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The World in 2017

Planet
Trump



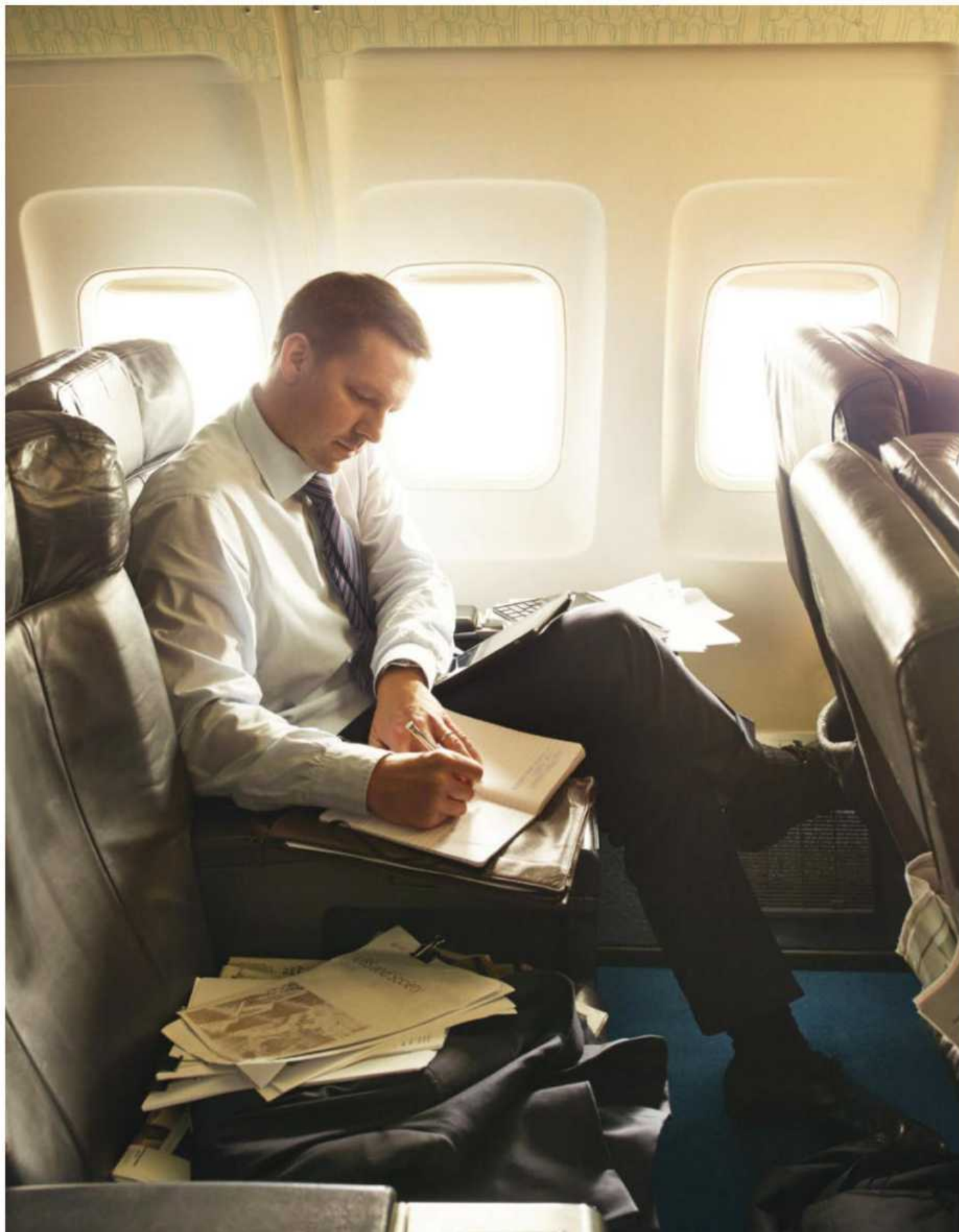
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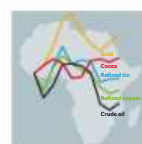
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POST PRODUCTION: Noel Allen OPERATIONS DIRECTOR: Sarah Bell PUBLISHER: Nicolas Sennegon

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Printed by Quad/Graphics, Saratoga Springs, NY 12866. Printed on 32# UPM Cote Gloss. Cover printed on 100# Verso Influence Gloss.

