of share analysts, as saying the market is not a weighing machine but a "voting machine whereon countless individuals register choices which are partly the product of reason and partly the product of emotion."

Even professional fund managers may have good reasons for following a fad. They may want to show, in their reports to clients, that they have been smart enough to buy the hottest stocks of the year. In addition, clients have a natural tendency to fire managers who have performed badly, and transfer their assets to managers who have recently beaten the market. When that happens the new managers get cash, and they are likely to use it to buy their favourite shares—by definition, those that have recently performed well. This may exacerbate the momentum effect.

In turn, this may explain why the average manager does not outperform the market, even though apparently exploitable anomalies exist. Professional fund managers have their favourites; they just hang on to them for too long.

* "Dimensions of Popularity", by Roger Ibbotson and Thomas Idzorek, *Journal of Portfolio Management*, Vol. 40, No. 5, 2014.

Economist.com/blogs/buttonwood

Political risk in Chinese finance

Kung-fu fighting

SHANGHAI

A legal dispute and a default illuminate the darker corners of Chinese finance

THE allegations are "like a martial-arts novel fantasy about nabbing a bad guy". So began a statement from Founder Group, an investment firm owned by Peking University, defending its conduct in one of the most bitter disputes to roil Chinese high finance in years. It went on to plead with the authorities to clear its name: "Make the truth known to the world as soon as possible!!!"

Ten days later, on January 4th, Founder's chairman, president and CEO were detained as part of an official investigation. The firm quickly named new board members to replace them. Authorities have also frozen more than 1.7 billion yuan ($285m) of funds in Founder's bank accounts.

The other combatant in the dispute is Beijing Zenith, a low-profile private holding company. The two have been tussling over Minzu Securities, a brokerage that Zenith sold to Founder. Zenith says Founder has not paid it or given it the seats on Founder's board it was promised; it is seeking 3 billion yuan in compensation. But Founder Group, a big state-backed company with annual revenues of 68 billion yuan from businesses as diverse as finance, health care and technology, is the sort of firm few Chinese would dare to challenge.

In that respect, the dispute highlights a gradual maturing of the legal underpinnings of China's financial system. Lawsuits have flown back and forth between Zenith and Founder. Both have also sued or threatened to sue Chinese media outlets for libel, a novelty in a country where the usual method of dealing with harmful allegations in the media is bribing journalists to shut up. The next big date in the dispute is January 21st, when Founder will convene a shareholders' meeting to decide whether to appoint Zenith-nominated directors to its board, a potential peace-offering. It is heartening that such an acrimonious battle is being waged, at least in part, according to the rules.

But deeper and more capricious forces also appear to be at work. Several Chinese news organisations have suggested that the authorities pursued Li You, Founder's now former boss, less because of any commercial dispute, than because of his alleged ties to associates of Ling Jihua, a former official now under investigation for corruption. It is a reminder that political fault lines run through the heart of China's financial system, and that ending up on the wrong side can bring disaster.

Foreign investors are also learning that lesson in China's property market. Kaisa, a developer based in Shenzhen, may soon become the first Chinese property company to default on an offshore bond. It missed an interest payment on the bond this month, and is now in a grace period. Last month it defaulted on a loan from HSBC, a big foreign bank.

There have long been concerns about a property bubble in China, but Kaisa's troubles have nothing to do with that: its finances had been strong until its chairman abruptly resigned in December, the government halted some of its projects, and banks froze some of its accounts hobbling its operations. It has since emerged that Kaisa is being probed for alleged ties to a local official accused of corruption.

Investors are now treating all Chinese property firms with suspicion. Yields on their debt have jumped and new bond issues have been delayed. There is no easy way for companies to prove that they are safe from investigations. This week Kenny Chan, chief financial officer of Times Property, a developer based in Guangzhou, joked to a room of investors that he might start carrying a GPS device around the clock. That way, they could track his every move, and thus be sure that he has not suddenly landed in an interrogation room. ■

Turkey's economy

Saved by the well

ISTANBUL

An ailing economy has staged a partial recovery thanks to cheap oil

IT IS a measure of how weak Turkey's opposition parties are that they see an economic crisis as their sole hope of ejecting the conservative Justice and Development (AK) Party government. In the summer of 2013 their dreams seemed within reach: America's Federal Reserve signalled it would soon start tightening monetary policy. In the ensuing "taper tantrum", investors pulled money out of emerging markets in the expectation of higher interest rates in America. Turkey is highly dependent on foreign capital (the current-account deficit hit 7.9% of GDP in 2013); disaster seemed imminent.

The sharp rise in interest rates needed to keep the lira from plunging naturally took a toll on the economy. The wilting currency, meanwhile, contributed to rising inflation. A further blow came with the upsurge in violence in neighbouring Iraq and Syria. Turkish exports to Iraq, its second-largest market after Germany, tumbled by 40%. And Turkey's fraught peace talks with its own Kurds nearly collapsed threatening, in turn, a resumption of a 30-year rebel insurgency. The economic stability that has been the hallmark of the past 12 years of AK party rule seemed at risk.

Luddites of the steppes

High-technology exports, 2011

As % of manufactured exports

Source: Turkey Data Monitor

Then the oil price slumped. That immediately relieved the pressure on the current account and on inflation. Turkey's huge energy imports had been costing 6% of GDP a year. Thanks largely to lower fuel costs, the current-account deficit is set to shrink to around 5% of GDP this year. Largely for the same reason, inflation will fall to 6.8%. Most bankers say the economy will grow by around 3.5% this year; the government talks of more than 4%.

Indeed, with other big emerging markets such as Russia and Brazil beset by troubles of their own, investors are giving Turkey another look. "A large volume of funds has started to flow into Turkey," boasts Mehmet Simsek, the finance minister. The wobbly Kurdish peace talks seem to have been salvaged. AK is likely to win parliamentary elections due in June. Ali Babacan, the respected economy minister, is expected to stay on in some capacity.

"Will Turkey grasp this opportunity to accelerate structural reforms, or opt to stimulate growth ahead of elections?" asks Serhat Gurleyen, of Is Bank, one of Turkey's biggest. The IMF has similar questions. In a mildly gloomy report released in December, it argues, "Policies should focus on rebalancing the economy, reducing the external deficit—by boosting savings rather than decreasing investment—and lowering inflation to preserve competitiveness."

The IMF would like to see Turkey liberalise its rigid labour market—one of the reasons the OECD ranks it as among the most ▸▸

over-regulated of its members. Female participation in the labour force is pitifully low at 30%. Even with few women working, the economy needs to keep growing by at least 3.5% to hold unemployment at 10%, reckons Emre Deliveli, a local economist. Around 2m Syrian refugees, an ocean of cheap labour, are adding to the pressure.

Education is another worry. Only 1% of Turkish students have advanced computer skills, compared with 33% of their Polish peers. High-tech gear makes up a measly 2% of manufacturing exports (see chart on previous page); R&D spending totals only 0.9% of GDP. Yet Turkey's Islamist president, Recep Tayyip Erdogan, seems interested chiefly in spreading the faith and reviving Ottoman Turkish influence.

Selin Sayek-Boke, an economist and opposition politician goes further, pointing to Mr Erdogan as an economic risk. The former prime minister has retained his iron grip over the government since being elected to the presidency in August. He keeps nagging the central bank to cut rates in the bizarre belief that high rates stoke inflation.

Mr Erdogan's campaign to destroy Fethullah Gulen, a popular cleric and one-time ally, is sowing fear in business circles. Bank Asya, a small Islamic finance house that is associated with Mr Gulen, is caught in the crossfire. Government-linked businesses withdrew their deposits, public trading in the bank was suspended three times, and Mr Erdogan went so far as to suggest that Asya was "already bankrupt. "The greatest threat to the economy is the erosion of the rule of law," says Ms Boke.

Yet Mr Erdogan understands more than anyone that it is rising living standards that help to keep AK in power. He may be persuaded that change is needed. "Some less costly reforms will likely be front-loaded," predicts Ahmet Akarli of Goldman Sachs. "But the more contentious ones will probably be implemented only after the 2015 general elections." ■

Monetary policy in India

The cycle turns

MUMBAI

The central bank cuts interest rates for the first time in two years

IT WAS a surprise, but not a big one, when on January 15th the Reserve Bank of India (RBI) reduced its benchmark interest rate by 0.25 percentage points, to 7.75%. The decision to cut was made outside the normal cycle of monetary-policy decisions. But Raghuram Rajan, the central bank's chief, said in December that he was minded to cut interest rates soon—perhaps before the next scheduled policy meeting—if nothing clouded the rosy outlook for inflation. Figures released on January 13th showed that India's consumer-price inflation in December was 5%, lower than forecasts. The RBI is thus confident that it will be able to keep inflation below 6% by next January, as it has pledged.

India's stockmarket rose sharply in response to the news, which investors judged was a decisive turn in the interest-rate cycle. The timing of the reduction was widely interpreted as a signal of further cuts to come. (It might have come sooner, had the government not challenged the RBI's independence by nagging it to cut.) It also says something about the business cycle in India in comparison with other biggish emerging markets. GDP in Brazil, Russia, Turkey and South Africa is sluggish or shrinking. Central banks in such places are keeping interest rates on hold, or raising them, to stop foreign capital from leaving and driving down the local currency.

In contrast the rupee has been stable against a basket of other currencies. The slump in commodity prices has hurt some emerging markets, but is a boon for India, which imports 80% of the oil it consumes. The government of Narendra Modi, elected with a big majority last May, is at last pushing for the reforms it had promised. The World Bank this week stuck with its forecast for healthy growth in India, at 6.4% for 2015, even as it pared its numbers for other places.

Bullish pundits reckon interest-rate cuts will kick-start a new cycle of business investment, which has been rather flat. Credit growth has been feeble. But the overhang of corporate debt and a growing bad-loan problem at India's banks is a bigger obstacle to a recovery in capital spending than the level of interest rates. The biggest debtors are power firms, which face loan rates in the low teens. A quarter-point cut is not going to make a great deal of difference to their debt-service costs. Lower interest rates are likely to have a bigger impact on consumer spending.

Mr Rajan wants to create a more formal system for setting monetary policy, with a committee to decide on interest rates. He favours an inflation target of 4%, subject to fluctuations of up to two percentage points to either side. The government is expected to announce something along those lines soon, perhaps when Arun Jaitley, India's finance minister, gives what is now billed as a landmark budget address at the end of February.

Some will benefit more than others

Energy prices

Pump aligning

A few countries are taking advantage of lower oil prices to cut subsidies

ECONOMISTS loathe energy subsidies. They wreck government budgets—Venezuela's parlous finances are partly the result of letting citizens buy petrol for a few cents a gallon. Subsidies damage the planet: they were responsible for 36% of global carbon emissions between 1980 and 2010. Despite noble intentions they do little to help the poor, since richer folk are heavier energy consumers. In 2008 the poorest 40% of Egyptians received 3% of petrol subsidies. So many economists will be heartened to see that some countries, notably Indonesia, are winding down such subsidy support, in response to the 50% fall in oil prices over the past six months.

