The Economist

How Sisi is ruining Egypt

Vietnam: Asia's newest tiger

Hunting down stealthy submarines

The Japanese way of death

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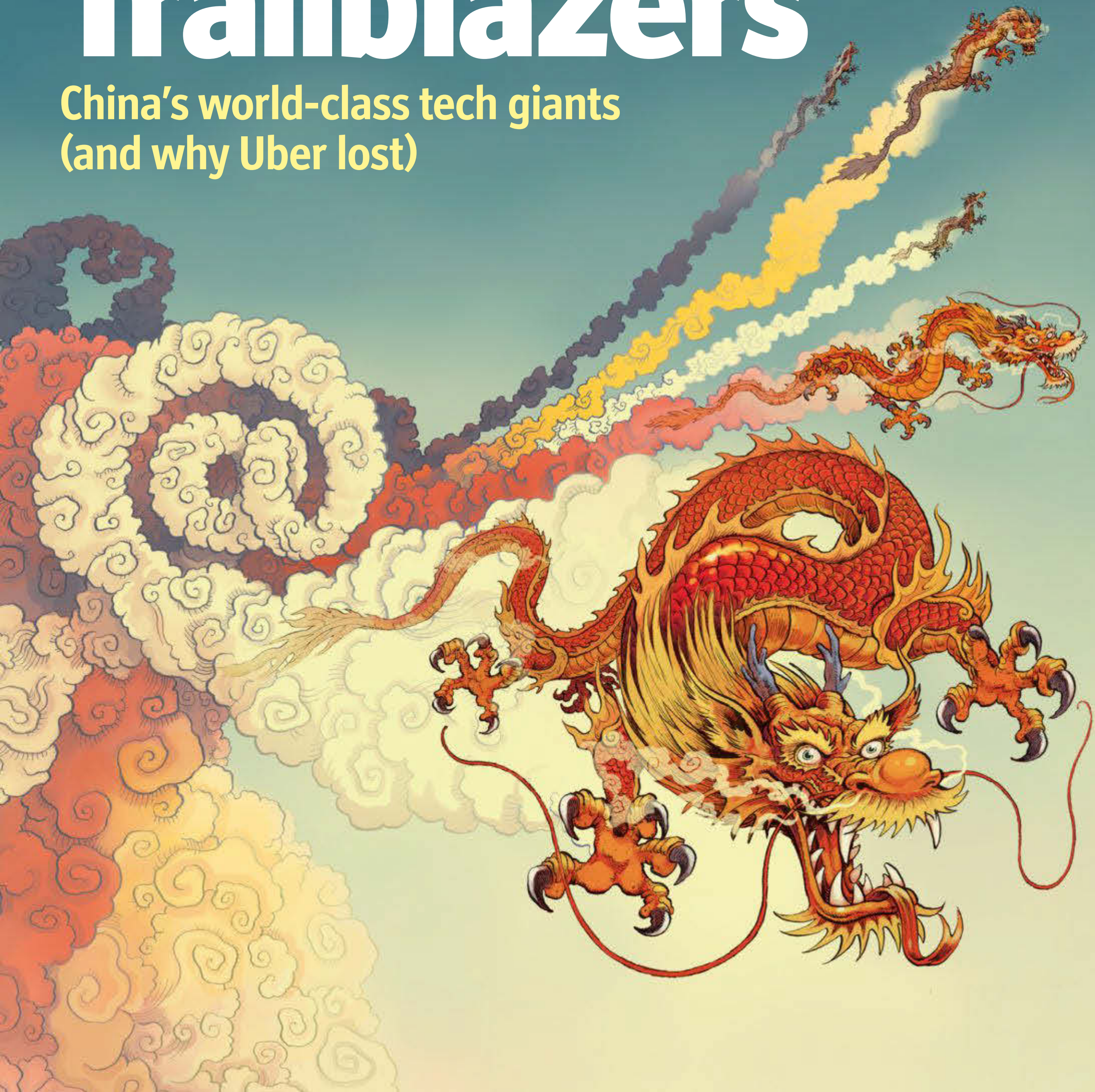
Trailblazers

China's world-class tech giants (and why Uber lost)



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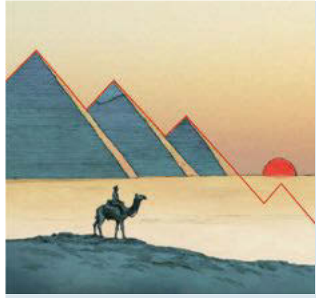

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Politics

Continuing his crackdown, **Turkey's** president, Recep Tayyip Erdogan, issued a decree allowing the government to issue direct orders to the commanders of the army, air force and navy, bypassing the chief of the general staff. Mr Erdogan also sparred with **Italy's** prime minister, Matteo Renzi, over his son, Bilal Erdogan, who is under investigation for money laundering in Bologna. Mr Erdogan was not allowed to speak via videolink at a rally of his supporters in Cologne. Turkey summoned **Germany's** chargé d'affaires in Ankara to explain why.

Thousands of people attended the funeral of a **French** priest whose throat was slit by two jihadists. Muslims attended Catholic mass in a gesture of solidarity. Meanwhile, Nicolas Sarkozy, who is running for president again, called for a French-style Guantánamo to deal with suspected terrorists.

The **British** government unexpectedly put plans to build a new nuclear reactor at Hinkley Point on hold. EDF, the French company financing most of the project, had just narrowly voted to give it the go-ahead. China is also providing some of the funding. It was reported that Britain's prime minister, Theresa May, delayed the project because of security concerns over China's role.

London is to deploy more armed police in response to the recent spate of terrorist attacks across Europe. Highly visible patrols armed with handguns as well as semi-automatic rifles and tasers will be stationed around the capital's landmarks.

Shameless

Donald Trump came under pressure from Republicans to tone down his act and run a professional campaign. Mr Trump has been conducting a feud with the parents of a slain American Muslim soldier. Oddly, he likened his own "sacrifice" as a casino-builder to the soldier's. A Republican congressman became the first to declare that he will vote for Hillary Clinton in the presidential election.

An appeals court struck down a law in **North Carolina** that had made voting harder, including a requirement that voters show photo identification. The judges found that the law was designed specifically to reduce the turnout of blacks.

Freed at last

India's upper house passed the biggest reform to taxes since the country's independence from Britain in 1947. The goods-and-services-tax bill aims to replace India's innumerable sales-tax rates with a single levy. Businesses have been calling for the change for years.

Anandiben Patel resigned as chief minister of the Indian state of **Gujarat**, where dalits, formerly untouchables, have been protesting after violent attacks on their community.

Yuriko Koike was elected as the governor of **Tokyo**, the first woman to hold the position. Ms Koike emphasised her sex in her campaign, promising to change the country's male-dominated politics. Just 9% of the members of Japan's lower house are women.

North Korea fired a missile that travelled 1,000km (620 miles) over land and sea before falling into Japanese waters. Tensions are high in the region ahead of America's annual joint military drills with South Korea, which always rankle the North.

Hong Kong's electoral commission blocked Edward Leung, a pro-independence candidate, from standing in September's elections to the legislative council, even though he had signed a form declaring that the territory is an "inalienable" part of China. An arm of the Chinese government called America the "dark shadow" behind Hong Kong's pro-independence movement.

The head of **Malaysia's** anti-corruption agency resigned abruptly. He had been investigating the prime minister, Najib Razak, and a related scandal surrounding the state-investment fund, 1MDB. He had been heavily criticised by Mr Najib's supporters but denies standing aside because of political pressure.

Strike force

Intense fighting took place around the ancient **Syrian** city of Aleppo, as rebels in its eastern part attempted to break out of the siege imposed upon them by the regime of Bashar al-Assad, backed up by Russian warplanes. A huge tunnel bomb, set off by the rebels, hit a government position in the west of the city. A rebel-held town was hit with chlorine gas, near where a Russian helicopter had earlier been shot down.

America bombed positions held by Islamic State in Sirte, in **Libya**, a move intended to show support for the newly formed unity government.

In **Tunisia**, the parliament decided by 118 votes to three to remove the country's prime minister. The new appointee, Youssef Chahed, is said to have family connections to the president, the Arab world's oldest leader at 89, though he denies this.

South Africa voted in municipal elections, seen as a crucial test of the popularity of President Jacob Zuma and his African National Congress. Early results suggested big gains for the opposition.

Heading to court

A judge ruled that a case against **Brazil's** former president, Luiz Inácio Lula da Silva, along with six other people should proceed. Prosecutors allege that they conspired to pay a former executive of Petrobras not to co-operate with an investigation into a bribery scandal centred on the state-controlled oil company. Lula says he is the victim of a political witch hunt.

Venezuela's election commission confirmed that the opposition had gathered enough signatures to move to the next stage of holding a referendum to recall the president, Nicolás Maduro. The opposition must now collect signatures from about 4m voters. Meanwhile, the army has been put in charge of food distribution.

Nicaragua's president, Daniel Ortega, named his wife, Rosario Murillo, as his running-mate in a presidential election, to be held in November. Ms Murillo appears more often in public than her husband, a former leader of the Marxist Sandinista guerrilla movement, which is now his political party.

Police used tear gas against protesters along the route of the **Olympic** flame in Rio de Janeiro, where the summer games were ready to open on August 5th. The protesters are angry about the high cost of the event.

Business

The **Bank of England** cut its benchmark interest rate for the first time since 2009, from 0.5% to 0.25%. The central bank had been charting a course to raise rates. But Britain's vote in June to leave the EU has brought economic uncertainties to the fore; one survey of business activity recorded its sharpest drop in 20 years.

Markets were unimpressed with a new stimulus package in **Japan** unveiled by Shinzo Abe, the prime minister. He announced ¥28 trillion ($275 billion) in measures to boost the anaemic economy, though only a quarter of that is new government spending, mostly on welfare and infrastructure. The details are to be fleshed out later, but doubts remain whether long-term investments, such as in a maglev train line from Tokyo to Osaka, will be enough to speed a recovery.

European banks had a rocky week on the stockmarket. The results of the latest round of **"stress tests"** to determine the ability of lenders to survive a financial crisis weighed on investor sentiment. On average, the banks were deemed to be more robust than two years ago, when the previous round was conducted. But fewer banks from fewer countries participated; Cyprus, Greece and Portugal were excluded.

Monte dei Paschi di Siena did worst in the stress tests. The board of the troubled Italian bank approved a rescue plan that requires it to move €27 billion ($30 billion) of bad loans at a huge discount into a special fund that will then sell them off. The bank will also raise €5 billion in new capital. The plan is designed to avoid the use of public money and comply with tough new European rules on bailing out banks. Shares in other Italian banks slid. Investors fear that the lower value ascribed to Monte dei Paschi's bad loans sets a precedent for the holdings of other banks.

Uber reached a deal to sell its operations in China to **Didi Chuxing**, its arch-rival there, an acknowledgment that its expensive campaign to conquer the ride-sharing market in China is over. Uber is taking a 17.7% stake in Didi as a consolation prize. Passengers and drivers may be the biggest losers. Uber and Didi spent billions of dollars on discounting rides in their competition for market share, but Uber's discounts reportedly dwindled this week and fares soared.

Almost a year after admitting that it had cheated on emissions tests, **Volkswagen** faced new woes when South Korea in effect banned most of its cars, including its Audi and Bentley ranges, from sale in the country. Meanwhile, the state pension fund in the German state of Bavaria said it would join the ballooning number of lawsuits against the company.

In an all-share deal that has raised questions about possible conflicts of interest, **Tesla Motors** agreed to buy **SolarCity**, a solar-power company, for $2.6 billion. Elon Musk is the chief executive of Tesla and the chairman of SolarCity, holding around a fifth of the shares in both companies. The ebullient Mr Musk described those who have concerns about the merger as "silly buggers".

Qatar Airways revealed that last month it raised its stake in International Airlines Group, the parent company of **British Airways**, from almost 16% to 20%. The Qataris took advantage of IAG's cheaper share price, which plunged after the referendum in Britain on leaving the European Union, and a weaker pound.

Horizontal ambition

Kevin Roberts decided to resign as chairman of **Saatchi & Saatchi**, a British advertising agency, after he was roundly criticised for saying that female executives in the industry lack "vertical ambition". Mr Roberts left the firm speedily in the ensuing media storm, following at least one of his favourite leadership maxims; "Fail fast, fix fast, learn fast."

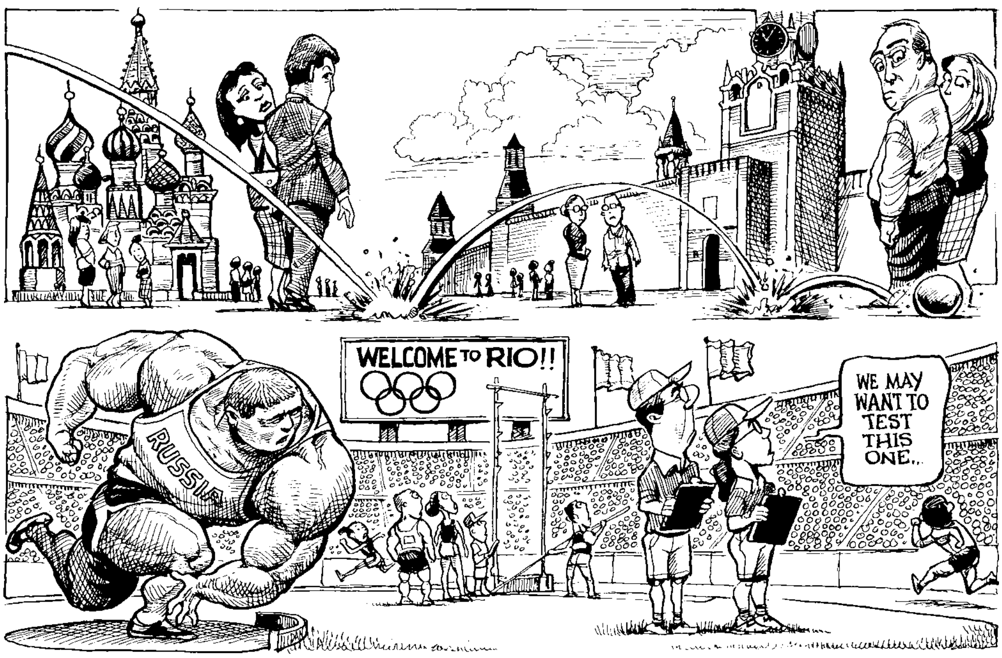
GlaxoSmithKline, a British drug company, said it was joining **Verily Life Sciences**, which is owned by Alphabet, Google's holding company, to create a new venture in bioelectronic medicine. The pair are developing miniature devices that can be implanted into a body to modify irregular nerve impulses related to several diseases, such as arthritis, asthma and diabetes.

Time Warner took a 10% stake in **Hulu**, a video-streaming company. Next year Hulu is introducing a live-streaming service, which will include Time Warner's CNN programming, that will distinguish it from rivals such as Netflix.

Fly me to the Moon

America's Federal Aviation Administration approved the first request by a private firm for a mission to the moon. **Moon Express** hopes to launch a small spacecraft with no crew in 2017. Under the Outer Space Treaty of 1967, private firms must request such permission from national regulators.

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



China's tech trailblazers

The Western caricature of Chinese internet firms needs a reboot

GOOGLE left. Facebook is blocked. Amazon is struggling to make headway. And if further proof were needed that China's tech market is a world apart, this week seemed to provide conclusive evidence. Uber, a ride-hailing service that is the world's most valuable startup, decided to sell its local unit to Didi Chuxing, a Chinese rival (see page 49). Its China dream, like those of so many before, is dead.

For many, the lessons of this latest capitulation are clear. China is a sort of technological Galapagos island, a distinct and isolated environment in which local firms flourish. Chinese firms are protected from external competition by government regulation and the Great Firewall. And that protection means that they need not innovate but can thrive by copying business models developed in the West. In short, China is closed, its firms are cosseted and their talent is for mimicry.

At first sight, Uber's retreat appears to fit this damning profile. The startup has ceded China to Didi: it will concentrate on its home market and elsewhere. Uber's surrender was caused partly by regulations, issued at the end of July by the Chinese authorities, that in effect outlawed subsidies—Uber spent $1 billion a year in incentives to Chinese drivers and riders. Now Didi, whose forerunner firms were founded in 2012, three years after Uber introduced ride-hailing, can make hay. But look more closely and a more positive picture emerges—not just of Didi, but of China's technology firms as a whole.

Getting the message

The usual story about the isolated nature of the Chinese market is that foreign firms are either blocked altogether or hobbled by regulators. The government has indeed restricted competition in some areas—which is why China has subpar clones of Western firms, such as Baidu in search or Renren, an ailing knock-off of Facebook. But China is not as impenetrable as its critics suggest. WhatsApp, the world's most popular messaging app, which is owned by Facebook, is freely available in China; yet it is dwarfed by WeChat, China's leading app (which has also fought off Alibaba, a formidable local internet giant). China is the largest market for Apple's iPhone. And Uber made a valiant effort to establish itself in China, the world's largest ride-hailing market: a 17.7% stake in Didi is not a bad consolation prize. Nor are Chinese tech giants walling themselves off from the rest of the world. They have invested in American startups, including Snapchat and Lyft, and bought mobile-gaming firms like Supercell of Finland and Playtika of Israel.

Being present in the Chinese market is all very well, comes the retort, but not if you are stopped from winning. That gives too little credit to China's tech leaders. Ride-hailing, like many online businesses, is a cut-throat, winner-takes-all market: Didi itself is the product of a 2015 merger of two local firms. Uber was outcompeted. Globally, Uber arranged its billionth ride at the end of 2015, after five years in business; Didi arranged 1.4 billion rides in 2015 alone, just in China. Uber struggled to raise its market share in China above 10%. Didi understood the local culture, integrated better with social-media platforms and got taxi drivers onside by incorporating them into its app from the beginning. In outlawing subsidies, the regulators called time on a fight the American firm had already lost.

Similarly, whatever the settings of the Great Firewall, there is nothing outside China that offers WeChat's combination of features. It has over 700m monthly users, and combines messaging, voice calls, browsing, gaming and payments (see page 50). It can be used for everything from paying parking tickets to booking a hospital appointment, ordering food or paying for a cup of coffee. WeChat is not so much an app as an entire mobile operating system, and accounts for more than one-third of all time spent online by Chinese mobile users; HSBC, a bank, values the app at over $80 billion. To Chinese users, Western apps look hopelessly backward.

WeChat is the best riposte to the condescending, widely held belief that Chinese internet firms are merely imitators of Western ones, and cannot innovate themselves. But it is not the only example. Alibaba kick-started Chinese e-commerce with the clever trick of holding payments in escrow, helping buyers and sellers establish trust. It now offers services that exploit its vast customer database, including credit-scoring, digital marketing, and vetting visa applicants and users of dating sites. Didi's ride-hailing app includes novel features such as on-demand bus services and the option to request a test-drive of a new car. Sina Weibo, the Chinese equivalent of Twitter, has a built-in payments system and supports premium content, both features that Twitter lacks. With revenue from payments, virtual goods and gaming, Chinese internet firms are also much less dependent on online ads than Western rivals.

As a result, the flow of ideas between China and the West is now two-way. Facebook's efforts to incorporate payments and commerce into its Messenger app are inspired by WeChat, as is Snapchat's expansion from a messaging app into a media portal, and the sudden enthusiasm of Google, Facebook and Microsoft for bots (smart software that chats with customers). Western consumers are having their experience of the mobile internet shaped by a Chinese success story. Companies that want a glimpse of the future of mobile commerce should look not just to Silicon Valley but also to the other side of the Pacific.

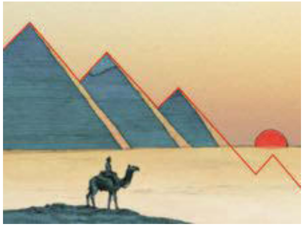
Digital dragons

Policymakers should study China, too. No other place will reveal more about the advantages and drawbacks of winner-takes-all digital markets. As WeChat shows, a single dominant app, particularly with a payments system included, is amazingly convenient for users. But monopolies can also spell danger. Now that Didi has a 90% market share and no serious rivals to speak of, riders can expect to pay more and drivers to be paid less. How to strike the balance between convenience and dominance is the great question for regulators in the digital age. One lesson is already clear: compared with Renren and Baidu, Didi and WeChat were strengthened by fierce rivalries. If China's tech trailblazers aim to become truly global champions, then competition is their friend. Watch closely, world. ■

After the Arab spring

The ruining of Egypt

Repression and the incompetence of Abdel-Fattah al-Sisi are stoking the next uprising



IN EGYPT they are the *shabab al-ahawe*, "coffee-shop guys"; in Algeria they are the *hittistes*, "those who lean with their backs to the wall"; in Morocco they go by the French term, *diplômés chômeurs*, "graduate-jobless". Across the Arab world the ranks of the young and embittered are swelling.

In most countries a youth bulge leads to an economic boom. But Arab autocrats regard young people as a threat—and with reason. Better educated than their parents, wired to the world and sceptical of political and religious authority, the young were at the forefront of the uprisings of 2011. They toppled rulers in Tunisia, Egypt, Libya and Yemen, and alarmed the kings and presidents of many other states.

Now, with the exception of Tunisia, those countries have either slid into civil war or seen their revolutions rolled back. The lot of young Arabs is worsening: it has become harder to find a job and easier to end up in a cell. Their options are typically poverty, emigration or, for a minority, *jihad*.

This is creating the conditions for the next explosion. Nowhere is the poisonous mix of demographic stress, political repression and economic incompetence more worrying than in Egypt under its strongman, Abdel-Fattah al-Sisi.

Battle of the youth bulge

As our briefing on young Arabs sets out (see pages 18-20), the Middle East is where people are most pessimistic and most fearful that the next generation will fare worse than the current one. Arab populations are growing exceptionally fast. Although the proportion who are aged 15-24 peaked at 20% of the total of 357m in 2010, the absolute number of young Arabs will keep growing, from 46m in 2010 to 58m in 2025.

As the largest Arab state, Egypt is central to the region's future. If it succeeds, the Middle East will start to look less benighted; if it fails, today's mayhem will turn even uglier. A general who seized power in a coup in 2013, Mr Sisi has proved more repressive than Hosni Mubarak, who was toppled in the Arab spring; and he is as incompetent as Muhammad Morsi, the elected Islamist president, whom Mr Sisi deposed.

The regime is bust, sustained only by generous injections of cash from Gulf states (and, to a lesser degree, by military aid from America). Even with billions of petrodollars, Egypt's budget and current-account deficits are gaping, at nearly 12% and 7% of GDP respectively. For all of Mr Sisi's nationalist posturing, he has gone beret in hand to the IMF for a $12 billion bailout (see page 35).

Youth unemployment now stands at over 40%. The government is already bloated with do-nothing civil servants; and in Egypt's sclerotic, statist economy, the private sector is incapable of absorbing the legions of new workers who join the labour market each year. Astonishingly, in Egypt's broken system university graduates are more likely to be jobless than the country's near-illiterate.

Egypt's economic woes stem partly from factors beyond the government's control. Low oil prices affect all Arab economies, including net energy importers that depend on remittances. Wars and terrorism have kept tourists away from the Middle East. Past errors weigh heavily, too, including the legacy of Arab socialism and the army's vast business interests.

But Mr Sisi is making things worse. He insists on defending the Egyptian pound, to avoid stoking inflation and bread riots. He thinks he can control the cost of food, much of which is imported, by propping up the currency. But capital controls have failed to prevent the emergence of a black market for dollars (the Egyptian pound trades at about two-thirds of its official value), and has also created shortages of imported spare parts and machinery. This is stoking inflation anyway (14% and rising). It is also hurting industry and scaring away investors.

Sitting astride the Suez Canal, one of the great trade arteries of the world, Egypt should be well placed to benefit from global commerce. Yet it lies in the bottom half of the World Bank's ease-of-doing-business index. Rather than slashing red tape to set loose his people's talents, Mr Sisi pours taxpayers' cash into grandiose projects. He has expanded the Suez Canal, yet its revenues have fallen. Plans for a new Dubai-like city in the desert lie buried in the sand. A proposed bridge to connect Egypt to Saudi Arabia sparked protests after Mr Sisi promised to hand back two Saudi islands long controlled by Egypt.

Even Mr Sisi's Arab bankrollers appear to be losing patience. Advisers from the United Arab Emirates have gone home, frustrated by an ossified bureaucracy and a knucklehead leadership that thinks Egypt needs no advice from upstart Gulfies—mere "semi-states" that have "money like rice", as Mr Sisi and his aides are heard to say in a leaked audio tape.

Better the general you know?

Such is Egypt's strategic importance that the world has little choice but to deal with Mr Sisi. But the West should treat him with a mixture of pragmatism, persuasion and pressure. It should stop selling Egypt expensive weapons it neither needs nor can afford, be they American F-16 jets or French Mistral helicopter-carriers. Any economic help should come with strict conditions: the currency should ultimately be allowed to float; the civil service has to be slimmed; costly and corruption-riddled subsidy schemes should be phased out. The poorest should in time be compensated through direct payments.

All this should be done gradually. Egypt is too fragile, and the Middle East too volatile, for shock therapy. The Egyptian bureaucracy would anyway struggle to enact radical change. Yet giving a clear direction for reform would help to restore confidence in Egypt's economy. Gulf Arabs should insist on such changes—and withhold some rice if Mr Sisi resists.

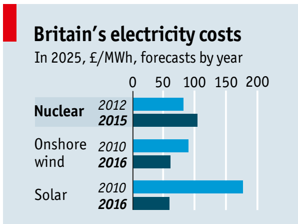
For the time being talk of another uprising, or even of another coup to get rid of Mr Sisi, has abated. Caught by surprise in 2011, the secret police are even more diligent in sniffing out and scotching dissent. But the demographic, economic and social pressures within Egypt are rising relentlessly. Mr Sisi cannot provide lasting stability. Egypt's political system needs to be reopened. A good place to start would be for Mr Sisi to announce that he will not stand again for election in 2018. ■


Traditional Fish Curry With Chili Peppers • Indonesia

Energy policy

Hinkley Pointless

Britain should cancel its nuclear white elephant and spend the billions on making renewables work



THE "golden decade" of co-operation between Britain and China, launched last year as Xi Jinping banqueted at Buckingham Palace, seems to have lasted all of nine months. The centrepiece of the new partnership was a deal in which China would invest £6 billion ($8 billion) in a new French-built nuclear power station at Hinkley Point in south-west England, before building one of its own in the south-east (see page 43). Yet on July 28th, as the Hinkley project was due to receive final approval, Britain's new government announced ominously that it was under review.

Putting the brakes on Hinkley has tarnished the golden era with China, whose state-owned news agency complained about Britain's "suspicious approach" (see page 44). It risks annoying France, which can complicate Britain's exit from the EU. And Britain badly needs new sources of energy.

Even so, scrapping the deal would be the right decision. Regardless of security worries about China, which are probably overblown, the Hinkley plan looks extraordinarily bad value for money. What's more, as renewable sources of energy become more attractive, the days of big, "baseload" projects like Hinkley are numbered. Britain should pull out of the deal, and other countries should learn from its misadventure.

The fallout

EDF, the firm building Hinkley, has yet to finish two similar reactors in France and Finland that, based on a design plagued by problems, are overdue and over-budget. The British government has nonetheless promised to pay about £92.50 per megawatt hour for Hinkley's output, compared with wholesale prices of around £40 today. By 2025, when Hinkley is due to open, that may look even pricier; by the time the guarantee runs out, 35 years on, it could look otherworldly. Other technologies are galloping ahead, upsetting all kinds of pricing assumptions. In the past six years Britain's government has reduced the projected cost of producing electricity from onshore wind in 2025 by one-third, and of solar power by nearly two-thirds (see chart). Because nobody knows how the next few decades will unfold, now is not the time to lock in a price

One of the few certainties is that Hinkley is not the sort of power station that any rich country will want for much longer. Nuclear energy has a future, but big, always-on projects like Hinkley, which would aim to satisfy 7% of Britain's energy needs, do not fit the bill. As renewables generate a growing share of countries' power, the demand will be for sources of energy that can cover intermittent shortfalls (for instance, when the wind stops blowing or the sun goes in).

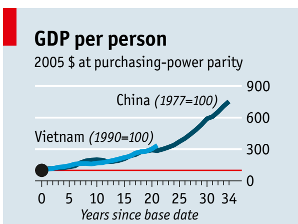
To keep the lights on in the short run it would make more sense to use gas-powered plants. These can be built quickly, run cheaply and turned on or off as required. Meanwhile, the sums earmarked for Hinkley could be put to use in better ways. Improved electricity storage is one answer to the intermittency problem. Battery technology is fast improving (see page 65); Tesla Motors opened its "Gigafactory" in America last week; and other firms are experimenting with drawing power from unusual stores, such as traffic-light batteries. Interconnectors can link energy-hungry countries like Britain with northern European ones, where there is a wind-energy surplus, or Iceland, which crackles with geothermal energy. The grid operator could pay firms to curb power usage at peak times.

All of these options would be cheaper than Hinkley, which would take ten years to get going and represent a huge, ongoing cost to bill payers, if it ever worked at all. Such a strategy would also buy time to see what new technologies emerge. The chances are, these would come from China anyway. ■

Vietnam's economy

The other Asian tiger

Vietnam's success merits a closer look



WHICH Asian country has roared ahead over the past quarter-century, with millions of its people escaping poverty? And which Asian economy, still mainly rural, will be the continent's next dynamo? Most would probably respond "China" to the first question and "India" to the second. But these answers would overlook a country that, in any other part of the world, would stand out for its past success and future promise.

Vietnam, with a population of more than 90m, has notched up the world's second-fastest growth rate per person since 1990, behind only China. If it can maintain a 7% pace over the next decade, it will follow the same trajectory as erstwhile Asian tigers such as South Korea and Taiwan. Quite an achievement for a country that in the 1980s was emerging from decades of war and was as poor as Ethiopia (see page 57).

Unlike either China or India, Vietnam lacks the advantages of being a continent-sized economy, so the lessons of its rise are more applicable to other developing countries, especially those nearby. It is also a useful counter to techno-pessimism. The spread of automation in factories has fuelled concerns that poor countries will no longer be able to get a lift from labour-intensive manufacturing. Vietnam shows that tried-and-tested models of development can still work. ▸▸

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Most obviously, openness to the global economy pays off. Vietnam is lucky to be sitting on China's doorstep as companies hunt for low-cost alternatives. But others in South-East Asia, equally well positioned, have done less. Vietnam dramatically simplified its trade rules in the 1990s. Trade now accounts for roughly 150% of GDP, more than any other country at its income level. The government barred officials from forcing foreigners to buy inputs domestically. Contrast that with local-content rules in Indonesia. Foreign firms have flocked to Vietnam and make about two-thirds of Vietnamese exports.

Allied to openness is flexibility. The government has encouraged competition among its 63 provinces. Ho Chi Minh City has forged ahead with industrial parks, Danang has gone high-tech and the north is scooping up manufacturers as they exit China. The result is a diversified economy able to withstand shocks, including a property bust in 2011.

At the same time Vietnam, like China, has been clear-minded about the direction it must take. Perhaps most important has been a focus on education. Vietnamese 15-year-olds do as well in maths and sciences as their German peers. Vietnam spends more on schools than most countries at a similar level of development, and focuses on the basics: boosting enrolment and training teachers. The investment is pivotal to making the most of trade opportunities. Factories may be more automated, but the machines still need operators. Workers must be literate, numerate and able to handle complex instructions. Vietnam is producing the right skills. Thailand, Indonesia and Malaysia lag behind, despite being wealthier.

Mekong, you follow

Now a middle-income country, Vietnam faces a steep ascent to the high-income ranks. The Trans-Pacific Partnership, a 12-nation trade pact meant to be a boost, may well be blocked by America's inward turn. State-owned enterprises (SOEs) are bloated. Competing provinces, long a benefit, are a liability when they duplicate infrastructure. Vietnam has struggled to build a domestic supply chain. Moving up in value will be hard when China's grip on high-end output is tightening. The repressive, one-party system of government is brittle.

But Vietnam's past quarter-century means that it has a decent chance of prevailing. It is at last starting on SOE reform. It is negotiating trade deals in Asia and with Europe. And it is drafting plans to increase its domestic share of manufacturing without scaring off foreigners. Vietnam is a model for countries trying to get a foot on the development ladder. With luck, it will also become a model for those trying to climb up it. ■

International adoption

Babies without borders

Hundreds of thousands of children languish in orphanages. Adopting them should be made easier

OF THE 2 billion children in the world, about 15m are parentless. Millions more have been abandoned. Most of these unlucky kids are cared for by other relatives. Others live temporarily with foster parents. But hundreds of thousands languish in state institutions of varying degrees of grimness. The youngest and healthiest will probably find local adoptive parents. For older or disabled children, however, willing adopters from abroad are often the best and only option. Yet the total number of overseas adoptions is dwindling (see page 46).

There is a reason for this. For decades cross-border adoptions were often a racket. In Romania after the fall of the dictator Nicolae Ceausescu in 1989, thousands of orphans were adopted illegally. In post-civil-war Guatemala middlemen paid poor women a pittance to get pregnant repeatedly—or simply stole babies and sold them. When one country tightened the rules, the trade in babies moved somewhere laxer.

That trend has stopped. As countries have implemented the Hague Adoption Convention, passed in the wake of the Romanian exodus, they have stamped out the worst cases. Last year 12,500 children were adopted by overseas parents, about a third of the total just over a decade ago. The crackdown was necessary: babies are not goods to be trafficked. But many governments have gone too far. It is now too hard for willing, suitable parents to adopt needy children—and this hurts both the would-be adopters and, more importantly, the children.

Cambodia and Guatemala have stopped foreign adoptions completely; Russia has banned those by Americans. In many other countries the paperwork can take years. This is cruel. The early months and years of life are the most crucial. Depriving a child of parental love—inevitable in even the least dire orphanage—can cause lifelong scarring. The priority for any system should be to perform the necessary checks as quickly as possible and to place every child with foster or adoptive parents.

The Hague convention is a good starting-point. It says: first try to place an abandoned child with a relative; if that fails, try for a local adoption; and if a local family cannot be found, look overseas. Critics of international adoption point out that children who grow up in a different culture sometimes feel alienated and unhappy. This is true, but for many the alternative—growing up in an institution—is far worse.

When overseas adoption is a last resort, the children who end up with foreign families are the ones whom no one else wants: the older ones, the severely handicapped, members of unpopular ethnic minorities. In Guatemala only 10% of the children awaiting adoption are babies or toddlers without special needs. Few Guatemalans will consider taking the other 90%. Plenty of evangelical Christians in America would be happy to. It makes no sense to stop them.

No one cares for you a smidge

Creating a fast, safe adoption system should not be costly. Indeed, it should be cheaper than keeping children in institutions. All it takes is political will, as can be seen from the success of schemes in Peru and Colombia. Public databases that match children with good, willing parents work well locally in some rich countries. (Pennsylvania's is praised, for example.) There is no reason why such systems should not be made international. Children need parents now, not next year. ■

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EXECUTIVE MBA GLOBAL NETWORK

Politics in Thailand

Your leader and article on Thailand contained a raft of one-sided observations ("The generals who hide behind the throne", "Twilight of the king", July 23rd). The claim that "the country is scared of what might happen" during the royal succession is unfounded. The law on succession and the constitution clearly stipulate the procedure. You went on to say that the *lèse-majesté* law "creates an atmosphere in which critics of the government, too, can be bludgeoned into silence". The government has never applied the law for political purposes. The aim of the law is to protect the rights and reputations of the king and his family because noblesse oblige prevents them from seeking legal redress against their subjects for defamation. The law is justified in a similar way that libel law is for commoners. Comparable protections are provided for monarchies in other countries.

The Thai monarchy is a pillar of stability. The Thai sense of identity is closely linked to the institution, which symbolises the unity of the Thai communities. The government never "hides behind the throne" for political gain, but simply carries out its duty. Your assertion that "coup-leaders have always trekked to the palace to receive royal assent" gives the impression that the monarchy is not above politics. In fact, royal commands appointing prime ministers are a mere formality. His majesty's bestowing of these commands cannot be interpreted as an approval or disapproval of any political actors.

Lastly, the "sufficiency economy" philosophy has been widely recognised as an alternative model of sustainable and integrated development. A Bloomberg "misery index" this year ranked Thailand as the world's happiest country.

Your articles were menacing in their nature towards a much-loved institution in Thailand. Less obsession with conspiracy theories about the monarchy would allow one to appreciate more clearly what has actually happened in the country.

SEK WANNAMETHEE
Spokesperson
Ministry of Foreign Affairs
Bangkok

Stuttgart stutters

In his column on the rise and fall of economic clusters, Schumpeter pointed to Stuttgart as a successful cluster that attracts talent and money and produces a distinctive culture (July 23rd). Yes, Stuttgart has been at the centre of Germany's car industry for a long time. But it is now being challenged by Tesla, Uber and Google. The key to Stuttgart's success, the motor vehicle, is being advanced elsewhere and its business model of selling cars to individual customers is about to be rocked to the core.

JOSEF ERNST
Stuttgart

Saudi Arabia and Yemen

Curiously, your article on Saudi Arabia's military involvement in Yemen made no mention that the coalition is operating with the unanimous support of UN Security Council resolution 2216 to thwart an Iranian-supported rebellion against an internationally recognised and legitimate government ("Worse than the Russians", July 30th). The president of Yemen requested "support...including military intervention to protect Yemen and its people from the continuing aggression by the Houthis".

Saudi Arabia deeply regrets any civilian deaths during the conflict, but it absolutely denies allegations of deliberately targeting non-combatants. The campaign is in full compliance with international humanitarian law; we have created a committee to investigate any claims that the law has been breached.

You also did not mention the conduct of the Houthis, who are backed by Iran and have committed numerous war crimes. Along with forces of the ousted president they have attacked Saudi Arabia directly, killing Saudi citizens. Houthi fighters have prevented aid groups from delivering urgent medical and food supplies to Taiz, one of Yemen's largest cities. Aid agencies have warned of a humanitarian disaster. Moreover, Saudi Arabia is the largest donor of humanitarian aid to Yemen. Indeed, Médecins Sans Frontières has acknowledged "the efforts done by the coalition in order to facilitate the work of its teams on the ground".

Terrorist organisations have been allowed to flourish, a clear threat to Saudi Arabia, the Middle East and the wider international community. We are acting in self-defence. The notion that we would seek to prolong this conflict, giving time for terrorists to solidify their grip in Yemen, is absurd.

Britain and Saudi Arabia have been allies for almost a century. The commitment by the new prime minister, Theresa May, to fight violent extremism and terrorism was welcome. It is only with the support of our friends that Saudi Arabia can continue to restore stability to places like Yemen and to confront the scourge of terror.

MOHAMMED BIN NAWAF AL SAUD
Ambassador of Saudi Arabia
London

Sovereign claims

The dispute over territory in the South China Sea, you say, constitutes a contest between "an American idea of rules-based international order and a Chinese one based on what it regards as 'historic rights' that trump any global law" ("Courting trouble", July 16th). You note that America has not ratified the UN Convention on the Law of the Sea, but do not explain why. In 1982 the Reagan administration reasoned that the convention cannot take priority over domestic legislation that declares American sovereignty over the extended continental shelf. This is not entirely different from China's claims of historic rights.

The Reagan administration was also uncomfortable with the compulsory dispute-resolution mechanism proposed by the convention, which is a similar argument to the one China put forward when it rebuffed the recent court ruling that rejected its claims in the South China Sea.

Therefore, the dispute is less a clash of "two world-views", as you suggest, but simply China taking cues from America in attempting to demonstrate its own exceptionalism.

KARTHIK SIVARAM
Stanford, California

Shimmering shiny sea

"See-through sea" pondered what would happen if oceans were transparent (July 16th). But there are deeper consequences. If we had translucent seas, the "Odyssey", "Moby Dick", "Twenty Thousand Leagues Under the Sea", "Jaws", "Finding Nemo", "The Hunt for Red October", or "Pirates of the Caribbean" might have never been written or produced. In each case the storyline would sink with the protagonist having a sufficiently strong telescope to scan the abyss.

On the flip side, all the treasures from sunk ships would have been found, MH370 conspiracy theories would never surface, and underwater laser-shows would dazzle octopuses and lobsters alike.