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Revolution will be in the air in 2017. Not only is it the centenary of the Bolshevik takeover in Russia, it is also 150 years since the publication of the first volume of Karl Marx's "Capital" and 50 since the death of Che Guevara, the face of revolution on countless T-shirts. For good measure, the year marks the 500th anniversary of Martin Luther's 95 theses, which he nailed to a church door in Wittenberg Castle (or so the story goes) and which led to the Protestant Reformation.

It will not be hard to find parallels between the conditions that produced upheaval in the past and the rebellious mood in the year ahead.

Americans have already voted for game-changing disruption. The dramatic election of Donald Trump as president means that the insurrection will be led from the White House, with both chambers of Congress also in Republican



Mr Trump's stunning victory will send shock waves around the world

hands. At home, Mr Trump promises to be a mega-builder, not just of walls to protect the country from outsiders, but of roads, bridges, tunnels and other infrastructure. He will also set about undoing the work of his predecessor, including a rollback of Obamacare. Abroad, not only will an inward-looking America unnerve allies from Europe to Asia who have depended on the superpower's stabilising support; Mr Trump's stunning victory will send shock waves around the world.

Europe will feel the tremors throughout the year. The scale of the protest vote will be keenly watched in presidential elections in France and parliamentary ones in Germany and the Netherlands. Frustration with a slow-growing economy, in a topsy-turvy time of negative interest rates from the EU to Japan, will fuel voters' frustration. Britain, meanwhile, will formally launch its proceedings for divorce from the European Union, which will be bitterly fought over at home and abroad.

Any rebellion is quickly crushed these days in

Russia, where Vladimir Putin increasingly resembles a new tsar, and in China, where Xi Jinping will use the five-yearly congress of the Communist Party's Central Committee to pursue his own imperial ambitions. Both countries are challenging the American-led status quo in unsettling ways, from the fringes of the former Soviet empire to the Middle East and the South China Sea. Add in the threat of terrorism and the nuclear mischief-making of North Korea's president, Kim Jong Un, and the world's security looks fragile.

In the wider jobs market a revolution will rumble on, too, driven not just by the promotion of more women into top positions but above all by advances in technology. New types of occupations—from drone operators to "bot wranglers" and virtual-fashion designers—will offer opportunities. Artificial intelligence will have a growing influence on people's lives (and personalised medicine will start to prolong them). More and more computers, meanwhile, will offer their increasingly efficient services as digital personal assistants.

Young people seem to be less worried by these forces of change than interested in using them to shape the future. In a special section in this year's edition we invite a number of rising artists, activists, entrepreneurs and innovators to give their predictions for 2017 and beyond. They are full of ideas and keen to shake things up: rather like modern Luthers or Lenins, only much nicer.

So don't expect 2017 to be a year of restful stability. However, some things will stand out as reassuringly enduring. India will remain a star among big emerging markets. Australia will experience its 26th year of uninterrupted growth. The Association of South-East Asian Nations will reach its 50th birthday, a club holding together even as the EU prepares to shrink. Finland will celebrate its 100th birthday, and Canada its 150th. Canada's prime minister, Justin Trudeau, writes that his country is intent on "embracing the world", remaining open to trade, new ideas, and different cultures and people. Amid the growing anti-globalist hubbub, that sounds almost revolutionary.

Daniel Franklin
Editor, *The World in 2017*

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Planet Trump

With Donald Trump as America's 45th president, 2017 will mark the beginning of a new and darker global order, warns **Zanny Minton Beddoes**

For liberals 2016 has been a grim year. A wave of populist anger has swept through the West, leading Britons to vote for a divorce from the European Union and Americans to elect as their 45th president a property magnate with no previous government experience who ran the most divisive and ugly campaign in modern American history. Within a few short months voters on both sides of the Atlantic delivered a powerful repudiation of their political establishment; shifted the fault lines of Western politics from left v right to open v closed; and voiced a collective roar of disapproval of globalisation, now shorthand for a rigged system that benefits only a self-serving elite. These are body blows to the liberal world order. Just how serious they are will become clear in 2017.