Especially in non-democratic states, subsidies are seen as crucial to maintaining social stability. But as energy prices rose during the 2000s, so did the cost of the handouts. The value of fossil-fuel subsidies around the world increased by 60% from 2007 to 2013, eventually reaching $550 billion, according to the International Energy Agency. In many countries, they overshadow spending on health care or education (see chart on next page).

A few poorer governments could not sustain such largesse, and so cut subsidies in spite of high prices. Kerosene prices in Yemen doubled in just one year, between 2011 and 2012. In 2012 Jordan eliminated ▸▸

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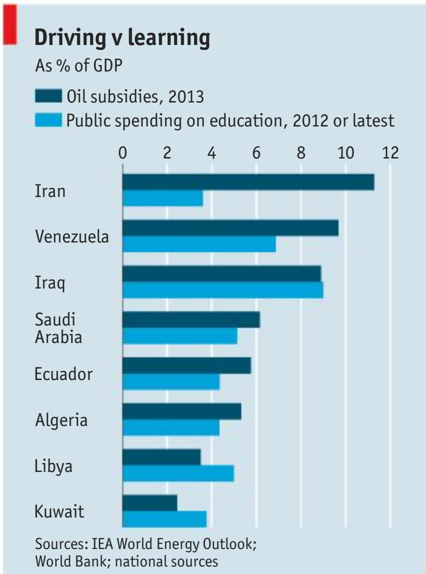

fuel subsidies altogether. But many governments deemed it too risky to expose their citizens to the full heat of the energy market.

Now prices are tumbling, it is easier (and less inflationary) to cut subsidies: the difference between the free-market price and the one expected by citizens has shrunk. Egypt's government has slashed subsidies on diesel and petrol, which were worth 10% of GDP in 2012. In July it raised diesel prices by 64% and petrol by 60%. This month Indonesia scrapped petrol subsidies entirely. India has stopped controlling diesel prices.

In oil-exporting countries, which are particularly generous (the Middle East and north Africa account for half of the world's energy subsidies), people are more likely to accept budget cutbacks because the economy as a whole is struggling with lower prices, says Jim Krane of Rice University. However, lower energy prices make subsidies cheaper. That can make it tempting to postpone hard decisions. Of the 19 oil exporters tracked by Mr Krane, only a handful started to cut subsidies in 2014.

As a condition for granting war-torn Ukraine financial support, the International Monetary Fund (IMF) wants it to raise the price of domestic gas. Doing so will help to close the massive deficit of Naftogaz, the state gas monopoly, which for years has supplied Ukrainian households at a fifth of the price it pays for gas.

To quell dissent, some governments are offsetting price rises by helping the neediest. Jordan, which is increasing electricity prices, has pledged to start giving poor families stipends when oil prices next top $100 a barrel. In Yemen, where subsidies for diesel and petrol have been shrinking for years, the government is boosting the number of families eligible for help from its Social Welfare Fund.

Yet even in countries where reform has taken place, it has been done imperfectly. The most effective way to cut subsidies is to adopt a clear and automatic formula, cutting meddling politicians out of the process. Last year, for instance, Tunisia embarked on a gradual but predetermined series of price hikes for petrol intended to raise domestic prices to market levels. Typically, though, politicians are all too happy to respond to political pressure.

Some countries have done nothing at all. Chief among the laggards is Russia, where in 2013 energy subsidies for gas and electricity cost $40 billion. According to James Henderson of the Oxford Energy Institute, residential and industrial gas prices were frozen during 2014 and are unlikely to change this year. Raising them would dent the popularity of President Vladimir Putin at a perilous juncture.

Cutting consumption subsidies may seem sensible when prices are falling, but it is also the time when struggling energy firms turn to the state for help. As it is, governments in the G20 spend $88 billion each year supporting fossil-fuel exploration, according to the Overseas Development Institute, a think-tank. That figure may grow. In December George Osborne, Britain's finance minister, announced tax cuts on oil firms in order to support the oil-and-gas industry in the North Sea. The same month Mr Putin bailed out Rosneft, a big oil company suffering from the depreciation of the rouble. America is another big offender, with generous subsidies for exploration and production of oil and gas. There is little talk of trimming them. Whether low prices help to galvanise reform or simply make it easier for governments to procrastinate still remains up in the air. ■

The tsetse fly and development

In the ointment

How an insect held back a continent

ECONOMIC historians have long supposed that Africa's historically low population density shaped its development. Rulers struggled to exercise control over scattered populations, the theory goes. Malfunctioning states inhibited growth because property rights were insecure and infrastructure was worse.

But why was it that land in precolonial Africa was so abundant, and people were so scarce? A new paper* by Marcella Alsan of Stanford University blames the tsetse fly. The pest, much like the mosquito, lives off the blood of people and animals and in the process transmits disease, in this case a parasite that causes sleeping sickness. To domesticated animals, on which it likes to feed, its bite is fatal. Its prevalence, the paper argues, made it considerably harder for Africans to develop agriculture.

Using historical data on climate, Ms Alsan constructs a "tsetse-suitability index" (TSI) to measure the extent to which the insect must have thrived in different places. She compares the TSI with anthropological records of pre-colonial African farming.

She finds that a one standard-deviation increase in the TSI is associated with a 23 percentage-point decline in the likelihood that the local people kept domesticated livestock. That, in turn, made it harder to farm: a one standard-deviation increase in the TSI is associated with a six percentage-point reduction in the use of ploughs.

The tsetse fly is found only in Africa, so Ms Alsan tested her results in areas outside Africa with similar climates; she did not find the same pattern. That suggests that it was the fly itself that was holding back agriculture. Without the help of animals, farming becomes much less productive and is viable in fewer places. Those Africans surviving by foraging, meanwhile, would have had to spread out over large areas in order to feed themselves. Doing so may also have lowered the risk of infection. No wonder, then, a higher TSI is correlated with a lower precolonial population density.

The tsetse's bite still smarts today. Thanks to the weak governments it engendered, economies in tsetse-infested areas have struggled to grow (although colonialism hardly helped). The higher the TSI, Ms Alsan finds, the lower the current level of economic development.


Taking a bite out of progress

* "The effect of the tsetse fly on African development", by Marcella Alsan, *American Economic Review*, 2015

Free exchange | Zoning out

Why leaving the euro would still be bad for both Greece and the currency area

IN 2012 Greece held two elections which might have led to its exit from the euro zone. In the event, that was avoided—a good thing since the costs of a "Grexit" would almost certainly have outweighed any gains, not only for Greece but for the entire currency area. Now yet another election, on January 25th, threatens Greece's membership of the euro zone. What would Grexit entail this time? And does it make any more sense?

The mechanics of Grexit would be straightforward. The change in currencies would be immediate as the government redenominated domestic assets and liabilities into drachma, most likely on a one-to-one basis with euros. The Greek central bank would be severed from the European Central Bank (ECB) in Frankfurt. Instead it would conduct Greek monetary policy, in drachma, through operations with banks whose domestic balance-sheets would now be in drachma, too.

Though the starting-point might be parity between a euro and a drachma, the new currency would quickly depreciate. Estimates from the IMF in 2012 suggested that it would fall against the euro by 50%. Such a reduction could spur an eventual economic revival by making Greece more competitive. After Argentina severed its decade-long link with the dollar in 2002, it experienced several years of rapid growth, helped admittedly by a commodity-price boom that played to its strengths as an agricultural exporter. The hope would be that Greece could also exploit its improved competitiveness, especially by attracting more tourists.

Even so, there would be several drawbacks. Grexit would be a huge short-term shock to the economy. Reintroducing new notes and coins would take several months. This would be likely to create chaos, even though ever more people are making payments electronically. In all likelihood, Greece would have to leave the EU as well, which would cut it off from the bloc's single market (and regional financial assistance). Inflation would surge as soaring import prices rippled through the economy; the IMF's analysis in 2012 suggested that Greek domestic prices would rise by 35%. The uncertainties caused by Grexit would undermine both consumer and business confidence.

All of which makes an Argentina-style boom highly unlikely. The economy would probably be pushed back into recession, only a year after it had started to recover. The IMF estimated that Grexit would cause an already sliding economy to contract by an additional eight percentage points in 2012.

The uncertainties would persist as the Greek government found itself stuck in an Argentine-style legal imbroglio, making it impossible to borrow from abroad. Although the Greek government could redenominate domestic debt it could not do so for foreign debt. That burden, still in euros, would grow dramatically overnight in relation to the devalued drachma-based economy and the Greek tax base, which would make a fresh default unavoidable. Long legal battles would be inevitable, especially with private holders of the new Greek bonds issued in a restructuring in 2012, which were written under English law.

In some respects, Greece is better-placed now to cope with an exit than in 2012. According to the European Commission, the government ran a primary surplus (ie, before interest payments) of 2.7% of GDP in 2014, whereas two years earlier it was still heavily in deficit (3.6%). Greece's once forbiddingly large current-account deficit (which reached 15% of GDP in 2008) is more or less back in balance. Grexit would therefore not cause a sudden budgetary crunch, and the balance of payments would be more resilient to the immediate effects of rising import prices and would gain from bigger exports.

But Greece is also better placed than before to prosper within the euro zone. A sudden exit would set back a promising recovery. Following a savage recession, in which GDP shrank by 27% from its previous peak, the economy has been growing since the start of 2014. It is now much more competitive than before, following big falls in wage costs. The sheer size of Greek public debt, at 175% of GDP, is cause for concern. But in fact much of this is owed to other euro-zone countries, and these have provided hidden debt relief through extending maturities and charging minimally low interest rates. Interest payments have also been deferred for ten years on a big chunk of Greek debt. As a result, even though Greece's stock of debt is now much higher than before the crisis, its interest payments are lower: 4% of GDP compared with 5% in 2008, when the debt was 109% of GDP.

Beware Greeks bearing precedents

For the euro zone, the balance of benefits and costs is also unfavourable, though less so than in 2012. The gain for Greece's creditors from Grexit would be one of discipline. A departure would show that members of the currency club have to abide by its rules, sending a strong message to rebellious politicians elsewhere on the periphery to fall into line. The risk that Grexit might cause a wider break-up is lower than in 2012 thanks to various new defence mechanisms, including a permanent rescue fund and the readiness of the ECB to come to the aid of countries facing a buyers' strike on their government bonds.

Even so, Grexit would still be a shock. Its detrimental impact on an already weak economic recovery could cause GDP across the rest of the euro zone to be lower by 1.5% in 18 months' time than it would otherwise have been, according to JPMorgan Chase, a bank. Grexit would shatter the principle that membership of the single currency is for ever. A sell-off in the bonds of other countries that might appear susceptible would naturally follow. The euro zone might now cope better with Grexit, but the cost of showing that the currency club can fracture would still outweigh the gain of enforcing discipline. ■

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Sex differences in academia

University challenge

Women are scarce in some, but not all, academic disciplines. New work suggests the cause may be a special kind of prejudice—one that also applies to black people

IT IS a long time since the groves of academe were paced only by men, but even now some of them are more populated by women than others are. Why, is a mystery. Though the phenomenon is most discussed in scientific and technological disciplines (new PhDs in maths and physics are earned mostly by men, while—in America at least—half of those in molecular biology and neuroscience are awarded to women), it is equally true in the social sciences and humanities, where art history and psychology are dominated by women, and economics and philosophy by men.