DOMINIK PUDO
Quebec City, Canada ■

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Look forward in anger

BEIRUT, CAIRO AND RIYADH

By treating the young as a threat, Arab rulers are stoking the next revolt

WITH his gelled hair, taste for coffee and keen interest in women, Muhammad Fawzy could be a university student anywhere. At the age of 21, and studying engineering at Cairo University, he should be looking to a bright future; after all, the world is crying out for technically minded graduates. But Mr Fawzy feels the outlook is bleak. He worries that no job he finds after graduation will pay enough to cover his costs, let alone allow him to support his widowed mother. Without a good salary, Mr Fawzy cannot buy a flat; without his own home he cannot marry; and without marriage, he cannot have sex.

"I cannot have a girlfriend for religious reasons, and because I wouldn't like that for my sister," explains Mr Fawzy. "I was in relationships [with women] previously but it never got physical. I never held their hands or kissed them." He often talks to women, but on Facebook: it affords privacy and safe distance. As with much else, his predicament about women is more complex than just the pull of tradition.

His views of Islam are just as tangled. He regards himself as more devout than his parents, but does not pray regularly; he prefers the company of friends to listening to preachers, yet craves a purer version of Islam. Egyptian tradition, he thinks, is tainted by a culture of bribe-paying, nepotism and other behaviour banned by religion. "We need to enforce morals that the West has taken from us." The spread of atheism, he thinks, is a menace.

Mr Fawzy is hardly unique. Arab countries are full of young people frustrated by a lack of jobs; questioning traditional authority; bittersweet about the West, its liberties and its power; and plugged-in enough to know that their lot is worse than that of many of their peers around the world. "Young people just want to live and not make trouble, but they are unable to break into the political, social, economic systems of their countries," says Rami Khouri of the American University of Beirut. "They have to create parallel universes for themselves because they can't do anything normal in normal settings."

Many factors led to the Arab uprisings of 2011, which overthrew old rulers in Tunisia, Egypt, Libya and Yemen, and rattled many other regimes. But there is little doubt that the Arab world's large youth bulge, and its rulers' failure to harness it for economic development, was central.

Now that the uprisings have either been beaten down or degenerated into murderous civil war (except in Tunisia), the lot of young Arabs is even worse: they face more political repression and worse job prospects. Economic growth in the region has lagged behind other middle-income countries (see chart 1 on next page). The fall in the oil price is now hurting some countries even more, turmoil has spooked investors and terrorism has wrecked tourism. The self-defeating policies of governments clinging to power, such as in Egypt (see page 35), cause yet more harm.

Elsewhere, a large youthful population would be regarded as an economic blessing. But in the Arab world the young are treated, for the most part, as a curse, to be suppressed. These days life for young Arabs is often a miserable choice between a struggle against poverty at home, emigration or, in extreme cases, *jihad*. Indeed, in places such as Syria, the best-paid jobs involve picking up a gun.

Young people in the Arab world, as elsewhere, come in endless varieties. But taken as a whole, several trends stand out. First is a demographic explosion. The Arab world is growing fast. The region's population doubled in the three decades after 1980, to 357m in 2010. It is expected to add another 110m people by 2025—an average annual growth rate of 1.8%, compared with 1% globally. The demographic stress is compounded by rapid urbanisation. In 2010 the proportion of Arabs who are aged 15-24 peaked at 20% of the total population. But the absolute number of young will keep growing, from 46m in 2010 to 58m in 2025.

A second striking aspect is the scale of youth unemployment (see chart 2 on next page). In 2010, on the eve of the Arab uprisings, total and youth unemployment rates in the Arab world were already among the ▸▸

highest of any region, at 10% and 25% respectively. Since then these figures have risen further, to nearly 12% and 30%.

Amazingly, in some Arab countries, the more time you spend in school, the less chance you have of finding a job. In Egypt 34% of university graduates were unemployed in 2014, compared with 2% of those with less than a primary education (see chart 3 on next page). The inequality between the sexes also stands out: 65% of women aged 15-24 were jobless in Egypt compared with 33% of men.

A third trend is the high level of migration, especially to oil-rich Gulf states. Syria, the Palestinian territories and Egypt were among the 20 countries worldwide with the highest number of people living abroad in 2015, in part because of a surging volume of refugees.

Little wonder, then, that young Arabs are unhappier than their elders and than their peers in countries at similar stages of development, according to Ishac Diwan of Harvard University. A survey by the Pew Research Centre, a think-tank in Washington, DC, likewise found that countries in the Middle East were an exception to its finding that people in poorer countries are generally more optimistic about their future than those in rich countries. Only 35% of those polled in the Middle East thought their children would be better off financially than them, compared with 51% in Africa and 58% in Asia.

Degrees of uncertainty

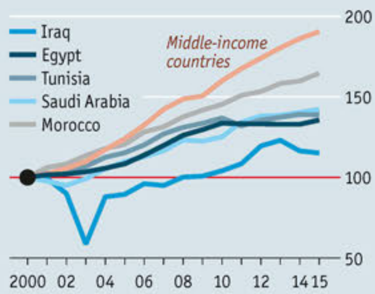
Young Arabs are most worried about their standard of living. All too often taxi drivers reveal that they possess engineering degrees; sometimes driving is a second job taken to make ends meet after a day at work elsewhere. Arab governments have long tried to absorb new workers by expanding the civil service; better to have the young do nothing on the public payroll than to go out on the streets and cause trouble. In the heyday of Arab nationalism under Gamal Abdel Nasser, who overthrew Egypt's monarchy in 1952, every graduate was guaranteed a government job.

But neither he nor his successors knew how to make good use of the talents of a soaring number of graduates (their ranks more than tripled between 1970 and 1980). Over time they were made to wait ever longer, sometimes for up to a decade, for a job. With the balance-of-payments crisis of the 1990s, the public sector was slimmed down and new government jobs all but disappeared.

Cheap oil is forcing Gulf monarchs, who have hitherto bought their people's acquiescence with cushy jobs and handouts, to trim the public payroll. And since Gulf monarchies cannot find enough jobs for their own people, the safety valve of emigration to work in the Gulf has closed to other Arabs. The largest Gulf state, Saudi Arabia, needs to create about 226,000 new jobs every year, according to Jadwa Investments, a Saudi research firm. But in 2015 employment rose only by 49,000.

Squeezed middle 1

GDP per person, 2000=100



Source: World Bank

Gulf states have set quotas for the employment of nationals, but many companies complain that local graduates lack the skills and work ethic required. "I know of firms that pay Saudis to satisfy the law, but tell them to stay at home," says one businessman. Under its 30-year-old deputy crown prince, Muhammad bin Salman, Saudi Arabia is planning an ambitious transformation, led by the private sector, to diversify away from oil. But it will be a tall order to train Saudi Arabia's pampered young men to work for a living.

In several parts of the region, Arabs retain a strong sense of entitlement, says Nader Kabbani of Silatech, a Qatari body that connects young Arabs to jobs. Many would rather continue to live with their family than take a job they deem beneath their dignity. At the same time, young people's aspirations are growing. They have higher rates of literacy than in the past and more access to information about the wider world. They are voracious users of mobile phones, the internet and social media. They get more of their news online, which is harder for governments to censor than TV and newspapers, according to the Arab Youth Survey, a poll conducted in 2016 of 3,500 young people in 16 countries by Asda'a Burson-Marsteller, a PR firm.

All this has started to chip away at a culture of obedience to family, religious leaders and governments. The tendency is perhaps most apparent in tension over the status of women who, for all their traditional subordination and the trend towards covering their heads in public, now make up the majority of university graduates in the Arab world.

For some, marriage is an escape from family strictures. But others choose not to get hitched. The Population Reference Bureau, a research body in Washington, DC, notes the growing number of Arab women who are not married by the time they are 39 years old. Khloud Faloudah, a 35-year-old unmarried Saudi woman who works in Riyadh in the IT department of Al Jomaih, which bottles Pepsi, says that a generation ago her ambition would have been to have a family, but "my main aim has been to get a management role at work."

All too often, though, the cause of late marriage is not ambition but poverty. Men are expected to buy a home and furnish it before they can get hitched. The groom is required to provide a dowry. In Gaza City the ruling Palestinian Islamist movement, Hamas, decks the seaside with bunting to hold mass weddings for followers unable to afford their own ceremonies. Ismail Haniyeh, the enclave's acting prime minister, sponsors a dating agency.

Independence for women, let alone sex outside marriage, is still strongly frowned upon. In Saudi Arabia women are not allowed to travel abroad without express permission from a male guardian (there is a mobile-phone app for the purpose). But even in countries, such as Egypt, where the law is supposedly more egalitarian social mores remain strict.

Riham, a 23-year-old freelance graphic designer from Tanta, a town north of Cairo, recounts how she moved to Egypt's capital to study fine arts and escape male relatives ▸▸

Wasted youth 2

Youth* population and unemployment in the Arab world

Sources: ILO; World Bank; US Census Bureau *15- to 24-year-olds

who banned her from wearing skirts, staying out late and travelling alone. "Even there I was not allowed to return to the dorms after 9pm, while my male friends were allowed back at 11pm," she says.

Islam is losing its stabilising role, too. Overall the Arab world is far more pious than countries at a similar stage of development, according to the World Values Survey, a research project based in Vienna. But young Arabs are exposed to a proliferation of Islamic beliefs on satellite-TV channels and the internet. Religious leaders once exercised a degree of authority over their flocks. But now young Arabs often cite Islamic texts when challenging their elders.

Some young Arabs are less devout than their parents; but others have become more so. Abdulaziz al-Ghanam, a Saudi studying in America, says that back home few people he knows still go to mosque for the five daily prayers even though all shops and restaurants are forced by law to shut during them. In Egypt, though, Ayman Nabil, a 29-year-old accountant, declares: "I am more conservative than my father because he is conservative based on traditions he inherited; but I am conservative based on things I read about."

That said, young Arabs have become more sceptical about religion in public life. Enthusiasm for religious parties has plummeted since the Arab spring. The Muslim Brotherhood, which took power in Egypt after the ousting of Hosni Mubarak, was deemed dismal. (The backlash against the Brotherhood was exploited by the army to depose it in 2013.) Half of those responding to the Arab Youth Survey saw the Shia-Sunni divide as a source of conflict.

Mr Diwan notes that, on the whole, young Arabs are markedly more patriarchal and less tolerant towards people of different cultures or religion than young people in other middle-income countries. Worryingly, better education does not breed greater openness, as it usually does elsewhere. Mr Diwan thinks it is because schooling is used by governments and religious authorities as a form of indoctrination. Rather than teach critical thinking, textbooks perpetuate ideas of obedience (the region's repressive governments like it that way) and, often, misunderstanding or even hatred of other faiths and sects. Textbooks in Saudi Arabia list Christmas among banned holidays.

A particular worry, held by young people themselves, is the prospect that disenchanted young Arabs will be pushed into the arms of jihadists. Much of the media coverage of Islamic State (IS) focuses on the radical ideology and extreme brutality of the group. But the Arab Youth Survey found that young people thought the lack of jobs and opportunities was the main reason why people joined up. IS offers salaries, an arranged marriage (sometimes to a slave-woman) and the opportunity to run amok and feel self-righteous about it.

It is difficult to gauge what, precisely, drives young people to violence. Most young Arabs shun IS. "Joining IS is the same as turning atheist or converting to Christianity," says Mr Nabil in Cairo. Recruits to IS come from both middle-class and poor backgrounds, educated and uneducated. But the vast majority of those who join are young men.

The Arab Youth Survey found that 78% of young people said they would never support the group. Yet 13% of them said they might, if it were less violent—a number that rose to 19% in the Gulf countries, which adhere to a more austere form of Islam. That is a minority, but not a small one. It suggests that IS and whichever terrorist group comes next can draw on a large pool of potential recruits and sympathisers.

Young and dangerous

Arab governments may pay lip service to the concerns of young people—the United Arab Emirates this year appointed a 22-year-old woman as minister of youth (along with new ministers for tolerance and happiness) but most rulers view young people as a danger.

Gerontocrats and autocrats still hold power, and are giving little say to the next generation. The near-absent president in Algeria, Abdelaziz Bouteflika, is 79; the one in Sudan, Omar Bashir, is 72. In Egypt young people of all hues—Islamist, liberal and professional—are being locked up by the president, Abdel-Fattah al-Sisi (61), with a zeal far outstripping that of the fallen Hosni Mubarak. Political parties attract few young members since they have little power. Parliament in Syria is a figleaf for dictatorship; Lebanese parties are sectarian; those of the Gulf are consultative only. In Egypt the Muslim Brotherhood, another party led by old men, has been banned.

Indeed, the wars and turmoil since the Arab spring have suppressed the hunger for democracy. In Tunisia, the supposed success story of the revolts, the hankering for stability overtook a want for democracy in mid-2012, according to Pew. Some 53% of respondents to the Arab Youth Survey said they put stability first.

Yet this does not mean the young are apathetic. Even if they are not all eager to vote, they want their rulers to be less corrupt and brutal. Many would like to see women enjoy more rights, too. Nearly all want institutions such as the police to work for them, rather than against them. In Lebanon Beirut Madinati ("Beirut is my City")—a new movement that promised to tackle uncollected rubbish, intermittent electricity and corruption—won 40% of the vote at local elections in May. Young people are increasingly keen to volunteer and join civil organisations, says Barbara Ibrahim of the American University of Cairo.

The Arab uprisings of 2011 showed a thirst for change among the young, says Mr Khouri. "They want to be involved and are looking for outlets that are satisfying," he says. "But they have given up on public political life. For now they are compliantly rebellious: finding private spheres in which to live."

How long will they remain sullenly subdued? A world where finding a job is ever harder, where getting by depends as much as ever on *wasta* (connections) and where the political system typically excludes them, is bound to stoke resentment. For Mr Nabil, the misery is caused by tyranny in its many forms: "All of society's problems stem from it: having people only serve one thing, be it the father, the family, the manager at work or the president. Tyranny is the root of society's problems."

For the time being, there are small protests, from Baghdad to Rabat, but little evidence of an incipient second wave of revolt, if only because people are tired and the secret police remain terrifyingly effective. But two things seem certain. The evidence from around the world is that lots of jobless young men are a recipe for instability. And Arab rulers, in fearing the young and failing to help them, are creating the conditions for the next explosion. ■

Young, gifted, held back

Also in this section

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Myanmar's economy

Miles to go

YANGON

The new government unveils promising but vague economic plans, as the armed forces loom in the background

IN AN open-plan office in a nondescript building in central Yangon, women sort through piles of brown folders. Three men try, with little success, to fix a photocopier; others organise piles of *kyat*, Myanmar's currency, by denomination. Myanma Economic Holdings Limited (MEHL), a conglomerate run by the armed forces, has many workers who do very little. Being owned by men with guns has long meant being shielded from competition.

That began to change in 2011 when Thein Sein, then the country's president, ended the military conglomerates' tax exemptions and their import monopolies on many goods. He welcomed foreign competitors to some of their businesses. But the army, which ruled from 1962 until March of this year, when the democratically elected National League for Democracy of Aung San Suu Kyi took office, retains vast business interests. And it controls three powerful ministries, as well as a quarter of the seats in parliament, meaning it can scupper Miss Suu Kyi's planned economic reforms, should it choose to.

That Myanmar's economy needs reform is beyond dispute. Though foreign investment is soaring and GDP is expected to grow by at least 8% this year and next, both are from a tiny base. Before the army seized power, Myanmar had been one of the world's leading rice exporters and one of Asia's wealthiest countries; today it is among the poorest. Last year GDP per person was just $1,204—less than a fifth the level of neighbouring Thailand—and tax revenue, as a share of GDP, was the lowest in the region. Most of the population is poor and rural: scant access to credit, energy, seeds and fertiliser keeps agricultural productivity low. Bad roads, inefficient ports and sporadic electricity impede industrial growth: the advantage afforded by a cheap, young workforce is frittered away if they sit idle during power cuts. Transporting goods to market costs a fortune.

On July 29th in Naypyidaw, the capital, Miss Suu Kyi presented her long-awaited plan to tackle these problems. Though it pointed in the right direction—towards greater liberalisation and away from the planned economy—it was worryingly light on detail. What were described as "economic policies" were more like aspirations: more efficient public spending and taxation; better technical and vocational education; more transparent budgeting; less red tape and so on. There were vague promises about agriculture and infrastructure. Farmers will somehow get greater access to credit and more secure land tenure. Electricity generation, roads and ports will be prioritised.

The goals are laudable. But are they achievable? And when will the government get started? According to Sean Turnell, an Australian economist advising the new administration, so little economic information was handed over by its predecessor that its first four months have been spent tracking down basic facts about revenue, budgeting, the financial position of state-owned enterprises and so on.

After many years in exile fighting for democracy, Miss Suu Kyi has entered office with much goodwill, at home and abroad. But she is also burdened with high expectations, which are likely to go unfulfilled. Almost everything needs fixing, and she has shown a worrying tendency to centralise and micromanage. She still chairs her political party, while holding three positions in the new government. To build functioning financial institutions, she must learn to delegate, analysts say.

The rift over the loot

There are also worries about how the army will react once the government is ready to act. Outright resistance is unlikely: the democratic transition began in part because the army realised it was hopelessly ill-equipped to oversee a market economy. And at least some of its enterprises make money legitimately, and will make more as the country prospers. MEHL, for example, makes Myanmar Beer, the most popular brand, and Red Ruby, one of the most popular cigarettes.

However, the army and its cronies have also grown rich from gem and jade mines—and vast tracts of land that many contend were illegally seized. The new government says it will neither extend mining licences nor offer new ones until the laws governing the sector are tightened (it appears keener on environmental and safety rules than its predecessors). It has begun to investigate what it estimates are hundreds of ▸▸

Award: Our correspondent in Sri Lanka, Namini Wijedasa, has been named Investigative Journalist of the Year by the Editors' Guild of Sri Lanka and the Sri Lanka Press Institute thousands of land grabs, totalling millions of acres. This limited remit—the government could have plumped, instead, for a full-blown investigation into land-ownership nationally—is seen by some as a signal to the army that it will be allowed to keep past gains, but should understand that from now on, things will change.

Whether that will be enough for it remains to be seen. For Miss Suu Kyi has pledged a "just balancing" between states and regions, with the aim of "national reconciliation". This is an old demand of ethnic insurgents against the central government: Myanmar's civil wars have been motivated not only by politics, but by control of resources. Dividing the spoils more equitably will be essential if the fighting is to end. But Miss Suu Kyi may find that the army is none too happy about a civilian government dictating terms over conflicts in which it has spilt blood for decades. ■

Sri Lanka's missing people

Refusing to give up hope

COLOMBO

A new government tries to give certainty to grieving relatives

SEVEN years ago, at a busy crossroads in Colombo, Sri Lanka's largest city, armed men in an unmarked white van abducted Stephen Sundararaj. He was going home, his three children snuggled up against him, after idling for weeks in a police cell. Mr Sundararaj, then a 39-year-old project manager at a local human-rights group, had been detained under the Prevention of Terrorism Act, a draconian law permitting arrests without warrant for "unlawful activities". He challenged the move in court and would have pursued the case, had he not been hauled away mere hours after his release. He was never charged with a crime. He has never been found.

Such horrifying tales are common in Sri Lanka, where 26 years of ethnic conflict ended with the defeat of the Tamil Tigers in 2009. In the past century the country has also experienced two Marxist insurgencies in the south, and several anti-Tamil pogroms. In May Mangala Samaraweera, the foreign minister, admitted that it had one of the world's largest caseloads of missing people. The armed forces, the Tamil Tigers and other insurgents are all to blame.

The Sundararaj family: happier days

Figures vary hugely, depending on the source. The UN puts Sri Lanka second only to Iraq, with 5,731 outstanding cases. But Dhana Hughes of Durham University, who has studied the two southern insurgencies, estimates that thousands vanished during the second one alone, in the late 1980s. Under the authoritarian Mahinda Rajapaksa, president from 2005 to 2015, who defeated the Tamil Tigers, snatches like that of Mr Sundararaj were so common that they were dubbed "white-vanning". Not only terrorism suspects but political opponents were targets. Some, like Mr Sundararaj, were taken for no apparent reason. Thousands more went missing from war zones.

In 2013, after heavy international pressure, Mr Rajapaksa set up a body to investigate missing-persons cases. The Paranagama Commission received more than 19,800 representations, including 5,600 from relatives of missing military personnel. Weeping families flocked to public hearings clutching photographs and heart-rending petitions. But the commission's final report, last year, exonerated the government of war crimes—which had not even been part of its remit.

But Mr Rajapaksa's defeat at a snap election in January 2015 by a coalition supported by Tamil and Muslim voters created space for more genuine efforts. The new government ratified the UN convention on enforced disappearances and allowed its working group to visit, even throwing open a former secret detention facility and escorting its members to mass graves. The group concluded that "a chronic pattern of impunity still exists in cases of enforced disappearance". It urged the government to determine the fate of the disappeared; to punish those responsible; and to guarantee truth and reparation.

The government vows that it is trying. A law to create an "office on missing persons" will be taken up for debate in parliament this month. Another, to issue "certificates of absence" to families of the missing, will be presented to the legislature around the same time. These will help relatives overcome legal, administrative and financial obstacles (the transfer of property or bank accounts, for instance) that would, under normal circumstances, require death certificates.

She does not want any certificate, says Vathana, Mr Sundararaj's wife. And she can identify two of his abductees, she says: she had often seen them sitting outside his police cell. What she wants is to get him back: she insists that he is still alive.

According to the International Committee of the Red Cross, which offers support to victims after as well as during wars, such refusal to lose faith is not unusual. The lack of information about missing relatives wears families out, it said in a survey of them it published last month. Fewer than two-fifths of those it interviewed believed their loved ones were dead; the rest were split roughly equally between believing they were still alive and being unsure. All vacillated between hope and fear; mired in pain, they told and retold their stories to anybody who would listen. "No abduction, please," says Vathana, wiping away tears. "Not for Sinhala, Tamil or Muslim." In the meantime, she waits for news. ■

India's economy

One nation, one tax

MUMBAI

A tax overhaul will have welcome, if unpredictable, consequences

GIVEN how few voters enjoy paying them, politicians rarely trumpet the advent of new taxes. But the passage of a new goods-and-services tax (GST) in India's upper house on August 3rd is a deserved exception. Well over a decade in the making, the new value-added tax promises to subsume India's miasma of local and national levies into a single payment, thus unifying the country's 29 states and 1.3 billion people into a common market for the first time. The government of Narendra Modi, never averse to over-hyping what turn out to be modest policy tweaks, has enacted its most important reform to date.

Few countries are fiddlier than India when it comes to paying taxes; the World Bank ranks it 157th out of 189 for simplicity. Both the central government and powerful state legislatures impose a dizzying array

Canine couture in Taiwan

Furry fashionable

TAIPEI

What pampered pooches reveal about national security

LONDON or Paris? Milan or New York? Fashionistas differ on which city is the most stylish. For four-legged trendsetters, however, there is a clear winner: Taipei. Dogs strut their stuff on its pavements tricked out in tutus, hoodies, boots, overalls and trousers. A biker's best friend can be kitted out with a matching motorbike helmet. Pampered pooches have been spotted in LA Dodgers kits (adapted, naturally, to accommodate four legs). In the city's night markets shops have sprung up with doggie sales staff modelling the wares (your correspondent tried to dig up data on entry-level pay, but found no bones).

A troubling trend is driving the popularity of canine couture: Taiwan's rock-bottom birth rate. At just 1.1 births per woman, it is far below the replacement rate of 2.1, at which the population would stabilise. Many Taiwanese fear that the growing amount of money and attention lavished on pets stems from the decreasing willingness of young Taiwanese to start a family. Caring for a dog seems to have become a substitute for having children. Dog strollers seem at least as numerous on Taipei's crowded streets as buggies holding babies.

The baby bust is giving the government paws for thought. The previous president, Ma Ying-jeou, called it a "serious national-security threat". He tried to encourage child-bearing with cash handouts, more breast-feeding facilities and the like. After all, if Taiwanese youth decides that dogs are less trouble than sprogs—and just as much fun to dress up—then who will defend the democratic island, which Beijing has long claimed as its own?

Did someone say "catwalk"?

of charges. Because the rates differ between states, making stuff in one and selling it in another is often harder within India than it is in trade blocs such as NAFTA or the European Union. Queues of lorries idle at India's state boundaries much in the same way they do at international borders.

That should change with the GST, essentially an agreement among all states to charge the same (still to be decided) indirect tax rates. Businesses are thrilled at the idea of being able to distribute their products from a single warehouse, say, rather than replicating supply chains in each state. Thick, exception-riddled tax codes—car sales are liable to six different levies at various rates, depending on the length of the vehicle, engine size and ground clearance, for example—are to be replaced with a single GST rate to be applied to all goods and services.

Better yet, the GST will be due on the basis of value added. That avoids businesses being thwacked by taxes on the entire value of the products they buy and sell rather than just the value they create—a situation that often made it cheaper to import stuff rather than make it locally. Just as importantly, by requiring businesses to document the prices at which they buy inputs and sell products (unless they wish to pay higher taxes), it will force vast swathes of the economy into the reach of the taxman.

Economists and technocrats have long backed the GST, which they think could boost economic output by 1-2 percentage points a year. Their calls were insufficient to overcome India's petty politics: GST proposals stalled under governments of left and right since it was first mooted in 2000.

Time to lighten the load

Mr Modi, as chief minister of Gujarat state until 2014, helped thwart the previous government's GST plans and has faced retaliatory obstructionism since. A committee of various states' finance ministers helped convince regional parties in the upper house, which Mr Modi's government does not control, to clear the blockage.

Because the tax overhaul requires a new amendment to the constitution, and therefore the backing of at least 15 state legislatures, it will take several months to enact. Few expect it to be derailed, but a deadline of April 2017 seems unlikely to be met. Though efforts to water down the bill (for example by exempting petrol) appear to have been overcome, its precise workings remain undecided. Even the GST rate is unknown; a government study mooted 17-18% but some states (which will receive the cash raised) would like it to be higher.

Such nitty-gritty will be fought over in the "GST council", a novel body which will represent both state and federal executive branches but looks likely to be dominated by ministers sitting in New Delhi. Arvind Subramanian, the government's chief economic adviser, calls the whole construct "a voluntary pooling of sovereignty in the name of co-operative federalism", borrowing freely from the lexicon once used by the builders of the EU's common market a generation ago. Such projects do occasionally run into bouts of difficulty.

Indeed, the new council and the tax it will administer go against a recent trend for decentralising power from New Delhi to the various state capitals. Powerful chief ministers sitting in the provinces will be more dependent on revenue collected federally and less on purse-strings they control themselves. Money will shift from (richer) states that make things towards (poorer) ones that consume them, too. The advent of a single tax to rule them all may come to shape Indian politics as much as it does the economy. ■

Japan and the last commute

Peak death

TOKYO

As a baby-boom generation ages, businesses struggle to make money out of a rare growth sector

IN HIS office behind Tokyo's Aoyama cemetery, Yukihiro Masuda says that these days prospective clients are so much readier to talk about the end of life that he encourages them to try out his coffins. He gestures at one: a handsome model, lined with white satin, and decorated on the outside with superb red kimono cloth. Inside, with the lid closed, it is as acoustically dead as a recording studio, quite soporific and, for this overweight Westerner, at least, rather snug at the shoulders and hips.

Talking about death is still taboo for some Japanese—and in parts of the country the *burakumin*, an often ostracised group who are descendants of medieval outcasts, still fill a large share of jobs in the funeral business. But for many others the taboo is broken. A 2008 film, "Departures", movingly depicted the beauty and dignity of *nokan*, the (Buddhist-derived) ritual cleansing ceremony for the recently deceased, carried out at home before laying the body in a coffin for cremation. The film's success led to a wave of job applications to perform *nokan*. Not long after, the *Weekly Asahi*, a magazine, began promoting the idea of *shukatsu*, planning for the end of life, in the hope of interesting readers and attracting advertisers. And then the devastating tsunami of 2011 made many Japanese wonder openly: if I die, who will take care of my funeral, sort out my affairs and carry out my wishes?

Underlying these cultural shifts is the tyranny of demography. Although Japanese are living longer, healthier lives, the huge baby-boom generation born after the second world war is starting to die just as younger Japanese are having fewer children. The population of 127m has already peaked and is set to fall below 100m by 2050. This year around 1m Japanese will be born, and around 1.3m will die. By 2040 annual deaths may approach 1.7m.

Call it peak death. It is already changing families. Traditionally, offspring would handle their deceased parents' affairs, with neighbours helping with funeral ceremonies at home. But many more Japanese, particularly in depopulated rural areas and coastal towns, are now dying alone, with few to help them into the next world.

The funeral industry and other companies not hitherto associated with end-of-life issues sense an opportunity—a rare growth sector. A huge funeral fair in Tokyo in December, with *nokan* competitions using volunteers posing as corpses, gave a sense of the scale of the ¥2 trillion ($20 billion) industry. There are niches: stationery companies sell books for "ending notes"—instructions for post-death practicalities, but also for innermost feelings that Japanese tend to keep to themselves and that atomised families make difficult to express in life. End-of-life businesses also offer alternatives to costly temple gravestones, such as scattering loved ones' ashes in Tokyo Bay (just don't tell the honeymooners to whom the boat is also offered).

Tech companies are also jumping in. Two years ago Yahoo Japan, an internet giant, launched Yahoo Ending, a service that charges ¥180 a month until you die, then sends an e-mail alerting friends and family once you've reached the other side, smoothly closes your internet accounts and sets up an online memorial page. It also offers to arrange funerals, complete with a Buddhist priest.

A fine and private place

Amazon Japan offers a monk-for-hire service: with one click you can order a priest to chant *sutras* (much to the ire of traditional temples, for which funerals and caring for ashes are nice earners). Aeon, a retail and financial-services conglomerate, has branched out from arranging funerals for employees past and present, and opened its first outlet for the general public in the shopping centre next to its Tokyo headquarters. Fumitaka Hirohara, the head of Aeon Life, its funeral business, claims it was the first place to offer free coffin trials, in 2011 (much to the initial surprise of passing shoppers).

Yet most of the businesses that moved into *shukatsu* have not found the bonanza they were hoping for. Few old people signed up to Yahoo Ending's services for the simple reason that they are not heavy users of internet services. Younger Japanese balked at a lifetime's monthly fees. Yahoo Japan closed the service in April. And then the funeral business turns out to be not so different from others in Japan: eking out thin margins in a competitive world. Though the number of funerals is rising, the average cost, once over ¥2m, is falling—deflation and competition are as fierce as in other sectors. In the boom years up to the early 1990s funeral firms charged what they wanted and few complained.

Companies often paid for lavish funerals for their executives and dispatched employees as mourners to the funerals of important customers, even if they did not know them. Now companies are strapped for cash, and employer-employee loyalty has eroded. Besides, more and more Japanese just want a simple ceremony for close family and friends.

Mr Masuda says that traditional funeral companies try to make their money from costly add-ons, such as fancy cars or a DVD of the funeral. But customers want less and less of it. "Companies don't listen to what customers want," he says; "they just offer the same old packages."

Instead, Mr Masuda says, firms need to keep prices low (a funeral package can now cost less than ¥500,000) and to differentiate their products. His company, Will-Life, offers an eco-friendly send-off. The coffins are made of robust cardboard from the packaging industry (which the parent company is in). Even though they need as much paraffin—70 litres—for cremation as the usual wooden versions, the company plants trees in Mongolia as a carbon offset.

Still, Mr Masuda laments that plywood coffins from China can cost just a third as much as his cardboard ones. The "China price", a fixture of life in Japan as elsewhere, applies in death, too. ■

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The Cultural Revolution

Unlikely hero

LANKAO

A local leader jailed for extremism during the Cultural Revolution has many devoted followers

WHEN Zhang Qinli's ashes were carried to his native village in a white pickup truck in May 2004, mourners lined the streets. They wept and clapped and set off firecrackers as the vehicle started its journey from the county seat of Lankao. "He died a wronged man," shouted some. It was a hero's send-off; so many knelt before the truck, sobbing, that it took about five hours to make its way from the dusty town to the hamlet, tucked in a grove of poplars 30km (20 miles) away.

It is rare indeed for someone who once served as the Communist Party chief of a county, as Zhang did, to be so adored by its residents that his death would provoke such spontaneous displays of sorrow. But Zhang's funeral went unremarked in the official media. That is because popular affection for him revealed an uncomfortable fact: though Mao's Cultural Revolution caused the suffering and death of millions, to some in China the era—a time of idealism and little corruption—was not all bad. A few, even, would like another one.

In 1978, two years after Mao's death, Deng Xiaoping muscled diehard Maoists out of the leadership and took over himself. To secure his power, he set out to purge the party of supporters of the "Gang of Four" radicals led by Mao's wife, Jiang Qing, who had been arrested shortly after the chairman's death and blamed for the Cultural Revolution's excesses. Zhang, who had held leadership posts in Lankao and in the nearby city of Kaifeng, was an early target. He was arrested in October 1978 and jailed for 13 years for "counter-revolutionary" crimes, including the "brutal persecution of revolutionary cadres" and "trampling on the socialist legal system".

At the time, as China began to open up and Deng launched economic reforms, no one stood up in support of imprisoned Maoists. But the deep factional divisions that had plunged the country into chaos during the Cultural Revolution had not healed. Those who had backed the wrong side kept their heads down. Not all had been supporters of Red Guard brutality—some were simply idealists who found it hard to shake off the leftist ideology they had believed was unassailable.

By the time Zhang was released from prison in 1990 on medical parole, China was growing richer but more unequal. Maoist traditionalists were beginning to criticise Deng's reforms openly. In the lower reaches of the Yellow River among the wheat- and maize-growing villages of Lankao (officially designated as an "impoverished county"), Zhang was remembered for his hard work and honesty: how different, many there thought, from modern-day officials.

But the party never formally forgave Zhang; though he was cleared of counter-revolution on appeal, he remained guilty of "instigating and plotting" others to engage in "beating, smashing and looting". He was never readmitted to the party's ranks. So the shouts of mourners on the streets of Lankao as his ashes passed by government buildings were cries of protest: "Learn from the old [party] secretary"; "Down with corruption and sleaze."

For China's current leader, Xi Jinping, Zhang is a headache. Not only is he a deceased arch-criminal who happens to be popular, but he is also one whom the party cannot easily airbrush from its history. That is because Zhang's story intertwines with that of one of the party's most beloved heroes: the model party secretary, Jiao Yulu. Jiao was Zhang's predecessor as Lankao's party chief. He died two years before the Cultural Revolution, so was not tainted by it. Mr Xi loves Jiao; in 1990, when still a little-known local leader himself, he wrote a poem about him. "Snow at sunset, frost at dawn/Cannot change the will of a hero" go two of its lines. He has urged the nation to study him.

Party and anti-party

Lankao thus has two heroes. One, Jiao, is honoured in a museum dedicated to his memory. Mr Xi visited it in 2014. The other, the "anti-party" (as the court described him) Zhang, enjoys an unofficial following, as is evident at his native village where admirers have erected more than 80 stone tablets inscribed with tributes to him (pictured above). Without Zhang, say his fans, Jiao might never have enjoyed such posthumous fame. It was Zhang who revealed details of Jiao's Stakhanovite attributes to Chinese journalists; their story, published in February 1966, launched the cult of Jiao. Zhang's fans say it was merely a cruel twist of fate that made one a saint in the party's eyes, and the other a criminal. The two, ▸▸

they insist, were very similar. Even some liberals in China accept that Zhang and his associates may have been wronged.

The party has tried to play down the 50th anniversary this year of the launch of the Cultural Revolution, which began a few weeks after the article about Jiao appeared. That bloody period of Mao's rule was a "disaster", the party says. It does not want its wounds reopened. Reformists in China have long argued that the party should be more open about what happened, in order that lessons be learned from the near civil war it led to.

But there are also some from the other end of the political spectrum who say that Deng overreacted, rounding up numerous people like Zhang whose only crime, they argue, was belonging to the wrong faction. The Cultural Revolution was a good idea, they say: China needed one to prevent the kind of slide towards capitalism that the country is now (as they see it) suffering. In May Maoist websites in China published photographs of a meeting of Mao-lovers in Xi'an, the capital of Shaanxi province. "Long Live the Great Proletarian Cultural Revolution" proclaimed a red banner along one side of the room, where more than 50 people sat in rows before a large portrait of Mao.

Rebuilding reputations

Mao-worshippers in Henan province, to which Lankao belongs, say that the purges of leftist radicals that began in the late 1970s were far more wide-ranging in Henan than elsewhere in China. In March a group of retirees, including former officials, wrote to the Supreme Court to demand the rehabilitation of more than 1m people whom they said were detained at the time. Some 4,000 were given prison sentences after closed-door trials, they said. The letter specifically called upon the court to reopen the case of Zhang, "a hero of socialist construction".

In Lankao Zhang's followers say they have heard nothing in response to such petitions, of which several have been sent (and published on Maoist websites) in recent years. Last year, however, Henan's state-run television station broadcast a documentary about Zhang. It described the charges against him as "groundless"—a strong hint that the party was having second thoughts.

Zhang's fans are keeping up the pressure. On the anniversary of his death this year, hundreds flocked to his village to mourn. Several new tablets commemorating him have been put up there in the past few months (bus drivers in Lankao waive the fare for pilgrims, locals say). The large walled compound containing the monuments is strewn with the detritus of firecrackers, set off to protect the dead from evil spirits. The Cultural Revolution's ghosts still wander. ■

Tibetan culture

And the policemen danced

YUSHU

In Tibetan areas the government mixes control with tolerance

TROUPES of Tibetan dancers twirled long pieces of silk. Men in red-tasselled hats brandished swords. Horses in fine saddles stormed around the stadium. Last week the Gesar cultural festival opened in Yushu in the western province of Qinghai. Locals gathered for the three-day celebration of equine prowess, yak-racing and Tibetan song and dance. It is just one of many such festivals held on the Tibetan plateau in the summer months.

It would be easy to paint recent changes to such festivities as an indication of repression of Tibetan culture. The opening ceremony of the Gesar event, once free to all, is now ticketed, and many seats are reserved for government officials. Police lined the perimeter fence; during one performance 13 uniformed men in protective vests, masks and helmets walked across the field. In a rare sign of dissent, only a few of the crowd outside the officials' section stood for the Chinese national anthem.

But the story is more subtle: on this part of the plateau, outside Tibet proper, China's government maintains stability by an artful balance of repression and tolerance. It allows freedom in some spheres to prevent simmering anxieties about the future of Tibetan culture and Buddhism from boiling over.

That contrasts with the official Tibetan autonomous region, home to less than half of China's 6.3m Tibetans, where several anti-Chinese riots erupted in 2008. There, a system of street-level surveillance known as the "grid" operates, in which community members gather information for officials. Groups of five to ten households sign contracts agreeing not to make trouble. In Lhasa people may be imprisoned for carrying or displaying images of the Dalai Lama; elsewhere on the plateau most are merely reprimanded.

The exact level of control in Qinghai is unclear. Some locals complained that July's event was smaller than previous ones because the government is "afraid" of large gatherings of Tibetans. Last year a Tibetan monk died after setting himself on fire in Yushu just weeks before the festival: since 2011 more than 140 Tibetans have protested against Chinese rule in the same desperate way. Yet Yushu's festivals may simply be losing out to events elsewhere: visitors to the Tibetan autonomous region, which has several similar celebrations, increased fivefold from 2007 to 2015.

China's government argues that such festivals demonstrate the protection and development of Tibetan culture. They are certainly not mere propaganda aimed at outsiders: many townsfolk came to the Gesar festival and the mood was relaxed. On the second day security was looser and Tibetans pitched coloured tents and picnicked on the Batang grasslands south of the city. In the evening the police allowed a bonfire—open flames in a place where people set themselves alight in anger—and the crowd joined the traditional Tibetan dance around it. Even the policemen danced.

In Tibetan parts of neighbouringSichuan province, where nearly a third of those who have burnt themselves are from, the picture is again less happy. At the same time as the horse festival in Yushu, buildings were being destroyed in Sichuan province at Larung Gar, one of the world's centres of Tibetan Buddhist learning, according to campaign groups outside China, and thousands of monks and nuns were evicted. Chinese officials claim that work is being done to upgrade living conditions. ■

Horses dance, too

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The presidential race

Trump in the dumps

MECHANICSBURG, PENNSYLVANIA

The divisiveness of his campaign, and his own loutishness, are giving Donald Trump a ton of trouble

SO CLOSE to the stage that Donald Trump could almost have touched it, a notice on the school wall in Mechanicsburg, Pennsylvania, carried this message: "Welcome to Cumberland Valley where sportsmanship is an expectation. So please ...let the spectators be positive." No chance of that. Even before the Republican nominee appeared, late on August 1st, on a pit-stop between Ohio and New York, the 3,000-odd people packing the gymnasium were spewing hate.