Most important will be what kind of president Donald Trump turns out to be. Take his words before and during the campaign at face value and the outlook is bleak. Mr Trump is a long-standing economic nationalist, a man who believes free trade has destroyed America's economy, who has cast doubt on America's commitments to its allies, and called for building a wall with Mexico and for restrictions on Muslim immigrants.

Although it seems unlikely that President Trump will try to enact all of this illiberal agenda, some of it will survive (see box on next page). His voters seemed to give Candidate Trump a lot of leeway, less interested in policy detail than the broad thrust of his message. The best outcome once he is in office would be for him to focus on his economic plans minus the protectionism. Big tax cuts coupled with a surge of spending from infrastructure to defence would bust America's budget in the long term. But in the short run they would inject adrenalin into the economy. This might, just, be enough to keep the protectionism minimal, per-

haps limited to a few token anti-dumping tariffs. The result would be a recipe similar to that of Ronald Reagan, a man whom much of the world viewed with alarm when he stormed to victory in 1980.

Even in this best case a Trump presidency would take its toll on the open world order. The Trans-Pacific Partnership (TPP), the biggest trade deal in years, is dead. Commitments made at the Paris climate-change accord look unlikely to be honoured. The Iran nuclear agreement could well wither. And the best case, on closer inspection, seems unlikely. The Gipper was a born optimist who believed in America as the shining city on a hill.

Mr Trump's appeal is rooted in anger and division. With Republicans in control of both chambers of Congress, his supporters will at a minimum expect barriers to go up, illegal immigrants to be deported and strict conservatives to be appointed to the Supreme Court. America will turn in on itself.

In the wider world, meanwhile, authoritarians will be ascendant, and keen to exploit America's introversion. In China Xi Jinping, already the most powerful Chinese leader at least since Deng Xiaoping, will use the Communist Party's five-yearly Congress to consolidate his autocratic clout. He will lose little time in trying to fill the geostrategic air-pocket left in Asia by the failure of TPP. In Russia Vladimir Putin will bask in Mr Trump's attention, but will disguise his vulnerability at home with foreign aggressions. Don't expect any end to his attempts to destabilise Ukraine and the rest of Russia's "near abroad".

Boosted by Mr Trump's victory, Europe's populist backlash will gather strength in 2017. Far-right parties will surge in both the Dutch and French elections and could, for the first time in the post-war era, take seats in Germany's parliament. In what will feel

In a nutshell

How the new president will reshape America and the world

Although he ran without a detailed policy platform, Donald Trump gave plenty of clues to what he would do once in office. One of his most consequential acts will be to fill the **Supreme Court** seat that has been vacant since February. Given some of the judges' ages, that may not be the only appointment to the court during his term. Abortion law, a central concern for millions of evangelicals who voted for Mr Trump, will not change much. But by appointing younger justices he could lock in a conservative majority for years to come.

During the campaign Mr Trump promised to block Barack Obama's Clean Power Plan, which had already run into trouble in the court. Without the measure, which would have cut carbon-dioxide emissions from power plants, America's efforts to limit **global warming** will be crimped. The Paris Agreement on climate change will be weakened.

Obamacare, his predecessor's signature health-care insurance scheme, narrowly survived previous court challenges. It will be attacked in Congress; during the campaign Mr Trump promised to repeal it and replace it with "something terrific".

Domestic demand will get a fillip from Mr Trump's mooted corporate-tax reforms, which will see multinationals repatriate billions of dollars, and from tax cuts and extra infrastructure spending. The deficit will balloon. His protectionism also threatens the world economy. Though he has proposed renegotiating NAFTA, America's trade deal with Canada and Mexico, it should survive. But the Trans-Pacific Partnership is dead. And if Mr Trump starts a **trade war** by imposing new tariffs on some Chinese goods, a global slump could be the result.