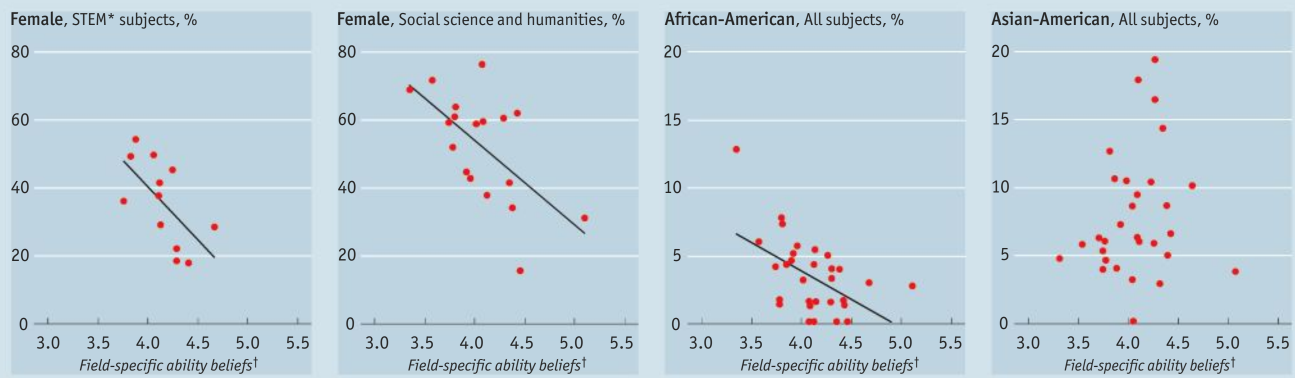
Various explanations have been advanced, beyond differential prejudice in different fields. That the long hours required for laboratory work are unconducive to child-rearing is one. A second is that those subjects in which women are rarest require habits of systematic thought found (it is claimed by some) more often in men. A third is that, though men and women have the same relevant abilities on average, the statistical distribution of these may be wider in men than women. Since academics are people who have these abilities most abundantly, the tail of male geniuses in the bell curve would, if this were true (the evidence is equivocal) be longer than that of female ones.

Suggesting this latter possibility in 2005 helped cost Larry Summers, then president of Harvard, his job, for the subject is political dynamite. A paper just published in *Science*, though, suggests all these explanations are wrong. What is happening, its authors say, really is just a species of prejudice. Moreover, it is a prejudice which, they think, also explains why some ethnic minorities, black people in particular, are under-represented in a similar way.

The paper's authors, led by Sarah-Jane Leslie of Princeton university and Andrei Cimpian of the University of Illinois at Urbana-Champaign, hypothesise that the crucial variable is something they call field-specific ability (basically, innate talent)—or, rather, a belief in this quality by those already entrenched in a discipline. They have found that the more existing professors think some special talent, beyond intelligence and hard work, is required to do their subject well, the lower will be the percentage of PhD students in ▸▸

A parable of the talents

American PhD students who are:



Source: *Science*

*Science, technology, engineering and maths †Higher numbers indicate emphasis on innate talent that subject who are women.

Dr Leslie and Dr Cimpian established this by sending questionnaires to more than 1,800 academics working in 30 fields, from astronomy to sociology, at American universities. They asked questions intended to test all four hypotheses, converted the responses into numbers, and then plotted those numbers against the fraction of female PhD students enrolled in the disciplines concerned, looking for correlations.

In the cases of long hours, they asked what a normal working week was. In the case of systematic thought, they asked how important participants believed it was in their own particular disciplines. In the case of the "long tail" they asked how selective the discipline was (that is, what fraction of graduate applicants were admitted), on the presumption that more selective fields would show a stronger long-tail effect, if one exists at all. Finally, on the question of innate talent, they asked questions such as, "Being a top scholar of [discipline] requires a special aptitude that just can't be taught", designed to elucidate how important respondents thought it was in their own, particular fields. Only in the case of academics' assessments of the need for innate talent was there a correlation—and, as the first two charts (see previous page) show, it was strong.

The results on race, illustrated in the third and fourth charts, are also intriguing. Black PhD students show the same types of correlation as women. Americans of Asian descent do not.

Systems of belief

All this raises interesting and awkward questions. It may be unpalatable to some, but the idea that males and females have evolved cognitive differences over the course of many millions of years, because of the different interests of the sexes, is plausible. That people of different races have evolved such differences is far less likely, given the youth of *Homo sapiens* as a species. Prejudice thus seems a more plausible explanation for what Dr Leslie and Dr Cimpian have observed. But prejudice can work in subtle ways.

It could indeed be that recruiters from disciplines which think innate talent important are prejudiced about who they select for their PhD programmes. It could instead, though, be that women and black people themselves, through exposure to a culture that constantly tells them (which research suggests it does) that they do not have an aptitude for things like maths and physics, have come to believe this is true.

If that is the case (and Dr Leslie and Dr Cimpian suspect it is), it suggests that a cultural shift in schools and universities, playing down talent and emphasising hard work, might serve to broaden the intake of currently male-dominated and black-deficient fields, to the benefit of all. ■

Engineering

Flight details

A new tool in the quest to understand—and co-opt—nature's secrets of flying

HERE'S a brainteaser: a driver with a cargo of birds approaches a bridge with a limit of 5,000kg. His lorry weighs 4,800kg and his load 400kg. The driver then has an idea: he strikes the side of the lorry, frightening the birds into flight, and quickly drives across while they are airborne. Does the ploy work?

This question is the stuff of late-night bar discussions among physics students. The answer is that physics is not fooled. A bird's flapping produces a downdraft that pushes on the lorry's floor with a force, on average, the same as the bird's weight.

That simple explanation, though, did not satisfy David Lentink, an engineer at Stanford University. Dr Lentink applies insights from flying animals to the design of drones. Yet the methods used until now to unpick the particulars of powered flight are either crude (measuring the tug on a tether tied to a flying animal) or unduly complex (feeding supercomputers with data gained from dissections on the masses and densities of bird parts).

Dr Lentink's paper, just published in the *Journal of the Royal Society Interface*, shows how to measure the quickly changing forces of flight without even touching an animal. This is not easy. The scales used must measure forces with great precision but also bounce back rapidly, to track fast changes. This requires them to be both light and stiff. Dr Lentink's team therefore built a box whose floor and ceiling (each hooked to a precise sensor) were made of balsa wood. They then taught Gaga and Ray, two small parrots, to fly across it.

The musculature of many birds suggests that their wings create more lift on the downstroke than the up, but what the team measured was extreme. Gaga and Ray created lift equivalent to twice their body weight on the downstroke and virtually none on the up. Were they to flap in synchrony, then, the apparent weight of the birds in a lorry could briefly double. That finding complicates matters for physics undergrads, but the approach makes studying real birds—and drones—far easier.

Chronic fatigue syndrome

Fear to tread

A controversial trial on a mysterious disease continues to yield insights

CHRONIC fatigue syndrome (CFS) is an illness that robs its victims of concentration, sleep and—as the name suggests—energy. What causes it is a puzzle. Hypotheses include it being the long-term consequence of viral infection, some sort of autoimmune reaction, or a species of depression. Some researchers argue that it is actually a spectrum of diseases; others say this view risks making it a dumping ground for not-otherwise-specified illnesses with similar symptoms.

Even the name raises hackles among patient and advocacy groups, who suggest it sounds as if those who have it are lazy or just need a good nap. These days, CFS often appears in conjunction with the term myalgic encephalomyelitis, a decidedly more medical-sounding designation which gives the impression that a cause has been hunted down and named.

It has not. The duality of names reflects an ideological rift regarding whether CFS's causes are physiological or psychological. Among patients and advocacy groups, there is long-running resentment of the idea that the disorder is "all in the mind". And no single study tore that rift open more widely than a paper published in the *Lancet* in 2011, the results of which have ▸▸

Correction In "Cold comfort farm" (January 3rd) we said that the Freeman Ranch forensic-anthropology research facility is run by the University of Texas. It isn't. It belongs to Texas State University. Sorry.

COMPETING TEAMS

INSEAD – The Business School for the World
Will Cappelletti
Steve Gabster
Bertrand Louvard

MIT Sloan Management
Samuel Horn
Reegy Laloi
Ting Sun

SDA Bocconi School of Management
Matteo Colombo
Athina Papaioannou
Tatiana Zakharova

Michigan State University – Broad College of Business Full-Time MBA
Holly Miller
Yang Hu
Troy Wallace

Georgia State University – J. Mack Robinson College of Business
Florian Michael Firlus
Asya White
Erik Charles Willanzheimer

UNT – College of Business, University of North Texas
Serena Dang
Danica Fiew
Bryan Smith

Sydney Business School – University of Wollongong
Devika Chandramohan
Kaustav Chatterjee
Sebastian Isbanner

Schulich School of Business – York University
Mark Freedman
Zach Lieberman
Umair Pervez

Ball State MBA
Elizabeth George
Chelsea Moccia
Jaysn Murphy

WHU – Otto Beisheim School of Management
Michael Jonas
Juan Rintha
Philipp Söchtig

University of North Alabama
Lori Light
Brian M. O'Leary
Mike Veigel

Johns Hopkins Carey Business School
Keaton Gray
Ray (Yu-Jui) Lin
Yue Sun

FIA Business School – International MBA in Brazil
Raquel Orsati Clara
Adriana Dionízio Martins
William Soares Vidal

University of Nebraska Lincoln
Christopher Aumueller
Jeremy Bridges
Dave Fuxa

Wagner College
Giuseppe Badalamenti
Nicholas De Matteo
Kenneth Whitman

Monterey Institute of International Studies – A Graduate School of Middlebury College
Meagan Braun
Whitney Hales
Nuan He

Florida Southern MBA
Melanie McDaniel
James W. Pelham, Jr.
Michael Scott

Creighton University Heider College of Business
Shradha Shrestha
Ravi Shukla
Scott Summers

MBA CityU – We are SHARP – City University of Hong Kong
Chris Shiyao Chen
Zhang Xiao
Nie Xiaolin

The Fletcher School – Tufts University
Shu Gao
Edward Lee
David Aldama Navarrete

University of St. Thomas Minnesota
Team 1:
Jeff Andersen
Luke Dery
Christian Engel

University of St. Thomas Minnesota
Team 2:
Erin Bakken
Nathaniel Stephens
Willis Krumholz

BYU Master of Business Administration
Brock Burrows
Steve Mineer
Jorge Montalva

Ted Rogers School of Management – Ryerson University
David Bender
Angela Holzer
Ilai Maor

been followed up this week by a second paper in *Lancet Psychiatry*.