"What should we do with Hillary Clinton?" hollered a local politician, as if this crowd, of young people wearing "Trump that bitch" T-shirts and older ones who apparently did not mind the slogan, needed warming up. "Kill her!" someone shouted. "Lock her up!" the chant began.

This is Mr Trump's achievement. The billionaire demagogue has not merely responded to the grievances of working-class whites—such as the folk in Mechanicsburg, mourning their lost steel mills and the pay rises and other benefits that once accrued to being hardworking and white in America. He has also sought to stoke their anger. Vengeance against "rapist" Mexicans, Muslim fifth-columnists, job-killing outsourcers and his "criminal" Democratic opponent, Mr Trump tells his supporters, is the solution to their gripes. Anyone who says otherwise, he added in his bleak convention speech last month, is conning them. "No longer can we rely on those elites in media and politics, who will say anything to keep a rigged system in place."

And yet, appearing onstage in Mechanicsburg, to the accompaniment of mock-heroic synthesiser chords, as if he were a game-show host, Mr Trump looked tired and unenthused. He did not thump the air and trumpet polling data as he likes to; how could he? After a disastrous fortnight for the Republican nominee, in which the chaos and thuggery he has brought to American politics appear to have united much of non-Trumpian America in disgust, the polls look bad for him.

In Pennsylvania, which he probably must win to gain the White House, he is trailing Mrs Clinton by an average of five points, as he is nationally. "I guess the polls have it sort of even," is how he put this. He also claimed the polls understate his appeal: "It's a little embarrassing, people don't want to say they want to vote for me, but then they get into the booth and they say, 'Is anyone looking? Boom, I'm taking Trump'!" But there is little evidence for these shy Trumpkins—or that Mr Trump believed his shtick. The speech that followed was even more rambling than usual, and peppered with personal gripes; the boasts were fewer, and his haranguing of the media ("some of the most dishonest people") went on for longer.

At times, Mr Trump sounded deranged. Some of the negotiators he says he will commission to improve America's trade terms "are horrible, horrible human beings", he said. "Some of them don't sleep at night, some of them turn and toss and sweat, they're turning and tossing and sweating and it's disgusting, and these are the people we want to negotiate for us, right?" Whose experience, actually, was he describing? With three months to the election, it is early days, and the contest looks close; yet Mr Trump's campaign is a mess. In Mechanicsburg it was tempting to think he really had seen the writing on the wall.

His troubles are in part the flipside of his vote-getting strategy. As an exercise in riling angry whites, his convention speech was masterful; Mr Trump's lead over Mrs Clinton with high-school-educated whites swelled to almost 40 points in one poll. He could win this group more crushingly than any presidential candidate since Ronald Reagan in 1984. The problem is that, back then, no-college whites represented 62% of the electorate; now they represent around 34%. And Mr Trump's raving depiction of America as a "divided crime scene" does not ring true to most other Americans.

By expanding his angry fan base, Mr Trump enjoyed a small post-convention boost, as newly-crowned nominees usually do. This gave him a small lead over Mrs Clinton in some polls. Yet, among the weeds, his ratings among non-whites and college-educated whites plunged. A poll by Gallup suggests that, for the first time ever recorded, the Republican convention repelled more voters than it attracted. Mr Trump now trails Mrs Clinton with college-educated whites, a group that has voted Republican since polling began, by a five-point margin. If Mr Trump cannot close that gap, he will probably lose. ▸▸

You might think this would have given a pragmatic tycoon, pursuing success with the focused greed of a truffle-hog, a moment's pause. Yet the incontinence Mr Trump has displayed since the convention has been astounding. In particular, consider the fight he has picked with a pair of Pakistani-Americans, Khizr and Ghazala Khan, whose 27-year-old son, Humayun, was killed fighting for America in Iraq.

Speaking at the Democratic convention in Philadelphia on July 28th, with his wife standing demurely beside him, Mr Khan noted that, had the ban Mr Trump swears to impose on foreign Muslims been in place at the time, his son might never have moved to America as a child. "Donald Trump, you're asking Americans to trust you with their future. Let me ask you: Have you even read the United States constitution?" said Mr Khan. "Have you ever been to Arlington cemetery? Go look at the graves of brave patriots who died defending the United States. You will see all faiths, genders and ethnicities. You have sacrificed nothing and no one."

A "sane, competent" person (a standard Michael Bloomberg, in another memorable moment in Philadelphia, suggested his fellow-New Yorker does not meet) might have responded by praising the Khans and changing the subject. Mr Trump bit back, suggesting Mrs Khan had not delivered the speech because of her religion ("Maybe she wasn't allowed to have anything to say"). He also protested that, as a hard-working builder, he too had "sacrificed". Unfortunately for Mr Trump, Mrs Khan, in subsequent television interviews and a piece in the *Washington Post*, turned out to be almost as articulate as her husband; she had chosen not to speak, she said, because, as she had stood beneath a giant portrait of her dead child, her pain was too great.

The row dominated America's airwaves for almost a week, setting Mr Trump against veterans' groups, the families of other dead servicemen and a parade of wretched-looking Republican leaders. The efforts of Mr Trump's campaign team to quash it were hapless. Its spokeswoman claimed Mr Khan had died because of stringent rules of engagement introduced under Mr Obama; he was killed, in 2004, serving George Bush.

Meanwhile, out of puerile spite, Mr Trump launched an assault on his disapproving party leadership, by refusing to endorse Senator John McCain, his predecessor in 2008, and Paul Ryan, the Speaker of the House of Representatives, in their forthcoming primary fights. He also implied, in an interview, that he would take revenge on his main rivals in the primaries, Ted Cruz and John Kasich, by backing their opponents. No wonder, despite an improvement in Mr Trump's fund-raising performance (in July he and his party raised $82m), there were reports of confusion in his campaign team. Its chief, Paul Manafort, was also linked to allegations that Mr Trump has an unhealthily high regard for Vladimir Putin; Mr Manafort previously worked for the pro-Putin former government of Ukraine. (In Mechanicsburg Mr Trump repeated his suggestion that Russia should keep annexed Crimea: "You want to have World War III to get it back?")

Rarely in recent times have America's fact-based media, on the left and right, its politicians, its armed forces and citizens' groups seemed so united, in a face-off between decency and rancour, as they do now. The baying of some of Mr Trump's supporters reinforces the impression: at a rally in Nevada the mother of an air-force officer was jeered after asking his running-mate, Mike Pence, to speak up for the Khans. So, too, for the small but growing majority of Americans who like his record, did an intervention by Barack Obama on August 2nd. Calling Mr Trump "unfit to serve" as president, he urged Republicans to disown him. "There has to come a point", he said, "at which you say somebody who makes those kinds of statements doesn't have the judgment, the temperament, the understanding, to occupy the most powerful position in the world."

The same day, Richard Hanna, a Republican congressman from New York, said he would vote for Mrs Clinton. "I think Trump is a national embarrassment," he said. Hours later, a billionaire Republican donor, Meg Whitman, said she would vote for and donate heavily to Mrs Clinton and urge her network to do likewise. On August 3rd even mild Mr Pence broke ranks, declaring that he would support Mr Ryan.

There is little to suggest the trickle will become a flood. The partisan division is too deep and the contest still too tight. Mr Trump looks able to rally his embittered, defiant supporters for a huge turnout; none of those in Mechanicsburg, it was depressing to note, admitted to giving a stuff about Mr Trump's remarks to the Khans. To defeat him, Mrs Clinton would have to rally her supporters similarly. And it is unclear, not least given the low esteem in which many hold her, whether she will be able to do that. But this is a bad moment for Mr Trump, so a good one for America. ■

Partisan politics

In plain words

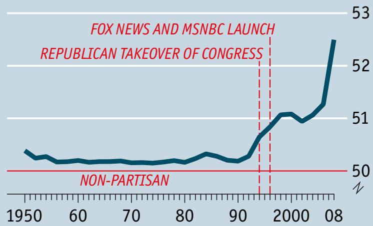
Republican or Democrat? Just listen

IN CASE anyone was in much doubt, a new working paper by Matthew Gentzkow of Stanford University, Jesse Shapiro of Brown University and Matt Taddy of Microsoft Research claims to show that partisanship among America's lawmakers is higher today than at any point since Reconstruction after the civil war. The researchers came to this conclusion after analysing more than 135 years of speeches in the *Congressional Record*, including 529,980 unique phrases spoken 297m times. In 1990, the probability of correctly guessing a lawmaker's party from a one-minute speech was 55%, only slightly better than flipping a coin. In the mid-1990s, however, Democratic and Republican language began to diverge, as politicians on the left adopted phrases like "undocumented workers" and "tax breaks for the wealthy" while those on the right spoke of "illegal aliens" and "tax reform". By 2008, the probability of correctly identifying a Democrat or Republican had jumped to 83%.

Shouting louder

Average partisanship of speech, US Congress

Probability of identifying a speaker's party based on a single phrase, %



Source: "Measuring Polarisation in High-Dimensional Data: Method and Application to Congressional Speech" by M. Gentzkow, J. Shapiro and M. Taddy, 2016

What caused this linguistic split? Possibly, say the authors, the Republican takeover of Congress in 1994 led by Newt Gingrich (whose pollster and spin-doctor, Frank Luntz, coined the phrases "death tax" and "climate change"). They also cite the use of polls and focus groups to craft messages that appeal to specific groups of voters; the rise of partisan cable-news stations; and the evolution of the 24-hour news cycle. Language gets most partisan over taxes, immigration and crime.

In the 2016 election cycle, the speech divide between America's parties seems to have widened. Donald Trump, who became a TV star with the phrase "You're fired!", has developed a swarm of catch-phrases to rally his supporters and tear down his opponents. And the habit is infectious. At the convention in Cleveland, "Lock her up!" and "Build that wall!" were popular all through the arena, and the phrase "radical Islam" was uttered from the lectern 41 times.

Voting restrictions

Back in the booth

NEW YORK

A wave of rulings may help the Democrats in November

AWAY from the razzmatazz of the party conventions, federal judges have been making decisions that could have a greater impact on the election. Seven rulings have softened or nullified Republican efforts in several states to tighten voting rules—allegedly to deter fraud, though they also depress turnout among minorities and the poor, who tend to vote Democratic.

In Michigan, where Hillary Clinton has a small lead over Donald Trump, a federal judge ruled on July 21st against a Republican-sponsored law meddling with the layout of the election ballot. For 125 years, Michigan voters have had the option of filling in a single bubble to select every candidate from a given party. Banning this practice, the court ruled, has a disproportionate effect on black voters, who tend to use the straight-party option to vote for the entire Democratic slate. Since it takes much longer to fill in a dozen bubbles, the law will increase "voter wait times…greatly in African-American communities", potentially deterring them from trying.

As for North Carolina, a state that has voted Republican all but twice since 1968, the 4th Circuit Court of Appeals issued a decision on July 29th that may give an edge to the Democratic nominee. Many provisions of the state's voting law of 2013, the court ruled, unconstitutionally "target African-Americans with almost surgical precision" to keep them away from the polls.

For decades, changes to voting practices in a large swathe of North Carolina—and in other states with a particularly chequered history of racial discrimination—could not be implemented without the approval of the Department of Justice, as required by the Voting Rights Act. But the Supreme Court found part of this law unconstitutional in *Shelby County v Holder*, a ruling three years ago in which Chief Justice John Roberts declared America's racism largely past. As soon as *Shelby County* came down, Republicans in North Carolina rushed to pass a new voting law, with one party leader later saying: "If it hurts a bunch of lazy blacks that want the government to give them everything, so be it."

The 4th Circuit court found that lawmakers had requested and surveyed black voting data before crafting rules to limit their franchise. They knew that eliminating same-day voter registration and pre-registration for high-school students, as the new bill did, would have an outsize impact on blacks. They knew that shortening early voting by seven days would cut out one Sunday on which black churches bused "souls to the polls". They understood that banning same-day registration and out-of-precinct voting would disproportionately hamper black voters because they move more often than whites. But they passed the law all the same, in three days, in an apparent "attempt to avoid in-depth scrutiny". No legislative body in America, the court concluded, "has ever done so much, so fast, to restrict access to the franchise".

Texas and Wisconsin may have come close. In the Lone Star State, voters must show one of seven forms of photo-ID before entering the voting booth. A gun licence works, but neither a driving licence from another state nor a university ID will do. The more than 600,000 registered voters lacking proper documents may still vote, but their ballots will be destroyed unless they show up at a government office within six days with one of the prescribed forms of identification. The story in Wisconsin is similar. Scott Walker, Wisconsin's Republican governor, called his state's law a "common-sense reform" that would protect "the integrity of elections". Senator Troy Fraser, the author of the Texas law, argued that without it "we can never have confidence in our system of voting".

These claims have now been found wanting. In a 9-6 ruling on July 20th, the 5th Circuit Court of Appeals found that Texas's photo-ID requirement had a discriminatory effect on racial minorities. Hispanics are about twice as likely as whites to be without acceptable ID on election day; blacks, three times as likely. After the ruling Texas relented, announcing that most documents bearing a voter's name and address would be sufficient.

On July 29th a federal district court also loosened Wisconsin's absentee-voting restrictions, shortened a 28-day residency requirement and added expired (but valid) student IDs to the list of acceptable forms of photo-ID. Another judge has ruled that those who are unable to obtain photo-ID in Wisconsin may instead vote by signing an affidavit. A similar ruling on August 1st found that North Dakota had suppressed the franchise of Native Americans by requiring photo-ID while eliminating other options, such as swearing an oath. The state will revert to its previous, less restrictive, policy for the November election.

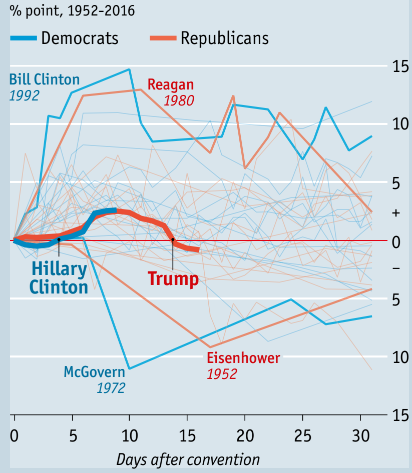
How many pieces of ID?

Some of these rulings will go to appeal, but with the Supreme Court down to eight justices, four of whom back expanded voting rights, circuit-court rulings striking down those rights are unlikely to stick. It takes five votes to reverse an appeals-court decision; and so if the election comes down to a few thousand votes in a handful of states, the absence of Antonin Scalia may be the key to stopping Mr Trump. ■

Convention bounces

After their conventions, most candidates briefly bounce. But transience does not mean insignificance. The two years that Democrats slid noticeably in the polls after their convention, 1968 and 1972, augured humiliating defeats.
On *The Economist*'s own analysis of presidential polling from 1952, Democrats usually nab a 3.2% gain in vote share within a week of the convention, while Republicans settle for a 2.3% upswing. The biggest bounce came in 1992 for Bill Clinton, whose boost of 13% was helped by Ross Perot's withdrawal from the race. One week after Philadelphia, on a poll of polls, Hillary Clinton saw a steady 2.3% upswing. Donald Trump earned a slightly worse 2.1%. Ms Clinton's advantage may yet surge; Mr Trump's has already gone.

Post-convention bounces in two-party vote share
% point, 1952-2016



Sources: RealClearPolitics; Robert Erikson and Christopher Wlezien; *The Economist*

Wilderness living

The last big frontier

BONNERS FERRY, COEUR D'ALENE AND SANDPOINT, IDAHO

A movement of staunch conservatives and doomsday-watchers to the inland north-west is quietly gaining steam

ASKED by an out-of-stater where the nearest shooting range is, Patrick Leavitt, an affable gunsmith at Riverman Gun Works in Coeur d'Alene, says: "This is Idaho—you can shoot pretty much anywhere away from buildings." That is one reason why the sparsely populated state is attracting a growing number of "political refugees" keen to slip free from bureaucrats in America's liberal states, says James Wesley, Rawles (yes, with a comma), an author of bestselling survivalist novels. In a widely read manifesto posted in 2011 on his survivalblog.com, Mr Rawles, a former army intelligence officer, urged libertarian-leaning Christians and Jews to move to Idaho, Montana, Wyoming and a strip of eastern Oregon and Washington states, a haven he called the "American Redoubt".

Thousands of families have answered the call, moving to what Mr Rawles calls America's last big frontier and most easily defendable terrain. Were hordes of thirsty, hungry, panicked Americans to stream out of cities after, say, the collapse of the national grid, few looters would reach the mostly mountainous, forested and, in winter, bitterly cold Redoubt. Big cities are too far away. But the movement is driven by more than doomsday "redoubters", eager to homestead on land with lots of water, fish, and big game nearby. The idea is also to bring in enough strongly conservative voters to keep out the regulatory creep smothering liberty in places like California, a state many redoubters disdainfully refer to as "the C-word".

Estimates of the numbers moving into the Redoubt are sketchy, partly because many seek a low profile. Mr Rawles himself will not reveal which state he chose, not wanting to be overrun when "everything hits the fan". But Chris Walsh of Revolutionary Realty says growing demand has turned into such a "massive upwelling" that he now sells about 140 properties a year in the north-western part of the Redoubt, its heart. To manage, Mr Walsh, a pilot, keeps several vehicles at landing strips to which he flies clients from his base near Coeur d'Alene.

Many seek properties served not with municipal water but with a well or stream, ideally both, just in case. More than nine out of every ten Revolutionary Realty clients either buy a home off the grid or plan to sever the connection and instead use firewood, propane and solar panels, often storing the photovoltaic power in big forklift batteries bought second-hand. They also plan to educate their children at home. The remoter land preferred by lots of "off-the-gridders" is often cheap. Revolutionary Realty sells sizeable plots for as little as $30,000. After that, settlers can mostly build as they please.

Lance Etche, a Floridian, recently moved his family into the Redoubt after the writings of Mr Rawles stirred in him "the old mountain-man independence spirit—take care of yourself and don't complain." He chose a plot near Canada outside Bonners Ferry, Idaho, cleared an area with a view, put down gravel, "and they dropped the thing [a so-called "skid house", transported by lorry] right on top of it", he says—no permit required.

Some newcomers are Democrats keen to get back to nature, grow organic food or, in Oregon and Washington, benefit from permissive marijuana laws. Not all conservatives dislike this as much as Bonny Dolly, a Bonners Ferry woman in her 60s who says: "We don't want liberals, that's for sure," and carries a .45-calibre handgun "because they don't make a .46". But lefties who move in and hope to finance tighter regulations with higher taxes often get the cold shoulder. Mr Walsh weeds out lefties from the start, politely declining to show them property, noting that they wouldn't fit in anyway. This discrimination is legal, he says, because political factions, unlike race or sexual orientation, are not legally protected classes.

Feds, liberals and Californians Keep Out

A red dawn

Todd Savage, who runs Survival Retreat Consulting in Sandpoint, Idaho, works with the more usual sort of client: political migrants who rail against "morally corrupt" nanny government elsewhere. He does a brisk business helping them set up their food-producing fortress-homesteads. Staff train clients in defensive landscaping, how to repel an assault on their property with firearms, and the erection of structures "hardened" to withstand forced entry and chemical, biological, radiological or explosive attack.

Very few redoubters, however, wish to secede from the United States. The Confederacy's attempt fared badly, notes Mr Rawles. He did, however, exclude the politically conservative but mostly flat Dakotas from the Redoubt because mechanised units could manoeuvre easily there. The same went for swathes of Utah, a state also left out because it has little water.

Purists have criticised him for including eastern Oregon and Washington in the Redoubt, since their larger liberal populations near the west coast dominate state politics. But he believes that the designation will quicken efforts in the eastern reaches to form new, freedom-minded states within a generation. As Mr Walsh puts it, easterners' taxes get them "nothing back except for a bunch more rules" from socialist bureaucrats.

As for doomsday itself, redoubters differ. Mr Rawles considers the most likely cause to be a geomagnetic solar storm like the Carrington Event in 1859, when a coronal mass ejection from the sun generated sparks in telegraph lines, setting some buildings on fire. Had the nearly 3,000 transformers that underpin America's grid existed then, a quarter of them would have burned up, according to Storm Analysis Consultants in Duluth, Minnesota. Some ▸▸

redoubters have signed up to receive a National Oceanic and Atmospheric Administration alert of any approaching solar storm like the big one that blew across Earth's path on July 23rd 2012, missing the planet by days.

Alternatively, a nuclear explosion 450km above the central United States would produce enough high-energy free electrons in the atmosphere below to fry the grid and unshielded electronics in all states except Alaska and Hawaii. Conceivably, and unpredictably, North Korea or Iran might dare to launch such a missile.

A more likely catastrophe, Mr Rawles believes, would be a pandemic virulent enough to cause the breakdown of the national sewerage system as well as the grid. Mr Savage, for his part, worries most about a "slow slide into socialism" akin to "death by a thousand cuts, right, you just keep whittling away at liberty" by, for example, restricting gun sales. Some of his firm's clients fear that bankers may deliberately collapse the financial system in order to introduce a single global currency.

The dominant view is simply that institutions and infrastructure are more fragile than most believe, says Dave Westbrook, an American Redoubt consultant homesteading north-west of Sandpoint. Videos sold by his firm, Country Lifestyle Solutions, show redoubters how to assess the viability of off-grid properties, plant orchards and tend crops. But paranoia is out there, says Ben Ortize, the pastor of Grace Sandpoint Church. Terrorism, and the widespread belief that President Barack Obama's progressive agenda is naive, have fuelled strong support for Donald Trump in the Redoubt, which has a disproportionately large population of former policemen, firemen and soldiers. To calm them down, he tells his flock that the Bible advises them to trust in the Lord, rather than in shotguns and Tasers.

The area's bad rap is sometimes undeserved. "Hate in America: A Town on Fire", a recent Discovery Channel broadcast about Kalispell, Montana, attempted to conflate gun-lovers who recoil at big government with the few white supremacists shown at the start. In fact, there is much less racism in the inland north-west than in the South, says Alex Barron, founder of the libertarian Charles Carroll Society blog and self-proclaimed "Bard of the American Redoubt". Some are quick to label ideological opponents as white supremacists, he says. Liberal bloggers have called him one; but Mr Barron is black.

The Redoubt does give refuge to more than its fair share of outlaws, whether ageing draft-dodgers or crooks on the lam. So says Mike "Animal" Zook, a bounty hunter in Spirit Lake, Idaho with a gunslinger image enhanced by his sidearm's faux-scrimshaw handle. Pointing east from the Riverman Gun Works car park, he notes that a man can trek that way for nearly 150 miles and see nothing but majestic forest and game. Turn south, and the wilderness extends more than double that.

Wanted men can and do disappear here, Mr Zook says. Some pan for gold, hunt, trap game and quietly slip into a town once a year or so for supplies. Nationwide, perhaps only one in 1,000 indicted felons skip bail and run for it, he says, but the percentage is higher in the Redoubt and especially in Lincoln County, in nearby north-western Montana. That provides enough work, he says, for more than 2,000 fugitive-recovery agents—as bounty hunters are also known—who, like himself, operate at least part-time, typically as private contractors for bondsmen in the Redoubt. All in all, the frontier spirit of America's Old West is still alive and well. ■

The NYPD

Goodbye to Bratton

NEW YORK

America's top policeman leaves at a sobering moment

AFTER two stints heading the New York Police Department (NYPD), as well as running the departments in Los Angeles and Boston, Bill Bratton is leaving public service for a job in the private sector. His legacy is a mixed one. His adopted city is decidedly safer; but the force is not much better liked, particularly by minorities. "I don't know why he ever came back," says one former cop, who thinks that second tour of duty in New York tarnished the glow of the first.

Mr Bratton transformed the NYPD in the mid-1990s, targeting low-level offences to deter larger ones, and introducing a data-driven real-time "CompStat" crime-fighting system which has been copied across the country. On his first watch, homicides fell by 50% and serious crimes, like rape, by more than a third. He had similar success in Los Angeles, where he cleaned up a scandal-plagued department and repaired relations between the police and the black community, all while lowering crime. His former deputies led police departments in Chicago and Miami. David Cameron wanted him to head London's Metropolitan Police, until Theresa May disagreed.

What would Peel do?

When he became head of the NYPD for a second time in 2014, therefore, much good groundwork had been done—by himself. Just seven months into his new job, however, he faced protests over the death of Eric Garner, an unarmed black man who had died at the hands of police. Some months later, after no indictments in the Garner case, two officers were shot dead. At that, the rank-and-file revolted against Bill de Blasio, New York's mayor, who was seen as lax on security generally, and Mr Bratton found himself caught between the police and City Hall. It was not a comfortable position.

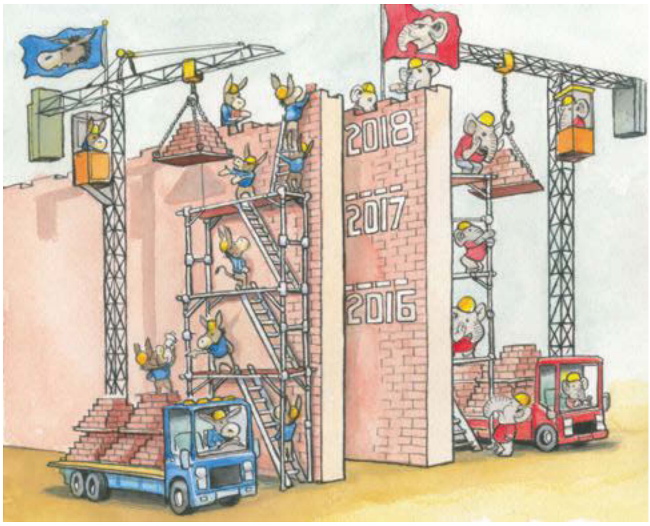
As chief, he was not afraid to make changes in the department. He moved officers away from their desks and on to the beat in local neighbourhoods. He overhauled training for recruits to reduce the use of force and was gradually bringing in the use of body cameras to record confrontations. And serious crime went on falling.

Yet by other measures, he failed. Mr Bratton had intended especially to rebuild "mutual respect and trust" between police and New Yorkers, especially in communities that had been subject to heavy stop-and-frisk techniques. He kept in mind the remark of his hero Robert Peel, who founded Britain's first force in 1829: "Police…should maintain a relationship with the public that gives reality to the historic tradition that the police are the public and the public are the police."

Instead he leaves behind a demoralised force, with many in blue glad to see the back of him. He is quitting at a low point in policing, when forces across the country feel besieged and protests against them are a daily occurrence. To many, it looks as though Mr Bratton could not wait to leave; and to hand over to his successor, Jimmy O'Neill, currently the highest-ranking uniformed officer, the burden of a job that has suddenly got much harder for everyone.

Lexington | Gridlock Central

The best-case scenario for American politics next year is not very cheering



AMERICANS dismayed by the 2016 elections should brace themselves: next year political divisions will probably deepen. With a hot-headed, thin-skinned President Donald Trump in charge of the nuclear codes, the worst-case scenario would resemble "Dr Strangelove". But weighing the lessons of the Republican and Democratic national conventions in Cleveland and Philadelphia, even the best-case scenario—in which Hillary Clinton becomes president, acknowledges that she will need bipartisan support and woos congressional leaders over White House dinners and late-night whiskies—will echo "All Quiet on the Western Front".

The causes of political trench-warfare range from giant, multi-year trends to petty calculations by individual members of Congress. Start with large forces. At the 2016 conventions the parties did not so much disagree on how to solve America's problems, as speak to two different countries. The Republican convention was a four-day lament for stolen national greatness. Delegates heard about an America under domestic assault from terrorists and immigrants, and left at the mercy of foreign foes by corrupt elites. Democrats celebrated modern America's diversity and tolerance. Like members of a self-help group, Democratic delegates were urged to praise their country for acknowledging lingering social, racial and economic ills, as a first step to seeking a cure.

Should Mr Trump pull off a win in November, a perilous number of voters and officials will see him not just as the wrong man for the job, but as wholly unfit for public service. In Philadelphia a veteran of the Obama administration admitted to fearing the arrival of Middle Eastern-style politics, in which opposing parties view each other as illegitimate threats to national survival. Rather than wait four years for another election, this former member of Team Obama suspects many Americans would feel a patriotic duty to thwart what in their eyes would be the world-threatening policies of President Trump. Should Mrs Clinton win, a dangerous number of voters seem certain to think she should be in prison, agreeing with delegates in Cleveland chanting "Lock her up!" or (as Lexington heard more than once: "Hang the bitch!").

Then come narrow electoral calculations. The sort of political realignment needed to elect Mr Trump president should leave Republicans with a hefty majority in the House of Representatives. But the map of Senate seats in play suggests that the chamber is likely to remain finely balanced whoever wins the presidency, with neither party enjoying a 60-seat super-majority. A well-placed Republican predicts that, whichever party controls the Senate after November, its leaders will change the rules so that a simple majority will be enough to end filibusters and force a vote on confirming Supreme Court justices—an assault on the powers of the minority party which will poison relations. Republican bigwigs insist that Mr Trump can be kept in check by Congress, and will allow them to pursue conservative goals, such as corporate tax reform or slashing back environmental and financial regulations. Democrats will see little incentive to help.

The forces needed to elect Mrs Clinton president would probably leave the Senate narrowly controlled by Democrats but the House still in Republican hands, albeit with a reduced majority. Alas for Mrs Clinton, the most vulnerable members in both parties are moderates from swing districts and states. That will leave Republican hardliners with so much power in the House that, as Nathan Gonzales of the *Rothenberg & Gonzales Political Report* and CQ *Roll Call* suggests, it is far from guaranteed that Paul Ryan will be re-elected Speaker next year. In the Senate, the defeat of moderate Republicans will make it harder to pass such ambitious measures as immigration reform.

In the corridors of the Philadelphia convention, some happy Democratic members of Congress imagined a Republican Party reeling after a thumping Trump defeat, notably at the hands of non-white and Hispanic voters, making them desperate to pass a law resolving the status of some 11m migrants in the country without legal papers. A Hispanic congressman imagines contrite Republicans rushing to prove to the country that they are not racists, "to get away from the Trumpster". But those gleeful Democrats are indulging in dodgy political analysis and worse psychology. An immigration bill could conceivably pass the Senate, but House Republicans face different incentives. Their party's fate in presidential contests matters less to them than a primary challenger in their own district, charging them with backing "amnesty for illegals". As a matter of human nature, it is also implausible that chastened Republicans will bow their heads before Democrats charging them with racism, and vow to mend their ways. Instead, should Mr Trump lose, here is a prediction: lots of Republicans will accuse the media, in their cynical pursuit of TV ratings, of bamboozling their primary voters into choosing Mr Trump, a non-conservative whose defeat need teach the party nothing.

Obstructionism as a sacred duty

What might Hillary Clinton get done? In her convention speech she talked of a big, bipartisan infrastructure bill, creating millions of jobs and fixing battered roads and bridges. A Democrat suggests that his party should let Republicans call it the "Ryan Infrastructure Plan", if that helps. But that presupposes Republicans would want to give Mrs Clinton a win of any sort, even a shared one. There are members on right and left who support changes to criminal-justice laws that lock non-violent offenders up for decades; Mrs Clinton has, in her day, sounded open to examining the sustainability of safety-net schemes such as Social Security. But the window for bipartisanship will be narrow. The Senate map in 2018 overwhelmingly favours the Republicans, offering reasons to dig in for two years. Defeating Mr Trump—a would-be American Caesar, come to save the republic—is a worthy fight. It may be hard for Mrs Clinton to accomplish much else. ■

Also in this section

Venezuela

Army rations

CARACAS

Nicolás Maduro turns to the armed forces for salvation

"THERE is only one chief! One commander! One authority!" These thunderous assertions came from Nicolás Maduro, Venezuela's president, during a recent television appearance. Oddly, he was not talking about himself. He was extolling the defence minister, Vladimir Padrino López (pictured with Mr Maduro), who nodded appreciatively. The general, long a behind-the-scenes operator, has become much more visible and powerful.

In July Mr Maduro put him in charge of the government's latest effort to alleviate food shortages, which have destroyed the populist regime's prestige and threaten its survival. Things are now so bad that McDonald's has stopped selling Big Macs because it cannot get the buns (a privation for the few Venezuelans who can afford them). The "Great Mission of Sovereign Supply" takes the bulk of food distribution away from an array of state and privately owned wholesalers and entrusts it to the army. General Padrino López, whose first family name means "godfather", would be answerable to no one, Mr Maduro proclaimed. "All ministries and government institutions [involved in distributing food] are subordinated" to him. Mr Maduro told the army to take over the ports, too.

One big question is whether General Padrino López is now also in charge of Mr Maduro, or soon will be. The president has "transferred power", believes Cliver Alcalá, a retired major-general who counts himself an admirer of General Padrino López. Writing on Latin America Goes Global, a website, analysts Javier Corrales and Franz von Bergen contend that Venezuela may have undergone "a new type of coup" in which "the president is not displaced, but effectively handcuffed."

The regime was already a quasi-military one. Its founder, Hugo Chávez, was an army colonel who once attempted to stage a coup (he failed, but later won power in an election). His government was a civil-military union, in which the army acted as a spearhead of his "Bolivarian revolution". The hapless Mr Maduro, chosen by Chávez to be his heir before he died in 2013, is a civilian and can look awkward at military gatherings. But he has kept the government's martial tone. A third of his ministers are soldiers. Following a failed coup attempt in 2002, Chávez asserted full control over the army; after he died it resumed its historical role as an arbiter of power.

That became apparent after Venezuela's parliamentary election on December 6th, when the opposition won control of the national assembly for the first time in 17 years. After the vote General Padrino López went on television to congratulate citizens for taking part in a peaceful democratic process. Some analysts interpreted this as a warning to Mr Maduro not to reject the opposition's victory. More recently, General Padrino López has spoken of a "failure of governance". There is no reason to doubt his loyalty to Chávez's revolution; to defend it, he might betray the president.

The army's future role may now be intertwined with the opposition's attempt to unseat Mr Maduro by holding a recall referendum. On August 1st the election commission confirmed that the opposition had collected enough signatures to move to the second stage of the recall process: the collection of signatures representing at least a fifth of the electorate—about 4m. If Mr Maduro's foes achieve that, by law a referendum on whether to oust him must be held. Since less than a quarter of Venezuelans approve of his job performance, he would probably lose.

Recall to duty?

Timing is everything. If Mr Maduro is ejected before January 10th there will be a new presidential election; if after, the vice-president, currently Aristóbulo Istúriz, will take over. In that case, General Padrino López might increase his influence over government still further.

By then, though, the army's already diminished prestige may have suffered from its failure to alleviate food shortages. The government blames them on black marketeers, whom the army is to evict from the distribution network. This is delusional.

The shortages are caused by price controls, which make it illegal to sell essential goods for more than a fraction of what they cost to make. Domestic production of everything from bread to toilet paper has predictably plunged. Thanks to low oil prices and its own incompetence, the government does not have enough money to subsidise imports to make up the shortfall. The black market is a consequence, not the cause, of shortages. Reaffirming his rejection of economic reality, Mr Maduro appointed a new commerce minister who last year praised the Soviet Union as a ▸▸

"highly self-sustaining country".

Soldiers are unlikely to help much. Military checkpoints on the border with Colombia already skim off cash from smuggling networks. On August 1st a court in New York charged Néstor Reverol, an ex-commander of the national guard and Venezuela's former drug tsar, with cocaine trafficking. The day after the indictment Mr Maduro named him interior minister.

There is little evidence that the Grand Supply Mission, inaugurated on July 11th, is making much difference. Venezuelans still spend hours queuing at supermarkets with empty shelves. Millions are desperate for bread. Perhaps the generals will manage to put the buns back on Big Macs. More likely, they will demonstrate that supply and demand, unlike soldiers on parade, do not follow orders. ■

Cannabis in Colombia

Weeds of peace

BOGOTÁ

A drug-growing country experiments with medical marijuana

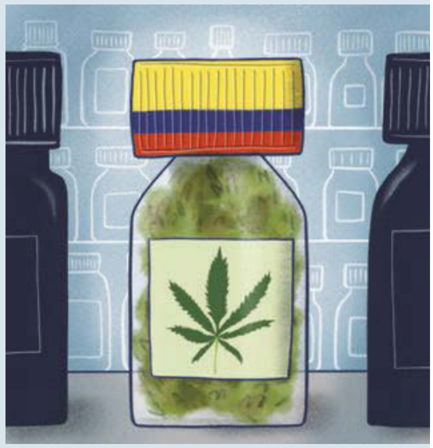
COLOMBIANS called it the *bonanza marimbera* (marijuana bonanza). In the 1970s and 1980s smokers in the United States were especially partial to Santa Marta Gold, a variety of cannabis grown on the slopes of Colombia's Sierra Nevada. It has "a sweet, intense aroma" and "powerful psychedelic effects", says WeedWiki, a website. But government fumigators, plus competition from American-grown weed, ended the Santa Marta Goldrush. Farmers switched to coca, the raw material of cocaine.

Now Colombia hopes to cash in on a new cannabis-based bonanza, set off by legalisation in parts of the United States and elsewhere. The government recently licensed three companies to process extracts, resins and oils for treating such ailments as cancer, epilepsy and multiple sclerosis. Its ambition is to build medical marijuana into a business as big as cut flowers, which bring in more than $1 billion in export revenue. Colombia could be "the winner of this emerging global market", said Alejandro Gaviria, the health minister.

The three companies with permits to process cannabis—one Canadian and two Colombian—must wait until the government licenses the growing of the weed itself, probably next year. Also awaiting the go-ahead are Colombian growers, whose activities are unauthorised but tolerated.

They hope to move up the value chain. A co-operative of 53 farmers in Cuaca province, where half of Colombia's marijuana is grown, is seeking licences to cultivate it, produce cannabis-based remedies and research the weed's medicinal properties. This shows that the cannabis industry "can change a problem into an opportunity", said Mr Gaviria.

It could also help solve the coca problem. The area under production jumped by 39% last year. One reason is that farmers are profiting all they can before a peace accord is signed by FARC guerrillas and the government, after 52 years of war. That would oblige the FARC to fight the drug trade, from which they have long profited. Cannabis would be less lucrative, but it might provide pain relief.



The Petrobras scandal

Defendant-in-chief

SÃO PAULO

The remarkable downfall of the most important Brazilian

"I DOUBT that anyone in this country is more law-abiding than me," says Brazil's former president, Luiz Inácio Lula da Silva. On July 29th a federal judge in the capital, Brasília, demurred in startling fashion. He accepted charges of obstruction of justice against Lula and six other people. Prosecutors say they tried to pay a former executive of Petrobras not to co-operate with the investigation into a vast bribery scandal centred on the state-controlled oil company. The judge thinks the evidence is strong enough to warrant a trial.

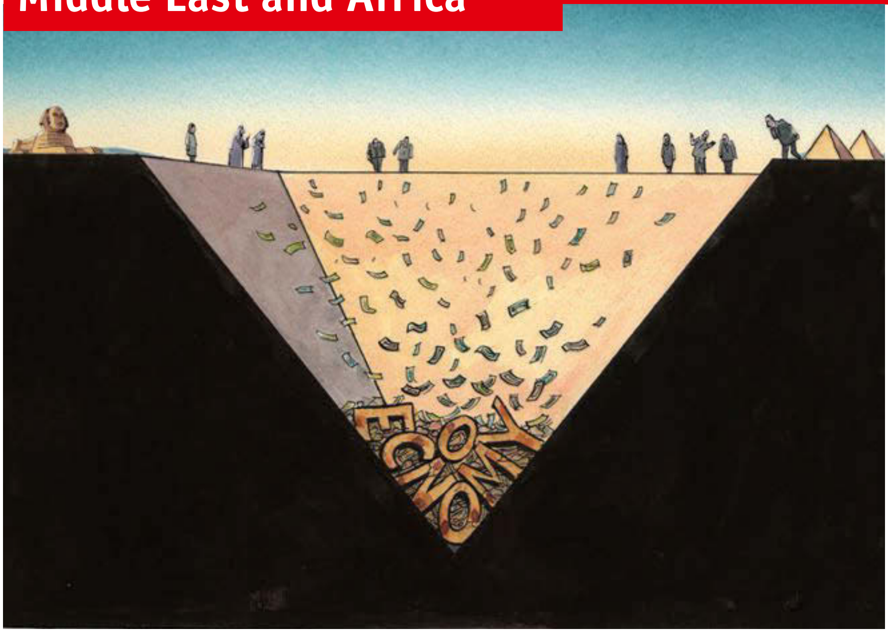
His decision hastens the downfall of this century's most important Brazilian. Lula's election in 2002 showed that a member of the working class could gain power democratically in a country marked by great inequality. As president from 2003 to 2010, he won adulation at home and renown abroad for reducing poverty and presiding over brisk economic growth. Lula's global stature helped bring this month's Olympic games to Rio de Janeiro.