If followed through, Mr Trump's America First rhetoric, fondness for strongmen and declared willingness to ignore treaty obligations will have profound implications for geopolitics.

Russia's president, Vladimir Putin, will portray Mr Trump's presidency as a victory for his own view of the world. He will seek a new Yalta agreement granting Russia its own sphere of influence, including Ukraine.

In the **Middle East** Mr Trump must choose between his isolationist instincts and his promise to "bomb the shit" out of Islamic State. He will probably give the green light to the **Syrian** regime of Bashar al-Assad, supported by Russian firepower, to act at will against opposition forces in the name of fighting terrorism. The nuclear deal with **Iran** is now in question.

China's ability to shape its region will face fewer checks. President Xi Jinping, another authoritarian of the type Mr Trump admires, will aim to assert China's primacy in the East and South China Sea, against claims from neighbours backed by American might, and to continue expansionist island-building. **Taiwan's** de facto independence relies on ambiguous American assurances that now look even flimsier. **Japan** and **South Korea** will be hoping Mr Trump did not mean it when he seemed to suggest they should get their own nuclear weapons.

Marco Rubio, one of Mr Trump's rivals for the Republican nomination, questioned his suitability to bear the grave responsibility of controlling America's **nuclear arsenal**. Mr Trump has said he does not take it lightly. But how might he cope with an escalating confrontation, given his thin skin and macho style?

America first

Post-Brexit, ethnic minorities in Britain have grown used to being asked why they have not yet left the country. Hispanic and Muslim Americans can expect to hear the same question in 2017. Mr Trump will struggle even to begin to fulfil his pledges to deport 11M undocumented migrants, to keep out Muslims and to build a wall on the Mexican border. But immigration will become harder—and a new life in America less appealing. Not only **racism** but **misogyny**, too, will be more freely voiced. America will feel like a less welcoming place. ■

Helen Joyce: International editor, *The Economist*

▶ like one long disgruntled election season, European politics will be dominated by scaremongering, about the dangers of migrants, the evils of trade deals and the nefariousness of the European Union.

More terrorist attacks, which seem all too plausible, would darken the mood yet further. So would financial shocks: a fiscal crisis in Portugal and a flare-up of Italy's chronic banking woes both seem likely. In such a febrile environment the Brexit negotiations will be slow, complicated and cantankerous.

Tunnels end with light

This adds up to a dark year. Liberals should be worried. But the gloom will not last for ever. Populist and isolationist policies eventually discredit themselves, because their consequences are disastrous. In a cruel irony, Latin America—the region recently most associated with a backlash against liberal, open econom-

ics—is once again shifting in a more liberal direction. Having tasted the disappointments that populism brings, Latin Americans are understandably sick of it.

The danger that this angry bout of Western nativism will intensify is also offset by deeper forces. Technology is forging global connections, whatever the backlash against migration or trade. Students study at foreign universities via online courses; small businesses export via online markets; people chat and share news on global social-media platforms. Younger voters raised amid these digital opportunities are keener on globalisation than their parents are; they voted against Brexit and Mr Trump.

The question is not whether the world will turn back towards openness, but how soon—and how much damage will be done in the meantime. The answer to that question depends above all on one man: Donald J. Trump. ■

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Bolshiness is back

The similarities to the world that produced the Russian revolution are too close for comfort, argues **Adrian Wooldridge**

This is a period of miserable centenaries. First, in 2014, came that of the outbreak of the first world war, which destroyed the liberal order. Then, in 2016, that of the Battle of the Somme, one of the bloodiest conflicts in military history. In 2017 it will be 100 years since Lenin seized power in Russia. Lenin's putsch led to a succession of tragedies: Stalin's rise to power; the death of more than 20m people as a result of the collectivisation of agriculture and forced industrialisation; and, partly in reaction to communism, the rise of Hitler, Mussolini and Franco.

From the dying days of the second world war onwards, Western policy was dedicated to making sure that the problems that had produced authoritarianism, both left and right, could not occur again. The Allies created a triad of global institutions—the World Bank, the International Monetary Fund and the United Nations—that were supposed to stabilise the global economy and prevent conflict. Most countries built (or reinforced) welfare states to provide safety nets and ladders of opportunity. America led a policy of containment that first limited the expansion of the Soviet Union and then led to its collapse.