The PACE trial, on which the original paper was based, was the largest of its kind. It followed 641 participants over the course of a year. It was designed to compare the effects of a few well-established treatments. These included graded exercise therapy (GET), in which patients gradually increase the length or intensity of a set of exercises; adaptive pacing therapy (APT), a strategy to set modest exercise goals but to stay within an maximum "envelope" of exertion defined by the illness; and cognitive behavioural therapy (CBT), which aims to identify and adjust the thought processes that lead to unhelpful behaviours.

When the numbers were crunched, both CBT and GET were shown to improve outcomes, such as self-reported levels of fatigue and physical fitness. APT, on the other hand, was not.

The findings sparked a furious and public debate between the researchers, the editors of the *Lancet*, advocacy groups and some patients, who called the study's methods and conclusions into question. At issue was the quantity of resources spent looking at effects in patients' psyches rather than hunting for more tangible causes and effects in their bodies. Many researchers studying psychological or psychiatric causes of or treatments for CFS reported being harassed in person and online. Some received death threats.

Undaunted, several of the paper's authors have spent the intervening time using a technique called mediation analysis to tease out the reasons why CBT and GET had their positive effects. Mediation analysis turns questions of cause and effect into mathematical equations, presuming that a positive clinical outcome after a particular treatment occurs because of one or more "mediators" in between.

The team examined the responses to a detailed questionnaire administered partway through the trial. Questions had been designed to measure established psychological factors that might serve to mediate the various treatments; for example, whether a respondent agreed with the statement, "I am afraid that I will make my symptoms worse if I exercise" fell into the category of fear avoidance. Other categories included avoiding embarrassment, focusing on symptoms (thinking frequently about the illness and its effects) and catastrophising (believing things were worse than they really were). In each case, the analysis puts the category into the equation and determines if its presence looks statistically likely to have made a difference to the outcome.

The results, which are the subject of the new paper, show one of the main ways CBT and GET trumped APT was that people prescribed them were less fearful than those prescribed APT. This seemed to account for about 60% of the advantage they brought. GET also brought an increase in tolerance to exercise that APT, with its concern not to overstep the boundaries, did not. One psychological mechanism, then, and one physiological one.

That both are involved is hardly surprising. The link between a healthy mind and a healthy body (and vice versa) has been known since classical times. That, though, is by no means the same as saying something is all in the mind. ■

Oceans and climate science

Higher water mark

The rise in sea levels may be accelerating

TIDES ebb and flow but mean sea levels are among the constants of climate science. Though things like the recent slowdown in the rise of average surface temperatures are puzzling, scientists can at least point to higher sea levels as clear evidence that climate change is real. The rise is caused by thermal expansion (hot water expands) and by melting ice sheets. And the facts are observable: thousands of gauges—such as that pictured above—measure tides around the world, with some records going back to the 18th century.

But this evidence is not as irrefutable as it might seem. The coverage of tidal gauges is patchy. Most are in coastal waters, so the high seas are poorly measured. The majority are in the northern hemisphere. Few are near the poles. The records, says Carling Hay of Harvard University, are "very noisy [and] sparse". It was not until the spread of satellite observations in the 1990s that measurement of sea levels became reliable and global. All sorts of adjustments are needed to make sense of earlier data and produce a complete record.

Dr Hay and her colleagues have come up with a new way of doing this, reported in this week's *Nature*. They use a statistical technique called probabilistic estimation in which probabilities are assigned to estimated or unknown figures. The technique is fashionable; last year demographers from the United Nations used it to produce new projections for the world's population in 2050 and 2100.

The team re-examined records from 622 tidal gauges (about a third of the total) since 1900. Applying probabilistic techniques, she puts mean sea-level rise between 1901 and 1990 at 1.2mm a year, plus or minus 0.2mm. That is much lower than previous estimates. The most recent assessment by the Intergovernmental Panel on Climate Change (IPCC, which represents mainstream climate scientists) said sea levels had risen about 1.7mm a year in 1901-2010.

This new, low figure, if confirmed, would explain a puzzle in climate science: that estimates of sea-level rise have been much greater than you would have expected if you had looked just at the main causes of the rise, namely thermal expansion and the melting of the Greenland and Antarctic ice sheets. These, according to the IPCC, account for a sea-level rise of only about 1.2mm a year, leaving 0.5mm unexplained. But if Dr Hay is right, the puzzling difference between the predicted and real figures disappears.

So estimates of 20th-century sea-level rise may have been exaggerated. Does that mean global warming itself is being overstated? Unfortunately not. Dr Hay applied her probabilistic techniques to more recent tidal-gauge data (between 1993 and 2010). Her estimates give a mean sea-level rise of 3mm a year in that period, almost exactly the same as estimates from satellite data. In other words, her study confirms that sea levels are now rising as much as had been thought. But 3mm a year, instead of being less than twice as fast as the 20th-century average, appears to be almost three times as fast.

If this acceleration were to continue, the problem could get worse. A study last year, commissioned by Michael Bloomberg, a former mayor of New York, and three former American Treasury secretaries reckoned that rising seas could put American property worth $66 billion-106 billion under water (literally) by 2050. It used previous estimates. If the new numbers are any guide, the damage would be greater still. ■

Also in this section

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Obamacare

Good, bad and ugly

The depressing story behind Barack Obama's biggest achievement

America's Bitter Pill: Money, Politics, Backroom Deals, and the Fight to Fix our Broken Healthcare System. By Steven Brill. *Random House; 512 pages; $28*

IT WAS never going to be easy. Reforming health care in America means fiddling with an industry that is larger than the economies of all but five countries. The system is a mishmash of laws and regulations that relies on profiteering firms and merciful doctors. It is an expensive mess. Even so, few predicted that Barack Obama's attempt to reorganise the clutter would degenerate into such a remarkable example of Washington dysfunction.

It is easy to feel depressed reading Steven Brill's new book, "America's Bitter Pill", which uses a series of narratives to explain the past few years of health policy in America. The central tale follows the Affordable Care Act (ACA), better known as Obamacare, from inception to implementation. One might think that the passage of the biggest liberal achievement since Lyndon Johnson's "Great Society" would prove an uplifting story. But this is mostly an account of backroom deals, broken promises and bungling government—not to mention bitter partisanship.

The great and well-known irony of Obamacare is that it is based on a Republican idea. Mitt Romney's three-pronged health reform while governor of Massachusetts provided the template: first, insurance companies could not discriminate against the sick; second, everyone had to buy insurance or face a penalty; third, the government would help poor people buy insurance or cover them outright. In 2008 nearly all of the Democratic presidential candidates agreed that this was the way forward, but the winner would have to navigate a maze of powerful special interests in order to get reform passed.

Candidate Obama vowed to televise negotiations over health reform. President Obama did no such thing. In fact, as Mr Brill writes, the administration and its allies in Congress reached secret agreements with the industry groups affected by the ACA. These deals left out policies that help other countries spend substantially less on health care than America (with similar results for patients). The government, for example, would not allow itself to bid down the price of drugs for Medicare, the public health programme for the elderly; nor would it avail itself of research on the value and efficacy of different medicines.

The abandonment of these potential money-savers reflected the fight within the administration between the economic and policy teams. The economists wanted to focus on bringing down the ever-increasing cost of health care in America (the growth of which has slowed of late). But the policy wonks favoured extending health coverage to as many people as possible—in large part by expanding Medicaid, the public health programme for the poor—and dealing with the cost stuff later. In the end, the policy team won the day. Drugmakers, hospitals and insurance firms would benefit from all of the new customers that Obamacare brought into the system, while agreeing to taxes and regulations that were not exceedingly painful. Their biggest concession was their support.

With these deals in hand, the White House political machine went to work portraying the ACA as substantial reform and downplaying the government handouts to the poor that dominated the bill. One thing the administration did receive from the pharmaceutical industry was a promise to quietly contribute tens of millions of dollars to two political-action committees that would buy advertisements supporting senators who favoured the bill and attacking those who did not. With some understatement Mr Brill writes that "it was not the new way of doing business that Barack Obama had promised in his campaign." In the end the ACA would pass with only Democratic support, and by taking advantage of a quirk in congressional rules.

Mr Obama could be forgiven for proving more cynical than promised. The Republicans, after all, have tried to use lawsuits, a government shutdown and the threat of sovereign default to derail Obamacare. The opposition began, quite literally, on day one. Mr Brill describes a dinner attended by 20 Republican congressmen and about a dozen strategists and lobbyists on the night of Mr Obama's inauguration. "It was about stopping anything the new president championed and also stopping another big-government programme," writes Mr Brill. "No one mentioned that Obama was talking about a health-care plan like the one Romney, and Nixon before him, had espoused."

Still, Mr Brill seems to think that all the bartering and bitterness surrounding Obamacare was worth it, "because all of the realistic alternatives were worse". Many of the book's other narratives, which follow families once left out of the health-care system and now inside, strengthen this claim. Even the botched roll-out of Obamacare's online marketplace, to which Mr Brill devotes numerous pages, has a happy ending; more than 8m people signed up for coverage, exceeding expectations.

But Obamacare tackled only half of the problem. American health care, warns Mr Brill, is still jeopardised by "the broken economics of the marketplace". Doctors are rewarded for performing useless procedures, while insurers pay for as little as possible, and hospitals gouge those without coverage. The author has his own plan for reform that involves encouraging the country's big health systems to expand and offer their own insurance. This, he writes, would eliminate the incentive for doctors and hospitals to run up costs (as they would be on the hook for them) and cut out the insurance-company middleman that wants to skimp on care.

It is a good idea, which is why it is already known. Mr Brill is describing an integrated managed-care organisation, like Kaiser Permanente, the successful California firm. Others are moving that way, but Mr Brill fails to explore why this model isn't more popular. Whatever its flaws, at least the plan does not rely on dysfunctional Washington to pass a new law. ■

The Great Depression

Root causes

Hall of Mirrors: The Great Depression, the Great Recession, and the Uses—and Misuses—of History. By Barry Eichengreen. *Oxford University Press; 512 pages; $29.95*

ECONOMISTS usually work with large samples of data, so they are in a bind when it comes to depressions: there simply haven't been enough to yield predictable patterns. When the world stood on the precipice in 2008, its leaders had only the 1930s as a template.

Today they congratulate themselves on having avoided another Great Depression. Were they right to? Barry Eichengreen argues no. Their reading of the 1930s, he writes, is incomplete, often erroneous and has led them to settle for weak or no growth and for too-timid reform of their financial systems.

Mr Eichengreen, of the University of California, Berkeley, recreates the last century's two great episodes of financial instability with compelling portraits of bankers and policymakers and accessible theoretical explanations. His retelling of America's and Europe's recent crisis adds little to earlier accounts, but his version of the 1930s is rich with detail and myth-busting insights.

The Great Depression is often blamed on central bankers who stood by and let their banks fail. In fact, for the first year, the Fed filled its lender-of-last-resort job as intended, quickly injecting cash into banks after the stockmarket crashed, and ring-fencing healthy banks with loans when weaker banks failed.