But he has been caught up in a scandal that has implicated dozens of prominent politicians and businessmen. It has discredited the left-wing Workers' Party (PT), which he founded and led. The popular fury aroused by the scandal provided the political passion that led to the impeachment of Lula's successor as president, his protégée Dilma Rousseff. The senate is to try her later this month on charges that she manipulated government accounts. She has had to step aside until the trial is completed, leaving the government in the hands of her vice-president, Michel Temer.

Brazilians have become so accustomed to revelations of wrongdoing that they treated news of Lula's forthcoming trial almost as a non-event. *Valor Econômico*, the biggest business daily, did not mention it in its next edition. But it will further weaken the PT ahead of important local elections to be held in October. If Lula is convicted, and his conviction is upheld in a higher court by 2018, he will not be able to run in the next presidential election. Despite the scandal and his age (70), he remains the PT's most effective vote-getter by far.

More charges may follow the indictment, which is based on testimony given by a disgruntled former PT senator, Delcídio do Amaral, in return for leniency. Prosecutors allege that Lula is "one of the principal beneficiaries of the crimes" at Petrobras. Lula, his family and an NGO he heads received "undue advantages" worth 30m reais ($9m) from construction firms, investigators say. Those firms also made payments to the PT and its allies in return for padded contracts with Petrobras. Lula's alleged personal gains seem to have taken the form of refurbishments to property; investigators have not found bank accounts stuffed with cash. In March police briefly detained him for questioning.

He and the other alleged conspirators (Mr do Amaral aside) deny wrongdoing. Lula claims that he, along with Ms Rousseff and the PT, is a victim of a political witch hunt. On July 27th he launched a website to defend "democracy, justice, development and social inclusion"—and his image. The next day, anticipating a trial, he petitioned the UN Human Rights Committee to intervene, accusing Sérgio Moro, the crusading federal judge in charge of the main Petrobras investigation, of "a lack of impartiality" and "abuse of power". Awkwardly for Lula, a different judge called for a trial first. Whatever the courts conclude, Lula is unlikely to reclaim his position at the pinnacle of Brazilian politics. ■



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Egypt's economy

State of denial

CAIRO

Egypt has squandered billions of dollars in aid. With more on the way, is it at last ready to reform?

AFTER Abdel-Fattah al-Sisi, Egypt's president, welcomed hundreds of foreign dignitaries to the seaside resort of Sharm el-Sheikh last year, he made them a simple pitch. The upheaval that followed the Arab spring in Egypt was over, said Mr Sisi, who had ousted his Islamist predecessor, and the country was ready for their investment. He promised stability and economic reforms. His guests, in turn, rewarded Egypt with cash, loans and new business. It was "a moment of opportunity", said Christine Lagarde, the head of the IMF.

That opportunity has been squandered. A team from the IMF is now back in Egypt negotiating a new package of loans thought to be worth $12 billion over three years. Mr Sisi desperately needs the cash. His government faces large budget and current-account deficits (almost 12% and 7% of GDP, respectively), as Egypt's foreign reserves run perilously low. An overvalued currency, double-digit inflation and a jobless rate of 12% complete the dismal picture. Potential investors are staying away.

Egypt's government inspires little confidence. The new IMF package would be contingent on reforms that politicians have talked about for years, but failed to implement. Take a value-added tax, which would raise much-needed revenue. A proposal is now before parliament, but it has caused uproar owing to concerns over inflation, which has just hit 14%. Similar misgivings caused Mr Sisi to back away from a promise to end fuel subsidies, after trimming them in 2014. Parliament is holding up reform of Egypt's bloated civil service, despite Mr Sisi's pledge that nobody would be fired.

In the face of such inertia, the World Bank has withheld a separate package of support. The African Development Bank may do the same. Even the Gulf states, which strongly support Mr Sisi and have given Egypt billions of dollars in aid, seem to be losing faith. The United Arab Emirates is believed to have pulled its advisers out of the country in dismay. The latest instalments of aid have been slow to arrive.

Hoarding is haram

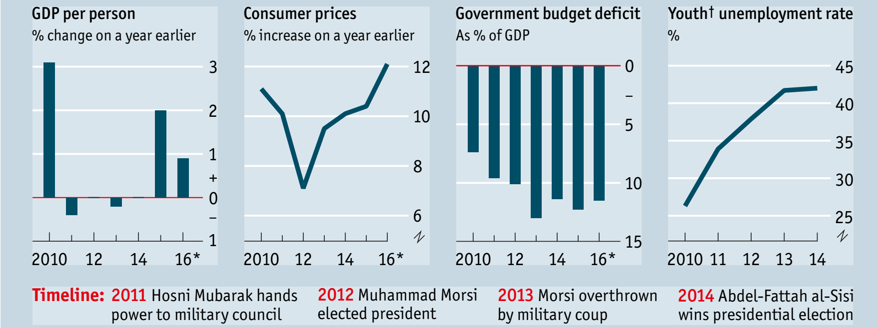
The government's fecklessness extends to Egypt's most pressing problem: its overvalued currency. While the official exchange rate is 8.83 Egyptian pounds to the dollar, the black market rate is over a third higher. The demand for dollars has outpaced supply owing to steep drops in tourism and foreign investment, key sources of hard currency. So the government has tried to keep dollars in Egypt by, for example, limiting bank withdrawals. Al-Azhar, the country's Muslim authority, has declared it a sin to hoard foreign currency. But these efforts have merely scared off potential investors and hobbled Egyptian importers.

There is concern that a weaker pound would lead to even higher prices, as Egypt imports many staples, such as wheat. But the government ought to worry more about its broken subsidy schemes. Egypt is the world's largest market for wheat, which is bought by the state and used to make heavily subsidised bread. The state buys some wheat at home at an outrageous mark up to encourage local farmers. This scheme drains public coffers and is horribly corrupt. Farmers mix foreign wheat with their own and sell it at jacked-up prices. Bureaucrats exaggerate the amount of wheat in government silos and pocket some of the subsidies. A smart-card system that is meant to track bread purchases has been hacked, allowing some bakers to load up on subsidised flour.

Mr Sisi warns that "harsh economic measures" are coming. Tarek Amer, the governor of the central bank, admits that defending the pound was a "grave error". The government seems likely to pass a number of reforms and even devalue the currency. But economic policy is seldom implemented properly. The government, for example, has backed off a plan to start paying Egyptian farmers the market rate (plus a small subsidy) for their wheat. Rather, Mr Sisi has trumpeted various mega-projects, such as expanding the Suez Canal, to pump up national pride—and his ego. But, they have done little to boost the economy. Revenue from the canal has actually fallen since the expansion was completed last August.

A related project will create a special economic zone, supposedly with fewer regulations and lower taxes than the rest of Egypt, along the canal. The head of the zone, Ahmed Darwish, has insisted that "we are completely independent of the government decision-making process." Still, few companies have signed up to join the zone—perhaps because Mr Darwish's claim has already been undermined by the government's decision to raise the corporate-income-tax rate, even in special ▸▸

The plagues of Egypt



Sources: Economist Intelligence Unit; World Bank *Forecast †15- to 24-year-olds

economic zones, from 10% to 22.5%. Compare that with Dubai's Jebel Ali port, where companies will pay no tax at all for 50 years.

At least policymakers are thinking of ways around Egypt's overbearing regulatory system. Mr Sisi uses the army for many of his projects, increasing its already large role in the economy. Ordinary firms, though, are strangled by red tape. Nothing moves without a bribe. Egypt comes a woeful 131st in the World Bank's ease-of-doing-business ranking. An investor must get permits from 78 different official bodies to start a new project, according to the government. Its promise of a "one-stop shop" to replace them all, made 18 months ago, has so far come to naught.

The bureaucracy is so predatory that many stay small to hide from it. An estimated 18m businesses are not monitored (or taxed) by the government. The informal economy is thought to be about two-thirds the size of the formal one.

But informal enterprises find it hard to borrow money, and therefore hard to grow. This year the government mandated that 20% of bank loans go to small- and medium-sized firms, but it is not clear how informal ones will be treated (or whether there are enough promising small enterprises to absorb that much cash anyway). Banks may struggle to finance this plan and still keep lending to the government.

Egypt is also failing to equip its young people with useful skills. More than 40% of them are unemployed. A university education is in effect free, but the quality is poor and universities make little effort to teach skills that local employers actually need. Egypt produces many doctors—but more of them end up in Saudi Arabia than in Egypt. Other graduates count on the public sector to provide work, but job openings are increasingly scarce.

Jobless graduates have held dozens of protests in recent years. Adel Abdel Ghafar of the Brookings Doha Center, a think-tank, notes the "direct correlation between youth unemployment and the socioeconomic and political stability of a state". As Egypt's youth population continues to grow, some call the country a powder keg.

But Egypt also has a history of muddling through. Hosni Mubarak, a previous strongman, also received help from the IMF and embraced its suggested reforms, leading to impressive growth in the 1990s and 2000s, even as the masses continued to struggle. Mr Sisi is hoping for more broad-based development. So far, however, there are few signs that he will do what it takes to achieve it. ■

The war in Syria

Kerry talks while Aleppo burns

A putative agreement between America and Russia offers little hope

THE black smoke rising over eastern Aleppo is a mark of the desperation of its 300,000 besieged inhabitants. By setting old tyres on fire, they hope to conceal targets from Syrian government and Russian aircraft that are pounding them relentlessly. Food, water and medical supplies are running out; the few remaining hospitals are routinely attacked. Meanwhile, the Assad regime has opened "humanitarian corridors". The aim is not to allow the passage of essential supplies, as the UN demands. Rather, it is to prepare the ground for a final assault on Syria's biggest city by encouraging an exodus of its people.

It is against this appalling backdrop that America's secretary of state, John Kerry, is trying to put together a deal with Russia that will supposedly boost the air campaign against Islamic State (IS) and the other big local terrorist outfit, Jabhat al-Nusra (JAN). Details of the proposed deal leaked out in mid-July, when Mr Kerry said he hoped to get an agreement tied down by early August. It involves the setting up in next-door Jordan of a "joint implementation group" (JIG) that will share intelligence and co-ordinate American and Russian air strikes against IS and against JAN in "designated areas".

It aims also to curb the regime's military air operations, particularly the bombing of civilians and attacks on the less extreme rebel groups that America supports. As a prelude to the establishment of the JIG, there would be a renewed commitment by all sides to revive the "cessation of hostilities" pact that was announced in February, but which has since frayed to irrelevance, and to resume the passage of UN-sponsored humanitarian aid to the most hard-pressed areas.

Mr Kerry's capacity for pulling rabbits from hats should not be underestimated. But it is hard to see how he can enter into such an agreement with Russia while the ferocious assault on the rebel-held areas of Aleppo continues. Given that Bashar al-Assad's regime believes that controlling Aleppo is key to its survival, it is equally hard to imagine either it or its Russian and Iranian allies pulling back now.

Michael O'Hanlon of the Brookings Institution, a think-tank, worries about sharing intelligence with the Russians. He sees it, like the stalled Geneva peace process, as a form of displacement activity in which the Obama administration "pretends to have a policy, but is really just buying time and running down the clock". Andrew Tabler of the Washington Institute, another think-tank, fears that in its present form the deal might do more harm than good. He points out that it does nothing to limit the regime's use of artillery, by far its most devastating weapon.

It is not clear where the Americans would and would not work with the Russians against JAN. As one of the largest rebel militias, JAN intermingles with less extreme groups. Two weeks after the details of the plan emerged, JAN announced that it was ending its affiliation with al-Qaeda and renaming itself Jabhat Fateh al-Sham, in order to "protect the Syrian revolution".

The rebranding does not alter the group's Salafi-jihadist ideology and indeed al-Qaeda's leader, Ayman al-Zawahiri, appears to have given it his blessing. However, it does remove a major obstacle to the unification of Syria's armed opposition (still excluding IS). As *The Economist* went to press, Jabhat Fateh al-Sham was fighting alongside other rebel groups in a bid to break the siege of Aleppo. America is unlikely to want to help the Russians do anything to hamper that.

Anthony Cordesman of the Centre for Strategic and International Studies in Washington DC praises Mr Kerry for effort. But he says the agreement is flawed because "we have no leverage and we are negotiating with someone who is not a friend." Mr Tabler says Russia knows what it wants—a national unity government led by Mr Assad—but America does not. "The White House," he says, "is retreating faster than the other side can advance." ■

The roasting of the Middle East

Infertile Crescent

BASRA

More than war, climate change is making the region hard to live in

"UNTIL the 1970s Basra's climate was like southern Europe's," recalls Shukri al-Hassan, an ecology professor in the Iraqi port city. Basra, he remembers, had so many canals that Iraqis dubbed it the Venice of the Middle East. Its Shatt al-Arab river watered copious marshlands, and in the 1970s irrigated some 10m palm trees, whose dates were considered the world's finest. But war, salty water seeping in from the sea because of dams, and oil exploration which has pushed farmers off their land, have taken their toll. Most of the wetlands and orchards are now desert. Iraq now averages a sand or dust-storm once every three days. Last month Basra's temperature reached 53.9°C (129°F), a record beaten, fractionally, only by Kuwait and California's Death Valley—and the latter figure is disputed.

Unlike other parts of the world where climate change has led to milder winters, in the Middle East it has intensified summer extremes, studies show. Daytime highs, notes an academic study published in the Netherlands in April, could rise by 7°C by the end of the century. Another study (by the UN) predicted that the number of sandstorms in Iraq would increase from 120 to 300 a year. The UN's Environmental Programme also estimates that the harsh climate claims 230,000 lives annually in west Asia (the Arabian Peninsula and the Fertile Crescent), making it a bigger killer than war. Things are so bad that even Jabhat al-Nusra, a terrorist group, is preaching the virtues of solar panels.

The region also has fewer coping mechanisms than before. Population increase has reduced the water supply, leaving two-thirds of the countries in the Arabian Peninsula and Fertile Crescent without what the UN considers enough. Sana'a, the capital of Yemen, is set to run out of water in 2019 or perhaps earlier. Some people have air-conditioners, but power cuts—of up to 16 hours a day in southern Iraq—make them nearly useless. Baghdadis blister their fingers on door-knobs.

And they are the lucky ones. The Middle East is home to 39% of the world's refugees, more than any other region. Hundreds of thousands live in tent cities. "If the wind blows from the north, it brings the gas from Qurna field," says a librarian in a village north of Basra. "If it blows from the south, it's heavy with gas from Majnoon."

Much of the problem is man-made. Over-irrigation has dried up lakes and turned seas into dustbowls. The Dead Sea is shrinking by a metre a year. Oil has made much of the Gulf fantastically wealthy. But like a modern Midas touch, its atmospheric by-product threatens to choke it. Rising water levels could sink between 5% and 11% of Bahrain by the end of the century, according to projections. War and urbanisation have combined to chase rural people from the land. Desertification and sandstorms lift radioactive war detritus into the air. War stops people from taking counter-measures, such as planting trees.

Richer states can create artificial environments to make life less sweaty. In Kuwait, which recorded highs above Basra's this week, malls turn the air-conditioning so low that wags joke they offer one of the coolest summers on Earth. Land reclamation may outpace land loss from rising sea-levels. And each summer millions of Gulf citizens migrate north. But for most Arabs, such things lie far out of reach. ■

It's too darn hot

South Africa

The Zuma effect

JOHANNESBURG

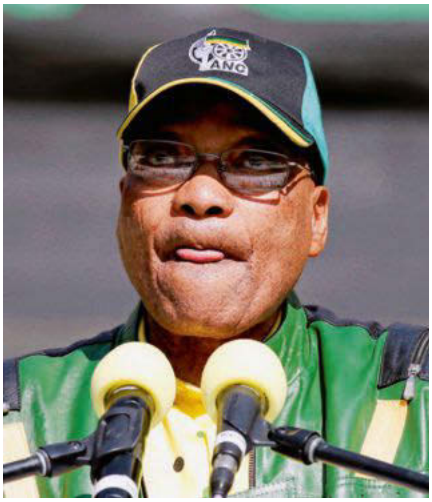
The big cities vote for change

BLUSTERY winter weather settled over South Africa on August 3rd as voters handed the ruling African National Congress a sharply diminished share of the vote in local-government elections, the most competitive polls since the end of apartheid. As *The Economist* went to press, incomplete results showed that the ANC had slid from 63% in the 2011 local polls (it won 62% in the 2014 national election) to around 52%. The main opposition Democratic Alliance (DA) appeared on track to boost its support to above 30%, up from 24% in 2011 and 22% in 2014. For Mmusi Maimane, 36, who only last year became the first black leader of what is still viewed as a white party, these results are a vote of confidence.

The populist Economic Freedom Fighters (EFF), under the young firebrand Julius Malema, looked likely to match the 6.5% of the vote they received in 2014, the first election the party contested. This will be a big disappointment for Mr Malema, who had hoped to triple the EFF's tally by appealing to disgruntled young ANC supporters with promises of nationalising mines and seizing white-owned land.

South African elections are impressively clean affairs by any standards. Nasty weather was the biggest problem of the day, according to the Independent Electoral Commission. Results from the country's big battleground cities were still being tabulated, but the DA looked certain to win the Nelson Mandela Bay municipality, which includes Port Elizabeth. Tight races in Johannesburg and Tshwane (the metro area that includes Pretoria, the capital) point to the DA's success in pushing back the ANC. Coalitions are likely to follow. The DA benefited from high turnout in the cities, where it campaigned hardest. This combined with slipping support for the ANC in townships and rural districts to boost the DA's share of the vote.

All of this is good news for South African democracy. Jacob Zuma, the unpopular president, has been dogged by corruption allegations and scandals for nearly his entire time in office. According to a recent Ipsos survey, 57% of South Africans believe the ANC has "lost its moral compass". As the ANC counts its losses, Mr Zuma is likely to face mounting pressure to step down ahead of his party's leadership conference next year. A particularly worrying trend is a rise in intra-ANC violence. This was especially the case in rural KwaZulu-Natal prov- ▸▸



Zuma bruised

ince, Mr Zuma's heartland, where factional disputes raged over lucrative positions on candidate lists, and at least a dozen ANC members were killed. In June violent protests broke out in Tshwane after the ANC announced its mayoral candidate.

Apart from a broad dislike of Mr Zuma's leadership, for many voters the government's shoddy provision of basic services was the decisive issue of this election. Protests over the lack of water and electricity have spiked in recent years. In a part of Limpopo province, where angry residents burned down two dozen schools in a recent dispute over municipal demarcation lines, many voters refused to cast a ballot, instead playing football in protest. The DA argues that where it governs, it governs well. It has demonstrated this in Cape Town. Now it may get the chance to take its claim to the heart of the country. ■

Gabon

Trying to get past oil

LIBREVILLE

One African country's struggle to diversify

GABON, in west-central Africa, is among Africa's least densely populated countries. Fly south from the capital, Libreville, in a helicopter and you will mostly see rainforest, stretching endlessly into the distance, interrupted only by rivers cutting through to the Atlantic Ocean. Yet suddenly, near a town called Mouila, the dense forest gives way to orderly rows of palms, separated by roads of red earth. A processing factory sits in the middle, its metal roof sticking out from the expanse of green.

This is Africa's newest palm-oil plantation. Built by Olam, a vast Singapore-based agricultural trading house, it should eventually cover 50,000 hectares (120,000 acres) and employ some 15,000 workers. It is the main evidence of President Ali Bongo Ondimba's plan to reduce Gabon's dependence on the other sort of oil—which in 2014 made up four-fifths of the country's export revenues. Mr Bongo (pictured), who faces an election at the end of this month, seems determined to make his country diversify. Yet it is harder than he lets on. Gabon shows how oil can twist the fate of a nation—and how difficult moving away from the black stuff is.

With just 1.8m people, Gabon is a minnow. But it is spacious—twice the size of England—and resource rich. Gross national income per head was around $9,000 in 2015, among the highest in Africa. Gabon has long punched above its weight in Francophone west Africa, largely thanks to Mr Bongo's father Omar, who served as president from 1967 until his death in 2009. The elder Bongo had a gift for politics as outsized as his personality (among other foibles, he liked to show off his pet tiger to guests). He became close friends with François Mitterrand, France's president in the 1980s, as well as mentor to a generation of politicians in neighbouring Congo-Brazzaville and Equatorial Guinea.

This ensured stability, and made Gabon a perennial obsession of the French press. What it didn't do, however, was create prosperity. When Bongo died, he left his country with a political system built mostly on sharing oil spoils among a fat class of *fonctionnaires*. Around a quarter of the population still live on less than $3 a day. The Bongos themselves live in spectacular fashion: the family is said to own 39 properties in France alone. Their assets are still under investigation by the French authorities. In four decades under the elder Bongo, little was built in Gabon bar a lot of grandiose offices and an extraordinarily expensive railway, running from Libreville to the Bongos' hometown of Franceville.

It is this mess that his son—one of 52 officially recognised children—inherited in 2009 and now promises to fix. Speaking to *The Economist* from the presidential palace in Mouila (one of many), he is careful to defend his father. "I found the country at peace," he says of what he inherited. But he admits he has his work cut out. "Basically we're a country based on the sales of raw materials," he says. Now, he believes, Gabon needs manufacturing and agriculture.

The Olam investment is the biggest evidence of this effort. The company is not only planting trees, it is also building a new port to ship out the palm oil. It is involved in opening a special economic zone on the outskirts of Libreville, which the president hopes to turn into a manufacturing cluster. Olam was persuaded to come to Gabon by the combination of fertile soil, political stability and a flexible government, says Gagan Gupta, the local boss.

Yet Gabon remains a difficult place to do business for anyone who is not extracting oil (of either variety). At a Malaysian-owned factory in the special economic zone, huge piles of sawn wood are being turned into doors and tables. The idea, which originated with the president, is to use more Gabonese wood in the country. The export of logs has been banned, though that of sawn planks continues. But business is struggling. "We can't make a profit," laments Cheah You Wok, the factory's manager. His boss says that he hopes that the government will introduce tariffs on imported furniture.

The risk now is that growth goes into reverse as lower oil prices—and the need to pay salaries before an election—put a brake on infrastructure building. Only 20% of the government's infrastructure plan has been implemented, says Sylvie Dossou, the World Bank representative in the country. Funding has been cut for almost everything. Almost the only projects that continue are related to the African Cup of Nations football tournament, which Gabon is hosting next year. Some 162 billion CFA Franc ($270m) of bills to government suppliers are in arrears. Yet Mr Bongo still proudly talks of giving civil servants a 30% pay rise.

After the election binge, expect a hangover. By the end of the year Gabon is likely to need a bail-out, probably from the IMF. This will surely come with uncomfortable conditions. Another oil-rich state, Angola, asked for a bail-out in April, but changed its mind last month, probably because it would have required its national oil company, Sonangol, to be opened up to scrutiny. If Mr Bongo stays in power, which seems likely, he faces a turbulent 2017. ■


Digging for diversity

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Media freedom in Turkey

Sultanic verses

ISTANBUL

The Turkish government's crackdown extends to journalists and poets

THE past three weeks have seen a reversal of fortunes for Dogan Holding, Turkey's largest media conglomerate. Last September, when a mob of supporters of the ruling Justice and Development (AK) party stormed the offices of *Hurriyet*, the group's biggest newspaper, it was to protest at what they saw as hostile coverage of President Recep Tayyip Erdogan. But when a similar crowd returned on July 16th, in the dying hours of an attempted coup against Mr Erdogan's government, it was with a wholly different purpose: to evict rebel troops that had taken over Dogan's flagship news channel, CNN Turk.

Along with all of Turkey's mainstream media, CNN Turk had sided against the coup plotters. Shortly before being yanked off the air by the putschists, the channel broadcast Mr Erdogan's plea, made using a FaceTime call, for Turks to fight back. At the cost of some 270 lives, they did. Today, the Dogan group, once reviled as a bastion of the political opposition by AK hardliners, is basking in the government's favour. Its share price has climbed by 40%, while its journalists are lauded as heroes. "I think the media response to the coup was a lesson for Erdogan," says Nevsin Mengu, one of CNN Turk's most popular anchors, "because it showed him the need for a free press."

Yet there is little to suggest that Turkey's leader has taken that lesson to heart. The purge he ordered after the coup, which has cost 60,000 civil servants their jobs and 10,000 soldiers their freedom, has now to spread to journalists. Last week, the government closed 131 media outlets linked to the Gulen community, or *cemaat*, a secretive Islamist movement. Arrest warrants were issued for 89 journalists on suspicion of links to the Gulenists. At least 17 have already been charged with membership of a terror group.

According to Turkish officials, it was Gulen followers in the armed forces who masterminded the coup. The chief of the general staff, who was held hostage by the plotters, has testified that one of his captors offered to put him on the phone to the *cemaat*'s Pennsylvania-based leader, Fethullah Gulen. Other evidence suggests that the conspiracy involved a wider alliance of factions. Official and popular outrage, however, whipped up by new footage of the coup-plotters' violence against civilians, has focused on the *cemaat*. In one poll 64% of Turks hold the group responsible. Both Mr Erdogan and the leader of the main opposition party have called on America to extradite Mr Gulen. (Mr Gulen himself has denied any involvement.)

International watchdogs have condemned the crackdown on the press, but the outcry among Turks, including journalists, has been muted. Partly this is because little sympathy is left for the *cemaat* in Turkey. Secularists resent the group's followers in the police and judiciary for staging mass trials from 2008 to 2013 that sent hundreds of army officers to prison on trumped-up coup charges (with the blessing of Mr Erdogan, who was then allied to the Gulenists). Kurds blame them for locking up thousands of activists. Journalists dislike the *cemaat*'s media outlets for applauding the trials and smearing those who exposed the group's wrongdoings. "This was not the free press, it was a propaganda machine," says Ms Mengu, referring to the group's biggest newspaper, *Zaman*, whose employees have been detained en masse since the coup (although she does not think editorial bias justifies the arrests).

Poets are dangerous, too

Now, however, the government is starting to target people with only tenuous links to the *cemaat*. Thousands of academics have been suspended. An octogenarian poet and a prominent human-rights activist were detained for days, seemingly guilty of little more than penning a column in a Gulen newspaper (the poet was released because of poor health). Other critics, including the group's opponents, are also being rounded up. "I was in the streets protesting against those people," says Bulent Mumay, a journalist (pictured above), referring to the Gulenists. "And now the government accuses me of being one of them. That is bullshit." Mr Mumay was detained on July 26th and released three days later.

Mr Erdogan has not been entirely consistent in his purge. On July 29th he announced that he would withdraw all lawsuits, said to number around 2,000, against people accused of insulting him. (Mr Erdogan did not, however, withdraw charges against a German comedian who offended him by joking that he had sex with a goat, ▸▸

among other things.)

But in many ways the actions of the Turkish government, newly equipped with emergency powers, are predictable. Despite lingering questions about the key suspects and their motives, most media outlets have lapped up the government's version. Journalists at mainstream TV channels admit that they have to steer clear of provocative subjects, such as claims that the alleged coup plotters were tortured, which the government denies.

Big news organisations find it particularly tricky to be critical of the government, says Erol Onderoglu of Reporters Without Borders, a Paris-based lobby. Dissent, whether in the press or in public life, was already difficult in Mr Erdogan's Turkey. The crackdown, accompanied by a surge of jingoism, has made it even harder. ■

Land transfers

Peak diplomacy

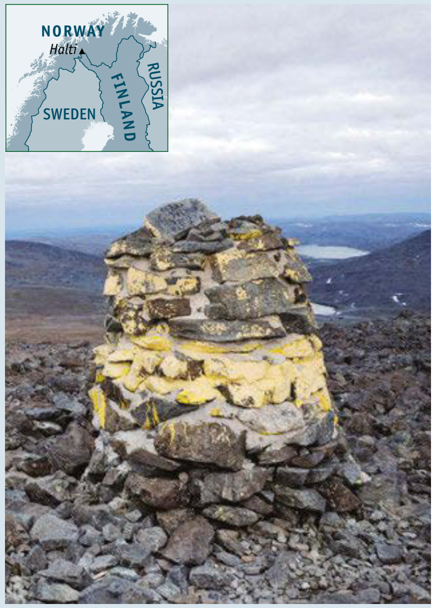
A towering birthday gift from Norway to Finland is an excuse for bad puns

ERNA SOLBERG, Norway's prime minister, piqued the interest of the press worldwide last week. The momentous event happened when she suggested that her government might cede some territory as a birthday gift to Finland, which next year marks a century since it declared independence from Russia.

The land in question is some 15,000 square metres of Halditsohkka, a minor peak of the Halti mountain. Though Halti is not particularly high—it is more than 500 metres shorter than Norway's 200th-highest peak—its lower spur would instantly become the highest point in Finland. When the border was agreed by treaty in 1751, a straight line was cut along the side of the range, depriving the Finns of the crest. The transfer would be a high point in Nordic relations.

The idea started as a suggestion from a retired Norwegian government surveyor, who called the border "illogical". Many Finns thought he had a point. A Facebook group was set up and things snowballed from there, reaching the zenith of Norway's government. Asked about it by the country's public broadcaster, Ms Solberg said her government would "look into the matter". In practical terms it would make no difference. Though Norway is not in the European Union, both countries are members of the Schengen area, which guarantees free movement across borders. The adjustment would be so minor as to be invisible on most maps.

Both sides could benefit. Norway has already had mountains of favourable press coverage. It has also generated goodwill among its neighbours: and, as any accountant would agree, there is an economic value to goodwill. Meanwhile, flat Finland acquires a new entry in its record books. Eurocrats in Brussels may also be delighted. Having just lost Britain, any expansion of EU territory, no matter how tiny, will be welcome.



The tipping point

Turks in Germany

Old faultlines

BERLIN

As tensions rise in Turkey, they spill over into Germany

THE arm of Turkey's president, Recep Tayyip Erdogan, "must not reach into Germany", says Cem Ozdemir, one of 11 members of Germany's parliament with Turkish roots. Yet Turkish politics have erupted onto the streets of Germany. On July 31st almost 40,000 people gathered at a pro-Erdogan rally in Cologne organised by an international lobby for Mr Erdogan's Justice and Development party. The demonstration hinted at the scale of support for Mr Erdogan—and the difficulty German politicians will face when speaking out against him.

About 3m people of Turkish descent live in Germany. Half of them retain Turkish citizenship, making Germany in effect Turkey's fourth-largest electoral district. Of the roughly 570,000 German Turks who voted in 2015, 60% chose Mr Erdogan's party, giving him a higher share in Germany than at home. Some 2,000 of the country's 3,000 mosques are Turkish, and 900 of those are financed by DITIB, an arm of the Turkish government, which sends the imams from Turkey. Other political groups are present too, including the movement founded by the exiled Islamist cleric Fethullah Gulen, whom Mr Erdogan blames for the attempted coup in Turkey on July 15th. (Mr Gulen denies this.)

Relations between the two countries have been deteriorating for months. Since the German parliament voted in June to call the Turkish massacre of Armenians a century ago a "genocide", Mr Erdogan has given Germany's ambassador in Ankara the cold shoulder. He has harassed members of the Bundestag with Turkish roots such as Mr Ozdemir. And he has barred all German parliamentarians from visiting their troops stationed in Turkey (as part of a NATO force fighting Islamic State). This may lead to Germany withdrawing.

But since the coup attempt three weeks ago things have got much worse. Mr Erdogan's German supporters have become more vocal. Several Gulen supporters have had death threats. The Turkish government is demanding the extradition of many of them. Winfried Kretschmann, premier of Baden-Württemberg in the south-west, says the Turkish government has asked his state to close schools considered to have ties to the Gulen movement, requests that he thinks outrageous.

This could not come at a trickier time for Angela Merkel, Germany's chancellor. In March she negotiated a deal whereby Turkey promised to stop refugees from crossing the Aegean Sea in return for money, visa-free travel for Turks in the European Union and new talks about the (very remote) possibility of Turkey joining the EU. But progress has slowed as Turkey still does not meet all of the conditions for visa-free travel. Turkish politicians are threatening to scupper the whole deal.

Many German politicians now doubt the loyalty of their country's largest minority. "Citizens have to pledge allegiance to the state in which they live," demands Volker Kauder, the majority whip in the Bundestag. But many Turks blame German politics. For decades after Turkey started sending "guest workers" to man German factories, politicians maintained the fiction that these Turks would one day go home, doing nothing to integrate them. Their divided loyalties today are the blowback of that bad policy. ■

Award: Annabelle Chapman, the Warsaw correspondent for *The Economist*, has won the inaugural Timothy Garton Ash prize for European writing.

Anti-Mafia

Dead dogs and dirty tricks

ROME

Some of those battling the mob are less than squeaky clean themselves

FOR decades the police have tirelessly attempted to crush organised crime in southern Italy. In 1963 Italy's parliament acquired a dedicated, all-party anti-Mafia commission. But the fight against Italy's four big Mafia groups also has a vast unofficial component: of businesspeople publicly refusing to pay for protection, investigative journalists and, above all, civil-society movements. The management of the mobsters' seized wealth is a huge enterprise: in the 12 months to August 2015, €678m ($793m) was taken from them.

Over the past year, however, a string of scandals has blurred the line between the Mafia and their opponents. Indeed, the parliamentary anti-Mafia commission's latest investigation, which began taking evidence in December, is aimed at the anti-Mafia itself, especially the unofficial parts of it, such as civil-society groups. Rosy Bindi, the commission's president, says she aims to cut through the anti-Mafia's "opaqueness and ambiguities".

In the most blatant instances, standing up to the mobsters became its own route to personal enrichment. A woman who was a symbol of the fight against the Calabrian 'Ndrangheta was found guilty of pocketing funds she received for a women's support group. Sometimes, individuals celebrated for their anti-Mafia stance were found to have adopted the criminals' methods, such as the case of a leading Sicilian businessman convicted last year of extorting a €100,000 bribe. In other cases, running an anti-Mafia group was a source of power in a society infused with a culture of favours.

The latest scandal concerns the campaigning head of a TV station in Sicily, Pino Maniaci. When in 2014 Mr Maniaci's pet dogs were found hanging dead near his workplace Matteo Renzi, the prime minister, called him to express admiration for his courage. But in April it emerged that Mr Maniaci is under investigation, suspected of extortion. Prosecutors allege he obtained cash and favours by threatening to use his media clout against local mayors. Among the alleged beneficiaries was his married lover. The dogs, say the investigators, were killed not by Cosa Nostra (the Sicilian Mafia) but by her husband.

Mr Maniaci, who has not been indicted, denies wrongdoing. He claims the allegations are in retaliation for his station's role in exposing potentially the most serious case, involving a judge, Silvana Saguto. Last year Ms Saguto, who presided over the court in Palermo which rules on the administration of property confiscated from Cosa Nostra, was suspended after being placed under investigation on suspicion of corruption. (Ms Saguto denies the accusation and has yet to be indicted.)

In May Antonino Di Matteo, a deputy chief prosecutor of Palermo, stressed that the cases which had come to light were isolated ones. He expressed concern that the entire anti-Mafia movement was being sullied. But ignoring the shortcomings of the anti-Mafia will only make battling the gangsters and their friends even harder. The godfathers are no doubt delighted by the recent scandals—and the attention they deflect from their own dirty business. ■

Britain and Europe

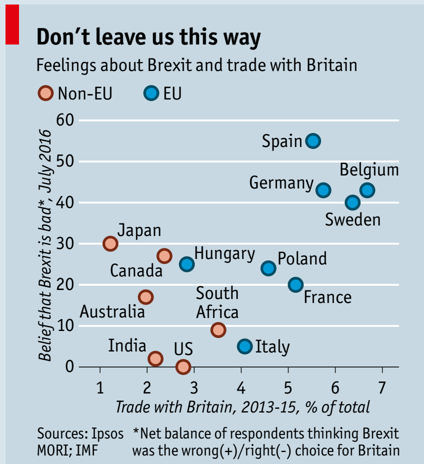
The start of the break-up

What do other countries make of Brexit?

MUCH of the European Union is still smarting from Britain's vote to leave the club on June 23rd, according to data released on August 4th by Ipsos Mori, a pollster. In the nine member states surveyed, 55% think an exit vote was a bad choice for Britain, while 58% think it was also bad for the EU as a whole. Outside the Union feelings are slightly more sanguine. Only 35% of those polled in seven countries with big economies think Britain made a mistake.

Of all the countries surveyed, Russia is by far the happiest. Only 10% believe it was the wrong decision for Britain. By contrast, the Swedes are the most overwrought: 68% think it will be bad for Europe. These two extreme reactions may well be connected. Swedes fear Brexit could lead to the dissolution of the EU. This would leave them even more exposed to the whims of the Kremlin, which routinely makes aggressive gestures in their direction, such as sending submarines into Swedish waters. By contrast Russia is delighted by the prospect of a weaker Europe.

Another reason the Swedes may be anguished is trade. Britain is their fourth-biggest trading partner. As with the other countries surveyed, that factor seems to sway respondents' feelings about Brexit. Broadly speaking, the more a country exports to Britain, the more upset are its citizens by the split (see chart).



In almost every country surveyed the better educated are more likely to think Brexit was unwise. On average 42% of people who did not finish secondary school thought it was the wrong choice, compared with 58% of those who had been to university. Moving up the income ladder also tends to lower the likelihood of backing Brexit.

Slightly more Europeans want the EU to be tough with Britain (28%) than those who want a softer approach (26%). France is harshest: 39% of its people want Britain to be clobbered. Britons, unsurprisingly, are the most eager for generous terms.

Britons diverge from continental thinking in another regard. They are more likely than those in any other EU state to believe their departure will spur others to leave. Fully 64% of them also reckon that Brexit will leave the EU economy weaker, the joint-highest estimate among all the countries asked. Breaking up a relationship is never easy, but when one side thinks it is God's gift to political unions it becomes tougher still.

Charlemagne | Au revoir, l'Europe

What if France voted to leave the European Union?

BARELY a year into his second presidency, Nicolas Sarkozy looked out from the steps of the Élysée and admitted defeat. The referendum had been lost. The European Union flag still fluttering behind him, the president said that he regretted that France, a founding member of the EU, would now have to leave it. Pollsters were flabbergasted. Mr Sarkozy put on a brave face. "Eternal France", he said, trying to sound like de Gaulle, had endured far worse in its long and glorious history. Its best days lay ahead. And *non*, the president had no intention of resigning.

His optimism was unusual. Mr Sarkozy had won another spell in the Élysée by trafficking in fear (borrowing several ideas from Donald Trump's almost-successful campaign for the White House). In the primary for France's centre-right Republicans, held in November 2016, Mr Sarkozy had focused relentlessly on the country's *année de cauchemars* ("year of nightmares"), blaming weak leaders and bumbling Eurocrats for failing to prevent a bloody series of terrorist attacks. In this febrile atmosphere Mr Sarkozy's rival, the genteel Alain Juppé, didn't stand a chance.

The same arguments carried Mr Sarkozy through the first round of the following year's presidential election. But in the run-off pressure from a surging Marine Le Pen, who campaigned openly for France to follow Britain out of the EU, forced him to beat the nationalist drum even harder. A plot to bomb the railway station in Lille, organised over the Belgian border in Namur, was foiled just in time, but added to the sense that the EU's commitment to open borders was endangering French lives. Eventually Mr Sarkozy pledged a referendum on France's EU membership within a year of taking office. (Inevitably, the plebiscite was dubbed "Frexit".) It won him the presidency.

Ms Le Pen's National Front made the running during the referendum campaign, tapping old French neuroses about cheap eastern European workers and newer ones about Muslims. Mr Sarkozy argued vigorously for France to stay in the EU. But voters found it hard to swallow his bromides about European co-operation after years of hearing him rail against it. The opposition Socialists were in disarray. A gloomy (and, said some, racially charged) piece in *Le Figaro* by Michel Houellebecq, an eccentric author, accusing Europe of "auto-crucifixion", seemed to capture the mood of *malaise*. In the end it was not even close: the French voted to leave by 55%-45%.

The loss liberated Mr Sarkozy to indulge the grittier side of his politics. He revived his old idea of shutting the border with Italy, across which refugees from Libya's civil war were streaming. The revelation that a refugee who entered Belgium in the wave of 2015 had had a bit-part in the Lille plot allowed the president to accuse Angela Merkel, Germany's chancellor, of having endangered European security by opening her country's borders. Mrs Merkel was not amused; not least because the ringleader of the foiled attack was not a refugee or even an immigrant, but a French-Algerian child of the Paris *banlieue*.