Yet this golden age is coming to an end. This time the first shots are being fired by the right rather than the left, by the Brexiters in Britain and Donald Trump in America. But the similarities between the collapse of the liberal order in 1917 and today are stark. They start with the *fin de siècle* atmosphere. The 40 years before the Russian revolution were years of liberal triumphalism. Free trade (led by the British) brought the world together. Liberal democracy triumphed in Britain and America and looked like the coming thing elsewhere. The years from 1980 were a similar period of triumphalism. Globalisation (led by America) advanced relentlessly. The number of countries that qualified as democracies multiplied. Politicians of the right and left competed to demonstrate their fealty to the "Washington consensus".

The world has thankfully been spared another total war (though parts of the Middle East are in flames). But other parallels are striking. In America Mr Trump promises to take a pitchfork to the entire liberal order: not just to free trade and liberal values but also to global alliances against rogue regimes. In Britain Theresa May, the prime minister, is trying to extricate her country from



the European Union. Mr Trump's victory will embolden other Western authoritarians, such as Marine Le Pen and strengthen anti-Western authoritarians, notably Vladimir Putin. Mr Putin is much more the embodiment of the spirit of his age than is the outgoing American president, Barack Obama.

Who's guilty and what is to be done?

Some of the blame for this lies with happenstance. The Democrats might not have lost the election if they hadn't nominated Hillary Clinton, the embodiment of a decaying establishment, and Britain would not be preparing to leave the EU if David Cameron had not taken the fateful decision to experiment with direct democracy. But the liberal order itself is also to blame.

The global economy has delivered too many of its benefits to the richest: in America, the proportion of after-tax income going to the top 1% doubled from 8% in 1979 to 17% in 2007. And in many ways the future looks worse. Productivity growth has slowed. Unless this can be changed, politics will inevitably become a struggle over dividing up the pie. Tech giants such as Google and Amazon enjoy market shares not seen since the late 19th century, the era of the robber barons.

How can liberals save what is left of the liberal order? Part of the solution lies in being more vigorous in its defence—for example, pointing out that globalisation has lifted millions out of poverty and that reversing it will make today's economic woes much worse. Part of the solution lies in exposing liberalism's enemies as the paper tigers that they are: Mr Putin, in particular, presides, by fear and fraud, over a country whose economic power is stalling and whose people are plagued by poverty and illness. Other strongmen around the world are far less tough than they claim.

But liberalism's champions must do more than just repeat tired mantras. They need to take worries about immigration more seriously and check their instinct to ride roughshod over minorities such as evangelical Christians. They also need to redouble their efforts to fix capitalism's most obvious problems. High levels of inequality are threatening stability. Economic concentration is allowing companies to extract record profits. Overregulation is driving businesspeople to distraction. The revival of bolshiness has already taken a terrible toll. Liberals need to think more clearly, and act more forcefully, to stop the rot. ■

Liberals must do more than just repeat tired mantras

Lower for longer

The world economy will struggle to gain altitude, forecasts **Leo Abruzzese**

Sluggish growth is the new normal for the global economy. World output measured at market exchange rates will increase by less than 3% for the sixth straight year in 2017, further extending what was already the longest stretch of weak growth in more than half a century (see chart). The strong recovery that was expected after the global bust in 2008 never happened, and it won't start in 2017. Donald Trump's anti-trade policies, if they come to pass, will hurt the global economy over time, but won't do much damage in 2017—unless he starts a tariff war with China, which is unlikely. Weak demand and poor productivity growth will be the greater problem in the coming year.