The real failures came later. In 1931 Austria's government had to let its biggest bank collapse because it couldn't meet foreign powers' conditions for a loan. Gold fled Austria, then Germany, then Britain, and finally America. Governments responded with monetary and fiscal austerity. The resulting hardship provoked political revolt. Royal Navy sailors protested over proposed pay cuts and Germans elected communists and Nazis.

Many of these events repeated themselves 80 years later. Ireland went bust guaranteeing its oversized banks' liabilities, much as Austria did in 1931. By letting Lehman Brothers fail in 2008, in order to expunge the moral hazard from earlier bail-outs, American officials reprised the decision to let Guardian Trust fail in 1933.

Today's officials did learn some important lessons from the 1930s. Ben Bernanke, chairman of the Fed and himself a Great Depression scholar, was quick to lend to Europe when its banks were in desperate need of dollars. Most rich countries decided to enact fiscal stimuli in the early years of the crisis.

But in responding so well to the initial instability, "success thus became the mother of failure," Mr Eichengreen charges. On fiscal policy, he is certainly correct. Within a couple years, America, Britain and Europe had all pivoted from stimulus to austerity. Unlike their forebears, they couldn't blame the gold standard. Rather, officials were motivated by misplaced fear of bond-market vigilantes, desire for a smaller state, or, in Europe's case, an insistence that profligate governments tighten their belts in exchange for support.

But Mr Eichengreen at times stretches the facts to fit his narrative. He accuses the Fed of keeping monetary policy too tight because of a preoccupation with inflation; but it enacted several rounds of unconventional stimulus.

Because the last crisis was less severe than the Depression, bankers were able to hold firm in resisting radical reform of the financial system. Yet Mr Eichengreen does not explain what more radical reform would accomplish; if anything, tougher regulation of banks would probably hold back their lending, which would make the recovery even weaker.

Mr Eichengreen wisely acknowledges that history has many, often conflicting, narratives which make it an imperfect guide to the present. This guarantees that when the next crisis hits, the world will find brand new mistakes to make. ■

Franz Schubert

Wintry passions

Schubert's Winter Journey: An Anatomy of an Obsession. By Ian Bostridge. *Knopf; 544 pages; $29. Faber and Faber; £20*

I came a stranger
I depart a stranger
May was good to me
With many a garland of flowers.
The girl, she talked of love,
The mother even of marriage—
Now the world is so gloomy,
The way is shrouded in snow.

THE opening of "Winterreise" sets the tone. This is one of Franz Schubert's most famous compositions: a cycle of 24 songs (*Lieder*) for voice and piano, written in 1827-28. It is set to a collection of poems by Wilhelm Müller, a contemporary of Schubert's, about a winter journey undertaken by an enigmatic wanderer. The mood is mostly dark, though the hero also reminisces about happier times, especially in "The Linden Tree", which subsequently became a much-loved folk song.

The desolate, freezing weather (at a time when continental European winters were much colder than they are now) reflects the wanderer's state of mind. With a love affair apparently behind him, he hides from other people and sees rejection and forebodings of death everywhere. But is he just an isolated misfit, or a symbol of a more widely felt sense of alienation?

Ian Bostridge, one of Britain's foremost tenors, has performed "Winterreise" more than 100 times. He knows every last nuance of the work and has given it a great deal of thought. His beautifully produced book offers many new insights that will inform the enjoyment of both old admirers and newcomers to the music. Each of the songs has a chapter devoted to it, which at first sounds like a device that might quickly pall; but, like Scheherazade in "1001 Nights", Mr Bostridge is a good storyteller and keeps the reader in constant suspense.

A man of deep intellectual curiosity, he offers explanations of many of the strange sights the wanderer encounters on his journey, from the design of snowflakes to the physics of the will-o'-the-wisp and from the special qualities of the crow family to the story of the waltzing craze in the Vienna of Schubert's day. More important, as a historian who came late to his singing career (his PhD thesis was on witchcraft c. 1650-1750), Mr Bostridge has an acute understanding of the historical context of the time and how it may have influenced Schubert's reading of the poems.

The composer was about 30 when he wrote "Winterreise", and enjoying a prolific and successful career. He was one of a new breed of musicians who were able to live on their talent without the need to find a job at court or in the church. That allowed him a measure of independence, but also involved some financial ups and downs. He had a large circle of friends, mostly artists, writers and thinkers, with whom he liked to engage in what became known as "Schubertiads", lengthy drinking sessions accompanied by lively intellectual discussions. In Metternich's post-Napoleonic Austria such intellectual exchanges were not without their dangers. Censors were everywhere, trying to keep down political and religious dissent.

Schubert understood the coded messages in many of Müller's poems and reflected them in his music, which required some careful judgments. The frozen landscape mirrored a repressive political regime. Even the wanderer's seeking refuge in a humble charcoal-burner's hut was fraught with meaning: it was a hint at the *carbonari*, an Italian secret society which Austria's Habsburg rulers suspected of subversion.

On a personal level, the composer was deeply affected by a new marriage law the regime introduced in 1815, requiring men to take a means test before they were permitted to wed. He applied, but as a freelance worker failed the test. He subsequently contracted syphilis, probably caught from a prostitute, which caused him much suffering and killed him at just 31. Some authorities take the view that he may have been gay. In any event, he never married. All that snow and ice in "Winterreise" might also be read as a symbol of repressed sexuality, Mr Bostridge suggests.

Certainly the poems and their musical settings reflect the Romantic obsession with death. On his journey through the wintry landscape the wanderer is often tempted to rest, and thus die from cold. A signpost invites him down a path from which no one has ever returned. He meets a crow which already seems to look upon him as carrion. Later he stumbles upon a cemetery which in his benighted state he sees as an inn welcoming guests with green wreaths, but it has no room for him. In the last song he comes across an old hurdy-gurdy player, grinding away at his instrument without anyone listening, and considers joining forces with him.

When Schubert was working on "Winterreise", he sang it to a group of friends and accompanied himself on a small piano. At first hearing, his friends were sceptical. Now famous singers perform the work in large concert halls the world over, accompanied by well-known pianists playing very grand instruments. The context is quite different, yet the *Lieder* still seem to hit home with today's audiences.

"Winterreise" is a long work; it takes 70 minutes or so to perform. Mr Bostridge explains that when it has ended, with the hurdy-gurdy man's plain and oddly inconclusive song, the audience usually sits in stunned silence for some time. That is just what happened when he sang it at the Barbican in London this week. ■

Wintry water

Cyber-dystopianism

Net costs

The Internet is Not the Answer. By Andrew Keen. *Atlantic Monthly Press; 273 pages; $25 and £16.99*

THE history of the internet, Andrew Keen suggests, can be reduced to two stories. In the beginning, there were the publicly funded technologist-visionaries: Vannevar Bush, a revered American engineer whose "memex" prophesied the internet, and Tim Berners-Lee, a British programmer who unwittingly designed the information superhighway's road markings. These are just two names among many, Mr Keen says, who made the network and saw that it was good.

The second story, the fall from grace, is what came after America's National Science Foundation allowed its commercial partners to take over the nascent internet framework. It is safe to say that Mr Keen, a British-American entrepreneur and author, is not happy with how things have gone since.

His main preoccupation is the online economy's structure, which has made only a few people (nearly every one of them young, white men) fabulously rich, without creating many jobs. At each mention of Tom Perkins, a venture capitalist, Mr Keen cannot resist bringing up his $130m, football-pitch-length yacht. Yet all this wealth has no strings attached; "we have a new nobility," he laments, "without any *noblesse oblige*".

There is more at work here than conspicuous consumption. Apps such as Instagram and Snapchat have led to a "fashion for vulgar immodesty" and an "epidemic of narcissism and voyeurism", Mr Keen writes. He dislikes the distorted-reality Silicon Valley culture. He seeks out the tech illuminati on their own turf, attending their gatherings and reporting back with savage deconstructions of their affectations.

"The Internet is Not the Answer" returns to arguments that Mr Keen has made in previous books, expanding the case for worries about privacy in the wake of the revelations of Edward Snowden, a surveillance-state whistle-blower. And it makes a strident economic argument; a reader wishing to underline each instance of the phrase "winner-take-all" should keep a pencil sharpener to hand.

It echoes other criticisms of the networked world, such as those of Sherry Turkle, who in "Alone Together" asserts that digital devices increase loneliness, and of Jaron Lanier, whose "Who Owns the Future?" tackles the two-tier society that the net is creating. Silicon Valley culture, with its bespoke lingo and self-delusions, is ripe for Mr Keen's satire. The author certainly sees himself as a playful provocateur, but his message is dire. It is difficult, for example, to disagree that many people's interactions with social media are indeed "selfie-centred". By way of prescriptions, Mr Keen is keen for stricter oversight "to force the internet out of its prolonged adolescence". For starters, he would like to see more self-regulation and calls for a new social contract for citizens of the web.

The internet has certainly contributed to a gross increase in inequality in some areas of society. Yet the world is still in the middle of a technological revolution, and it is hard to see the picture when you are inside the frame. Unbridled techno-Utopianism shows only the revolution's benefits, and is dangerously incomplete. It is handy, therefore, to have sceptics like Mr Keen around. But the depth of his distaste for it all risks missing the point by exaggerating the net's many costs. ■

African-American art

Playing tag

PHILADELPHIA

Artists should be identified by race, according to a new show. Is this wise?

FEW exhibitions question their own premise as openly as "Represent: 200 Years of African-American Art in the Philadelphia Museum". But this willingness to test, to probe and to doubt proves to be a strength rather than a weakness. Given a history in which invidious distinctions were used as instruments of oppression, it is natural to ask whether an exhibition defined by race just perpetuates an outmoded way of thinking. In a multicultural society, writes the consulting curator Gwendolyn DuBois Shaw, "the idea that works of art should be discussed in separate groups based on a perception of a shared 'identity' among the objects' makers…seems increasingly regressive." So why do the exhibition at all? Doesn't this kind of survey merely impose an aesthetic ghetto on the real-world variety that many would like to abolish?

Full of folk memory

The evidence, however, largely dispels these doubts. "Represent" transforms what might have been little more than an exercise in curatorial affirmative action into a meditation on the burdens and possibilities of racial identity. Otherwise unremarkable works take on new life, while powerfully original forms are made more eloquent when seen in the light of harsh realities faced by their creators.

Works that would be overlooked if integrated into the permanent collection gain new resonance in this context. The portrait of Edward Aisquith (c. 1810) by Joshua Johnson, for example, resembles countless other likenesses of the age—earnest and a little awkward. But knowing that the painter was a black freedman prompts one to speculate about the relationship between the solidly respectable sitter and the socially marginal man who immortalised him. Similarly, the plain storage jar inscribed with lines inspired by St Peter's vision in the Acts of the Apostles—"Good for lard or holding fresh meat, blest we were when Peter saw the folded sheet"—takes on new significance when you realise that it was fashioned by a legendary slave, David Drake also known as Dave the Potter, one of the few who signed his work.