The euro had played little part in the referendum campaign. Indeed, the hastily drafted referendum text did not mention the single currency at all. So the finest legal minds in Brussels were put to work to find a way to keep France inside the euro even after it left the EU. That didn't keep markets from swooning. France was, after all, the second-largest economy in the euro zone. The French elite believed more passionately in the EU than they did in God. Without Paris to propel it along, what hope was there for the European project? Bond yields in Greece, Portugal and Italy soared. Mario Draghi, the head of the European Central Bank, sought vainly to calm investors' nerves.

After a summit of the 26 other members in Sofia, Mrs Merkel declared gamely that the EU would survive, because "we are always stronger together than apart". Her domestic popularity, which had been waning after her fourth election victory, rose as quickly as the Bunds into which frightened investors had poured their money. But Mrs Merkel acknowledged that a "momentous" change to the EU treaty was needed. (Merkologists confirmed that this was the chancellor's first known use of the word.)

Moins d'Europe

It didn't take long for the gears to spin in Brussels. Jean-Claude Juncker, the hapless president of the European Commission, jumped before he was pushed; his appeal to French voters not to kill "our beautiful Europe" was ridiculed. A leaked paper from Wolfgang Schäuble's finance ministry in Germany became the template for a radically stripped-down commission, proposing the removal of its competition and fiscal-scrutiny powers. At an emergency summit Mr Juncker's rapidly shrinking job was handed to Donald Tusk, who chaired the summits of EU leaders.

But events were moving quickly. The unbowed Ms Le Pen and Nigel Farage, a British Eurosceptic, toured Europe stirring up nationalists at vast "Patriotic spring" rallies. Pressure for referendums was growing in the Netherlands and Denmark. In Spain and Portugal and most of eastern Europe there was little appetite for destruction but scarce will to stem the bleeding. Left-wing parties began to lose faith in the EU; one oddball outfit in Romania even campaigned for "socialism in one country". From free movement to fishing quotas, governments began openly defying EU law, eating away at the commission's authority.

Perhaps most worrying was the decay in the EU's influence abroad. With the prospect of membership now all but dead, Serbia's voters turned to the pro-Russia Radicals. Bosnia began to fray. Ukraine, despite the best efforts of a despairing Mr Tusk, drifted further from the EU into corruption and misrule. Putting a brave face on things, Mr Sarkozy visited Britain to sign a naval co-operation deal. But his trip was cut short when he was called home to deal with an emergency. An explosion had taken place near Nantes, and it did not appear to be an accident. ■

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Nuclear power

When the facts change...

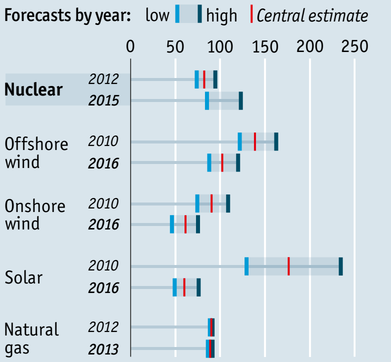
Hinkley Point would tie Britain into an energy system that is already out of date

LESS than three years ago the British government struck a deal with EDF, a French state-owned utility, to subsidise the first new nuclear power station built in Britain since 1995: Hinkley Point C on the Somerset coast. The agreement was hailed by David Cameron, the then-prime minister, as "brilliant news". But a lot has changed since then—and not just the incumbent at 10 Downing Street.

On July 28th, hours after EDF's board narrowly endorsed a decision to go ahead with the £18 billion ($24 billion) Hinkley Point investment, the new government of Theresa May unexpectedly slammed the brakes on, launching a review of the project that it says it will finish by the autumn. It is understood to want to probe a deal with China General Nuclear Power, a Chinese state behemoth, which had offered to stump up one-third of the price tag in exchange for permission to build a nuclear-power station of its own at Bradwell, in Essex. The delay is the clearest sign that Mrs May is rethinking the open-door industrial policies of her predecessor (see next story).

Yet analysts say there is more to the delay than mere Sinophobia. Hinkley is "big and based on last-century technology, which is not what the UK's power system needs for the future," says Michael Grubb of University College London. A review of the assumptions prevailing when the government struck the deal reveals how flimsy the economic rationale was. In 2012 Britain's energy boffins predicted that for the foreseeable future the price of non-nuclear fuels, such as natural gas, would be more than double where they are today. As a result, they estimated that wholesale electricity prices—the basis for determining the level of subsidy to EDF—would remain above £70 per megawatt hour. They are currently below £40. Last month the National Audit Office, a spending watchdog, said that forecasting error alone had almost quintupled the implied value of the subsidy, from £6 billion to almost £30 billion over 35 years.

Meltdown
Comparable cost of electricity generation in Britain in 2025, £/MWh



Source: National Audit Office

At the time, the civil servants reckoned that by 2025, when Hinkley Point is due to open, the cost of producing electricity from a nuclear-power station would be lower than from a gas-fired one—and much lower than from wind farms and solar-power plants. They have since reversed those views (see chart). Since Hinkley became a serious proposal less than a decade ago, the cost of nuclear power has increased, that of renewables has fallen and the price of battery storage—which could one day disrupt the entire power system—has plummeted. What is more, EDF's nuclear technology has failed to get off the ground in the two projects in Finland and France that have sought to use it. "When so much has changed, it would have been inappropriate not to pause," says Professor Grubb.

Hinkley's supporters counter that it would help to plug a looming gap in the country's energy supply. Over the next 15 years, Britain plans to shut down its coal-fired power stations and decommission all but one of its ageing nuclear plants, losing 23 gigawatts (GW) of power-generating capacity. Hinkley Point C, with a capacity of 3.2GW, is intended to ensure there is enough clean energy to offset that, by kick-starting a broader revival of nuclear power in the country. It would also strengthen energy security, reducing reliance on Russian gas. And its power would be clean: without it, supporters say, Britain would fail to meet its obligation under the 2008 Climate Change Act to reduce greenhouse gases to 80% below their 1990 level by 2050.

But these arguments fail to account for how quickly the energy landscape is changing. First, as their costs continue to ▸▸

drop, renewables are becoming a bigger part of the energy mix. They currently account for about one-quarter of Britain's power output. But renewables are intermittent, generating little power on days that are calm or overcast. So they must be complemented by alternative sources of energy, which add to the total cost. Big power stations such as Hinkley Point cannot fill that role: nuclear power is hard to flex up and down. Combined-cycle gas turbines (CCGTs) are cheaper and more nimble. As a backup to renewables, they can enable Britain to "muddle along" at least for another 20 years, says Deepa Venkateswaran of Bernstein Research, a firm of analysts. That would buy time to assess the progress of other clean technologies, such as battery storage and carbon capture.

Smaller businesses are also jostling to step into the breach, offering standby power when shortages occur. One such firm, UK Power Reserve, uses small gas-fired generators that can be switched on and off quickly. It calls itself a "scalpel" compared with a CCGT "sledgehammer". Another, Upside Energy, proposes selling to the grid surplus power stored in battery systems that back up everything from office computers to traffic lights. Others enable companies to shift their power consumption to times of lower demand, cutting their bills. Such options may not provide the bedrock of power or thousands of jobs that EDF promises at Hinkley Point, and may require more innovative policymaking. But in terms of value for money, they could beat it hands down. ■

Chinese investment

Not so gung-ho

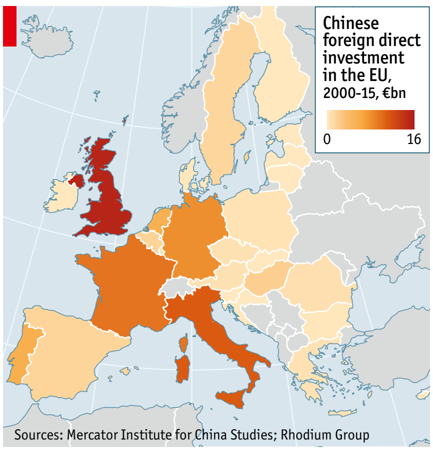
Relations may cool, but the flow of yuan into Britain is unlikely to dry up

AFTER spending a century trying to prise open the Chinese market in Victorian times, European countries are now seeing the flow reversed, as a tide of Chinese money (if not yet gunboats) goes west. Some are cautious about allowing Chinese investment in sensitive areas of the economy. But last year, to the surprise of many, Britain's government launched a new initiative of economic co-operation with China that the two sides said would bring forth a "golden era" in bilateral relations.

Britain became one of the first Western countries to sign up for the new, China-led Asian Infrastructure Investment Bank, to America's annoyance. George Osborne, then chancellor of the exchequer, visited Beijing, to make clear that cash-strapped Britain was open for infrastructure investment. He launched the £12 billion ($16 billion) procurement process for HS2, a railway between London and the north of England, in the Chinese city of Chengdu.

Then came a double shock. First the vote on June 23rd to leave the European Union. Then on July 28th the surprise decision by the new prime minister, Theresa May, to delay approval of a nuclear power plant at Hinkley Point in Somerset, due to be part-funded by Chinese investment. If the review cancels the project, the golden era could be over before it has begun, says Kerry Brown of King's College London.

Since 2000 China has poured more direct investment into Britain than it has into any other EU country (see map). The Chinese are keen to prove themselves as solid partners in Western infrastructure projects, and hope, after Hinkley, to design and build an entire nuclear plant in Essex. But critics felt the sudden British embrace of China was too gung-ho. The same sceptics had, for security reasons, already warned about a decision to allow Huawei, a Chinese firm, to supply equipment for Britain's telecoms infrastructure. Many feared getting too close to China tied Britain's hands diplomatically.



Sources: Mercator Institute for China Studies; Rhodium Group

Mrs May's delay on Hinkley has clearly annoyed China's leaders. In an editorial Xinhua, the official news agency, denied that China would put any "back doors" into the project, saying that ditching it would "stain" Britain's credibility as an open economy and "might deter possible investors from China" in the future.

Xinhua also pointed indirectly to a sensitive issue about the British delay: Brexiteers had promoted a vision of Britain outside the EU with closer ties to emerging markets like China. The new government has begun to explore what type of trade deal it could strike with the Chinese, but that process could be more difficult if the nuclear project is blocked. "For a kingdom striving to pull itself out of the Brexit aftermath, openness is the key way out," warned Xinhua. The delay threatens the "Northern Powerhouse" plan to boost the economies of northern English cities, for which Chinese investment was considered crucial. Lord (Jim) O'Neill, a key proponent of the Powerhouse, is said to be considering whether to resign as commercial secretary to the Treasury.

A potential bust-up with China comes at a bad time for British business. For many years, British firms trailed German, French and American exporters in the Chinese market. Now, though, with tens of millions of middle-class Chinese looking for better health care, insurance and financial services—areas in which Britain excels—"This should be Britain's time," says David Martin of the China-Britain Business Council, a lobby group. London this year became the largest clearing centre for the yuan outside greater China.

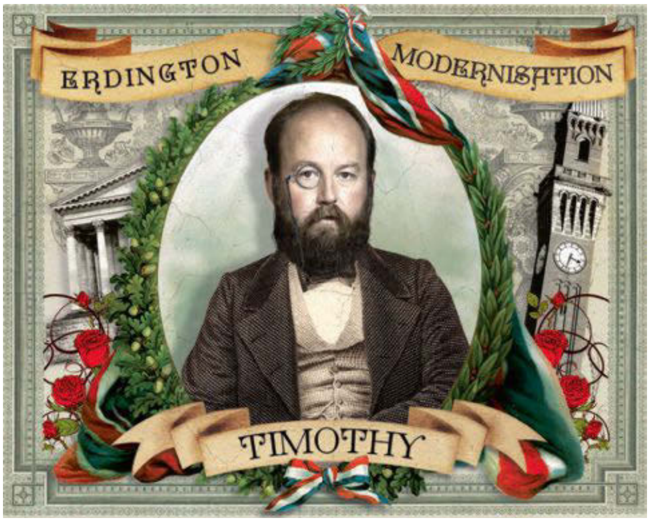
"It is going to need some skilful diplomacy to maintain this relationship," admits Mr Martin. But he still thinks the pessimism is overblown. Chinese leaders last year launched an initiative called "Made in China 2025", to deal with its declining competitive advantage in manufacturing by helping companies make better-quality products. The scheme is a chance for British firms to supply high-tech equipment, design and consulting.

British bankers, oilmen and consultants are also working with Chinese companies in third countries on multi-billion dollar projects as part of China's "One Belt, One Road" initiative. The scheme aims to revive the ancient silk roads, connecting China with its neighbours and beyond, through investment. Much of this will be unaffected by Brexit or Hinkley. "The things the UK was good at on June 22nd [the day before the referendum], it was still good at on June 24th," says Mr Martin.

Though some state-owned Chinese companies may think twice, private firms are likely to continue looking for growth in the West. China will triple its overseas assets from $6.4 trillion to almost $20 trillion by 2020, says the Rhodium Group, a consultancy. "China is eager to expand its presence in OECD countries such as Britain," says Rhodium's Thilo Hanemann. Attitudes across Europe are changing, he admits: in Germany, for example, some politicians opposed the purchase of Kuka, a robotics firm, by Midea, a big Chinese appliance manufacturer. But for every sensitive deal that draws opposition, he says, there may be ten that go through. ■

Bagehot | The sage of Birmingham

Theresa May's pugnacious chief-of-staff prescribes a new direction for the Conservative Party



ON JULY 7th 1906 Joseph Chamberlain led an 80-car rally to celebrate his 70th birthday. Thousands of Brummies lined its 17-mile route. "Our Joe" had fought for Birmingham's workers as mayor and, on the national stage, had advocated tariffs protecting its industries. The city was a palimpsest of his achievements: its schools for the poor, its magnificent parks, its grand civic buildings, its whirring workshops and clanking factories full of confident, well-fed workers.

Still, eyebrows twitched when, in a speech almost precisely 110 years later, Theresa May cited him as an example. She was campaigning for the Tory leadership and, though he had ditched the Liberal Party over its tolerance for Irish autonomy, Chamberlain had never been a Tory. That the woman who today runs Britain praised him had everything to do with her closest adviser: Nick Timothy. He is one of the most interesting figures in her government. The son of a steelworker and a school secretary, he venerates Chamberlain's interventionism and wrote a biography of the man. He even wears a long Victorian beard.

Those close to Mrs May differ on how much Mr Timothy influences her, but only between "quite a lot" and "enormously". Like her he is a cricket fanatic (he lives a big six away from the Oval ground). He shares the post of Downing Street chief-of-staff with Fiona Hill. For most of their boss's spell as home secretary this duo was her praetorian guard: bossing around civil servants, telling David Cameron's aides to mind their own business and generally exhibiting an unflinchingly protective loyalty to her. Admirers credit this with Mrs May's unusually long (six-year) stint in the job. Critics fret that the control freakery will now constipate Whitehall: "You couldn't blow your nose without Nick or Fi knowing," recalls one former colleague.

It is not an exaggeration to discern a direct line between Mr Timothy's upbringing and Mrs May's vision. He provides a pragmatic prime minister with an idealistic edge. His credo is captured in an article he wrote in March (one of a series for ConservativeHome, a Tory-aligned website) about "modernisation". Here a bit of history helps. Back in the early 2000s, when the Conservatives were in the doldrums and the reactionary old farts were doing battle against modernisers, Mr Timothy was with the modernisers. But with David Cameron's rise to the leadership in 2005, the debate shifted to what modernisation should mean. There was "Easterhouse modernisation", a focus on the poorest, named after a Glasgow housing estate. There was "Soho modernisation", an urban social liberalism named after a trendy part of London. But Mr Timothy reckoned a third leg of the stool was missing: "Erdington modernisation", a concentration on the struggling, patriotic working-class named after the industrial suburb of Birmingham where he grew up.

His writings expatiate on the idea. At home: more intervention in the economy, a clamp on immigration, less greenery, tough measures against crime, more religious schools and selective education rewarding poor, bright kids. Abroad: closer links with the Commonwealth—akin to Chamberlain's proposed imperial economic union—and looser ties to Europe, which features in Mr Timothy's output only as a source of bad public policies, corrupt leadership and justifications for Brexit. It also means a cooling of Britain's links to both America, to which he reckons Tony Blair was too close, and China, to which he believes Mr Cameron was too craven. Overall it means a government keener to confront foreigners, vested interests and especially the sort of polenta-munching elites who share each other's globalising enthusiasms, holiday villas and platforms at Davos.

Mrs May's premiership is not a month old. But already it bears Mr Timothy's stamp. Britain has lost a department dedicated to climate change and gained one devoted to "industrial policy". She has sidelined the "Northern Powerhouse" programme to integrate the big northern cities and committed to reining in foreign takeovers. A Chinese bid to finance Hinkley Point, a nuclear power station, has been put on hold. The new prime minister's speech to the Tory conference in October (in Birmingham, as it happens) should be a Chamberlainite symphony. Renewal, a think-tank founded in 2013 to promote working-class Toryism, is emerging as the new regime's brains trust.

Mr Timothy's analysis of his party—that it can appear not to "give a toss about ordinary people"—is accurate. The Cameroons' brand of modernisation owed too much to noblesse oblige, to a vision of society that treated the welfare state as the institutional equivalent of giving one's gardener a Christmas bonus. Mrs May's authoritative mien and middle-class roots, combined with Mr Timothy's instinct for working-class priorities, makes her party newly formidable, propelling it into landslide territory (an early election is surely not off the cards). Moreover, she and he have a point. Britain is too unequal. The past years have been brutal to the sorts of left-behind places that have been denied the boom enjoyed by the big cities.

A new business model

Still, the new Chamberlainites have questions to answer. Britain has found confidence and relative prosperity as a linchpin of globalisation. It is good at the sort of service industries that demand flexible labour markets, urban clusters, worldly universities and fast-moving capital: think not just the City of London but successful provincial centres like Swindon, Milton Keynes and Manchester. Where manufacturing survives, it is often thanks to the country's openness to foreign investors. All this has bypassed some towns. But for decades Britain has sought to make the most of its strengths while helping those who have lost out to adapt or move. Mrs May and Mr Timothy seem to reckon those strengths—and globalisation itself—are much more malleable than their predecessors have realised. The burden of evidence is on them. ■

International adoption

Home alone

GUATEMALA CITY

Fewer families are adopting children from overseas

A DECADE ago Guatemala's hotels were full of light-skinned foreigners with dark-skinned babies. The country was sending nearly as many children to America for adoption as was China, despite a hundredfold difference in population. Between 1996 and 2008 more than 30,000 Guatemalan children were adopted abroad—in 2007 nearly one out of every 100 babies. Hotels in Guatemala City, the capital, had entire floors for child care and notaries' offices. "Some countries export bananas," says Fernando Linares Beltranena, who worked as an adoption lawyer. "We exported babies."

Guatemala's adoption business took off in the 1970s, when a civil war displaced hundreds of thousands, including many children. A 1977 law allowing notaries to facilitate adoptions helped shape an industry where anything went. After the war ended in 1996 the number of overseas adoptions rocketed. Americans and Europeans swooped in to adopt supposed orphans, unaware that many had been stolen from their families.

By the 2000s the country's adoption "supply chain" had thousands of workers. "Snatchers" kidnapped or bought children; caretakers fed kids in "fattening houses" crammed with cribs; notaries and lawyers took chunky fees for the paperwork; and poor women were paid to get pregnant repeatedly. Most of the children being adopted by foreigners each year were "manufactured for the specific purpose of adoption", says Rudy Zepeda of Guatemala's National Council of Adoptions. Reports of baby-theft were ignored. "People looked to the state for help but the state was complicit," says Laura Briggs, a historian at the University of Massachusetts. In 1997 there were fewer than 1,000 adoptions to America; a decade later there were five times as many.

Eventually, in 2008, in response to hunger strikes by mothers of stolen babies and pressure from the UN and receiving countries, Guatemala stopped foreign adoptions. Many other "sending" countries have seen the same pattern: a big rise in adoptions; claims, first ignored and then acknowledged, of rampant child-trafficking; a shutdown; and then—in the best cases—slow reform. As one country after another has tightened up its rules (see chart on next page), the number of overseas adoptions has fallen, from 45,000 in 2004 to 12,500 in 2015.

One consequence is that couples in the rich world find it harder to adopt a baby from a poor country. Another is a debate about the place of cross-border adoption in broader attempts to help children in poor countries. Advocates see it as the only way to save "hard-to-place" children—older, with severe health problems or in sibling groups—from life in an institution. Critics note that some children adopted into a different culture later feel unhappy about having been uprooted. Some also dismiss overseas adoption as a distraction from other ways of reducing poverty.

It was the rushed, often illegal overseas adoption of thousands of children from Romanian orphanages after the fall of the dictator, Nicolae Ceausescu, in 1989 that first led activists to call for global adoption standards. The result was the Hague convention of 1993, which said that governments should verify children's origins and oversee all adoptions, taking them out of private lawyers' hands. It also established the "subsidiarity principle" that first relatives and then local adoptive parents should be sought before looking abroad.

No place left

As one country after another became more stringent, adopters and agencies moved on to others with still-lax rules. In the 1980s 56% of all international adoptions had been from just three countries—Colombia, India and South Korea. By 1998 the top three were China, Russia and Vietnam. Some governments blacklisted countries that were slow to follow the new rules. By 2002 Canada, France, Italy and Spain had all stopped accepting adoptions from Guatemala, though America continued until it ratified the convention in 2008. American adoption agencies then turned to Africa, in particular Ethiopia and the Democratic Republic of Congo—which are now tightening up in turn.

Few development types have noticed. ▸▸

They pay little attention to international adoption, arguing that most vulnerable children in poor countries need not a new family but support in their current one. They point to how Guatemala, for example, devotes less than 3.4% of its GDP to public spending that directly helps children and adolescents, the lowest rate in Central America. "Adoption is a symptom of a society that can't care for its children," adds Ms Briggs.

Seeking answers

Among other critics of overseas adoption are some adult adoptees who have begun to speak publicly about how hard they found it growing up knowing little about the culture and circumstances into which they were born. Jean Sebastien Zune, who is active in the European organisation La Voix des Adoptés, the Voice of Adoptees, was adopted from Guatemala by Belgian parents in 1985. He returned in 2013 to look for his birth parents. He tracked down the man and woman whose names appeared on his birth certificate but neither was related to him.

In fact, as Mr Zune discovered with the help of government investigators, he was probably born in a Mexican border town and given to a criminal network in Guatemala. He plans to file cases against traffickers in Guatemala and the Belgian adoption agency he accuses of having been complicit in the fraud. "Adoption is not just paperwork and an aeroplane ticket," he says. "When a child grows up, you need to be able to tell him where he came from."

Though some countries, notably China, have built domestic adoption programmes as envisaged by the Hague convention, in many others locals have not taken up the slack. Globally, there are hundreds of thousands of children in state institutions because they have no family to care for them. They should be candidates for adoption—but many have health problems, and most are over five years old and have been harmed by neglect. "The profile is completely different from what most families can handle," says David Smolin of Samford University in Alabama.

Things are even tougher when the children in need of adoption come from a different ethnic group from the people who want to adopt. In Guatemala many of the children seeking new families are indigenous. In South Korea and many African countries domestic adoption efforts are also hampered by a cultural prejudice against bringing unrelated children into the household. "There's a lot of stigma. People worry that kids with different blood will be badly behaved, uncivilised, even dirty," says Aixa de López, an evangelical pastor who adopted two girls, aged six and nine, with her husband and runs a support group for adoptive families.

David McCormick, a social worker at Casa Bernabé, an orphanage near Guatemala City, says the home was unprepared for the rising number of older children needing institutional care because of the new rules. Previously, half of the 15-20 children adopted from the orphanage each year—by foreigners—were over ten years old. "Now we have an average of three adoptions a year, and they're all babies," he says. Of 339 children awaiting adoption in Guatemala, only 34 are babies and toddlers without special needs. But few of the 85 Guatemalan families waiting to adopt will consider older children.

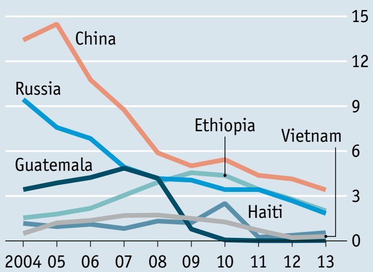
Children around the world "are languishing in institutions because the Hague has been wrongly interpreted and badly implemented," says Peter Hayes of the University of Sunderland. Excessive oversight means it can take years before a child is declared available for adoption. "Kids dread their birthdays," says Mr McCormick. "They know as they get older, the chance they'll be adopted diminishes."

Among those who want to help are evangelical Americans. Congregations have latched onto an estimate by UNICEF that there are 140m orphans in the world, declaring an "orphan crisis". (This figure includes children who have lost just one parent.) In 2009 the Southern Baptist Convention, a network of about 50,000 churches and missions, directed all members to consider adoption. The next year adoptions brokered by Bethany Christian Services, America's largest adoption agency, rose by 26%.

The fervour has abated somewhat after several scandals, such as when a Baptist congregation tried to sneak 33 children, most of whom had parents, out of Haiti in 2010. But Christians make up a large share of people seeking to adopt abroad, says Jedd Medefind of the Christian Alliance for Orphans. "It takes a very deep motivation to cause a family that could have a biological child to choose instead to welcome a child from another country with special needs," he says. "It stems from the central Christian narrative, that God pursued us and welcomed us into his family when we were separated and alone."

Out of luck

Selected origin countries for international adoptions, '000



Source: HCCH, Peter Selman

Shawn and Kathy Mokert, an evangelical couple from Missouri, have spent three years trying to adopt a seven-year-old girl with special needs from El Salvador, where hundreds of cases of baby theft during a civil war in the 1980s gave way to a slow and frustrating adoption system. "Sometimes the government's decisions seem so arbitrary, we ask ourselves, are they waiting for us to offer money?" says Mr Mokert. Rosario de Barillas, the director of El Salvador's National Adoption Office, blames a lack of social workers and judges. Lawyers criticise an overly rigid interpretation of the subsidiarity principle. Last year the country processed just four international adoptions and 59 domestic ones.

Baby steps

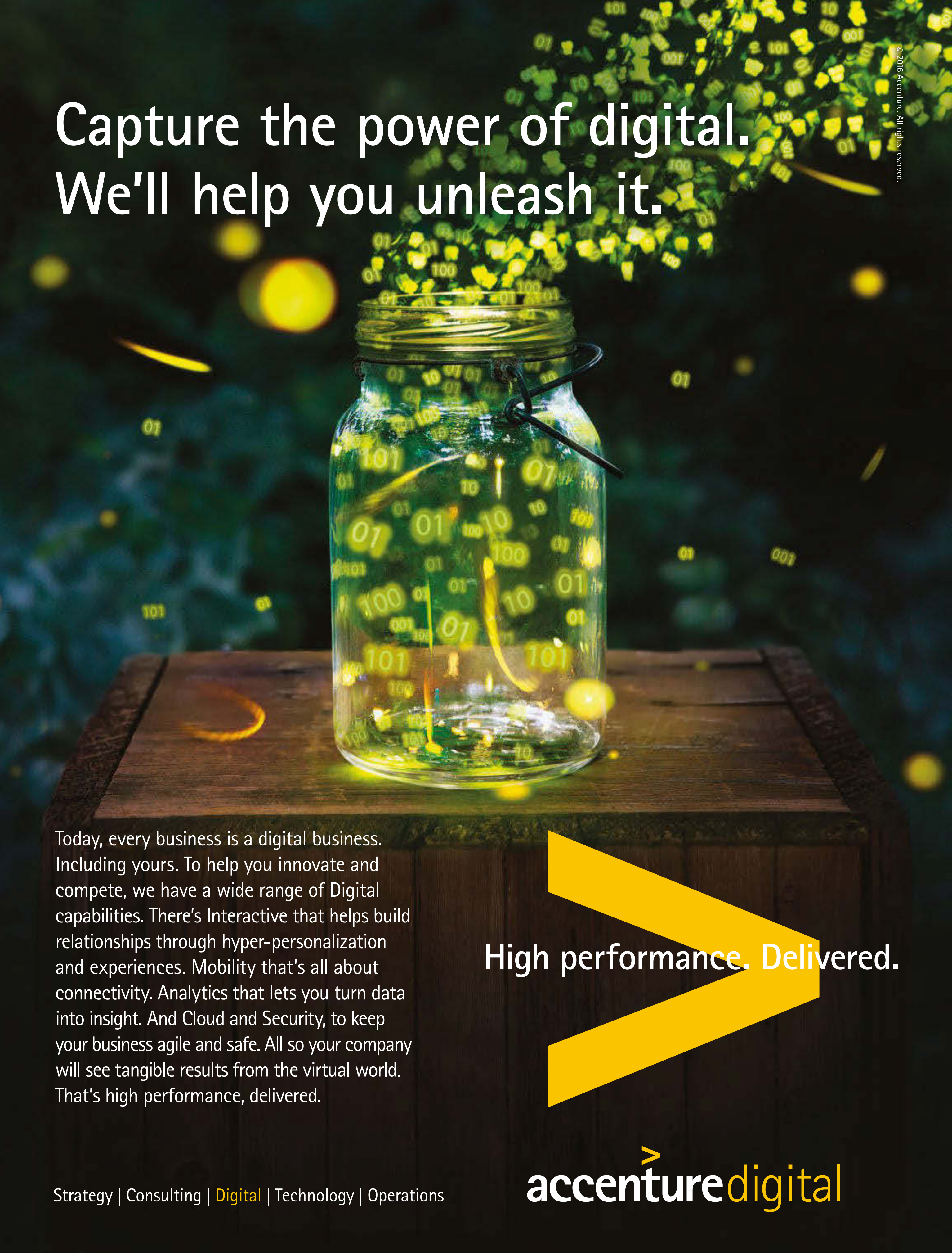
Such sluggishness infuriates overseas parents. But many sending countries say critics underestimate the difficulties of building a robust adoption system—and ask why, if people in rich countries really care about poor children in poor places, they do not fund domestic programmes to keep families together instead.

Some American charities have tried, reinventing themselves as welfare organisations focused on poor countries. Bethany has started foster-care programmes in five countries and is arranging more domestic adoptions. Similar efforts have, however, run into trouble. When Tom DiFilipo became director of the Joint Council on International Children's Services in 2007, an umbrella organisation of about 140 agencies, he tried to redirect funding toward family-preservation efforts. He was dubbed the "Devil in Adoption" by adoption advocates and quit last year.

For sensible adoption advocates, the solution is simple: poor countries should fix their adoption systems so that, once domestic possibilities have been exhausted, foreigners can step in. "The Hague isn't an expensive convention to uphold," says Susan Jacobs, America's ambassador for children's issues. "Countries just need to take the initiative."

And a few countries are leading the way. As El Salvador thrashes out its new adoption law, it looks for guidance to Colombia, which sends around 500 children abroad each year, nearly all older than seven or with special needs. Indeed, nowadays most of the 12,500 or so kids adopted globally by foreigners each year have special needs or are over five years old. El Salvador is poorer than Colombia, and its bureaucracy is less capable. But if it succeeds in its efforts to improve its adoption system, many more of the neediest children may find homes.

"We do our best," says Leticia Abarca of St Vincent de Paul Children's Home, where the seven-year-old matched with the Mokerts has spent her life. "But there's an emptiness only a family can fill." ■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Ride-hailing in China

Uber gives app

SAN FRANCISCO AND SHANGHAI

China's Didi Chuxing and America's Uber declare a truce in their ride-hailing war

WHAT will success look like in the extremely competitive Chinese ride-hailing market? "There are two versions," Travis Kalanick, the chief executive and co-founder of Uber, recently told *The Economist*. "There is the gold medal, and there is the silver medal."

Over the past several years Uber, an American ride-hailing firm, has lost a fortune competing in China with Didi Chuxing, an inventive local rival, and its forerunners. Mr Kalanick seems to have decided that accepting a slice of gold with a side-dish of crow is better than continuing a bloody battle in hopes of getting silver or bronze. The brash Silicon Valley giant has done what seemed unthinkable just a few weeks ago: surrendered.

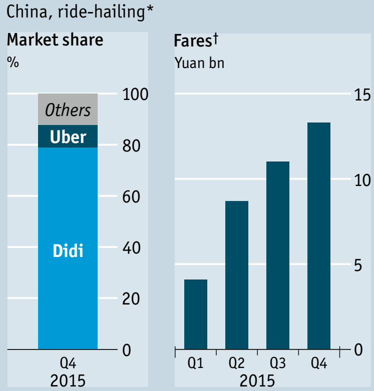
On August 1st Uber agreed to hand over its Chinese operations to Didi, in return for a 17.7% stake in the combined company's equity. Uber, though, will get only 5.9% of the voting rights in the new entity. Investors in Uber China, including Baidu, a big Chinese internet firm, will get a 2.3% stake. Mr Kalanick will serve on Didi's board, and Cheng Wei, Didi's boss, will join Uber's board. The deal is a boon for both companies, but especially so for Uber.

For years Uber has lagged behind Didi, which has an estimated four-fifths of the Chinese ride-hailing market (see chart). Critics of Uber's record in China say the American firm was both late to the market and sometimes flat-footed as it tried to adapt. For too long it used Google maps, which do not work well in China, before switching to a local service. Another problem, not of its own making, was that it offered a credit-card-based payment system even though such cards are not widely used on the mainland. Many people prefer to transact using WeChat, a hugely popular messaging app (see next story). But WeChat (whose owner, Tencent, is an investor in Didi), sometimes blocked Uber from the superapp, wounding its business.

In contrast, Didi proved a nimbler innovator than Uber and other rivals expected. It used its early presence in the market to establish its operating platform on a large scale, says Jeffrey Towson of Peking University. It started with taxi-hailing, not chauffeur-driven cars, which helped it win over grumpy taxi drivers and local politicians. In time, it added bus-hailing, car-pooling that came to resemble social networking and other inventive offerings. And it was able to integrate its service early on with WeChat.

The days of free-riding

China, ride-hailing*



Source: Analysys

*Includes chauffeur-driven cars but not taxis
†Shared by drivers and ride-hailing firm

The two firms' race was an extremely costly one: in two years, Uber lost $2 billion in China; Didi is believed to have lost far more. An investor close to both companies claims that Uber China lost $250m just in the past month, which he believes gave it no choice but to succumb. The money mainly went on subsidies to lure both drivers and passengers.

Investors on both sides approve of the arrangement. But it was Uber's investors who had been growing particularly queasy about the bloodbath in China. A long fight in China could have drained its resources and forced it to raise more money, diluting their stake. Uber, for its part, can console itself that the deal this week smooths the way for its expected initial public offering, which losses in China had reportedly held up. The stake in Didi should rise in value, and Uber can take a share of Chinese growth without having to spend another tuppence there. By striking the deal, Uber will have outdone Facebook, Google and Amazon in China, says Bill Gurley of Benchmark Capital, an investor in Uber who sits on its board.

The deal raises three big questions. One is what the alliance means for the global ride-hailing market. When it was at war with Mr Kalanick, Didi had invested in Uber's rivals, including Lyft in America, ▸▸

Ola in India and Grab in South-East Asia, in an attempt to weaken its enemy. The three smaller firms also formed an alliance to share technology and tips so as to better fight Uber. Now it is the alliance between Uber and Didi that seems strongest. The Chinese firm even agreed this week to invest $1 billion in the American startup. There are whispers that Didi and Uber are quickly moving forward with plans to carve up the world between them.

As a result, Lyft, Ola and Grab may not be able to count on Didi's cheque-book being open far into the future (although rumours surfaced this week that Didi is in fact involved in a new $600m round of financing for Grab and will continue with it). And the small fry now find themselves with a conflicted investor, who can try to influence their direction but has a strong, strategic relationship with their chief rival, Uber. Lyft and the others may try to find new backers to buy Didi's stakes in them, but in the meantime it brings uncertainty to these firms. Speculation that predated this week's news, that Lyft could be sold, has grown stronger still.

Fare trade

A second question is about the effect of the deal on ride-hailing customers. Consumers have been complaining noisily this week on Weibo, the Chinese version of Twitter, that fares have already shot up. An Uber driver in Shanghai says that pre-deal, he earned a subsidy at rush hour worth 1.8 times the fare. This will not last. And if a popular backlash grows from both consumers and drivers, it will focus attention on the Chinese government and its plans for the country's ride-hailing market. Just before the news of the agreement between Uber and Didi, seven ministries jointly announced a new law that legalises online ride-hailing services for the first time—and, in effect, bans all subsidies.

Some have claimed that the new law is a factor in why Uber China sold out. Because the underdog in ride-hailing markets typically needs subsidies more than the dominant firm, the new regime would have harmed it most had it stayed the course in China. But people familiar with the deal confirm that negotiations have in fact been under way for weeks, and say the new law was rather the final straw for the American firm.

A last question is how the Chinese authorities will treat the deal. The Ministry of Commerce on August 2nd tartly rejected Didi's claim that the deal was not subject to anti-trust scrutiny. Given public disgruntlement, it is likely to give the deal a noisy vetting. But the government has also allowed lots of big mergers and quasi-monopolies in various sectors of the internet already. It has a penchant for national champions, and Didi, after digesting its chief foe in China, will certainly be one. ■

China's mobile internet

WeChat's world

SHANGHAI

China's WeChat shows the way to social media's future

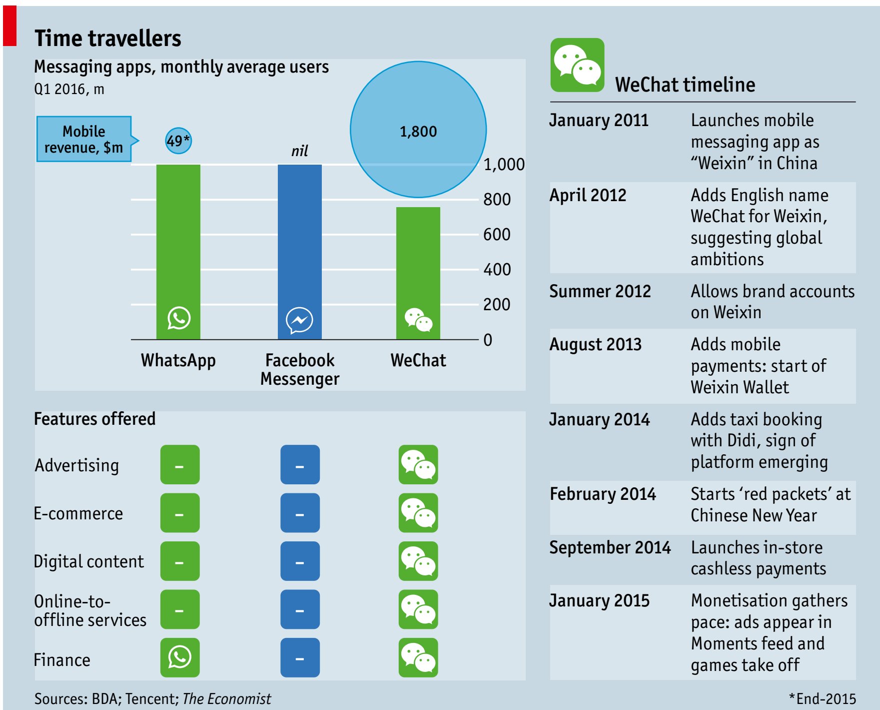
YU HUI, a boisterous four-year-old living in Shanghai, is what marketing people call a digital native. Over a year ago, she started communicating with her parents using WeChat, a Chinese mobile-messaging service. She is too young to carry around a mobile phone. Instead she uses a Mon Mon, an internet-connected device that links through the cloud to the WeChat app. The cuddly critter's rotund belly disguises a microphone, which Yu Hui uses to send rambling updates and songs to her parents; it lights up when she gets an incoming message back.

Like most professionals on the mainland, her mother uses WeChat rather than e-mail to conduct much of her business. The app offers everything from free video calls and instant group chats to news updates and easy sharing of large multimedia files. It has a business-oriented chat service akin to America's Slack. Yu Hui's mother also uses her smartphone camera to scan the WeChat QR (quick response) codes of people she meets far more often these days than she exchanges business cards. Yu Hui's father uses the app to shop online, to pay for goods at physical stores, settle utility bills and split dinner tabs with friends, just with a few taps. He can easily book and pay for taxis, dumpling deliveries, theatre tickets, hospital appointments and foreign holidays, all without ever leaving the WeChat universe.

As one American venture capitalist puts it, WeChat is there "at every point of your daily contact with the world, from morning until night". It is this status as a hub for all internet activity, and as a platform through which users find their way to other services, that inspires Silicon Valley firms, including Facebook, to monitor WeChat closely. They are right to cast an envious eye. People who divide their time between China and the West complain that leaving WeChat behind is akin to stepping back in time.

Among all its services, it is perhaps its promise of a cashless economy, a recurring dream of the internet age, that impresses onlookers the most. Thanks to WeChat, Chinese consumers can navigate their day without once spending banknotes or pulling out plastic. It is the best example yet of how China is shaping the future of the mobile internet for consumers everywhere.

That is only fitting, for China makes and puts to good use more smartphones than any other country. More Chinese reach the internet via their mobiles than do so in America, Brazil and Indonesia combined. Many leapt from the pre-web era straight to ▸▸



the mobile internet, skipping the personal computer altogether. About half of all sales over the internet in China take place via mobile phones, against roughly a third of total sales in America. In other words, the conditions were all there for WeChat to take wing: new technologies, business models built around mobile phones, and above all, customers eager to experiment.

The service, which is known on the mainland as Weixin, began five years ago as an innovation from Tencent, a Chinese online-gaming and social-media firm. By now over 700m people use it, and it is one of the world's most popular messaging apps (see chart on previous page). More than a third of all the time spent by mainlanders on the mobile internet is spent on WeChat. A typical user returns to it ten times a day or more.

WeChat has worked hard to make sure that its product is enjoyable to use. Shaking the phone has proven a popular way to make new friends who are also users. Waving it at a television allows the app to recognise the current programme and viewers to interact. A successful stunt during last year's celebration of Chinese New Year's Eve saw CCTV, the official state broadcaster, offer millions of dollars in cash rewards to WeChat users who shook their phones on cue. Punters did so 11 billion times during the show, with 810m shakes a minute recorded at one point.

Most importantly, over half of WeChat users have been persuaded to link their bank cards to the app. That is a notable achievement given that China's is a distrustful society and the internet is a free-for-all of cybercrime, malware and scams. Yet using its trusted brand, and putting to work robust identity and password authentication, Tencent was able to win over the public. In contrast, Western products such as Snapchat and WhatsApp have yet to persuade consumers to entrust them with their financial details. Japan's Line (which recently floated shares on the New York and Tokyo stock exchanges) and South Korea's KakaoTalk (in which Tencent is a big investor) have done better, but they cannot match the Chinese platform.

One app to rule them all

How did Tencent take WeChat so far ahead of its rivals? The answer lies partly in the peculiarities of the local market. Unlike most Westerners, many Chinese possessed multiple mobile devices, and they quickly took to an app that offered them an easy way to integrate them all into a single digital identity. In America messaging apps had a potent competitor in the form of basic mobile-phone plans, which bundled in SMS messaging. But text messages were costly in China, so consumers eagerly adopted the free messaging app. And e-mail never took off on the mainland the way it has around the world, mainly because the internet came late; that left an opening for messaging apps.

Time for a shot of WeChat

But the bigger explanation for WeChat's rise is Tencent's ability to innovate. Many Chinese grew up using QQ, a PC-based messaging platform offered by Tencent that still has over 800m registered users. QQ was a copy of ICQ, a pioneering Israeli messaging service. But then the Chinese imitator learned to think for itself. Spotting the coming rise of the mobile internet, Tencent challenged several internal teams to design and develop a smartphone-only messaging app. The QQ insiders came up with something along the lines of their existing product for the PC, but another team of outsiders (from a just-acquired firm) came up with Weixin. When Tencent launched the new app, it made it easy for QQ's users to transfer their contacts over to the new app.

Another stroke of brilliance came two years ago when the service launched a "red packet" campaign in which WeChat users were able to send digital money to friends and family to celebrate Chinese New Year rather than sending cash in a red envelope, as is customary. It was clever of the firm to turn dutiful gift-giving into an exciting game, notes Connie Chan of Andreessen Horowitz, a VC firm. It also encouraged users to bind together into groups to send money, often in randomised amounts (if you send 3,000 yuan to 30 friends, they may not get 100 yuan each; WeChat decides how much). That in turn led to explosive growth in group chats. This year, over 400m users (both as individuals and in groups) sent 32 billion packets of digital cash during the celebration.

The enthusiasm with which WeChat users have adopted the platform makes them valuable to Tencent in ways that rivals can only dream of. After years of patient investment, its parent now earns a large and rising profit from WeChat. While other free messaging apps struggle to bring in much money, Duncan Clark of BDA, a technology consultancy in Beijing, estimates that WeChat earned about $1.8 billion in revenues last year. By the reckoning of HSBC, a bank, according to current valuations for tech firms, WeChat could be worth over $80 billion already.

Over half of its revenues come from online games, where Tencent, the biggest gaming firm, is extremely strong. E-commerce is another driver of the business model. The firm earns fees when consumers shop at one of the more than 10m merchants (including some celebrities) that have official accounts on the app. Once users attach their bank cards to WeChat's wallet, they typically go on shopping sprees involving far more transactions per month than, for instance, Americans make on plastic. Three years ago, very few people bought things using WeChat but now roughly a third of its users are making regular e-commerce purchases directly though the app. A virtuous circle is operating: as more merchants and brands set up official accounts, it becomes a buzzier and more appealing bazaar.

Users' dependence on the portal means a treasure-trove of insights into their preferences and peccadilloes. That, in turn, makes WeChat much more valuable to advertisers keen to target consumers as precisely as possible. There are few firms better placed to take advantage of the rise of social mobile advertising than WeChat, reckons Goldman Sachs, an investment bank. When BMW, a German carmaker, launched the first-ever ad to appear on the WeChat Moments page (which is akin to a Facebook feed) of selected users, there followed nothing like pique at the commercial intrusion, but rather an uproar from people demanding to know why they had not received the ad. Even though Tencent has deliberately trodden carefully in introducing targeted ads on users' Moments pages, its official corporate accounts enjoy billions of impressions each day.

For Western firms, the most telling lesson from WeChat's success is that consumers and advertisers will handsomely reward companies that solve the myriad problems that bedevil the mobile internet. The smartphone is a marvellous invention, but it can be frustrating. In much of the world, there are too many annoying notifications and updates and the proliferation of apps is baffling. WeChat provides an answer to these problems.

Better-known rivals in the West regard WeChat's rise with more than a tinge of jealousy. One executive, David Marcus, who runs Facebook Messenger, a popular messaging app run by the social network, is willing to talk about it openly. He calls WeChat, simply, "inspiring". His plan, to transform Messenger into a platform where people can communicate with businesses and buy things, sounds familiar.

Even enthusiasts acknowledge that the mobile ecosystem is different in the West and that WeChat's reach and primacy in the eyes of consumers will not be easily replicated. It took off in China well before the app ecosystem had taken hold, as it has now in America and Europe. Western consumers are accustomed to using many different apps to access the internet, not just one. It would require a lot of nudging to encourage use of a single, central hub.

Nor is there much chance that Facebook could make a significant dent in WeChat's dominance in China. The Silicon Valley darling enjoys incumbency and the network effect in many of its markets. That has sabotaged WeChat's own efforts to expand abroad (despite splashy ad campaigns featuring Lionel Messi, a footballer). But the same rule applies if Facebook enters China, which could happen this year or next. "We have the huge advantage of incumbency and local knowledge," says an executive at Tencent. "Weixin is quite simply more of a super-app than Facebook."

Indeed, WeChat has already proved itself in the teeth of competition. Many Chinese champions have succeeded only because the government has hobbled domestic rivals and blocked foreign entrants. Here, too, Tencent breaks the mould. It has withstood numerous attempts by Alibaba, a formidable local rival, to knock it and its creations off their perch. And it is Facebook's WhatsApp that is WeChat's most obvious rival. Unlike Facebook itself, and Twitter, both of which are blocked on the mainland, WhatsApp is free to operate. WeChat has flourished for simple, commercial reasons: it solves problems for its users, and it delights them with new and unexpected offerings. That will change the mobile internet for everyone—those outside China included, as Western firms do their all to emulate its success. ■

Tobacco regulation

No logo

NEW YORK

Big Tobacco's controversial, ailing crusade against plain packaging

THREE years ago, the government of Togo, which has a gross domestic product of $4 billion, received a letter from Philip Morris International, a tobacco giant which last year earned revenues of $74 billion. The country had been mulling bringing in plain packaging for cigarette boxes. It would risk "violating the Togolese constitution", the firm's subsidiary explained, "providing tobacco manufacturers the right to significant compensation." It then outlined how plain packaging would violate binding global and regional agreements. Togo was in no position to anger its international partners, it suggested.

For health advocates, such tactics are the last refuge of firms they have long denounced. But tobacco companies will do what they can to protect their packaging. They detest warnings with repulsive images of decaying body parts. In 2010 Philip Morris sued Uruguay, claiming that big warnings on boxes violated a trade deal. Then two years later Australia became the first country to go further, banishing iconic trademarks from tobacco packs. Its law mandates that brand names—such as Marlboro, Winfield or Dunhill—appear in grey type against a background of Pantone 448C, a putrid green deemed the world's ugliest colour by a market-research firm.

So tobacco firms sued—in Australian courts, before a UN tribunal and by supporting countries that challenged the rule before the World Trade Organisation (WTO) on the ground that banning trademarks represents an expropriation of intellectual property (IP). Less formally, they and allies have lobbied against warnings and plain packaging in places ranging from Namibia to New Zealand. It has all been surprisingly effective. Until very recently, Australia has been the only country to ban tobacco trademarks from cigarette packs.

Such avenues may be closing. Although the WTO's decision is still pending, firms lost their other suits against Australia. Last month arbitrators at the World Bank threw out the lawsuit against Uruguay. In May the European Court of Justice upheld a rule on big warnings and Britain's High Court confirmed one for plain packaging. It seems likely that more governments will in future prioritise public health over IP. Canada, France and Ireland are already moving towards plain packs.

If so, ugly packaging could become the most damaging rule tobacco firms have faced in years. To date many laws have hurt firms in some ways but also, strangely, helped them in others. Bans on advertising lower their costs. Small competitors, unable to advertise, struggle to grow. High excise taxes can be another boon: when taxes are fixed and large, a big increase in the underlying price of a pack amounts to a relatively small rise in the pack's total price. High prices have sustained tobacco firms, even as smoking rates decline. "They probably have the best pricing power of any industry," says James Bushnell of Exane BNP Paribas, a broker.

But plain packaging clamps down on one of their last bits of advertising. The design of the box is where they must convey not only the name of the brand but abstract qualities, such as masculinity or the idea that a product is "premium", and worth an extra outlay. If such traits are stripped from packs, consumers may choose cheaper brands. That is particularly worrisome in emerging markets, says Mr Bushnell, where standard packs would threaten the aspirational appeal of smoking. Other "sin" industries are worried. The International Trademark Association frets that governments might strip trademarks from junk food and liquor.

It may become pointless for cigarette firms to start legal proceedings. The Trans-Pacific Partnership (TPP), a pending free-trade agreement among 12 countries, shields governments from lawsuits over tobacco rules. It may unravel, but future pacts could have similar terms. Only America, where the right to free speech makes standard packs highly unlikely, may remain an anomaly (though it is a signatory to the TPP). In the past investors often viewed a new wave of rules on tobacco as a chance to buy tobacco stocks inexpensively, before they resumed their steady rise. This time may be different. ■

Ashes to ashes

Bosses' salaries in Japan

Pay check

TOKYO

Japanese bosses still find it hard to ask for more

TO PROMOTE team spirit among their loyal, lifelong employees, Japanese bosses live in modest houses and take the metro to work. They also keep the pay gap between themselves and workers tiny by international standards (see chart). To them the news that SoftBank, a telecoms and internet firm, paid its former, Indian-born president, Nikesh Arora, ¥31.5 billion ($300m) in two years defies comprehension. Bosses at the biggest firms receive ¥100m ($1m) a year on average.

Corporate-governance experts are used to grappling with excessive executive pay. In Japan, they are pondering how big a problem rock-bottom compensation may be. The earnings of bosses at listed firms weigh in at roughly a tenth of what American executives get. Foreign bosses in Tokyo, such as Mr Arora, or Carlos Ghosn of Nissan, a car firm, come near the top of global league tables, but very highly-rewarded local executives are extremely rare.

Low compensation doubtless contributes to a cautious culture in which many firms prefer to sit on vast piles of cash—non-financial firms now hold more than ¥1 quadrillion ($9.5 trillion) of financial assets, including cash—rather than invest in risky new projects. Japanese firms whose bosses receive fatter paychecks outperform peers, according to a recent study from Goldman Sachs, an investment bank.

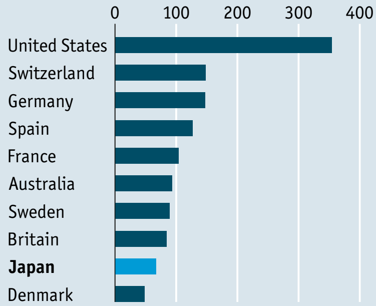
Not only is there too little financial incentive to make bold bets, but there are social penalties if things don't work out. If a risky new tack fails, that could mean losing face, being forced to cut the workforce or forfeiting the privilege of staying on well past retirement as a paid adviser.

Japanese companies have recently started making better returns, partly because of a new corporate-governance code introduced by Shinzo Abe, the prime minister, in June 2015. The government took care to include in its new code a recommendation that firms lift the variable bit in pay packages that is linked to long-term results. Such incentive-based pay makes up just 14% of packages in Japan, compared with 33% in Germany and 69% in America, according to Towers Watson, a human-resources consultancy. Accordingly, two Japanese giants—Shiseido, a cosmetics firm, and Obayashi, a builder—began for the first time to offer their executives stock-option plans tied to corporate performance.

But the unintended effects of an ill-conceived regulation from 2010 may yet hold back much-needed change on pay. Back then, securities regulators required listed companies to disclose, for the first time, all bosses earning above ¥100m. The idea was to increase transparency for investors (before, companies disclosed only the sum of the total executive-pay pot, for shareholder approval). There were hardly any that met the threshold—in 2014 only executives at 9% of listed firms had to be outed.

Underpaid, over there

Ratio of average CEO pay to workers' pay at listed companies, selected countries, 2011-12



Source: American Federation of Labour and Congress of Industrial Organisations

Even so, it was considered embarrassing to be named. Naohiko Abe of Pay Governance, which advises corporate compensation committees, says he was inundated with calls early on checking what others firms' bosses were being paid. In the West, such transparency has tended to have the effect of raising the compensation of comparatively underpaid bosses. In Japan, some quickly took a pay cut so as not to appear on the list, says Mr Abe. In particular, says Nicholas Benes of the Board Director Training Institute of Japan, which promotes better governance, the ¥100m-disclosure rule inadvertently sets a limit on lifting the incentive portion of pay cheques (salaries are mostly cash-based).

Still, there has been progress. The number of bosses earning $1m, or enough to require disclosure, has risen from fewer than 300 to just over 500 since 2009. Some people want to go further. Takeshi Niinami, the boss of Suntory, a drinks giant, and a prominent adviser to the government, thinks that firms should eschew thresholds and simply disclose the compensation of all their best-paid people. Openly paying bosses oodles of cash and stock options might work best in topsy-turvy Japan. ■

The chocolate industry

Cocoa nuts

Where Starbucks once blazed a trail, chocolatiers are following

THEY have "brew bars", single-origin beans and hessian sacks from exotic lands. Sound familiar? Posh chocolate shops are springing up in the hip neighbourhoods where coffee culture long ago took root. All the talk is of aromas and sustainability—the usual stuff of craft products that makes it seem stingy not to fork out £7.50 ($10) for something that disappears in a few mouthfuls.

"Coffee has paved the way for chocolate," says Lani Kingston, the boss in London of Mast Brothers, a well-known Brooklyn-based chocolate-maker that came to Britain last year. For a while it even had to fend off intrigue over whether it had melted another maker's squares into its own bars, such is the growing fascination with artisanal chocolate.

More established chocolatiers are trying to do for the stuff what Starbucks once did for coffee—investing a commoditised product with a dash of high-street chic. Last year Ferrero Rocher, an Italian brand, bought Thorntons, a UK chocolate retailer with almost 250 stores. Lindt and Sprüngli, owner of Switzerland's best-known brand, aims to become the world's biggest retailer of premium chocolate in four years. It expects to add 65 stores this year, after 50 new ones in 2015.

Posh chocolate is where the money is. Euromonitor, a retail consultancy, says that worldwide consumption of all chocolate has been stagnant during the past five years, mostly because rich-world consumers are eating healthier snacks. But sales of dark chocolate grew by 5.1% and 3.3% last year in America and western Europe, respectively.

The upmarket trend extends back to the grower. Doug Hawkins of Hardman Agribusiness, an advisory firm, says that most cocoa is produced by smallholders who have not increased supply in recent years as much as other commodity producers, helping push up prices. Posh chocolatiers such as Britain's Hotel Chocolat, with higher margins, can absorb that better than big brands such as Mars.

Rising raw-material costs and stagnant demand bode less well for big manufacturers. That may be one reason Mondelez International, owner of Cadbury, has bid for Hershey, another American firm. They are eying potential chocoholics in China and India. But again, it is quality chocolate that will most appeal to elites with purchasing power. As Euromonitor notes, it would take an Indian on average a month's wages to buy the chocolate a Brit scoffs in a year.

Schumpeter | Look before you leap

The notion of leapfrogging poor infrastructure in Africa needs to come back down to earth

CAN entrepreneurs make up for a lack of roads? In Rwanda, where most of the population live in cut-off villages, the government wants to skip straight to drones. Encouraged by Paul Kagame, the president and a darling of the development industry (if not of human-rights activists), some of Silicon Valley's most prominent venture-capital firms, including Sequoia Capital and the investment arm of Google's parent company, Alphabet, have bet that tiny, unmanned aircraft carrying medical supplies can simply hop over the rolling green hills and the mud tracks that barely connect people now.

It is the latest example of what businesspeople working across Africa call "leapfrogging". Usually married to an almost evangelical belief in the power of startups, this is the notion that, having failed to adopt now-outdated technology, Africa can simply jump straight over it and go right to the latest thing. Just as drones can make up for poor roads, the theory goes, mobile phones can overcome a lack of well-functioning banks, portable solar panels can stand in for missing power stations and free learning apps can substitute for patchy education.

There is a compelling precedent. Fifteen years ago, only a tiny fraction of Africans had access to phones of any kind. Getting a landline installed meant waiting years. Then mobile telephony exploded. In some African countries, such as Uganda, the number of mobile phones came to surpass the total number of landlines in less time than the old state monopoly would take to install a single connection in your house (typically two years or more). When a telecoms mast goes up, other new businesses follow. Young men start selling airtime; farmers find new markets.

Now the hope is that drones could take over from mobile phones as the way to transform Africa. The project under way in Rwanda is courtesy of a startup based in Silicon Valley called Zipline. Its idea is to use small, fixed-wing drones to drop off packets of blood with parachutes from Rwanda's five blood banks to hospitals and health-care centres, under a contract with the government. A lot of women die in childbirth because they cannot get blood quickly enough.

But the hype about machines saving African lives ought to elicit caution. No one can say how many people will benefit from Zipline, which has yet to begin operating, or whether there will be sufficient profits to continue over the long term. Another project is the world's very first "drone port", designed for Rwanda by Foster + Partners, a fancy British firm of architects that wants every small town in Africa to have its own drone port by 2030. Yet its Rwandan project won't be completed for another four years. A separate initiative, in Malawi, to transport blood samples for HIV tests, received money from UNICEF, a branch of the UN, and testing is under way. The project is pricey—at $7,000 a drone. Paying drivers on motorbikes would be cheaper.

Such caveats hardly dampen the mood at business conferences in Africa, where you find hundreds of investors gushing about their plans to help the poor with new technology and make big profits while doing it. "Within the next few years you'll really see leapfrogging taking off," says Ashish Thakkar, a British-born, Ugandan businessman whose Mara Group, a business-services firm, is setting up tech businesses across the continent. Perhaps, but tech booms based on leapfrogging have been wrongly anticipated in the past. Americans who turn up in Nairobi and Dar es Salaam with millions of dollars hoping to buy startups that have risen as part of the so-called "Silicon Savannah", an east African cluster, for example, frequently leave empty-handed because there isn't all that much to buy.

African tech types often think they can quickly copy rich-country products and sell them to the urban middle class. But then they discover that there is no getting around complex tax laws, a dearth of engineers and fragmented markets. The Western investors who back them have even less grasp of just how dysfunctional basic infrastructure can be, notes Ory Okolloh, a Kenyan investor and a political activist. All the evidence suggests that technology firms are no better at leapfrogging such hurdles than, say, a carmaker. The only part of the continent with a mature tech scene is South Africa: a country which also has good roads, reliable power and plenty of well-educated graduates.

Mr Kagame himself has admitted that leapfrogging has limits. Drones can transport blood, but they can't transport doctors, who need roads. Solar panels will help people light their homes without burning kerosene, but they will not replace the functioning grid that manufacturers need. Nor will clever technology firms do away with the need for well-drafted regulation and the rule of law.

Mind the gaps

A few tech firms are pulling off impressive feats. M-Kopa, a Kenyan company backed by the Gates Foundation, has sold some 375,000 solar panels on credit, using mobile money to collect payments and to monitor the creditworthiness of borrowers. But it has had to build an entire network of old-fashioned marketers going from door to door. Jumia, a Nigerian e-commerce firm, built separate logistics systems in seven different countries. In other words, to make the most of digital opportunities these firms had to construct their own basic physical infrastructure.

Wander the streets of any big African city and it soon becomes clear that a lack of enterprise is hardly the problem. In Nairobi's biggest slum, Kibera, the narrow dirt streets bustle with businesses charging phones from generators; running tiny cinemas showing Premier League football on satellite TVs; and selling solar panels. What you won't find are clean toilets, potable water or anyone earning much over a few dollars a day. The main leapfrogging that takes place is over the open sewers. That is not something you can fix with a mobile-phone app. ■

Tariffs and wages

An inconvenient iota of truth

The third in our series looks at the Stolper-Samuelson theorem

IN AUGUST 1960 Wolfgang Stolper, an American economist working for Nigeria's development ministry, embarked on a tour of the country's poor northern region, a land of "dirt and dignity", long ruled by conservative emirs and "second-rate British civil servants who didn't like business".

In this bleak commercial landscape one strange flower bloomed: Kaduna Textile Mills, built by a Lancashire firm a few years before, employed 1,400 people paid as little as £4.80 ($6.36) a day in today's prices. And yet it required a 90% tariff to compete.

In this series

1 Akerlof's market for lemons
2 Minsky's financial cycle
3 The Stolper-Samuelson theorem
4 The Keynesian multiplier
5 The Nash equilibrium
6 The Mundell-Fleming trilemma

Skilled labour was scarce: the mill had found only six northerners worth training as foremen (three failed, two were "so-so", one was "superb"). Some employees walked ten miles to work, others carried the hopes of mendicant relatives on their backs. Many quit, adding to the cost of finding and training replacements. Those who stayed were often too tired, inexperienced or ill-educated to maintain the machines properly. "African labour is the worst paid and most expensive in the world," Stolper complained.

He concluded that Nigeria was not yet ready for large-scale industry. "Any industry which required high duties impoverished the country and wasn't worth having," he believed. This was not a popular view among his fellow planners. But Stolper's ideas carried unusual weight. He was a successful schmoozer, able to drink like a fish. He liked "getting his hands dirty" in empirical work. And his trump card, which won him the respect of friends and the ear of superiors, was the "Stolper-Samuelson theorem" that bore his name.

The theorem was set out 20 years earlier in a seminal paper, co-authored by Paul Samuelson, one of the most celebrated thinkers in the discipline. It shed new light on an old subject: the relationship between tariffs and wages. Its fame and influence were pervasive and persistent, preceding Stolper to Nigeria and outlasting his death, in 2002, at the age of 89. Even today, the theorem is shaping debates on trade agreements like the Trans-Pacific Partnership (TPP) between America and 11 other Pacific-rim countries.

The paper was "remarkable", according to Alan Deardorff of the University of Michigan, partly because it proved something seemingly obvious to non-economists: free trade with low-wage nations could hurt workers in a high-wage country. This commonsensical complaint had traditionally cut little ice with economists. They pointed out that poorly paid labour is not necessarily cheap, because low wages often reflect poor productivity—as Kaduna Textile Mills showed. The Stolper-Samuelson theorem, however, found "an iota of possible truth" (as Samuelson put it later) in the hoary argument that workers in rich countries needed protection from "pauper labour" paid a pittance elsewhere.

To understand why the theorem made a splash, it helps to understand the pool of received wisdom it disturbed. Economists had always known that tariffs helped the industries sheltered by them. But they were equally adamant that free trade benefited countries as a whole. David Ricardo showed in 1817 that a country could benefit from trade even if it did everything better than its neighbours. A country that is better at everything will still be "most better", so to speak, at something. It should concentrate on that, Ricardo showed, importing what its neighbours do "least worse".

If bad grammar is not enough to make the point, an old analogy might. Suppose that the best lawyer in town is also the best typist. He takes only ten minutes to type a document that his secretary finishes in 20. In that sense, typing costs him less. But in the time he spent typing he could have been lawyering. And he could have done vastly more legal work than his secretary could do, even in twice the time. In that sense typing costs him far more. It thus pays the fast-typing lawyer to specialise in legal work and "import" typing.

In Ricardo's model, the same industry can require more labour in one country than in another. Such differences in labour requirements are one motivation for trade. Another is differences in labour supplies. In some nations, such as America, labour is scarce relative to the amount of land, capital or education the country has accumulated. In others the reverse is true. Countries differ in their mix of labour, land, capital, skill and other "factors of production". In the 1920s and 1930s Eli Heckscher and his student, Bertil Ohlin, pioneered a model of trade driven by these differences.

In their model, trade allowed countries like America to economise on labour, by ▸▸

concentrating on capital-intensive activities that made little use of it. Industries that required large amounts of elbow grease could be left to foreigners. In this way, trade alleviated labour scarcity.

That was good for the country, but was it good for workers? Scarcity is a source of value. If trade eased workers' rarity value, it would also erode their bargaining power. It was quite possible that free trade might reduce workers' share of the national income. But since trade would also enlarge that income, it should still leave workers better off, most economists felt. Moreover, even if foreign competition depressed "nominal" wages, it would also reduce the price of importable goods. Depending on their consumption patterns, workers' purchasing power might then increase, even if their wages fell.

Working hypothesis

There were other grounds for optimism. Labour, unlike oil, arable land, blast furnaces and many other productive resources, is required in every industry. Thus no matter how a country's industrial mix evolves, labour will always be in demand. Over time, labour is also versatile and adaptable. If trade allows one industry to expand and obliges another to contract, new workers will simply migrate towards the sunlit industrial uplands and turn their backs on the sunset sectors. "In the long run the working class as a whole has nothing to fear from international trade," concluded Gottfried Haberler, an Austrian economist, in 1936.

Stolper was not so sure. He felt that Ohlin's model disagreed with Haberler even if Ohlin himself was less clear-cut. Stolper shared his doubts with Samuelson, his young Harvard colleague. "Work it out, Wolfie," Samuelson urged.

The pair worked it out first with a simple example: a small economy blessed with abundant capital (or land), but scarce labour, making watches and wheat. Subsequent economists have clarified the intuition underlying their model. In one telling, watchmaking (which is labour-intensive) benefits from a 10% tariff. When the tariff is repealed, watch prices fall by a similar amount. The industry, which can no longer break even, begins to lay off workers and vacate land. When the dust settles, what happens to wages and land rents? A layman might assume that both fall by 10%, returning the watchmakers to profit. A clever layman might guess instead that rents will fall by less than wages, because the shrinkage of watchmaking releases more labour than land.

Both would be wrong, because both ignore what is going on in the rest of the economy. In particular, wheat prices have not fallen. Thus if wages and rents both decrease, wheat growers will become unusually profitable and expand. Since they require more land than labour, their expansion puts more upward pressure on rents than on wages. At the same time, the watch industry's contraction puts more downward pressure on wages than on rents. In the push and pull between the two industries, wages fall disproportionately—by more than 10%—while rents, paradoxically, rise a little.

This combination of slightly pricier land and much cheaper labour restores the modus vivendi between the two industries, halting the watchmakers' contraction and the wheat-farmers' expansion. Because the farmers need more land than labour, slightly higher rents deter them as forcefully as much lower wages attract them. The combination also restores the profits of the watchmakers, because the much cheaper labour helps them more than the slightly pricier land hurts them.

The upshot is that wages have fallen by more than watch prices, and rents have actually risen. It follows that workers are unambiguously worse off. Their versatility will not save them. Nor does it matter what mix of watches and wheat they buy.

Stolper, Samuelson and their successors subsequently extended the theorem to more complicated cases, albeit with some loss of crispness. One popular variation is to split labour into two—skilled and unskilled. That kind of distinction helps shed light on what Stolper later witnessed in Nigeria, where educated workers were vanishingly rare. With a 90% tariff, Kaduna Textile Mills could afford to train local foremen and hire technicians. Without it, Nigeria would probably have imported textiles from Lancashire instead. Free trade would thus have hurt the "scarce" factor.

In rich countries, skilled workers are abundant by international standards and unskilled workers are scarce. As globalisation has advanced, college-educated workers have enjoyed faster wage gains than their less educated countrymen, many of whom have suffered stagnant real earnings. On the face of it, this wage pattern is consistent with the Stolper-Samuelson theorem. Globalisation has hurt the scarce "factor" (unskilled labour) and helped the abundant one.

But look closer and puzzles remain. The theorem is unable to explain why skilled workers have prospered even in developing countries, where they are not abundant. Its assumption that every country makes everything—both watches and wheat—may also overstate trade's dangers. In reality, countries will import some things they no longer produce and others they never made. Imports cannot hurt a local industry that never existed (nor keep hurting an industry that is already dead).

Some of the theorem's other premises are also questionable. Its assumption that workers will move from one industry to another can blind it to the true source of their hardship. Chinese imports have not squeezed American manufacturing workers into less labour-intensive industries; they have squeezed them out of the labour force altogether, according to David Autor of the Massachusetts Institute of Technology and his co-authors. The "China shock", they point out, was concentrated in a few hard-hit manufacturing localities from which workers struggled to escape. Thanks to globalisation, goods now move easily across borders. But workers move uneasily even within them.

Grain men

Acclaim for the Stolper-Samuelson theorem was not instant or universal. The original paper was rejected by the *American Economic Review*, whose editors described it as "a very narrow study in formal theory". Even Samuelson's own textbook handled the proposition gingerly. After acknowledging that free trade could leave American workers worse off, he added a health warning: "Although admitting this as a slight theoretical possibility, most economists are still inclined to think that its grain of truth is outweighed by other, more realistic considerations," he wrote.

What did Stolper think? A veteran of economic practice as well as principles, he was not a slave to formalism or blind to "realistic considerations". Indeed, in Nigeria, Stolper discovered that he could "suspend theory" more easily than some of his politically minded colleagues (perhaps because theory was revealed to them, but written by him).

He was nonetheless sure that his paper was worth the fuss. He said he would give his left eye to produce another one like it. By the paper's 50th anniversary, he had indeed lost the use of that eye, he pointed out wistfully. The other side of the bargain was, however, left unfulfilled: he never did write another paper as good. Not many people have. ■

Also in this section

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Asia's next tiger

Good afternoon, Vietnam

HO CHI MINH CITY

Having attained middle-income status, Vietnam aims higher

WHEN Jonathan Moreno's company was looking for a location for a new factory in 2009 to make its medical devices, it ruled out much of the world. Europe and the Americas were too expensive, India was too complex and intellectual-property rights in China too patchy. In the end, Vietnam was the one candidate left standing. It still seemed risky as the country was just emerging as a destination for foreign investors. Seven years on, Mr Moreno surveys the scene—employees assemble delicate diagnostic probes in a room that resembles a laboratory—and has no doubt about where his company, Diversatek, will expand next. "To the back, there and there," he says, pointing to either side.

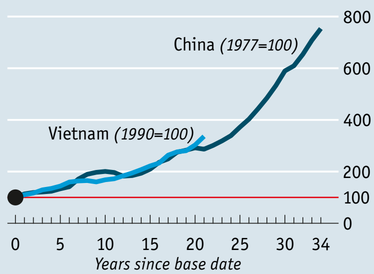
It is far from alone. Foreign direct investment in Vietnam hit a record in 2015 and has surged again this year. Deals reached $11.3 billion in the first half of 2016, up by 105% from the same period last year, despite a sluggish global economy. Big free-trade agreements explain some of the appeal. But something deeper is happening. Like South Korea, Taiwan and China before it, Vietnam is piecing together the right mix of ingredients for rapid, sustained growth.

Vietnam already has a strong, often underappreciated, record. Since 1990 its growth has averaged nearly 6% a year per person, second only to China. That has lifted it from among the world's poorest countries to middle-income status. If Vietnam can deliver 7% growth for another decade, its trajectory would be similar to those of China and the Asian tigers (see chart). But that is no sure thing. Should growth fall back to 4%, it would end up in the same underwhelming orbit as Thailand and Brazil.

Perhaps the biggest factor in Vietnam's favour is geography. Its border with China, a military flashpoint in the past, is now a competitive advantage. No other country is closer to the manufacturing heartland of southern China, with connections by land and sea. As Chinese wages rise, that makes Vietnam the obvious substitute for firms moving to lower-cost production hubs, especially if they want to maintain links back to China's well-stocked supply chains.

Be there soon

GDP per person, 2005 $ at PPP*



Source: Penn World Table, University of Groningen

*Purchasing-power parity

A relatively young population adds to Vietnam's appeal. Whereas China's median age is 36, Vietnam's is 30.7. Soon enough, it will start ageing more rapidly but its urban workforce has much scope to grow. Seven in ten Vietnamese live in the countryside, about the same as in India—and compared with only 44% in China. The reservoir of rural workers should help dampen wage pressures, giving Vietnam time to build labour-intensive industries, a necessity for a nation of nearly 100m people.

Many other countries also boast young workforces. But few have had as effective policies as Vietnam. Since the early 1990s the government has been very open to international trade and investment. This has given foreign companies the confidence to build factories. Foreign investors are responsible for a quarter of annual capital spending. Trade accounts for roughly 150% of national output, more than any other country at its level of per-person GDP.

Investors have also taken heart from the stability of Vietnam's long-term planning. Like China, it has used five-year plans as rough blueprints for development. But also like China, its governance allows scope for innovation: its 63 provinces compete with each other to attract investors. A model of developing industrial parks with foreign money and managers began in Ho Chi Minh City in 1991 and has since been replicated elsewhere.

And Vietnam's workforce is not just young but skilled. Public spending on education is about 6.3% of GDP, two percentage points more than the average for low- and middle-income countries. Although some governments spend even more, Vietnam's expenditures have been well focused, aiming to boost enrolment levels and ensure minimum standards. In global ▸▸

rankings, 15-year-olds in Vietnam beat those in America and Britain in maths and science. That pays dividends in its factories. At Saitex, a high-end denim manufacturer, workers must handle complex machinery—from lasers to nanobubble washers—all to produce the worn jeans so popular in the West.

On top of this solid foundation, Vietnam is reaping benefits from trade deals. It is set to be the biggest beneficiary of the Trans-Pacific Partnership (TPP), a 12-country deal that includes America and Japan. With American politics turning hostile to trade, there is a risk that the TPP will fail. But even if that happens, Vietnam will do well. The TPP has already helped to advertise its capabilities. And there are other major agreements: a free-trade pact with the EU is in the works, and one with South Korea went into force in December.

Yet Vietnam also faces a series of challenges, any of which could impede its rise. Speculative excesses in the past helped fuel a property bubble. It burst in 2011, saddling banks with bad debts. Vietnam created a "bad bank" to house the failed loans and has started cleaning up its banks. However, it has been slow to inject new capital into its banks and hesitant about modernising their operations.

In one crucial area it compares poorly with China: getting the most out of the private sector. Private Chinese companies generate about 1.7 yuan of revenue per yuan of assets, more than double the 0.7 ratio for state-owned enterprises (SOEs). In Vietnam private-sector productivity has slumped over the past decade to the 0.7 level, the same as SOEs, says the World Bank. One reason is that large groups in Vietnam sprawl across 6.4 separate industries on average; those in China operate in just 2.3, according to the OECD.

Furthermore, although Vietnam has

Buttonwood | The second big shift

The relationship between equity and bond values has changed again

INVESTORS who need income have traditionally opted for savings accounts and bonds. That was believed to be the safe approach. In the conventional view, equities were what you bought when you wanted long-term capital gains.

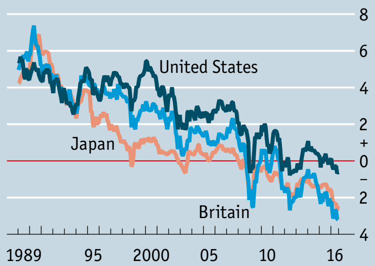
That view was always short-sighted; over 20-year periods around half of the total return from American shares comes from reinvesting dividends. But ignoring the income-generating appeal of equities looks particularly odd now. The dividend yield on shares in America, Britain and Japan is higher than the yield on ten-year government bonds; in the case of the latter two, the difference is more than two percentage points (see chart). The gap is nothing like as big in America, although many would argue that share buy-backs materially boost the effective yield.

For investors who started their careers in the 1980s and 1990s, this relationship looks very weird. For them, the norm was for bonds to offer a yield many percentage points higher than that from equities. As a result, when, in 2003, the dividend yield on British shares rose above the government-bond yield for a few days, many investors saw it as an historic buying opportunity. London's FTSE 100 index duly rallied sharply. A closer look at the chart suggests something significant has changed. Equities have frequently yielded more than bonds in both Britain and Japan since 2008, without signalling that shares were a steal.

Financial history shows that the valuation basis for equities and bonds has already undergone one historic change. Up until the late 1950s, it was quite common for equities to yield more than government bonds. That is because equities were perceived to be more risky. Companies pay dividends only after they have satisfied the demands of other creditors, in particular bondholders. The Depression had shown that equities could collapse in price and that many companies could go bust. So, the institutional investors of the 1930s and 1940s thought it prudent to place the bulk of their assets in bonds.

The big switch

Ten-year government-bond yield minus equity dividend yield, percentage points



Source: Thomson Reuters

But from the mid-1950s onwards, these big investors started to change their minds. Memories of the Depression faded. Equities might be individually risky but a diversified portfolio looked much more secure. Over time, the dividend income from shares would rise while the income from bonds was fixed. And as inflation soared in the 1960s and 1970s, that made holding bonds look like a very bad idea. The "cult of the equity" had arrived.

In other words, this first valuation shift between bonds and equities was down to a change in economic fundamentals and in the attitudes of institutional investors. Both factors are probably at play in this latest switch, too.

Since 2008 the developed world has struggled to generate either inflation or consistently rapid growth. That combination is better for bonds than it is for equities. In a sense equities have defied the odds, rallying strongly since the spring of 2009 despite sluggish economic growth. The reason is that profits (in America in particular) have been high as a proportion of GDP, because wages have been held down. But it seems unlikely that profits can stay elevated indefinitely. And although a diversified portfolio of equities protects investors against the risk of individual company failure, they can still suffer significant losses from a market sell-off. Japan's Nikkei 225 is less than half its 1989 peak. Dividend income can be slashed in a crisis; it fell by 28% in America in 2008, for example.

Investor attitudes have also changed. Regulations mean that insurance companies and pension funds have reduced their exposure to equities and pushed up their bond holdings. They are no longer automatic buyers of equities when the market falls. The cult of the equity has lost some important followers.

Central banks have also become huge players in the government-bond markets, pushing yields to negative levels in many cases. That has led some commentators to argue that, rather than equities being cheap, bonds are ridiculously expensive.

This view may turn out to be right. But investors have been betting that Japanese bonds are overvalued for more than 20 years in a trade now known as the "widowmaker". In the post-2008 world, bond yields seem likely to stay low. That should make investors cautious about using bond yields as a buy signal for equities. The income from equities looks very appealing and (in the absence of a recession) should provide support for share prices. But do not count on share prices rising sufficiently to push the dividend yield below bond yields again.

Economist.com/blogs/buttonwood

benefited from foreign investment, only 36% of its firms are integrated into export industries, compared with nearly 60% in Malaysia and Thailand, according to the Asian Development Bank (ADB). In some cases Vietnam has gone too high-end. Much has been made of Samsung's plans to invest $3 billion in mobile-phone production in Vietnam, but domestic suppliers provide it with little except plastic wrapping. Vu Thanh Tu Anh, director of the Fulbright Economics Teaching Program in Ho Chi Minh City, says the government needs to help build up supply chains—for example, training companies in textile production to support the apparel sector.