Identity is at the heart of "Represent", though there is little consensus among the artists about how, or if, it should be addressed. Some want only to practise their trade on equal terms with their white colleagues; others investigate what it means to be black, summoning their ancestral heritage or confronting racial stereotypes.

Patterns can be discerned over time, but "Represent" demonstrates that there is no simple progression from the "assimilationist" goals of artisans like Johnson to the politically engaged and conceptually savvy work by contemporary artists like Lorna Simpson, Glenn Ligon, Dawoud Bey and Kara Walker. Even within a single generation the debate about what it means to be a black artist can be fierce.

The battle between those advocating assimilation to mainstream culture and those promoting an art of ethnic identity became particularly heated in the early decades of the 20th century, and was waged most ably by two leading intellectuals of the Harlem Renaissance. In his 1926 essay, "The Negro-Art Hokum", George Schuyler made the case that black artists were indistinguishable from their white colleagues. "Negroes and whites from the same localities in this country talk, think and act about the same," he insisted. Langston Hughes responded by calling for a more authentic expression of ethnic difference: "We younger Negro artists who create now intend to express our individual dark-skinned selves without fear or shame."

Issues of identity also manifested themselves in more covert ways. An artist's circumstances could provide eloquent testimony to social inequities, without the artist consciously addressing the issue. The prevalence of outsider voices in the exhibition, like the vigorous folk narratives of Bill Traylor (c. 1853-1949) and Sister Gertrude Morgan (1900-80), offer accounts of life on the margins that are no less incisive for being the product of unschooled hands. And some artists manage deftly to straddle the divide. Martin Puryear's 1985 sculpture, "Old Mole" (pictured) is a powerful abstract form in the best modernist tradition, while at the same time its interwoven cedar slats evoke traditional African crafts.

Over the decades the pendulum has swung back and forth, between those demanding only that they be given the same opportunities and be judged by the same standards as white artists and those who have made their heritage an essential ingredient in their work. In the mid-1900s abstract artists such as Alma Thomas made paintings that fit comfortably within a modernist canon that is indifferent to an artist's biography. However, in the closing decades of the 20th century the pendulum swung back once more, as the return of identity politics encouraged black artists to examine their own ethnic roots.

One problem with "Represent" is that its ambition sometimes overwhelms its actual presence in the galleries. It is difficult to cram 200 years of history into a few small rooms; many artists are represented only by a single work, while equally worthy candidates are not represented at all. Despite its title, "Represent" does not pretend to be definitive. It promises only to spark a lively and open-ended discussion, not pronounce the final word. ■

Appointments

Business & Personal

Courses

Tenders

BOST — BULK OIL STORAGE AND TRANSPORTATION COMPANY LIMITED (BOST)

REQUEST FOR EXPRESSION OF INTEREST FOR THE PROVISION OF FRONT END ENGINEERING DESIGN (FEED) SERVICES FOR ~750 KM OF BURIED PIPELINE BUILD OUT IN GHANA

- Bulk Oil Storage and Transportation Company Limited (BOST) is mandated by the Energy Commission of Ghana to be the sole Natural Gas Transmission Utility (NGTU) in Ghana.
- BOST intends to apply part of its budgetary allocation to payments under the contract for the Front End Engineering Design for ~750 km of buried transmission pipeline build out.

Scope of services

- The purpose of the FEED contract will be to refine cost estimates, evaluate potential risks and define a detailed scope for the engineering, procurement and construction (EPC) phase of the transmission network's Western roll-out. The successful FEED contractor will work closely with BOST to adequately define the project requirements and provide a foundation in preparation for tendering the EPC contract for the pipeline. In conjunction with BOST, the FEED contractor will come up with a realistic (±10%) estimate of the project cost and duration.

The services to be provided include, but are not limited to:

- Route selection, with considerations such as crossings and obstructions, rights of way and land acquisition, and environment and safety.
- Pipeline calculations, including line pipe properties, operating conditions, capacity design for optimal flow rate, pressure containment mechanical calculations, corrosion control and external load/pressure assessments.
- Key material selection, including selection criteria, coatings and corrosions assessment, material qualification, and material standards and specifications.

In addition, the successful FEED contractor would be required to contribute to the development of Ghana-wide technical standards and specifications to ensure consistent design, build and operations of the entire transmission network.

Requirements

- In addition to this advertisement, a Data Sheet and a Memorandum that describes the scope of services to be provided can be found on the Public Procurement Authority of Ghana's website (EOI Package Number: GR/BOST/TS/0001/2015).
- Interested FEED contractors are encouraged to read and complete the Data Sheet that can be obtained from the Public Procurement Authority of Ghana's website (www.ppaghana.org).
- The closing date for responding to this EOI is Sunday, 01 February 2015.

Address:
11 Nortei Ababio Street
Airport Residential Area
Accra, Ghana

Contact person: Ato Amissah Wilson (BOST)
Telephone: +233-244280002
E-mail address: tenders@bost.com.gh

BOST — BULK OIL STORAGE AND TRANSPORTATION COMPANY LIMITED (BOST)

REQUEST FOR EXPRESSION OF INTEREST FOR THE OPERATION AND MAINTENANCE (O&M) SERVICES OF GHANA'S ONSHORE GAS PIPELINE NETWORK

- Bulk Oil Storage and Transportation Company Limited (BOST) is mandated by the Energy Commission of Ghana to be the sole Natural Gas Transmission Utility (NGTU) in Ghana.
- BOST intends to apply part of its budgetary allocation to payments under the contract for the Operations and Maintenance of Ghana's onshore gas transmission network.

Scope of services

- The Operations and Maintenance services to be provided are for an existing 111 km onshore gas pipeline (diameter 508 mm) from near Atuabo to Aboadze in Ghana. Under the BOST O&M contract, the successful contractor would need to perform all activities required to comply with relevant international standards and best practice, and relevant Ghana regulatory and legislative requirements. The successful contractor would work closely with BOST to ensure maintenance and replacement plans are performed to a level that optimises the pipeline asset efficiency.

The services to be provided include, but are not limited to:

- **Operations services:** Patrol and surveillance, control room monitoring, records upkeep and metering and measurement.
- **Maintenance services:** Maintenance scheduling, pipeline inspection, pipeline corrosion control, oversight of spare parts and logistics, repairs and preventative maintenance.
- **Training of Ghana nationals:** The O&M services provided will ultimately be insourced by BOST in the long term. The selected O&M contractor should assist with the transfer of skills and operations to BOST employees through training, skills development workshops and the inclusion of BOST employees in operations.

Requirements

- In addition to this advertisement, a Data Sheet and a Memorandum that describes the scope of services to be provided can be found on the Public Procurement Authority of Ghana's website (EOI Package Number: GR/BOST/TS/0002/2015).
- Interested O&M contractors are encouraged to read and complete the Data Sheet that can be obtained from the Public Procurement Authority of Ghana's website (www.ppaghana.org).
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Address:
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Contact person: Ato Amissah Wilson (BOST)
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E-mail address: tenders@bost.com.gh

REQUEST FOR EXPRESSIONS OF INTEREST (ROEI)

Project Management Consultant
for
The Program of Medical Mobile Clinics for Health Care in Rural Areas in Some Member Countries and Muslim Communities

The Islamic Development (IsDB) has received a donation of US$266.67 million to establish 75 mobile clinics in rural areas in some Muslim states and communities (hereinafter referred to as "the Program"). IsDB was entrusted on the implementation of the Program in seven countries namely, Tajikistan, Kyrgyz, Yemen, Afghanistan, Pakistan and others.

So far, the IsDB signed an Agreement with the Governments of Yemen, Tajikistan and Kyrgyz. The program will be implemented under the overall supervision and management of the Bank through a Project Management Consultant (PMC) with the coordination of the concerned authorities in the targeted countries. The services of the PMC may be provided by a consulting firm (Consultant) with adequate experience in the field.

The IsDB now invites eligible firms to indicate their interest in providing the PMC. Interested firms must provide information indicating that they are qualified to perform this task (brochures, description of similar assignments, experience in similar conditions, availability of appropriate skills among staff, etc.). Experience in the following scope shallbe the minimum requirement for the assignments.

Scope of Service: Under the overall guidance of the Bank, the Consultant will provide complete project leadership and management services (including time and resource management), planning services including appraisals of the clinics requirements in the seven areas/countries, as well as supervision of implementation and setting up the scope, methodologies and procedures for sub-projects in each targeted location, preparing the procurement documents, supervision of contract management and quality monitoring of all activities, including works, procurement and services to be provided under the project. The consultant will have to make his own arrangements for office, utilities, accommodation and transport. The service will be for 5 years.

The firms may associate to enhance their qualifications and clearly specify the type of association.

A firm will be selected in accordance with the procedures set out in IsDB Procurement Guidelines under Islamic Development Bank Financing, refer to IsDB web site (isdb.org).

Interested firms may obtain further information and expressions of interest must be delivered to the address below latest **by 25 February 2015** (4:00PM) via courier and notification by email with the subject *(MMUs: ROEI: Firms Interested: "your company name").*

Technical Team
Mobile Clinics Program
Trust Fund Department
Islamic Development Bank, Jeddah, Saudi Arabia
Telephone +966126466728
Fax: +966126466661
msuhail@isdb.org