There are grounds for cautious optimism. The Ministry of Planning and Investment teamed up with the World Bank to lay out a strategy for change earlier this year. Their joint report, "Vietnam 2035", details how the country can make SOEs more commercial and reinvigorate the private sector. Weakened public finances—the fiscal deficit is set to be more than 6% of GDP for the fifth straight year in 2016—are putting pressure on the government. To bolster its revenues, it sold shares in more than 200 SOEs last year, the biggest annual tally ever. These were mostly small deals but in July it took a bolder step, scrapping a foreign-ownership limit (previously 49%) on Vinamilk, the country's main dairy company. Investors are hopeful this will serve as a template for more such reforms.

After years of solid growth, Vietnam has nearly reached a milestone. Now it is classified as a middle-income country, it is about to lose access to preferential financing from development banks. In 2017 the World Bank will start to phase out concessional lending. For Vietnam it is a moment to reflect on how far it has come and also on the trickier path ahead. It has a chance to be Asia's next great success story. It will take courage to get there. ■

European banks

Still stressed out

Stress-test results do little to dampen worries about Italy's lenders

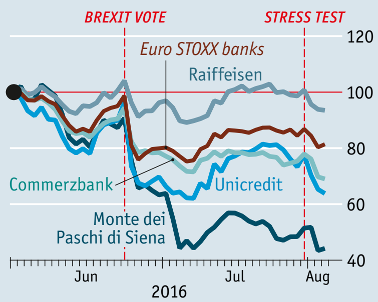
ANY big announcement about banks made after the markets close for the weekend is bound to bring back dark memories of the 2007-08 financial crisis. Although the results of the latest European bank stress tests, released on July 29th, contained much that was reassuring, they did not dispel investors' doubts about the industry's earnings prospects. And in the case of Italy, the tests seemed to exacerbate bigger worries. When the markets opened again on August 1st, they were marked by falls in banks' share prices; the Euro Stoxx banks index dropped by 3% and almost 5% on successive days.

In aggregate the results suggested that European banks were in a healthier position than when the last exercise was conducted, in autumn 2014. This time the banks began with an average "fully-loaded" capital ratio of 12.6% and ended with one of 9.2% in the tests' most adverse scenario; that compares with a fall from 11.1% to 7.6% last time. No country's banking sector ended the tests with an average capital ratio below the 5.2% of Ireland; in 2014, the ratio for several countries was negative, implying systemic insolvency. These figures are flattered, however, by the absence of banks from the still-struggling economies of Greece, Portugal or Cyprus.

But the real focus was on the weakness of specific banks, notably in Italy. The worst of the bunch was Monte dei Paschi,

Testing times

Share prices, June 1st 2016=100



Source: Thomson Reuters

Italy's third-largest lender. Its capital ratio was the only one to turn negative in the test, at -2.4%, meaning that it would be bankrupt if the tests' worst-case scenario came true. The bank anticipated this awful result by unveiling a plan of its own a few hours earlier to shore up its finances. The scheme involves increasing provisions on impaired loans from 29% to 40%; moving €27.7 billion ($30.9 billion) of the most troubled non-performing loans, discounted to 33% of book value, off its balance-sheet into a special-purpose vehicle; and securitising and selling these loans to investors.

The losses that Monte dei Paschi incurs as a result of this transaction will be offset by raising €5 billion of new equity, though this is conditional on the successful completion of the bad-loan spinoff. Although investors initially welcomed the plan, with the share price rallying early on August 1st, the bank's shares fell by a precipitous 16% on the following day as concerns grew that the deal may fall through and that regulators may impose losses on creditors if the capital-raising is unsuccessful.

Health assessment

UniCredit was the second-worst test performer among Italian banks, with a capital ratio of 7.1%. Its second-quarter results reinforced worries about its thin capital cushion, which has dipped from 10.5% to 10.3% since March. Analysts at Morgan Stanley, an investment bank, expect that it will need to raise €6 billion in capital. The bank has already announced the sale of its card-processing business; in the wake of a 17.8% share-price plunge in just three days after the tests, more action to spruce up its balance-sheet is surely needed.

The fall in Italian bank shares extended even to those that performed well in the stress tests, such as Banco Popolare. One fear is that the bad-loan plan laid out by Monte dei Paschi sets a new benchmark for the whole sector. Many Italian lenders still have provisions on impaired loans of below 20%, and value their non-performing loans at much more than 33 cents on the euro. If the Monte dei Paschi deal does indeed set the standard for the rest, Italian banks could need up to €18 billion more in capital, according to Autonomous, a research firm.

The stress test also highlighted other poor performers outside Italy. Allied Irish Bank had a capital ratio of just 4.3% in the adverse scenario, a result that may delay the Irish government's plans to float 25% of the bank in 2017. Further disappointments included Raiffeisen of Austria, the third-worst performer in the test with a 6.1% capital ratio, and two German behemoths, Commerzbank and Deutsche Bank. Yet despite share-price declines—exacerbated in Commerzbank's case by the release of a set of poor second-quarter results on August 2nd—the test results are unlikely to force an urgent response.

Indeed, most investors are more worried by chronic ailments than the sort of shocks simulated by the stress tests. Hani Redha of PineBridge Investments, an asset-management firm, says markets are more concerned with bank profitability than solvency. The stress tests were based on the effects of a spike in long-term yields, when continued low interest rates seem more likely to weigh on a sector that depends for its earnings on the gap between short- and long-term interest rates. Banks are tied closely to the economic health of the countries they operate in. As long as low growth persists in Europe, no one should expect its banks to perform all that well. ■

Japan's economy

Levitation speed

Japan gets less stimulus than expected

JAPAN'S fastest trains run above the tracks, not along them, suspended in the air by magnetic forces. One of these miraculous trains will eventually connect Tokyo and Osaka, cutting over 70 minutes off the journey time. In its ability to speed things up, this "maglev" technology is matched by the magic of macroeconomics. This week the government approved a fiscal-stimulus plan to revive Japan's economy that will, among other things, cut eight years off the completion time for the Tokyo-Osaka line.

The government's low-interest loan to high-speed rail was one of many goodies in a plan advertised at over ¥28 trillion (almost $280 billion). Only a fraction of that figure represents new government spending. And only a fraction of that fraction will be spent this fiscal year (which ends in March 2017). Nonetheless, ¥4.6 trillion will be included in the government's "supplementary" budget this year, a non-negligible sum equal to about 0.9% of GDP. This easing is also a striking contrast with the fiscal tightening that was previously planned. A much-feared increase in the consumption tax was postponed on June 1st.

In theory, the more a government does to revive demand, the less its central bank has to do. In practice, the government seems to be urging the Bank of Japan (BOJ) to match its stimulus efforts. On July 29th the BOJ demurred, easing monetary policy by less than expected. It increased its purchases of equities (via exchange-traded funds) but left its bond-buying and interest rates unchanged.

As if to throw a bone to the government, the BOJ did note that its monetary easing and the government's efforts to revive the economy will generate "synergy effects". It may explore these interactions further in a "comprehensive assessment" of policies it is undertaking for its next meeting in September.

Some commentators, including Adair Turner of the Institute for New Economic Thinking, argue that the synergy between monetary and fiscal stimulus can be pushed further. The government could finance its deficit with newly created money, not bonds. This was one of a variety of unconventional proposals the IMF analysed in its latest report on Japan's economy, also released this week. (Others included a policy of "irresponsible" fiscal and monetary stimulus in pursuit of inflation well above 2%, as advocated by Paul Krugman, a Nobel-prize winning economist, and a policy of capping the yen until prices reach a desired level, an idea propounded by Lars Svensson of the Stockholm School of Economics.)

All of these approaches could lift inflation and growth. Mr Turner's proposal could even lower public debt. The IMF worries, however, that these benefits will be negated if markets demand an inflation-risk premium or if they believe the state will subordinate monetary policy to its fiscal needs, replacing deflationary dangers with fears of excessive inflation (see Free exchange). Like its maglev trains, Japan's economy must build up velocity before it can levitate. To speed it up, some unconventional policies may be necessary. But there is always the worry that such policies might send Japan's economy off the rails altogether.

Property taxes

Home bias

VANCOUVER

A taxing problem for foreign buyers

EVEN in hot markets like Vancouver, property sales normally slow in the summer. But for Sonia Prasad and other estate agents, the last days of July were a blur of hurried sales and paperwork as buyers and sellers rushed to complete transactions before an August 2nd deadline.

On July 25th the provincial government of British Columbia decreed that, after that date, foreign buyers must pay a new 15% tax on any residential purchase. The tax is aimed at stopping these buyers from pushing up prices in Canada's most expensive residential-property market.

Ms Prasad's last-minute buyers included a couple from China who were purchasing a C$400,000 ($305,000) condominium in the suburb of New Westminster for their son, a student starting college in September. The extra $60,000 they would have had to pay might have killed the deal, Ms Prasad says. Indeed, the tax seems likely to have prompted some foreign buyers to walk away from deals agreed, but not completed, before the deadline.

Governments at all levels, from municipal to federal, have been under pressure over the past two years to curtail foreign ownership in Vancouver. Michael de Jong, the finance minister of British Columbia, says foreign nationals invested more than C$1 billion in the province's properties in the five weeks between June 10th and July 14th. More than C$860 million of that was spent in metropolitan Vancouver.

Back in 2011 the median price of a detached home in Vancouver was C$933,000; now it is C$1.56m. Household median incomes in the city have been rising only gently, from C$69,000 in 2011 to C$76,000 by 2014. Sherry Cooper, chief economist at Dominion Lending in Toronto, says Vancouver's inflated prices are higher than anywhere else in the country. "When everyone is screaming about affordability, the government has to look like it's doing something," she says.

Other jurisdictions have also implemented policies and surcharges to reduce foreign ownership in their residential markets. In December Australia's Foreign Investment Review Board started to charge application fees for foreign buyers. Hong Kong, the most expensive real-estate market in the world, has added a 15% surcharge on home purchases from non-permanent residents. Britain has raised the stamp duty on homes worth more than £1.5m, the kind of properties bought by rich foreigners.

To some, however, British Columbia's move was poorly thought out. Under the Canada China Foreign Investment Promotion and Protection Agreement which took force in October 2014, foreign investors must be treated as favourably as locals, says Barry Appleton, a trade lawyer. The new tax, which targets all foreigners and not just Chinese buyers, will also violate the terms of the North American Free Trade Agreement, he alleges. This policy could end up being settled in the courts. ■

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You may be included in one or more of the Settlements (as a Class Member) if you: (1) Directly purchased Freight Forwarding Services; (2) from any of the Defendants, their subsidiaries, or affiliates; (3) from January 1, 2001 through January 4, 2011; (4) in the U.S., or outside the U.S. for shipments within, to, or from the U.S.

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Free exchange | The desperation of independents

Stubbornly low interest rates may mean the end of central-bank autonomy

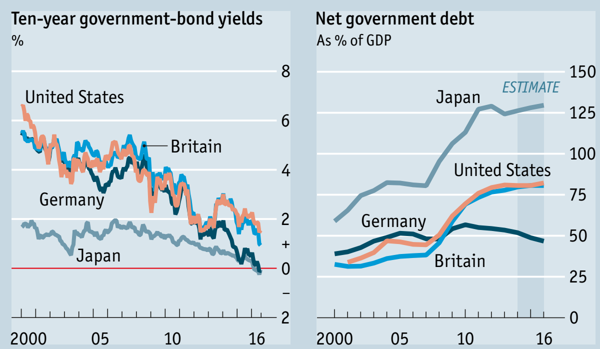
LIKE many articles of faith, central-bank independence requires some suspension of disbelief. In most countries the central bank is a branch of government, which appoints its top officials and sets its goals. Yet in the decades after the 1980s, when governments began giving the institutions operational independence, that faith seemed to move mountains. The shift coincided with the "great moderation" era of low inflation and gentle business cycles. Indeed, central bankers came to be seen as near-omnipotent. The 2007-08 crisis reminded the public that the monetary titans are mortal. Yet for all the criticism they have faced since then, central bankers have less to fear from frustrated politicians and angry voters than from the cold logic of low interest rates.

What is so special, exactly, about an independent central bank? Support for their autonomy emerged as a result of the counter-revolution against Keynesianism of the 1970s, and is built on two related ideas. The first is that independence is necessary to preserve monetary restraint. Robert Lucas, a Nobel-prize winning economist, argued that when elected leaders exercise influence over interest rates, they cannot resist the temptation to loosen monetary policy in election years, accepting higher inflation as the price of lower unemployment. As people learn to anticipate this behaviour, so their expectations of inflation change. Price rises accelerate even as unemployment holds steady or rises. To rein in inflation, monetary policy had to be depoliticised and given to central bankers who stood alone.

Independence was also intended to impose discipline on fiscal policy. In 1981 Thomas Sargent (another Nobel laureate) and Neil Wallace pointed out that central banks and governments are locked in a battle for dominance. If a central bank is beholden to the government then spendthrift politicians might become emboldened and rack up enormous debts, knowing that should markets lose faith, a dutiful central bank will step in and print money to cover the fiscal shortfall. If, on the other hand, a central bank can credibly assert independence and commit itself to a monetary-policy target, governments might be persuaded that money-printing is not available as a backstop, and that public debt must be kept under control. In the 1970s governments ran roughshod over their central banks, contributing to the high inflation of the period. During the great moderation, in contrast, assertive central bankers hectored their governments about the need for fiscal restraint: Alan Greenspan, then chairman of the Federal Reserve, famously persuaded Bill Clinton to drop his plans for public spending and instead slash deficits. By successfully imposing discipline on governments, central bankers hoped to avoid being captured by them.

This model of the economy has been turned on its head by the steady downward march of interest rates that began in the 1980s as a result of financial globalisation, lower inflation and expectations of slower growth. In the years since the financial crisis rates have plumbed new and extraordinary depths. This striking trend, which once looked like a macroeconomic triumph, now threatens to marginalise central banks. It has steadily eliminated the room central banks have to cut their benchmark interest rates in order to provide an economic boost in a slump. They look anything but all-powerful: unable to generate strong growth or to return rates to normal levels after years of recovery.

Ever cheaper debt



Sources: Thomson Reuters; IMF

Give me liberty or give me debt

A further erosion of central banks' authority may be unavoidable. Many of their remaining tools reduce their ability to impose discipline on government budgets. If not eventually reversed, quantitative easing, or the purchase of government bonds with newly created money, represents the monetary financing of some government debt—precisely the outcome independence was meant to rule out. Negative interest rates relax budget constraints by reducing the cost of financing government debt. New policy tools (like the authority to buy a wider range of assets or a change in mandates) would in most cases require government permission. And as asset purchases lead to larger central-bank balance-sheets, so do the potential losses to those banks from higher interest rates (and corresponding declines in the prices of the bonds they hold). Such losses would not impair monetary policy, but would open the central banks to intense scrutiny and perhaps invite populist power grabs.

Although economists remain broadly in favour of central-bank independence, the amount of new research affirming the importance of stimulatory fiscal policy is growing. The continued economic doldrums are also creating a political opening for more aggressive fiscal action. On August 2nd the Japanese government announced new stimulus measures worth ¥4.6 trillion ($45 billion) this year. Both American presidential contenders have plans that will raise government deficits, and the British government has abandoned its target of balancing the budget by 2020. Low interest rates have emboldened politicians who might otherwise have ignored the calls of frustrated voters for fear of the bond-market vigilantes.

The loss of central-bank autonomy would create risks—serious ones in places with a history of fiscal incontinence. Governments are not the deftest of economic stewards. They are often slow to respond to slumping demand. Tax cuts and spending increases can play havoc with people's incentives, undermining the efficiency of the economy. Yet history also suggests that central-bank submission need not lead to disaster. The period from the 1940s to the 1970s, when governments took primary responsibility for keeping economies out of slumps, was more volatile and inflationary but it was hardly Armageddon. Demand-starved recoveries with central-bank interest rates stuck perpetually at or below zero are corrosive in their own way. The independent central bank is an impressive technocratic institution. It may also prove to be a relatively short-lived one. ■

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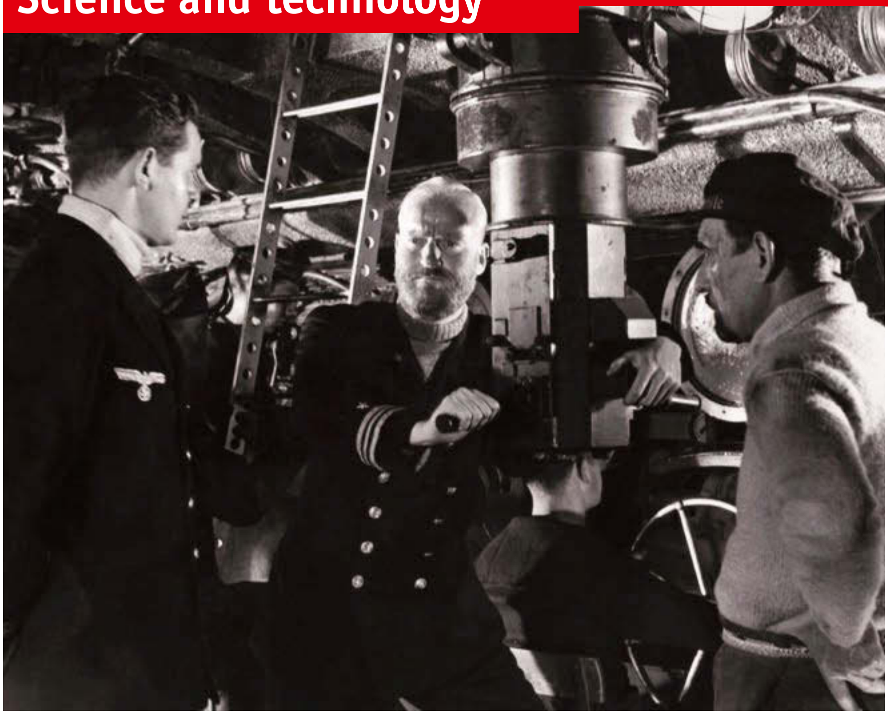

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Anti-submarine warfare

Seek, but shall ye find?

A proliferation of quieter submarines is pushing navies to concoct better ways to track them

DURING war games played off the coast of Florida last year, a nuclear-powered French attack submarine, *Saphir*, eluded America's sub-hunting aircraft and vessels with enough stealth to sink (fictitiously) a newly overhauled American aircraft-carrier, *Theodore Roosevelt*, and most of her escort. An account of the drill on a French defence-ministry website was promptly deleted, but too late for it to go unnoticed.

Nor was this French victory a fluke. In 2006, in what was very far from being a war game, a Chinese diesel-electric submarine surfaced near Okinawa within torpedo range of another American carrier, *Kitty Hawk*, without having been detected by that carrier's escort of more than a dozen vessels and anti-submarine aircraft. And, from the point of view of carrier-deploying navies, things are threatening to get worse. *Saphir*, launched in 1981, hardly represents the state of the art in underwater undetectability; in the decade since the Okinawa incident diesel-electrics have become even quieter. For an inkling of the silence of the new generation of such subs when they are running on battery power alone, without their engines turning, Jerry Hendrix, a former anti-submarine operations officer on the *Theodore Roosevelt*, asks: "How loud is your flashlight?"

Moreover, submarines are spreading. Since the cold war ended, the number of countries deploying them has risen from a dozen or so to about 40. Many of the newcomers are not part of the Western system of alliances. Some are actively hostile to it. And more may join them. A secondhand diesel-electric boat—not state of the art, admittedly, but effective nevertheless—can be had for as little as $350m.

Worse, for those trying to defend ships from submarine attack, Western powers have routinely cut anti-submarine spending since the end of the cold war. American carriers retired the S-3 Viking submarine-hunting warplane in 2009, leaving shorter-range helicopters to compensate. Since the Soviet Union's demise the average surface escort of an American carrier has shrunk from six vessels to four.

Modern submarines are not merely quieter than their predecessors, they are also better armed. Many carry anti-ship guided missiles as well as torpedoes. One such, the CM-708 UNB, was shown off by China in April. It packs a 155kg warhead and, after popping out of the water, flies at near the speed of sound for about 290km. An export version is available but, if you prefer, Russia's submarine-launched Kalibr-PL missile offers a bigger warhead and a terminal sprint at Mach three. In December a submerged Russian submarine hit Islamic State targets in Syria with four similar missiles.

Potential adversaries operate or have ordered more submarines than Western powers could feasibly find and track with their existing defences. Even Iran has more than a dozen well-armed "midget" subs that hide in the shallows of the Persian Gulf, as well as three big Russian-made *Kilo* class diesel-electrics. Israel's navy trains as if this trio carry the Kalibr-PL's export variant, according to an Israeli expert. Countries which plan to arm submarines with that missile include China, India and Vietnam. The upshot is that many warships are in jeopardy and may only learn just how great that jeopardy is, says Alain Coldefy, a former vice-chief of France's defence staff, once a missile is closing fast.

Automating the hunt for Red October

Perhaps belatedly, but certainly determinedly, a new approach to the submarine threat is now being developed. It is based on a simple principle: since submarines are hard to detect, when you do find one you should never let go.

Shadowing threatening submersibles is nothing new. Trailing something is a much easier sensory task than discovering it in the first place, when you have an entire ocean to search. But at the moment this job is done by destroyers and (for those that have them) nuclear submarines. These cost billions of dollars to build and tens of millions a year more to run. Instead, the idea is to use smallish unmanned ships—marine drones, in effect—to do the job. These will be packed with enough sensors and artificial intelligence to follow adversaries' submarines automatically.

Half a dozen Western naval powers are

conducting the R&D needed to build these, according to Eric Wertheim, author of the US Naval Institute's reference doorstop "Combat Fleets of the World". America is furthest along. In June its Office of Naval Research and its Defence Advanced Research Projects Agency, DARPA, began tests in the Pacific of the Sea Hunter, an unmanned (and, for now, unarmed) 40-metre trimaran, pictured right. It is designed to follow an enemy submarine from the surface relentlessly for months, even in high seas. While the crew of the boat being tailed will probably be able to hear their pursuer's diesel engine, that is not really a problem. Short of a torpedo launch, which would be an act of war, "there's nothing you can do about it", says Nevin Carr, a retired rear admiral in the American navy who now works at Leidos, the firm which designed Sea Hunter.

Crew optional

Sea Hunters will cost just $20m each, according to Leidos. America will be able to let lots of them loose, says Scott Littlefield, head of the Sea Hunter programme at DARPA—or, rather, the "anti-submarine-warfare continuous trail unmanned vessel" (ACTUV) programme, as the agency prefers to call it. Mr Littlefield thinks of these robots as pawns to be put in harm's way without risking loss of life or great treasure. Likening them to the chessboard's lowliest piece, however, is slightly misleading. They will eventually need enough artificial intelligence not to be outfoxed by the manoeuvrings of the world's best submarine commanders.

Designing the software to do this has been hard, Mr Littlefield says. DARPA therefore asked video gamers for help. In 2011 the agency released "ACTUV Tactics Simulator", a modified version of a game called "Dangerous Waters", in which players chose the sensors for a Sea Hunter-like craft that they piloted to follow an enemy submarine. Having played, they repaid DARPA by uploading relevant data from their game sessions. These were analysed by the agency's naval-warfare experts and tactics judged useful then programmed into the Sea Hunter's software or passed on to contractors to improve the design of the ship. Even so, more advances are needed before the system can match an enemy submarine's crew, according to Mr Carr.

But naval drones will still be useful before then. With greater manoeuvrability, endurance and speed than manned diesel-electric submarines, they will find employment in many sorts of mission besides tracking the boats of potential enemies. This autumn, for example, Norway begins sea trials of ODIN, an 11-metre-long surface drone. ODIN will first sweep for underwater mines, since these are static and cannot take evasive action. Eventually, though, upgrades should give its software the wit to follow manned submarines.

Some navies hope to make the drones themselves submerge. America's putative SHARK class (an acronym contrived from "submarine, hold at risk") is the furthest advanced in this area, says Andrew Krepinevich, a former adviser to three American defence secretaries—but China and Japan are not far behind. Underwater drones are harder to detect, and thus counter, than surface drones are because sound radiates from them through the water as a sphere, rather than the hemisphere occupied by the waterborne sonic emissions of a drone at the surface. Filling a larger volume at any given distance from its source, the sound of a submarine drone therefore dissipates faster than that from a surface drone.

Some needle, some haystack

All this technological change is ushering in a new era for anti-submarine warfare, according to Gunnar Wieslander, a former commander of Sweden's submarine flotilla who now runs Saab Kockums, an exporter of diesel-electric manned submarines. Saab Kockums's new 62-metre A26 model will sport a tube from which an underwater drone could slip out to attack surface drones. This, Mr Wieslander says, is the first time that such a feature has been fitted to a production submarine. Mr Krepinevich, however, counsels caution regarding underwater drones. They are fine for attacking other drones, but without huge advances in battery technology (see following article), no such machine could keep up for long with a big submarine that charges its batteries from a diesel engine and can travel at up to 20 knots—much less with a faster nuclear-powered one.

What, though, of the crucial task of detecting the submarines to be trailed in the first place? The phrase "surfaced within torpedo range" may bring to mind an image of a boat popping up a few hundred metres from its target—as, perhaps, in a film about the second world war. In the Okinawa incident, though, the distance was probably about five nautical miles (the details remain classified). Sound, whether of engines turning or sonar pulses returning, obeys the inverse-square law. Its strength changes in inverse proportion to the square of the distance it has travelled. That means it falls off fast. Ideally, therefore, detectors need to be close to their targets.

One way to do this, at least for home waters, is to have a dense grid of fixed detectors. One of the more advanced of these is Singapore's. It consists of underwater buoys called acoustic nodes that are tethered to the sea bed two or three kilometres apart. These nodes can talk to each other. They communicate by broadcasting precisely calibrated vibrations through the water. At the moment they are sending test messages, but eventually they will be equipped with their own submarine-detecting sensors.

More sophisticated systems than this are in the works—including anti-drone countermeasures. According to Torstein Olsmo Sæbo, a scientist at FFI, Norway's defence-research establishment, drone-towed acoustic arrays can now mimic the signature of a big submarine, luring a drone off in the wrong direction. (Just because Norway's nascent flotilla of underwater drones could be programmed to do this, he adds, does not mean that it has been.) DARPA, meanwhile, is planning sea-floor pods which pop open to release drones that swim closer to an enemy submarine, or, after rising to the surface, fly off to deliver or collect more intelligence.

The arms race between surface vessels and submarines has been going on for almost exactly a century—since Germany's demonstration to its enemies in the first world war of the threat from its U-boats. By the end of the second world war, the Allies had become so good at finding U-boats that German crews taking to the sea had a life expectancy of about a week. As the examples of the *Kitty Hawk* and the *Theodore Roosevelt* show, the balance at the moment has tipped back in favour of the submariner. The great question is how long it will stay that way. ■

Lithium-air batteries

Their time has come

A new type of electrical cell may displace the lithium-ion design

BATTERIES are notoriously hard to improve. Nowhere was this more apparent than at the opening last week, on July 29th, of Tesla's Gigafactory, a massive battery plant in Nevada. According to its boss Elon Musk, Tesla built the factory because wringing more efficiency out of batteries is far more difficult than optimising the process by which they are made.

It is an ironic coincidence, therefore, that last week also saw the publication, in *Nature Energy*, of a paper outlining a way of making a battery whose prototype stores twice as much juice as the lithium-ion cells the Gigafactory will turn out, and which could eventually do better than that. The new battery, brainchild of Ju Li of the Massachusetts Institute of Technology, is some way from commercialisation, but its design is such that commercialising it should not be hard.

The fundamental idea behind Dr Li's device is not new. It is a version of what is known as a lithium-air battery, something that has been a desideratum of energy-storage research since the 1970s. In theory, such batteries could hold more than four times the energy per kilogram of lithium-ion batteries. Building them, though, has proved taxing. As their name suggests, they draw in air. The part they need is the oxygen, but other atmospheric components—water vapour and carbon dioxide in particular—often damage them.

A cage for battery ions

Even versions that run on pure oxygen, however, have been plagued with problems. Using and recharging existing lithium-air batteries wastes a huge amount of energy because the process involves changing the oxygen from a gaseous state into what is, in essence, a solid, and then back again. Such phase changes require a lot of energy and may thus waste more than 30% of the input electricity. Moreover, the changes in volume that accompany the shift from gas to solid to gas put a strain on the battery's electrodes. This means they rapidly degenerate to the point where the battery can no longer be recharged.

The crucial difference between Dr Li's design and previous attempts is that no actual air is involved. Instead, the cell is hermetically sealed and uses oxygen stored inside the battery itself, in a chemical called lithium superoxide (LiO_2). Because this compound is unstable, it is easily induced to surrender some of its oxygen.

To stop the superoxide disintegrating spontaneously, Dr Li embed it in the voids of a matrix made of cobalt oxide (yellow, in the artist's imagining below left, in which white spheres represent lithium ions, red ones oxygen ions and blue streaks the crackle of electricity). This gives the superoxide's structure stability.

When the new battery is discharging power, lithium ions from a liquid electrolyte that bathes the matrix enter the solid and react with the oxygen in the superoxide to form either lithium peroxide (Li_2O_2) or lithium oxide (Li_2O), both of which are also solids. Those chemical reactions drive electrons around an external circuit, where they might be put to use running anything from a mobile phone to a vehicle's electric motor. Push electrons the other way around the circuit, though, by connecting the battery to a power supply, and the chemical reactions will go into reverse, charging the thing up again.

That the oxygen remains in a solid state throughout these processes is crucial to the new battery's success. Instead of 30%, it loses just 8% of the energy put into it. Similarly, its life is prolonged. In trials which discharged and recharged the battery 130 times, it lost less than 2% of its capacity.

Past claims of practical lithium-air batteries have been met with scepticism, but in this case other workers in the field who are not involved in the study seem persuaded that Dr Li may be onto something. "Really impressive," says Venkat Viswanathan of Carnegie Mellon University, in Pittsburgh. "A very interesting, exciting piece of work," agrees Laurence Hardwick of Liverpool University, in Britain.

Dr Li hopes, within a year, to turn the prototype into something that might be manufactured. This is an ambitious goal but Dr Hardwick agrees that, from an engineering perspective, the challenges are similar to conventional lithium-ion batteries, so rapid development is possible. And it is also an attractive goal. For Tesla and its rivals, these batteries could fuel a virtuous cycle of lighter cars with longer ranges. Dr Li sees this potential, too. His team have filed a patent and have begun talking with manufacturers. The question now is: who will license the technology first? ■

Artificial neurons

You've got a nerve

Narrowing the gap between biological brains and electronic ones

SINCE nobody really knows how brains work, those researching them must often resort to analogies. A common one is that a brain is a sort of squishy, imprecise, biological version of a digital computer. But analogies work both ways, and computer scientists have a long history of trying to improve their creations by taking ideas from biology. The trendy and rapidly developing branch of artificial intelligence known as "deep learning", for instance, takes much of its inspiration from the way biological brains are put together.

The general idea of building computers to resemble brains is called neuromorphic computing, a term coined by Carver Mead, a pioneering computer scientist, in the late 1980s. There are many attractions. Brains may be slow and error-prone, but they are also robust, adaptable and frugal. They excel at processing the sort of noisy, uncertain data that are common in the real world but which tend to give conventional electronic computers, with their prescriptive arithmetical approach, indigestion. The latest development in this area came on August 3rd, when a group of researchers led by Evangelos Eleftheriou at IBM's research laboratory in Zurich announced, in a paper published in *Nature Nanotechnology*, that they had built a working, artificial version of a neuron.

Neurons are the spindly, highly interconnected cells that do most of the heavy lifting in real brains. The idea of making artificial versions of them is not new. Dr Mead himself has experimented with using specially tuned transistors, the tiny electronic switches that form the basis of computers, to mimic some of their behaviour. These days, though, the sorts of artificial neurons that do everything from serving advertisements on web pages to recognising faces in Facebook posts are mostly simulated in software, with the underlying code running on ordinary silicon. That works, but as any computer scientist will tell you, creating an ersatz version of something in software is inevitably less precise and more computationally costly than simply making use of the thing itself.

Hearing the noise, seeing the signal

Neurons are pattern-recognition devices. An individual neuron can be connected to dozens or hundreds of others, and can pass electrical signals to and fro. If it receives a sufficient number of strong enough signals from its brethren over a short enough span of time, it will "fire", sending a jolt of electricity to other neurons connected to it, possibly causing them to fire as well. If the incoming signals are too weak, or too infrequent, it will remain quiescent.

Dr Eleftheriou's invention consists of a tiny blob of germanium antimony telluride sandwiched between two electrodes. Germanium antimony telluride is what is known as a phase-change material. This means that its physical structure alters as electricity passes through it. It starts off as a disordered blob that lacks any regular atomic structure, and which conducts electricity poorly. If a low-voltage electrical jolt is applied, though, a small portion of the stuff will heat up and rearrange itself into an ordered crystal with much higher conductivity. Apply enough such jolts and most of the blob will become conductive, at which point current can pass through it and the neuron fires, just like the real thing. A high-voltage current can then be applied to melt the crystals back down and reset the neuron.

This arrangement mimics real neurons in another way, too. Neurons are unpredictable. Fluctuations within the cell mean a given input will not always produce the same output. To an electronic engineer, that is anathema. But, says Tomas Tuma, the paper's lead author, nature makes clever use of this randomness to let groups of neurons accomplish things that they could not if they were perfectly predictable. They can, for instance, jiggle a system out of a mathematical trap called a local minimum where a digital computer's algorithms might get stuck. Software neurons must have their randomness injected artificially. But since the precise atomic details of the crystallisation process in IBM's ersatz neurons differ from cycle to cycle, their behaviour is necessarily slightly unpredictable.

The team have put their electronic neurons through their paces. A single artificial neuron, hooked up to the appropriate inputs, was able, reliably, to identify patterns in noisy, jittery test data. Dr Tuma is confident that, with modern chip-making techniques, his neurons can be made far smaller than the equivalent amount of conventional circuitry—and that they should consume much less power.

The next step, says Dr Eleftheriou, is to experiment with linking such neurons into networks. Small versions of these networks could be attached to sensors and tuned to detect anything from, say, unusual temperatures in factory machinery, to worrying electrical rhythms in a patient's heart, to specific types of trade in financial markets. Bigger versions could be baked onto standard computer chips, offering a fast, frugal co-processor designed to excel at pattern-recognition tasks—like speech- or face-recognition—now performed by slower, less efficient software running on standard circuitry. Do that and the conceptual gap between artificial brains and real ones will shrink a little further. ■

The right to die

What is unbearable?

Some data about an emotional issue

"A FATE worse than death" is a journalistic cliché, used this week alone to describe a visit to the dentist (in a British newspaper) and the plot arc of a character in J.K. Rowling's new "Harry Potter" play (in an American magazine). But for the terminally ill, such fates do exist: death really can seem preferable to a lifetime of pain and suffering. A growing movement, including this newspaper, thus seeks to legalise—with stringent safeguards—doctor-assisted suicide around the world.

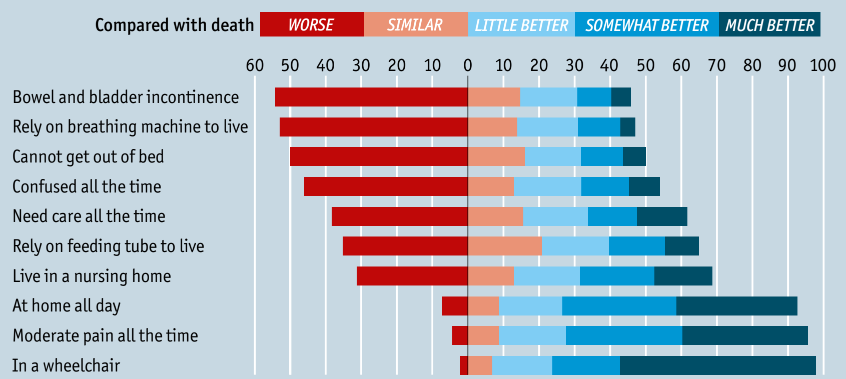
Yet doctors are taught to keep patients alive regardless of the circumstances, says Emily Rubin of the University of Pennsylvania. A paper by her and her colleagues, just published in *JAMA Internal Medicine*, attempts to give statistical rigour to scientific hunches about end-of-life care. Over an eight-month period, beginning in July 2015, her team surveyed 180 patients who had been admitted to a hospital in Philadelphia suffering from serious illnesses, including lung and heart disease. All participants were over 60, and were asked by medical staff to hypothesise whether they would prefer to die than be in progressively worse vegetative states.

As the chart shows, half or more said that they would consider being incontinent, being unable to get out of bed or relying on a breathing machine to stay alive as fates worse than death. Being so debilitated that they were reliant on food delivered via a tube, were constantly confused or required round-the-clock care were judged similarly by a third or more of respondents.

Although it draws on a small sample, Dr Rubin's study adds data to the discussion. Too much of the debate around the "right to die" focuses on individual opinion, often that of campaigners (on both sides) who are in rude health imagining how they would feel were they faced with severe illness. And when the views of those who are actually afflicted by ill-health are considered, the cases cited are often the hard ones that proverbially make bad law. Asking people approaching, or threatened with death, how they feel about it, and the moment at which they would like it to come, is a welcome development. Both sides of the doctor-assisted-dying debate should pay attention to it.

Where is thy sting?

Ratings of states of functional debility relative to death by patients in hospital with serious illnesses*, %



Source: *JAMA Internal Medicine*

*Survey conducted July 1st 2015 to March 7th 2016, Philadelphia, United States

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Fiction

Life and afterlife

The surprising late literary flowering of John Maxwell Coetzee

The Schooldays of Jesus. By J.M. Coetzee. *Harvill Secker; 260 pages; £17.99. To be published in America by Viking in February 2017; $27*

JUDGING the Man Booker prize, the world's best-known annual award for fiction in English, involves reading a novel a day—every day—for more than six months. The initial distillation of this compulsive word-brew is the longlist, 13 books which are known collectively as the Man Booker dozen and are the first indication of what the judging panel is thinking. A crowd of famous authors failed to make the cut this year, from Edna O'Brien to Don DeLillo. Instead, the longlist, announced on July 27th, included three tiny independent publishers and four first novels (all virtually unknown). One was written in a VW camper van, a sign perhaps that the judges were looking for authors and editors who live outside the mainstream.

So it came as something of a surprise that the list also included an old, if not elderly, hand, J.M. Coetzee. A Nobel laureate who has twice won the Man Booker (in 1983 for "The Life & Times of Michael K" and again in 1999 for "Disgrace") and been longlisted three times more, Mr Coetzee is almost two decades older than any of his colleagues on the list. At an age when most people have retired to an armchair, he finds himself not so much making a late dash as accelerating on to a whole new literary motorway.

In 2009, when he was about to be 70, Mr Coetzee wrote two letters to Paul Auster, a New York novelist, outlining his ideas about "late style". He saw the artist's life as having two, perhaps three stages. "In the first you find, or pose for yourself, a great question. In the second you labour away at answering it. And then, if you live long enough, you come to a third stage, when the aforesaid great question begins to bore you, and you need to look elsewhere." By then, as an Irish literary critic, Fintan O'Toole, pointed out, Mr Coetzee had turned his back on his "great question", man's capacity for cruelty and the future of his native South Africa, the setting for his two Man Booker winners. He had also just finished "Summertime", an autobiographical novel that appeared to free him to make a fresh literary start.

The result, "The Childhood of Jesus", Mr O'Toole wrote in the *New York Review of Books*, was "not so much a late work as a posthumous publication...a writer's afterlife, Coetzee after Coetzee." The main character, Simón, explains to Davíd, the small boy he has taken under his wing: "After death there is always another life...We human beings are fortunate in that respect." The novel ends with the family on the run.

Readers, including Joyce Carol Oates who has a lifetime of difficult reading behind her, were gripped by the vestigial Bible tale and captivated by the spare writing style, even as they were bemused at the lack of conventional narrative landmarks and the fact that this so-called allegory turned out to be nothing of the kind. Mr Coetzee's new book aims to take the story on. "The Schooldays of Jesus" is not out until later this month, so the Man Booker judges are among the few who have read it. What was it that so impressed them?

Davíd and his parents have taken refuge in another town. In need of employment, they are taken in on a farm and work as common labourers. The boy is naturally clever—and wilful—with ideas of his own. "He believes he has powers," his father tells a friend. "As you can imagine, it is not easy to teach him." The owners of the farm, three sisters, offer to pay for his education. Having failed to thrive in an ordinary school, the boy is sent to the Academy of Dance, which is devoted to "the training of the soul through music".

Loose biblical associations are threaded throughout: a census is about to be held, the family meets many sinners, listens to parables and discusses sin, guilt, redemption and how miscreants should be treated. But the central issue of this novel and its predecessor is one that philosophers have pondered for centuries: what makes us human, and is there more to life than existence on this planet? People have feet of clay, but even the most earthbound can be transported by music, passion, poetry and the possibility of a next life—if only they find the key. Freed from literary convention, Mr Coetzee writes not to provide answers, but to ask great questions.

Will he become the first writer to win the Man Booker prize three times? Perhaps not this year. But that may not trouble him. Mr Coetzee is a writer; writing is what he does best. He is still having fun doing it and, at 76, he may not ask for more. ■

Elite black America

A world apart

Negroland: A Memoir. By Margo Jefferson. *Vintage; 248 pages; $16. Granta; £12.99*

"IN NEGROLAND", writes Margo Jefferson, "we thought of ourselves as the Third Race, poised between the masses of Negroes and all classes of Caucasians." This penetrating memoir, out last September in America and only recently in Britain, is at its heart an unpacking of that sentence and its implications.

Start with her self-conscious choice of the word "Negro". To modern ears it sounds archaic, not to mention offensive. But as Ms Jefferson explains, no other word captures the sweep and complexity of America's tortured race relations; it is "a word for runaway slave posters and civil-rights proclamations…a tonal-language word whose meaning shifts as setting and context shift."

"Negroland" is Ms Jefferson's term for "a small region of Negro America whose residents were sheltered by a certain amount of privilege and plenty." This region is not geographically bounded; it exists in most major American cities. Ms Jefferson is its product—having grown up in Bronzeville and Park Manor, wealthy black neighbourhoods on Chicago's South Side, in the 1950s.

She is not its first chronicler. In 1841 Joseph Willson, a dentist, wrote "Sketches of the Higher Classes of Coloured Society in Philadelphia", an orotund, Victorian disquisition that urged his coevals to be cultured and educated, but above all to "show themselves very humble". Nearly two decades later Cyprian Clamorgan's showier "The Coloured Aristocracy of St Louis" introduced readers to his mansion-owning neighbours who sent their children to school in Europe. In 1903 W.E.B. DuBois, a sociologist who founded one of America's pre-eminent civil-rights organisations (the National Association for the Advancement of Coloured People), called the African-American intellectual elite "the Talented Tenth", and placed upon them his hopes for racial advancement.

But unlike individual rich black people, and also unlike rich white castes such as Boston Brahmins and the southern agrarian elite, the black upper class as a group—with its rituals and lineages, like southern society, and its Brahmin-like social clubs—remains hazy to many. As recently as 1999, when Lawrence Otis Graham, a lawyer and author, published his breezy "Our Kind of People", the *New York Times* asked in a headline, "Is there a black upper class?"

In his magisterial novel, "Invisible Man", Ralph Ellison posits that mainstream America has trouble seeing black people as differentiated, fully rounded individuals. As Ms Jefferson observes, there are boxes into which white Americans can place outrageously wealthy black athletes and entertainers, and other boxes for poor black people, but when confronted by successful, diligent black lawyers, dentists and entrepreneurs—that is, when confronted by black people who have navigated the ordinary world as well or better than themselves—their imagination fails. "We are not what They want to see in their books and movies," she writes. "Our We is too much like Theirs. Which threatens them, bores them, or both."

Dressing up

This book encapsulates the tension between wanting and fearing to be seen. Ms Jefferson was taught to excel, but never to show off; to compete with anyone, regardless of race, and be comfortable anywhere, but to be aware that prejudice could rear its ugly head at any moment. She was spared the brutality of southern segregation; she learned to navigate a much subtler set of tacit rules and assumptions. The Black Power movement in the 1960s called into question the worth of seeking to succeed on white society's terms; by the 1970s "white society scurries to include us in its ranks…we work at corporations (usually as directors of human resources)". Ms Jefferson, it must be said, is a master of the arched-eyebrow, sardonic quip.

Suffusing this book are equal parts admiration at what it takes to navigate the world as a member of the Third Race, and a deep sadness at having to do so. Ms Jefferson reproduces a letter that her mother wrote to a friend in 1944, when she was a young wife of an army officer: "Tell Hertha I wish her all the happiness I have, 'cause that's as much as anyone could wish. Sometimes I almost forget I'm a Negro. That's something, huh?" ■

Geopolitics

East, West home is best

Easternisation: War and Peace in the Asian Century. By Gideon Rachman. *Bodley Head; 280 pages; £20*

JULY brought the clearest sign yet of how China's growing power is changing the world order. The Permanent Court of Arbitration in The Hague, a tribunal set up by Western powers in 1899 and designated by the UN as an arbiter of disputes under its Law of the Sea Convention, rejected China's claims to any historic right to control the South China Sea. The case had been brought by the Philippines, with unofficial backing from America. But China simply ignored it.

The Philippines, and its Western sympathisers, won the argument but will probably lose the battle. Conventional power politics trumps international law. That is scarcely a new insight, alas, but what is new is to see a non-Western nation displaying this truth so brazenly. That is what Gideon Rachman, chief foreign affairs commentator for the *Financial Times* (and before that a senior writer at *The Economist* for 15 years) means by "Easternisation", which is both the title of his book and what he says is the defining trend of our age.

The word is rather clunky and a tad misleading, as becomes clear when Mr Rachman tries a bit too hard to apply it to almost every foreign policy theme he can find. Has Russia really been "Easternising" simply by turning against the West, annexing Crimea and seeking to restore its domination of the former Soviet states around its borders? It certainly hasn't found an especially warm embrace in China.

Does the West's impotence in the Middle East and north Africa really contribute to "Easternisation" in any way other than the fact that the Gulf states sell a lot of oil to China? The continued disaster in Syria, Iraq and Libya is huge and hugely disturbing, but this is scarcely the first time in the post-imperial era that external intervention has been found wanting; it offers no particular advantage to the East, beyond evidence of Western discomfort.

What this book is really about, and is very good at describing, is the growing impact of China on its neighbours, on the world and on the liberal, mostly rules-based order that the West set up, principally after 1945. As historians have been saying ever since China's rise caught their notice in the 1990s, this ought to be called "normalisation", since until 1800 the world's biggest economies were its most populous countries, China and India.

Such normalisation was nicely sum- ▸▸

marised in "The Post-American World", by Fareed Zakaria, an Indian-born American journalist, in 2008. This is the point that Mr Rachman is underlining and updating here. The crucial "-isation" question, though, is neither about normality nor West-versus-East, but rather about whether a more even global distribution of power will bring stability or not.

Mr Rachman hopes it will, though he fears that it won't. Ranged on one side is a seemingly immutable Chinese aspiration to at least be treated just like America as a great power and, if circumstances permit, even to take over leadership. That aspiration is what lies behind the country's claim, first put forward formally by Chiang Kai-shek's Nationalist government in the 1940s, to the South China Sea: a great power needs to control the seas around its coasts, the logic goes, and China used to do so 2,000 years ago under its Han Dynasty, so it must be entitled to do so now.

Ranged on the other side is what a senior American official, quoted by Mr Rachman, terms his country's "addiction to primacy". Western countries have not truly dominated the world since the collapse of Europe's empires in the 1940s and 1950s, but they have certainly led it, with America at the forefront. America has both championed international law and institutions and demanded the right to be exempt from them when it chooses. Coping with a more equal world, accommodating new powers, ought to be possible in principle. But practice could be different.

Mr Rachman's book may produce a wry smile in Singapore. Until recently, one of Asia's most provocative current-affairs writers, a retired diplomat called Kishore Mahbubani, was producing book after book lambasting Western journalists like Mr Rachman for their pro-Western bias and failure to acknowledge Asia's success. One of Mr Mahbubani's recent books, however, was called "The Great Convergence", arguing that West and East were now blending together. He and Mr Rachman seem to have passed each other in mid-air. ■

European arts

Two men of one mind

Peacock & Vine: On William Morris and Mariano Fortuny. By A.S. Byatt. *Knopf; 183 pages; $26.95. Chatto & Windus; £14.99*

ANTONIA BYATT'S slim and elegant new book, "Peacock & Vine", is about two textile designers: Mariano Fortuny (1871-1949: think tiny silk pleats) and William Morris (1834-96: think willow branches). Ms Byatt admits to reading an "unmanageable heap of large books" for it, but her pleasure in just looking is everywhere: in every leaf and tendril, pomegranate and bird, in their colours, balance and geometry.

The whole idea for the book emerged from a strange piece of optics. Fortuny lived and worked in Venice, and while visiting his palazzo there (now a museum), Ms Byatt found her inner eye distracted by Morris's Gloucestershire house, Kelmscott, "with the meandering Thames and grass fields". Back home in Morris country, the author could not escape the "aquamarine light, water flowing in canals, the dark of the Palazzo Pesaro Orfei". She took the hint, and began to consider each man in the light of the other.

Like so many of the characters in "The Children's Book", a novel she published in 2009, both Morris and Fortuny were artist-craftsmen. Between them they covered design, painting, photography, lighting, embroidery, dyeing, printing and much else besides (Morris was also a poet, a translator of Icelandic sagas, and a Utopian socialist). There is room enough here for Ms Byatt's "large books", for her reflections on cultural influences, on art versus nature and on northern and southern sensibilities. But there is also room for her novelist's sense of Fortuny and Morris as men, especially in relation to women.

Ms Byatt uses the French expression *bien dans sa peau* about Fortuny's wife in his portraits of her, meaning comfortable. He too was happy in his skin. Born into a family of artists, he was rooted in his aesthetic tradition, at ease with people, and "moved by women". Morris, by contrast, had no artistic background, was "ill at ease with the human", and tormented in marriage. What excited him were "natural places, growths and creatures". Suddenly Morris's flowered cushions and curtains begin to seem more interesting, less comfortable. By contrast, those tightly pleated Fortuny dresses seem more sexy.

Pleats please

Paths well travelled

Trails and error

On Trails: An Exploration. By Robert Moor. *Simon & Schuster; 340 pages; $25. Aurum Press; £16.99*

HONED by time and the collective wisdom of walkers past, trails guide people through inhospitable territory towards food and shelter, and set wanderers right if they lose their bearings. Since the 19th century, they have also been a form of popular entertainment. Urban dwellers tramp them as a virtuous form of exercise and to get restorative doses of fresh air and the great outdoors.

The New World that Europeans discovered in the late 15th and 16th centuries was of course new only to them. It was already inhabited by native tribes, many of whom assiduously managed the land and were consummate trailmakers, carving out their walkways with moccasin-clad feet and dog sleds. And it was along some of these native trails, now known as the Trail of Tears, that some 16,000 Cherokees were forcibly driven after the Indian Removal Act of 1830, when the newcomers decided they could make better use of the Cherokee land than its inhabitants. Some 4,000 of the exiles died en route.

Robert Moor, an American environmental journalist, has crammed a wealth of such tales into his new book, "On Trails". In Newfoundland he walks the oldest known paths on Earth, made by Ediacarans—soft-bodied, sack-like creatures which crept across the seabed some 565m years ago. Other seemingly unintelligent creatures, including ants, caterpillars and slime mould can, by trial and error, create surprisingly efficient routes.

When Japanese researchers mimicked the main population centres surrounding Tokyo using a series of oat clusters, the way slime mould moved from cluster to cluster replicated Tokyo's railway system. Ant trails, which are powered by pheromones and are extraordinarily efficient, are used as models to improve fibre-optic networks and shipping routes. Other scientists found that the branching tunnels of Messor sancta ants closely resemble the elegantly reductive street structures found in unplanned cities. (Although, as the author wryly notes, because of ants' comparative selflessness, even the densest of ant crowds won't grind to a halt in the manner of impatiently barging humans.)

Larger animals use trails too, of course. Elephants, who in the wild walk up to 50 miles (80km) a day, create and then faithfully follow paths—even in captivity, where there is no need and little space. Some will lead to sites necessary for a herd's survival, including grazing sites, watering holes or salt licks.

Mr Moor's narrative is grounded by his passion for the story of the Appalachian Trail. From the moment it was dreamed up in 1900 by a forestry student called Benton MacKaye, during a hike in the Green Mountains in Vermont, to its planned expansion through Canada, across to Europe and into Morocco, the author returns again and again to the tale of this meandering, flawed and yet alluring path. In doing so, he leads the reader on page by page. A wanderer's dream, even from an armchair. ■

Classical music

He's the piano man

Why Stephen Hough is more and more in demand

ACCLAIMED for countless recordings and laden with awards, including a $500,000 MacArthur "genius" grant, 54-year-old Stephen Hough is the undisputed top dog among British concert pianists. He is even more sought-after in America, where he has been touring for much of this year. In Britain this month he is due to play Liszt, Schubert and Franck at the Edinburgh festival and Rachmaninov's "Rhapsody on a Theme of Paganini" in his 25th appearance at the BBC Proms in London.

There are reserves of power in Mr Hough's touch, and an ingrained refinement; his self-composed encores usually dissipate with sly comedy the high seriousness of his art. Elegantly at ease with himself, he is a performer with whom audiences also feel easy.

Mr Hough was born and brought up near Liverpool. The £5 ($6.70) second-hand piano his parents bought him was all he needed to start honing the talent which led him, via the Royal Northern College of Music, to win the Naumberg international piano competition in New York when he was 21. That win signalled the start of a relationship with America which has grown steadily closer ever since.

Most great pianists have a personal style, but Mr Hough's playing, though magisterial, is not easily characterised. With Vladimir Horowitz or Sviatoslav Richter, Martha Argerich or Mitsuko Uchida, you

Playtime

soon know who you are listening to. And although the fastidiously eccentric Shura Cherkassky, an American pianist with a virtuoso technique, named Mr Hough as his natural successor, the Englishman's style is far more complex. What sets him apart is the exceptional breadth of his repertoire, as well as the technical finesse and idiomatic authority he brings to every piece he plays. None of the heavily promoted younger pianists playing today can match this combination; among the older ones, Evgeny Kissin—now a 44-year-old eminence grise—is the only one who does.

Mr Hough programmes his repertoire by creative juxtaposition. For a recital at Alice Tully Hall in 2014, he began with Schoenberg's vestigial "Six Little Pieces", then moved on via progressively longer works by Richard Strauss, Wagner, Bruckner and Brahms, to climax with Liszt's gigantic B minor sonata. This programme, he explained, was a way of asking how much could be said in how little time.

Meanwhile, by performing and recording the forgotten concertos of Johann Nepomuk Hummel (overshadowed in life by Mozart and Beethoven) and of Franz Xaver Scharwenka (overshadowed by Tchaikovsky), he has induced other pianists to take them up. He has also devotedly championed the elusive miniatures of Federico Mompou, which he describes as "the music of evaporation".

The other way in which he has expanded his repertoire is by composition. In his pieces for solo piano and chamber ensemble, this means an ongoing wrestle with the question overarching all contemporary classical music: how to deal with the division between tonal and atonal? Mr Hough's flip description of his own music is "tonal with a twist", but there is nothing flip about his analysis of the revolution ushered in by Schoenberg.

Traditional tonality works by creating and resolving tensions—"placing markers along the way, paths to return home", Mr Hough says. "Conversely the 12-note system ensures that all roads are equal, that no note is more important than any other...a nomadic, circular path where home is the journey itself." This system became the basis for a cramping orthodoxy which still has adherents. Mr Hough's Piano Sonata III (Trinitas) is an ingenious experiment designed to undermine that system by taking it to its logical conclusion. "I want music to move me," he says, "and I don't think it can do that without at least a link to tonality. It's the tug between atonal and tonal which makes music poignant."

Mr Hough is also a prize-winning poet and paints in a boldly Abstract Expressionist style. He has just finished writing his first novel, about a priest who has lost his faith and is being blackmailed, an exercise that allowed him to explore his own life, though he says the book is in no way autobiographical.

That is an important disclaimer, because Mr Hough is a gay Roman Catholic. He has long felt drawn to the priesthood; the two masses he has composed and his book on devotional readings, "The Bible as Prayer", are commentaries on his belief. At the Wigmore Hall in October, Jacques Imbrailo, a baritone, will sing the premiere of "Dappled Things", Mr Hough's new song-cycle on poems by Oscar Wilde and Gerard Manley Hopkins. These poets were linked, he believes, by sexual orientation and a common aesthetic. Beneath its urbane surface all Mr Hough's music is, in one way or another, a crusade. ■

Stephen Hough is playing at the Edinburgh festival on August 18th; at the Royal Albert Hall in London on August 23rd; at the Helsingborg piano festival in Sweden on September 5th; in Birmingham, Alabama, on September 16th and 17th and at the Wigmore Hall in London on October 28th

Tenders

Appointments

Publications

Economic and financial indicators

Economic data

% change on year ago

	Gross domestic product			Industrial production	Consumer prices		Unemployment	Current-account balance		Budget balance	Interest rates, %	Currency units, per $	
	latest	qtr*	2016†	latest	latest	2016†	rate, %	latest 12 months, $bn	% of GDP 2016†	% of GDP 2016†	10-year gov't bonds, latest	Aug 3rd	year ago
United States	+1.2 Q2	+1.2	+1.7	-0.7 Jun	+1.0 Jun	+1.4	4.9 Jun	-473.1 Q1	-2.5	-2.9	1.54	-	-
China	+6.7 Q2	+7.4	+6.5	+6.2 Jun	+1.9 Jun	+2.0	4.1 Q2§	+284.7 Q1	+2.7	-3.8	2.61§§	6.63	6.21
Japan	+0.1 Q1	+1.9	+0.5	-1.9 Jun	-0.5 Jun	-0.1	3.1 Jun	+158.7 May	+3.4	-5.0	-0.12	101	124
Britain	+2.2 Q2	+2.4	+1.6	+1.4 May	+0.5 Jun	+0.7	4.9 Apr††	-161.9 Q1	-5.1	-4.0	0.87	0.75	0.64
Canada	+1.1 Q1	+2.4	+1.4	-2.8 May	+1.5 Jun	+1.7	6.8 Jun	-47.6 Q1	-2.4	-2.5	1.10	1.31	1.30
Euro area	+1.6 Q2	+1.2	+1.5	+0.5 May	+0.2 Jul	+0.3	10.1 Jun	+392.0 May	+3.0	-1.8	-0.05	0.90	0.91
Austria	+1.6 Q1	-0.7	+1.3	+0.8 May	+0.6 Jun	+1.2	6.2 Jun	+10.5 Q1	+2.3	-1.6	0.13	0.90	0.91
Belgium	+1.4 Q2	+2.0	+1.3	+1.7 May	+2.3 Jul	+1.7	8.5 Jun	+6.5 Mar	+1.1	-2.8	0.21	0.90	0.91
France	+1.4 Q2	-0.2	+1.4	+0.5 May	+0.2 Jul	+0.3	9.9 Jun	-20.9 May‡	-0.5	-3.3	0.20	0.90	0.91
Germany	+1.6 Q1	+2.7	+1.5	-0.4 May	+0.4 Jul	+0.4	6.1 Jul	+305.9 May	+8.1	+0.6	-0.05	0.90	0.91
Greece	-1.3 Q1	-1.9	-0.6	+2.9 May	-0.7 Jun	-0.2	23.3 Apr	+0.9 May	-0.2	-4.6	8.38	0.90	0.91
Italy	+1.0 Q1	+1.0	+0.9	-0.6 May	-0.1 Jul	nil	11.6 Jun	+47.7 May	+2.1	-2.6	1.21	0.90	0.91
Netherlands	+1.5 Q1	+1.8	+1.5	+1.1 May	-0.3 Jul	+0.3	7.5 Jun	+62.0 Q1	+9.9	-1.5	0.05	0.90	0.91
Spain	+3.2 Q2	+2.8	+2.8	+4.0 May	-0.6 Jul	-0.4	19.9 Jun	+22.0 May	+1.3	-4.3	1.12	0.90	0.91
Czech Republic	+2.7 Q1	+1.6	+2.3	+8.6 May	+0.1 Jun	+0.5	5.2 Jun§	+2.7 Q1	+1.1	-0.5	0.36	24.2	24.5
Denmark	-0.1 Q1	+2.7	+1.2	+6.2 May	+0.3 Jun	+0.7	4.2 Jun	+17.5 May	+6.0	-2.5	0.15	6.66	6.75
Norway	+0.7 Q1	+4.0	+1.0	-0.1 May	+3.7 Jun	+3.1	4.7 May‡‡	+29.3 Q1	+7.0	+3.0	1.05	8.43	8.13
Poland	+2.5 Q1	-0.4	+3.3	+6.0 Jun	-0.9 Jul	-0.6	8.8 Jun§	-2.7 May	-0.9	-2.9	2.77	3.85	3.76
Russia	-1.2 Q1	na	-0.8	+1.8 Jun	+7.5 Jun	+7.2	5.4 Jun§	+38.4 Q2	+2.9	-3.9	8.47	66.7	61.0
Sweden	+3.1 Q2	+1.2	+3.5	+1.7 May	+1.0 Jun	+1.0	7.6 Jun§	+28.2 Q1	+5.7	-0.4	0.13	8.53	8.58
Switzerland	+0.7 Q1	+0.4	+1.0	+1.0 Q1	-0.4 Jun	-0.5	3.3 Jun	+71.9 Q1	+9.2	+0.2	-0.51	0.97	0.96
Turkey	+4.8 Q1	na	+3.4	+7.0 May	+8.8 Jul	+7.5	9.3 Apr§	-27.2 May	-4.7	-1.7	9.88	3.02	2.76
Australia	+3.1 Q1	+4.3	+2.7	+4.8 Q1	+1.0 Q2	+1.3	5.8 Jun	-62.3 Q1	-4.5	-2.2	1.93	1.32	1.36
Hong Kong	+0.8 Q1	-1.8	+1.5	-0.3 Q1	+2.5 Jun	+2.6	3.4 Jun‡‡	+11.9 Q1	+3.0	nil	0.97	7.76	7.75
India	+7.9 Q1	+9.6	+7.4	+1.2 May	+5.8 Jun	+5.1	4.9 2013	-22.1 Q1	-1.2	-3.8	7.20	67.0	64.1
Indonesia	+4.9 Q1	na	+5.0	+7.5 May	+3.2 Jul	+4.0	5.5 Q1§	-18.2 Q1	-2.4	-2.1	6.81	13,128	13,528
Malaysia	+4.2 Q1	na	+4.3	+2.7 May	+1.6 Jun	+2.0	3.4 May§	+7.0 Q1	+2.8	-3.4	3.62	4.06	3.82
Pakistan	+5.7 2016**	na	+5.7	-1.4 May	+4.0 Jul	+3.7	5.9 2015	-2.5 Q2	-0.8	-4.6	8.03†††	105	102
Philippines	+6.9 Q1	+4.5	+5.8	-1.2 May	+1.9 Jun	+1.8	6.1 Q2§	+6.7 Mar	+3.1	-0.8	3.21	47.0	45.7
Singapore	+2.2 Q2	+0.8	+1.4	-0.3 Jun	-0.7 Jun	-0.8	2.1 Q2	+54.8 Q1	+19.5	+0.7	1.87	1.34	1.37
South Korea	+3.1 Q2	+2.9	+2.5	+0.8 Jun	+0.7 Jul	+1.2	3.6 Jun§	+105.5 Jun	+7.5	-1.1	1.43	1,118	1,170
Taiwan	+0.7 Q2	+0.1	+0.5	+0.9 Jun	+0.9 Jun	+1.1	4.0 Jun	+74.8 Q1	+13.3	-1.0	0.70	31.8	31.6
Thailand	+3.2 Q1	+3.8	+2.7	+0.8 Jun	+0.1 Jul	+0.3	1.0 Jun§	+40.1 Q1	+6.1	-2.6	1.97	34.9	35.3
Argentina	+0.5 Q1	-2.7	-0.8	-2.5 Oct	— ***	—	5.9 Q3§	-15.0 Q1	-1.6	-4.9	na	14.9	9.19
Brazil	-5.4 Q1	-1.1	-3.5	-5.9 Jun	+8.8 Jun	+8.0	11.3 Jun§	-29.4 Jun	-1.1	-8.2	11.97	3.28	3.41
Chile	+2.0 Q1	+5.3	+1.6	-3.8 Jun	+4.2 Jun	+4.1	6.9 Jun§‡‡	-4.7 Q1	-2.1	-2.5	4.39	657	672
Colombia	+2.5 Q1	+0.6	+2.2	+4.5 May	+8.6 Jun	+7.7	8.9 Jun§	-16.9 Q1	-6.0	-2.6	7.69	3,113	2,857
Mexico	+2.6 Q1	+3.3	+2.2	+0.4 May	+2.5 Jun	+3.0	3.9 Jun	-30.5 Q1	-3.0	-3.0	6.04	18.9	16.0
Venezuela	-8.8 Q4~	-8.4	-15.1	na	na	+546	7.3 Apr§	-17.8 Q3~	-3.0	-24.2	10.50	9.99	6.31
Egypt	+6.7 Q1	na	+3.0	-15.8 May	+14.0 Jun	+12.1	12.7 Q1§	-18.3 Q1	-6.6	-11.5	na	8.88	7.83
Israel	+2.1 Q1	+1.7	+2.2	+0.8 May	-0.8 Jun	-0.5	4.8 Jun	+14.7 Q1	+4.0	-2.5	1.65	3.82	3.76
Saudi Arabia	+3.5 2015	na	+0.9	na	+4.1 Jun	+4.4	5.6 2015	-59.5 Q1	-8.6	-13.1	na	3.75	3.75
South Africa	-0.2 Q1	-1.2	+0.4	+3.8 May	+6.3 Jun	+5.7	26.6 Q2§	-13.4 Q1	-3.0	-3.3	8.66	14.0	12.6

Source: Haver Analytics. *% change on previous quarter, annual rate. †*The Economist* poll or Economist Intelligence Unit estimate/forecast. §Not seasonally adjusted. ‡New series. ~2014 **Year ending June. ††Latest 3 months. ‡‡3-month moving average. §§5-year yield. ***Official number not yet proved to be reliable; The State Street PriceStats Inflation Index, June 36.96%; year ago 26.70% †††Dollar-denominated bonds.

Markets

	Index Aug 3rd	% change on one week	Dec 31st 2015 in local currency	Dec 31st 2015 in $ terms
United States (DJIA)	18,355.0	-0.6	+5.3	+5.3
China (SSEA)	3,118.0	-0.5	-15.8	-17.5
Japan (Nikkei 225)	16,083.1	-3.5	-15.5	+0.3
Britain (FTSE 100)	6,634.4	-1.7	+6.3	-3.9
Canada (S&P TSX)	14,512.1	-0.2	+11.5	+18.3
Euro area (FTSE Euro 100)	993.1	-2.5	-9.3	-6.7
Euro area (EURO STOXX 50)	2,911.1	-2.9	-10.9	-8.4
Austria (ATX)	2,166.6	-3.4	-9.6	-7.0
Belgium (Bel 20)	3,401.2	-1.5	-8.1	-5.5
France (CAC 40)	4,321.1	-2.8	-6.8	-4.2
Germany (DAX)*	10,170.2	-1.4	-5.3	-2.6
Greece (Athex Comp)	551.6	-3.1	-12.6	-10.1
Italy (FTSE/MIB)	16,129.8	-4.3	-24.7	-22.5
Netherlands (AEX)	440.4	-2.8	-0.3	+2.5
Spain (Madrid SE)	830.1	-4.8	-14.0	-11.5
Czech Republic (PX)	857.9	-4.0	-10.3	-7.8
Denmark (OMXCB)	871.3	-1.6	-3.9	-0.8
Hungary (BUX)	27,023.9	-2.7	+13.0	+18.1
Norway (OSEAX)	661.0	-3.5	+1.9	+7.0
Poland (WIG)	46,762.2	-0.1	+0.6	+3.1
Russia (RTS, $ terms)	910.5	-1.2	+9.9	+20.3
Sweden (OMXS30)	1,352.3	-2.5	-6.5	-7.6
Switzerland (SMI)	8,010.1	-2.6	-9.2	-6.4
Turkey (BIST)	74,552.1	-0.7	+3.9	+0.5
Australia (All Ord.)	5,551.3	-1.1	+3.9	+8.3
Hong Kong (Hang Seng)	21,739.1	-2.2	-0.8	-0.9
India (BSE)	27,697.5	-1.2	+6.0	+4.8
Indonesia (JSX)	5,351.9	+1.5	+16.5	+22.4
Malaysia (KLSE)	1,648.5	-0.9	-2.6	+3.0
Pakistan (KSE)	39,615.8	+0.5	+20.7	+20.8
Singapore (STI)	2,827.6	-3.9	-1.9	+3.7
South Korea (KOSPI)	1,994.8	-1.5	+1.7	+6.7
Taiwan (TWI)	9,001.7	-0.7	+8.0	+11.7
Thailand (SET)	1,507.5	-0.5	+17.0	+20.5
Argentina (MERV)	15,429.8	-1.7	+32.2	+14.9
Brazil (BVSP)	57,076.9	+0.4	+31.7	+59.0
Chile (IGPA)	20,273.1	-1.0	+11.7	+20.4
Colombia (IGBC)	9,598.6	-1.8	+12.3	+14.5
Mexico (IPC)	46,844.5	+0.1	+9.0	-0.6
Venezuela (IBC)	12,373.9	+0.4	-15.2	na
Egypt (Case 30)	8,104.6	+2.4	+15.7	+2.0
Israel (TA-100)	1,267.5	-0.5	-3.6	-1.8
Saudi Arabia (Tadawul)	6,237.6	-3.0	-9.8	-9.7
South Africa (JSE AS)	52,532.8	-2.3	+3.6	+14.8

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

	Real GDP, % change Low/high range 2016	Low/high range 2017	average 2016	average 2017	Consumer prices % change 2016	2017	Current account % of GDP 2016	2017
Australia	1.9/3.1	2.1/3.2	2.7	2.7 (2.8)	1.3 (1.4)	2.2	-4.5 (-4.3)	-4.1 (-3.8)
Brazil	-4.2/-3.1	0.3/2.0	-3.5	1.0 (1.1)	8.0 (8.5)	6.1	-1.1 (-1.0)	-1.2
Britain	1.2/1.9	-1.0/2.3	1.6 (1.5)	0.5 (0.8)	0.7	2.4	-5.1 (-5.0)	-3.8 (-3.9)
Canada	1.0/2.0	1.2/2.5	1.4	1.9	1.7 (1.6)	2.0	-2.4 (-3.1)	-2.1 (-2.6)
China	6.3/6.8	5.7/6.7	6.5 (6.6)	6.3	2.0	1.9	2.7 (2.8)	2.6 (2.5)
France	1.1/1.5	0.7/1.4	1.4	1.1 (1.2)	0.3	1.1	-0.5	-0.5
Germany	1.4/1.8	1.0/1.8	1.5	1.3	0.4	1.5	8.1	7.6
India	5.7/8.1	6.1/8.3	7.4 (7.5)	7.5	5.1 (5.3)	5.1	-1.2	-1.5 (-1.4)
Italy	0.8/1.2	-0.1/1.7	0.9	0.9	nil (0.1)	0.9 (1.0)	2.1	1.9
Japan	0.2/0.8	0.2/1.5	0.5	0.9 (0.8)	-0.1	0.7	3.4	3.1 (3.0)
Russia	-2.1/0.5	0.9/3.0	-0.8	1.5 (1.3)	7.2	5.7 (5.5)	2.9 (3.4)	3.2 (3.3)
Spain	2.5/3.0	1.3/2.5	2.8	2.0 (1.9)	-0.4	1.2 (1.1)	1.3	0.9 (1.0)
United States	1.0/2.1	1.3/2.5	1.7 (1.8)	2.0	1.4	2.1 (2.2)	-2.5 (-2.6)	-2.6 (-2.7)
Euro area	1.2/1.6	0.6/1.5	1.5	1.1 (1.2)	0.3	1.2 (1.3)	3.0	2.8 (2.7)

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

Other markets

	Index Aug 3rd	% change on one week	Dec 31st 2015 in local currency	Dec 31st 2015 in $ terms
United States (S&P 500)	2,163.8	-0.1	+5.9	+5.9
United States (NAScomp)	5,159.7	+0.4	+3.0	+3.0
China (SSEB, $ terms)	343.0	-1.0	-17.9	-19.6
Japan (Topix)	1,272.0	-3.8	-17.8	-2.4
Europe (FTSEurofirst 300)	1,322.2	-2.2	-8.0	-5.4
World, dev'd (MSCI)	1,703.4	-0.2	+2.4	+2.4
Emerging markets (MSCI)	868.2	-0.7	+9.3	+9.3
World, all (MSCI)	411.9	-0.2	+3.1	+3.1
World bonds (Citigroup)	965.4	+1.3	+11.0	+11.0
EMBI+ (JPMorgan)	795.9	+0.1	+13.0	+13.0
Hedge funds (HFRX)	1,178.3§	-0.1	+0.4	+0.4
Volatility, US (VIX)	12.9	+12.8	+18.2	(levels)
CDSs, Eur (iTRAXX)†	70.9	+1.6	-8.1	-5.5
CDSs, N Am (CDX)†	74.9	+2.1	-15.2	-15.2
Carbon trading (EU ETS) €	4.6	+2.7	-44.3	-42.7

Sources: Markit; Thomson Reuters. *Total return index.
†Credit-default-swap spreads, basis points. §Aug 2nd.

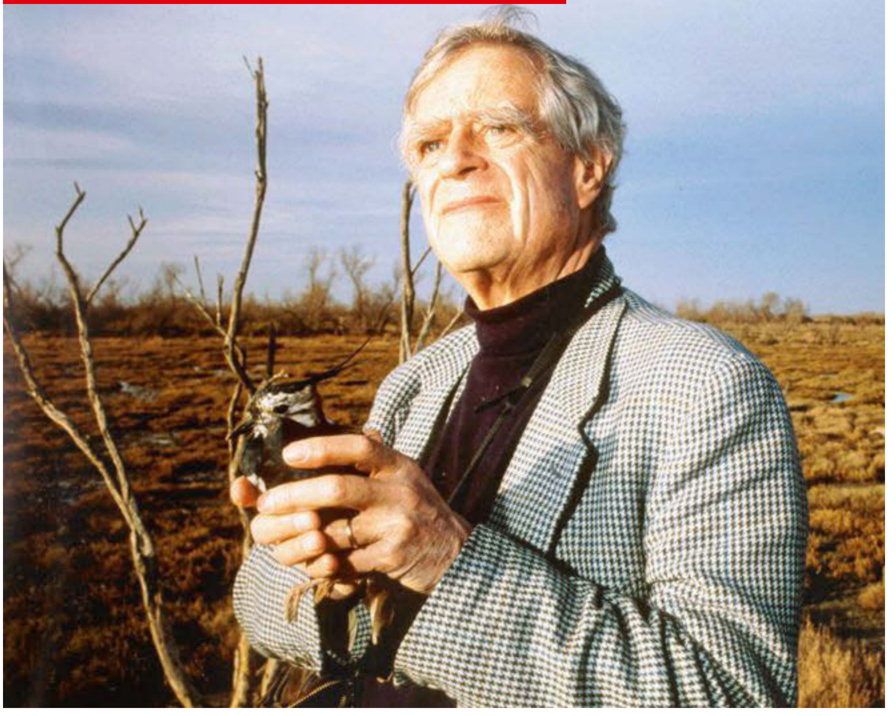
Indicators for more countries and additional series, go to: **Economist.com/indicators**

The Economist commodity-price index

2005=100

	Jul 26th	Aug 2nd*	% change on one month	one year
Dollar Index				
All Items	136.3	136.0	-2.3	-0.1
Food	155.8	154.1	-5.4	-2.5
Industrials				
All	116.0	117.1	+2.3	+3.3
Nfa†	125.9	125.3	+3.5	+8.9
Metals	111.7	113.6	+1.7	+0.8
Sterling Index				
All items	189.0	185.8	-4.3	+14.0
Euro Index				
All items	154.3	150.6	-3.3	-2.5
Gold				
$ per oz	1,320.5	1,367.4	+1.6	+25.2
West Texas Intermediate				
$ per barrel	42.9	39.5	-15.2	-13.6

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



For birds and for wilderness

Luc Hoffmann, ornithologist and conservationist, died on July 21st, aged 93

WHEN it came to birds, Luc Hoffmann was no elitist. Every species was precious to him. At boarding school in the Swiss Alps he watched migrating passerines—barn swallows, wrynecks, pied flycatchers—flocking through the passes between the peaks. His first scientific article, written at school, was on migrating shorebirds; his first long expedition, at 16 with his friend Dieter, was to Brittany in search of gannets, a bird rarely spotted in France. His doctoral thesis at the University of Basel was on the colour variations in the down of the chicks of the common tern. As an old man, standing tall and straight, he liked to watch the valiant efforts of brightly coloured bee-eaters to fly, and catch their food, in the *mistral*. And his binoculars often searched for his favourite, the collared pratincole, so small and neat in its brown and white, which also hunted in the air.

The birds he was most closely associated with, however, were the greater flamingos of the Camargue in south-eastern France. He first saw them when he was still a student, chasing the big grey chicks through stones and tamarisk in an effort to ring them. Everything about them fascinated him, from the wondrous pink-and-scarlet of their adult plumage to their strange tongues, spined and hooked to filter food from water like a baleen whale, to their surging flights in flocks of thousands from one lagoon to the next. In 1948 he bought an old farm at Tour du Valat, without water or power, with a mind to live there for ever and set up a centre for study.

He did both. His centre eventually welcomed up to 100 researchers; the flamingos, which had declined sharply in the 1960s, were monitored and re-established within a decade. And his ambitions embraced the wetlands themselves. His "emotional predilection" for such places in boyhood—a typical *Balser* understatement—had become, in the water-lit land of the Camargue, a *coup de foudre* of both mind and senses. The world's swampy, estuarine places were then mostly ignored by naturalists. But to him they were like plants, with their roots reaching down to hydrate the whole planet. If they were drained, the birds and all nature died in consequence. He was passionately determined to save them.

A pot of gold

In this he was not alone. Others too, like Peter Scott and Julian Huxley, were thinking that way. What distinguished him was an enormous pot of money. His grandfather had founded Hoffmann-La Roche, and he himself was a majority shareholder in what became a giant pharmaceutical company with annual sales, in this century, in the billions of dollars. This wealth was never flaunted. He drove a Fiat Panda, and stayed in hostels. At Tour du Valat his four children were brought up as little *camarguais* with the children of the estate workers, and told that their grandfather had a "chemist's shop" in Basel. Only the glass of Montrachet offered to a visitor, or the glimpse of a Braque in the drawing room (Braque, a friend, had also fallen for the Camargue), hinted that Mr Hoffmann could have led a different, self-centred life.

Wherever and whenever he thought good, he gave money. It was done either overtly, as grants or loans with his name attached, or covertly, through donations from organisations whose finances he controlled. When the World Wildlife Fund was set up in 1961, Scott invited him to be president, but he declined; he became its second vice-president, and made quietly sure his money bankrolled the WWF to success. His dollars, as well as his drive, also saved the wetlands at Coto Doñana in Andalucia, home to imperial eagles; the Banc d'Arguin in Mauritania, the stopover point for millions of migrating waders; the Faia Brava in Portugal, haunt of griffon vultures; and many others. In 1971, at Ramsar in Iran, he oversaw the signing of the first global treaty protecting wetlands.

His charm, tact and optimism proved important, for in setting up protected areas he was often dealing with difficult people: officials of Franco's Spain, Soviet Russia and Mao's China, and industrialists and developers of every stripe. He was dealing, too, with many struggling, suspicious locals who earned their living from the wetlands. His technique was to bring them alongside, showing that they could benefit from conservation—even the Camargue rice-farmers, who each spring found flamingos foraging among their newly planted crops. In Faia Brava the dwindling band of hill-farmers were encouraged to open their houses to hikers. In Banc d'Arguin tribal fishermen were given exclusive access to the waters of the reserve. His motto, reversing the theme of conservation to that point, was "with man, not against him".

Few understood, though, how far he meant that philosophy to go. The concept of reserved areas deeply dissatisfied him, for he wanted the whole globe to be a place where man lived in harmony with nature, and no special protections were needed any more. He was no militant, seeing the cause of conservation as going far beyond partisan politics or the shock tactics of Greenpeace; but in old age he shared much of their frustration. Small successes had been notched up here and there; not much more. Like the bee-eaters battling the wind, he was grateful to have caught a few flies on the wing; but his real ambition had been to change the wind itself. ■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