٤٠ عاما من العطاء
40 years of dedicated service
40 ans d'efforts soutenus

Economic data

% change on year ago

	Gross domestic product			Industrial production	Consumer prices		Unemployment rate, %	Current-account balance		Budget balance	Interest rates, %	Currency units, per $	
	latest	qtr*	2014†	latest	latest	2014†		latest 12 months, $bn	% of GDP 2014†	% of GDP 2014†	10-year gov't bonds, latest	Jan 14th	year ago
United States	+2.7 Q3	+5.0	+2.3	+5.2 Nov	+1.3 Nov	+1.6	5.6 Dec	-388.1 Q3	-2.3	-2.8	1.92	-	-
China	+7.3 Q3	+7.8	+7.3	+7.2 Nov	+1.5 Dec	+2.1	4.1 Q2§	+196.6 Q3	+2.4	-3.0	3.47§§	6.20	6.04
Japan	-1.3 Q3	-1.9	+0.3	-3.8 Nov	+2.4 Nov	+2.8	3.5 Nov	+16.1 Nov	+0.3	-8.2	0.26	119	103
Britain	+2.6 Q3	+3.0	+2.9	+1.1 Nov	+0.5 Dec	+1.4	6.0 Sep††	-163.0 Q3	-4.8	-5.1	1.63	0.66	0.61
Canada	+2.6 Q3	+2.8	+2.4	+3.4 Oct	+2.0 Nov	+1.9	6.6 Dec	-41.2 Q3	-2.4	-1.9	1.58	1.19	1.09
Euro area	+0.8 Q3	+0.6	+0.8	-0.4 Nov	-0.2 Dec	+0.4	11.5 Nov	+324.3 Oct	+2.4	-2.5	0.43	0.85	0.73
Austria	-0.1 Q3	-1.6	+0.7	-2.3 Oct	+1.7 Nov	+1.3	4.9 Nov	+1.5 Q2	+1.5	-2.5	0.61	0.85	0.73
Belgium	+0.9 Q3	+1.2	+1.1	-0.6 Oct	-0.4 Dec	+0.6	8.5 Nov	+8.0 Sep	-0.5	-3.0	0.70	0.85	0.73
France	+0.4 Q3	+1.0	+0.4	-2.6 Nov	+0.1 Dec	+0.6	10.3 Nov	-29.1 Nov‡	-1.3	-4.4	0.74	0.85	0.73
Germany	+1.2 Q3	+0.3	+1.4	-0.6 Nov	+0.2 Dec	+0.8	6.5 Dec	+283.5 Nov	+7.3	+0.8	0.43	0.85	0.73
Greece	+1.9 Q3	+3.0	+0.8	+2.3 Nov	-2.6 Dec	-1.3	25.8 Oct	+3.2 Oct	+1.5	-4.0	8.99	0.85	0.73
Italy	-0.5 Q3	-0.6	-0.3	-1.8 Nov	nil Dec	+0.2	13.4 Nov	+36.4 Oct	+1.5	-3.0	1.73	0.85	0.73
Netherlands	+1.0 Q3	+0.5	+0.7	+0.6 Nov	+0.7 Dec	+0.6	8.0 Nov	+91.5 Q3	+9.7	-2.6	0.57	0.85	0.73
Spain	+1.6 Q3	+2.0	+1.3	-0.1 Nov	-1.1 Dec	-0.2	23.9 Nov	-2.2 Oct	+0.2	-5.7	1.62	0.85	0.73
Czech Republic	+2.7 Q3	+1.7	+2.4	-0.4 Nov	+0.1 Dec	+0.5	7.5 Dec§	+0.2 Q3	-0.4	-1.6	0.54	24.1	20.0
Denmark	+1.0 Q3	+1.6	+0.8	-1.4 Nov	+0.3 Dec	+0.5	5.0 Nov	+22.0 Nov	+6.6	-1.3	0.71	6.31	5.47
Hungary	+3.2 Q3	+1.9	+3.0	+5.8 Nov	-0.9 Dec	nil	7.2 Nov§††	+5.7 Q3	+4.2	-2.9	3.36	270	219
Norway	+2.1 Q3	+2.0	+2.3	+2.1 Nov	+2.1 Dec	+2.0	3.8 Oct‡‡	+49.2 Q3	+11.1	+12.0	1.49	7.74	6.12
Poland	+3.4 Q3	+3.6	+3.3	+0.3 Nov	-0.6 Nov	+0.1	11.5 Dec§	-7.2 Nov	-1.2	-3.5	2.30	3.63	3.04
Russia	+0.7 Q3	na	+0.6	-0.3 Nov	+11.3 Dec	+7.7	5.2 Nov§	+54.2 Q3	+2.6	+0.4	14.72	65.8	33.3
Sweden	+2.1 Q3	+1.3	+1.9	-5.0 Nov	-0.3 Dec	-0.2	7.4 Nov§	+36.5 Q3	+5.8	-2.2	0.83	8.05	6.50
Switzerland	+1.9 Q3	+2.6	+1.7	-0.4 Q3	-0.3 Dec	nil	3.2 Dec	+45.7 Q3	+10.5	+0.3	0.20	1.02	0.90
Turkey	+1.7 Q3	na	+3.0	-1.2 Nov	+8.2 Dec	+8.9	10.5 Sep§	-47.1 Nov	-5.0	-1.7	7.11	2.28	2.18
Australia	+2.7 Q3	+1.4	+2.8	+3.8 Q3	+2.3 Q3	+2.5	6.1 Dec	-42.9 Q3	-3.1	-2.6	2.57	1.23	1.12
Hong Kong	+2.7 Q3	+6.8	+2.4	-1.8 Q3	+5.1 Nov	+4.4	3.3 Nov‡‡	+7.7 Q3	+1.8	+0.8	1.54	7.75	7.75
India	+5.3 Q3	+8.1	+6.0	+3.8 Nov	+5.0 Dec	+7.3	8.8 2013	-23.4 Q3	-2.0	-4.3	7.78	62.1	61.6
Indonesia	+5.0 Q3	na	+5.0	+7.8 Nov	+8.4 Dec	+6.4	5.9 Q3§	-24.0 Q3	-2.8	-2.3	na	12,598	12,050
Malaysia	+5.6 Q3	na	+6.0	+4.7 Nov	+3.0 Nov	+3.1	2.7 Oct§	+18.0 Q3	+5.7	-3.6	3.99	3.59	3.26
Pakistan	+5.4 2014**	na	+5.4	+1.8 Oct	+4.3 Dec	+7.3	6.2 2013	-3.4 Q3	-2.6	-5.5	10.35†††	101	106
Singapore	+1.5 Q4	+1.6	+3.1	-2.8 Nov	-0.3 Nov	+1.1	2.0 Q3	+58.9 Q3	+20.7	+0.5	1.94	1.33	1.27
South Korea	+3.3 Q3	+3.7	+3.5	-3.4 Nov	+0.8 Dec	+1.3	3.4 Dec§	+88.5 Nov	+5.7	+0.6	2.37	1,083	1,057
Taiwan	+3.6 Q3	+2.6	+3.6	+6.9 Nov	+0.6 Dec	+1.3	3.9 Nov	+65.0 Q3	+11.7	-1.4	1.52	31.8	30.0
Thailand	+0.6 Q3	+4.4	+0.7	-3.5 Nov	+0.6 Dec	+1.9	0.6 Nov§	+10.2 Q3	+2.6	-2.2	2.55	32.9	33.0
Argentina	-0.8 Q3	-2.1	-0.4	-2.1 Nov	— ***	—	7.5 Q3§	-5.0 Q3	-1.0	-2.8	na	8.59	6.66
Brazil	-0.2 Q3	+0.3	+0.1	-5.7 Nov	+6.4 Dec	+6.3	4.8 Nov§	-88.7 Nov	-4.0	-5.5	12.24	2.64	2.34
Chile	+0.8 Q3	+1.5	+1.8	-2.9 Nov	+4.6 Dec	+4.4	6.1 Nov§‡‡	-5.0 Q3	-1.7	-2.3	4.26	620	527
Colombia	+4.2 Q3	+2.6	+4.8	+0.4 Oct	+3.7 Dec	+2.9	7.7 Nov§	-16.2 Q3	-4.3	-1.5	6.83	2,440	1,925
Mexico	+2.2 Q3	+2.0	+2.1	+1.8 Nov	+4.1 Dec	+3.9	4.7 Nov	-25.4 Q3	-2.0	-3.6	5.58	14.6	13.0
Venezuela	-2.3 Q3	+10.0	-3.1	+0.8 Sep	+63.6 Nov	+62.2	5.9 Nov§	+10.3 Q3	+0.7	-12.7	14.96	12.0	6.29
Egypt	+3.7 Q2	na	+2.2	+21.8 Nov	+10.1 Dec	+10.0	13.1 Q3§	-4.4 Q3	-3.0	-11.9	na	7.15	6.96
Israel	+2.4 Q3	-0.1	+2.4	-0.8 Oct	-0.1 Nov	+0.5	5.6 Nov	+11.2 Q3	+3.8	-3.0	1.99	3.94	3.49
Saudi Arabia	+3.6 2014	na	+4.1	na	+2.5 Nov	+2.8	5.6 2013	+120.1 Q3	+12.7	+1.2	na	3.75	3.75
South Africa	+1.4 Q3	+1.4	+1.6	-1.3 Nov	+5.8 Nov	+6.2	25.4 Q3§	-19.7 Q3	-5.1	-4.3	7.20	11.5	10.8

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, Nov 41.61%; year ago 19.95% †††Dollar-denominated bonds.

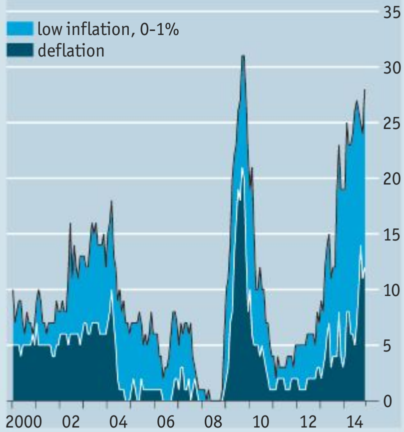
Markets

	Index Jan 14th	% change on: one week	Dec 31st 2013: in local currency	Dec 31st 2013: in $ terms
United States (DJIA)	17,427.1	-0.9	+5.1	+5.1
China (SSEA)	3,376.6	-4.5	+52.5	+49.0
Japan (Nikkei 225)	16,796.0	-0.5	+3.1	-7.3
Britain (FTSE 100)	6,388.5	-0.5	-5.3	-13.1
Canada (S&P TSX)	14,084.4	-1.4	+3.4	-8.1
Euro area (FTSE Euro 100)	1,023.1	+2.2	+0.3	-14.2
Euro area (EURO STOXX 50)	3,089.7	+2.1	-0.6	-15.0
Austria (ATX)	2,122.1	-0.8	-16.7	-28.7
Belgium (Bel 20)	3,274.0	+2.5	+12.0	-4.2
France (CAC 40)	4,223.2	+2.7	-1.7	-15.9
Germany (DAX)*	9,817.1	+3.1	+2.8	-12.1
Greece (Athex Comp)	819.6	+5.4	-29.5	-39.7
Italy (FTSE/MIB)	18,410.7	+1.6	-2.9	-17.0
Netherlands (AEX)	418.3	+1.7	+4.1	-10.9
Spain (Madrid SE)	995.1	-0.8	-1.7	-15.9
Czech Republic (PX)	958.8	+2.7	-3.1	-19.2
Denmark (OMXCB)	689.9	+2.7	+21.9	+4.6
Hungary (BUX)	16,066.1	-0.8	-13.5	-31.2
Norway (OSEAX)	617.7	+0.2	+2.5	-18.7
Poland (WIG)	51,910.3	+1.1	+1.2	-15.4
Russia (RTS, $ terms)	743.1	-0.5	+3.5	-48.5
Sweden (OMXS30)	1,434.8	+0.9	+7.6	-14.3
Switzerland (SMI)	9,198.2	+3.3	+12.1	-2.1
Turkey (BIST)	87,563.4	+0.9	+29.1	+21.7
Australia (All Ord.)	5,332.2	nil	-0.4	-9.0
Hong Kong (Hang Seng)	24,112.6	+1.8	+3.5	+3.5
India (BSE)	27,346.8	+1.6	+29.2	+28.5
Indonesia (JSX)	5,159.7	-0.9	+20.7	+16.5
Malaysia (KLSE)	1,742.0	+1.9	-6.7	-15.0
Pakistan (KSE)	33,585.8	+2.3	+33.0	+38.9
Singapore (STI)	3,326.2	+0.8	+5.0	-0.6
South Korea (KOSPI)	1,913.7	+1.6	-4.9	-7.2
Taiwan (TWI)	9,180.2	+1.1	+6.6	nil
Thailand (SET)	1,523.2	+1.5	+17.3	+17.5
Argentina (MERV)	8,425.2	+2.2	+56.3	+18.5
Brazil (BVSP)	47,645.9	-3.7	-7.5	-16.3
Chile (IGPA)	18,459.1	-0.6	+1.3	-14.9
Colombia (IGBC)	10,570.0	-3.1	-19.1	-36.0
Mexico (IPC)	40,984.2	-2.0	-4.1	-13.8
Venezuela (IBC)	3,928.9	-0.4	+43.6	na
Egypt (Case 30)	9,544.1	+8.5	+40.7	+36.7
Israel (TA-100)	1,284.3	+0.3	+6.3	-5.2
Saudi Arabia (Tadawul)	8,551.9	+3.2	+0.2	+0.1
South Africa (JSE AS)	48,057.5	-1.8	+3.9	-4.8

Consumer-price inflation

After falling steadily for more than three years, the median rate of annual consumer-price inflation (CPI) in high-income countries was down to 0.8% in November 2014. In 16 out of 55 rich countries, inflation rates were below 1%. Twelve countries faced deflation—outright declines in the consumer-price index, up from only three countries at the beginning of the year. The oil-price slump, along with weak demand, has helped to drive down inflation to these unusually low levels. Cheaper oil has also pushed down inflation in poor countries. The median CPI among 121 developing countries fell to 3.6% in November 2014 from a peak of 6.7% in July 2011. Fourteen poor countries had an inflation rate below 1%.

Number of high-income countries* with:



Source: World Bank *Out of 55 countries

Other markets

	Index Jan 14th	% change on: one week	Dec 31st 2013: in local currency	Dec 31st 2013: in $ terms
United States (S&P 500)	2,011.3	-0.7	+8.8	+8.8
United States (NAScomp)	4,639.3	-0.2	+11.1	+11.1
China (SSEB, $ terms)	290.1	-1.6	+17.1	+14.4
Japan (Topix)	1,358.0	-0.1	+4.3	-6.2
Europe (FTSEurofirst 300)	1,354.4	+1.8	+2.9	-12.0
World, dev'd (MSCI)	1,665.4	+0.2	+0.3	+0.3
Emerging markets (MSCI)	955.7	+1.5	-4.7	-4.7
World, all (MSCI)	407.4	+0.3	-0.3	-0.3
World bonds (Citigroup)	909.5	+1.2	+0.3	+0.3
EMBI+ (JPMorgan)	688.1	+0.1	+5.6	+5.6
Hedge funds (HFRX)	1,215.8§	+0.6	-0.8	-0.8
Volatility, US (VIX)	21.5	+19.3	+13.7	(levels)
CDSs, Eur (iTRAXX)†	62.3	-3.4	-8.1	-21.4
CDSs, N Am (CDX)†	71.5	+2.1	+12.1	+12.1
Carbon trading (EU ETS) €	7.3	+5.5	+39.2	+19.0

Sources: Markit; Thomson Reuters. *Total return index.
†Credit-default-swap spreads, basis points. §Jan 13th.

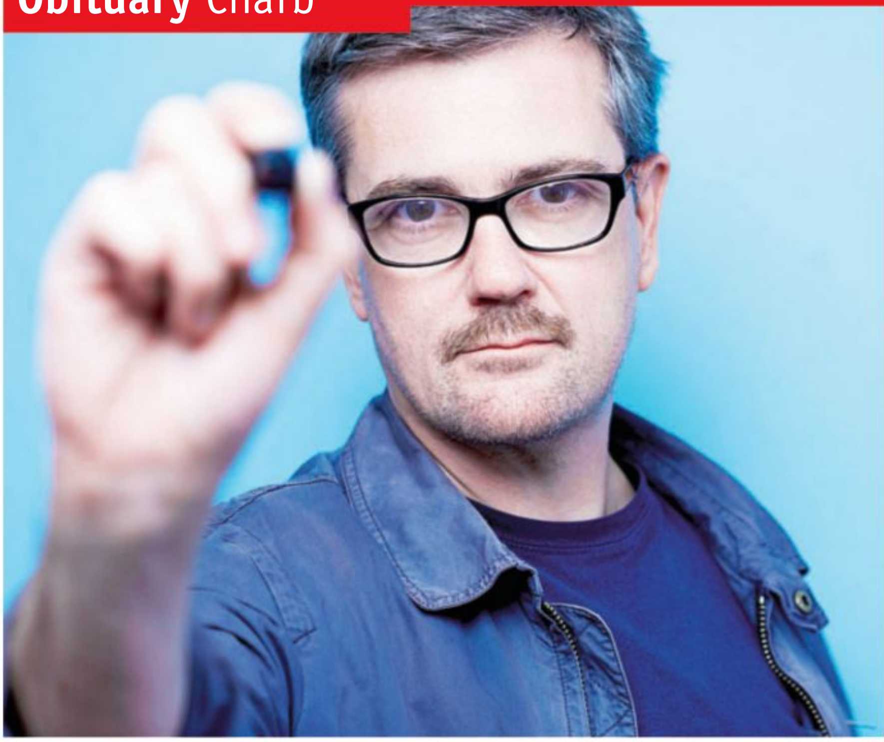
Indicators for more countries and additional series, go to: **Economist.com/indicators**

The Economist commodity-price index

2005=100

	Jan 6th*	Jan 13th*	% change on: one month	one year
Dollar Index				
All Items	152.3	148.4	-3.8	-9.7
Food	173.8	169.4	-2.6	-6.5
Industrials				
All	129.9	126.6	-5.4	-13.8
Nfa†	124.1	120.5	-3.3	-22.4
Metals	132.4	129.2	-6.2	-9.8
Sterling Index				
All items	182.5	177.9	-0.2	-2.1
Euro Index				
All items	158.8	156.6	+2.2	+4.9
Gold				
$ per oz	1,207.7	1,235.7	+3.3	-1.3
West Texas Intermediate				
$ per barrel	48.2	46.3	-17.3	-49.9

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.



Mightier than the sword

Stéphane Charbonnier ("Charb"), cartoonist and editor of Charlie Hebdo, was murdered on January 7th, aged 47

"WHERE'S Charb? Where's Charb?" cried the assassins as they hurtled into the offices of *Charlie Hebdo*. Where else should he be? At the big circular table, plotting with his fellow scribblers to draw something shocking, gross and salacious. The Virgin Mary giving birth in stirrups. The pope fondling a Swiss guard. The anarchist dog Maurice sodomising a chair or crapping in the foodbowl of Patapon, the fascist cat. Marcel Keuf *le flic*, goofy and drunk again, punching an innocent civilian in the police station. Muhammad showing his hairy naked bum…

Ba-boom, ba-boom, ba-boom.

He didn't look like a provocateur. A schoolboy, perhaps. Thick glasses, short hair, lorry-driver's T-shirt, faded denim jacket. Socks well pulled up. He liked order and punctuality, even in an office so small, cosy and crazy that they were all engaged in *un boulot de dingues* to get the magazine out at all. Cartoons were his wild side. Copying Hergé's Tintin had helped him escape from boring childhood in Pontoise and just-as-boring school. In interviews he was soft-spoken, almost grey, but with a gleam in his oh-so-innocent eye that said, Watch me. He would draw what he liked. Nothing and no one scared him. He wasn't killing anyone with his black felt pen.

Sure, what he drew was offensive, if you took it that way. It was also funny. If a cartoon made everyone giggle round the table, it went in the magazine. And if you were affronted by any of it, you didn't have to buy *Charlie*, which he had edited since 2009, or the other organs (*L'Humanité*, *Fluide Glacial*, *Télérama*) that ran his strips. What he was doing was perfectly legal, under French law. In 2007 *Charlie*'s editor had been hauled into court for reprinting cartoons of Muhammad from a Danish magazine. But the judge had said, fine.

Of course the government got jittery sometimes. In 2012, when Muslims were up in arms over a film, Charb responded with a cover showing a cretinous Jew pushing a cretinous Muhammad in a wheelchair. "You musn't make fun!" they were saying. The foreign minister accused him of adding oil to the flames. Rubbish, Charb shot back; this was fair comment on a news story. On the back page was a cartoon of naked Muhammad asking, "Do you like my butt?" The proud editor posed in the office holding his masterpiece high.

Hundreds of issues of *Charlie* had been printed since its revival in 1992. (The magazine had folded in 1981; he had been recruited for the relaunch by Philippe Val, who edited it before him, and Jean Cabut, "Cabu", whose cartoons had inspired him as a boy.) The staff fell out about topics, as cartoonists and writers do. But there was never serious trouble from outside unless Islam was on the cover. The worst came in 2011, when the office was firebombed for running an issue called *Sharia Hebdo*, with Muhammad as guest editor ("100 lashes if you don't die laughing!"). Charb stood in the ruins, holding up the magazine. After that, the police protected him 24 hours a day. How ironic, that the *flics* he loved to pillory now cared so much for him!

Communist-anarchist-pacifist

Some people thought he was obsessed with Islam. Some even said he got up Muslims' noses just to increase sales. It often turned out that way, but it wasn't true. As a paid-up communist, his main targets were the right and fat-cat corporations. He'd been sniping at those ever since his fascist grandfather had held forth across the dinner table in Pontoise. His dream was to be like Maurice the dog, insolent and uncontrollable; the powers-that-be wanted him to be uptight, asexual and conservative, like Patapon the cat. If any *con* had especially suffered the jab of his felt pen, it was Nicolas Sarkozy when he was president of France. But Islam bothered Charb because it couldn't be laughed at. As a good atheist and anti-clericalist he had to *banaliser* this religion, so that like Catholicism you could mock it and no one would care.

Not that he tolerated everything himself. He wanted to fart in his critics' faces and cut their balls off. He thought smokers should be locked up. The only things he considered sacred were the human person and free expression, but his regular column in *Charlie* was called "Charb doesn't like people", and sometimes he didn't. He couldn't understand marriage, all that clatter of saucepans and Hoovering, or why couples wanted kids. By contrast, he could fearlessly scrawl away because he had nothing to lose.

Instead, *Charlie* was his family. He happily took responsibility for everything it did. It gave him the joy of working alongside his hero Cabu, with his pudding-basin haircut and loud check shirts, and with Georges Wolinski, a venerable veteran of the satire trade. And there week by week he devoted himself to laughing out loud and crudely at the absurdities of the world. "Still no attacks in France?" a Kalashnikov-toting jihadist asked in one of his last drawings. "Well, I've got until the end of January to present my best wishes."

They were presented on January 7th, both to him and to the equally defiant Cabu and Wolinski. *Charlie*'s print run that week had been set at 60,000 copies, about half of which usually sold. The week after, the print run was more than 5m. Muhammad, again, was on the cover, this time proclaiming "Je suis *Charlie*". Where else should he be? ■