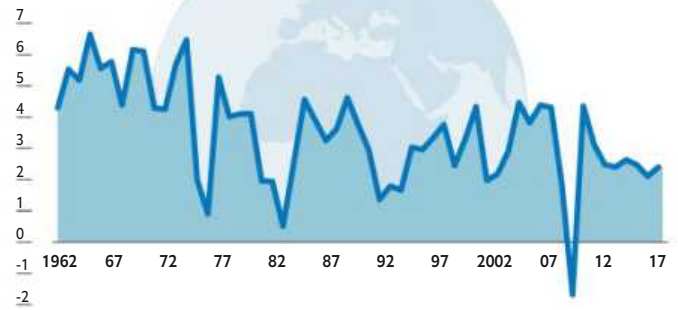
A strong global economy typically grows by around 4% a year, measured at market rates (which is the rate used by investors to move currency across borders and by businesses to repatriate profits). Growth of 3% is closer to normal, and is what the world averaged in the 20 years to 2005. The economy has regularly managed a short sprint. No longer. The Economist Intelligence Unit predicts that global GDP will expand by only 2.5% in 2017 and will do no better in the years immediately thereafter.

Weakness is everywhere. Growth in the euro zone hasn't exceeded 2% for six consecutive years. America hasn't strung together more than two continuous quarters of strong growth in more than a decade and won't do any better in the first year of an unpredictable Trump presidency. Japan's economy struggles to expand by even 1% a year. Most emerging markets came off the boil a decade ago. China, weighed down by debt, will push growth to 6% in 2017, but this will fall back to around 4% the year after—remarkably low by the country's own standards. Among the world's large economies, only India looks relatively buoyant; it will advance by 7.5%.

Slow growth will keep the world's beleaguered central banks in the spotlight. America's Federal Reserve, content that the jobs market is nearing normal, has been hinting at higher interest rates, though the immediate shock of a Trump presidency may stay its hand. At most, it will raise its main rate only once in 2017, by a quarter-point: the economy won't tolerate anything more. The European Central Bank (ECB), the Bank of Japan (BOJ) and a post-Brexit Bank of England will be searching for more ways to prod their languishing economies. Years of near-zero interest rates—and now negative interest rates at the ECB and the BOJ—

No lift-off

Real GDP growth*, %



*2016 estimate, 2017 forecast Sources: World Bank; The Economist Intelligence Unit

have produced diminishing returns, but central bankers dare not reverse course. A blast of fiscal stimulus would help: lower sales taxes and income taxes, better jobless benefits and a round of well-planned infrastructure projects might achieve what central bankers can't. Canada is edging in this direction, and Britain may do the same. Fiscal pump-priming will be on the Trump agenda as well. But don't expect anything like that from most countries.

Growth has been slow in part because of fading productivity. Output per worker in America expanded by 1.9% a year between 1990 and 2005, but by less than half that in the past decade. The euro zone was less productive than America to start with, and the rate there also fell by half. Productivity growth is usually higher in emerging markets, but the pace in China has slipped back, too. The outlook is no better for 2017. In the West, weak investment and overregulation seem to have taken a toll.

Look on the bright side

None of this equals an entirely gloomy year. American consumers will regain more of their swagger. The income stagnation that has contributed to weak spending may be reversing: the latest figures show median household income rising at the fastest rate since at least 1967. The nation's jobs machine will add another 2m positions in 2017, as it has in each of the past six years: business uncertainty over some Trump policies could be offset by cheer at less regulation and lower taxes. China's shift to a consumer-led economy will accelerate, despite its dizzy levels of debt: credit is growing three times faster than nominal GDP. Although Brexit presents Europe with the latest in a rolling series of crises, the economic damage will be small for most countries. (The British economy itself will struggle with rising prices and weaker growth as the slow-motion withdrawal from the EU begins.)

After two years of recession, Russia will squeeze out a bit of growth in 2017. Brazil's recession will end too, but the public finances are a mess and the country is years away from a strong recovery. For the large number of countries that rely on mining and farming, commodities prices will rise in 2017 for the first time in five years, creeping up by around 4% on average. But if the commodity bear market is over, a price surge isn't in sight. Economic growth globally is too weak for that. In an earlier era, when business cycles still mattered, that might have meant stronger growth lay ahead. Maybe so, but not in 2017. ■



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Xi Jinping's autocratic and imperial ambitions should be resisted, argues **Simon Long**

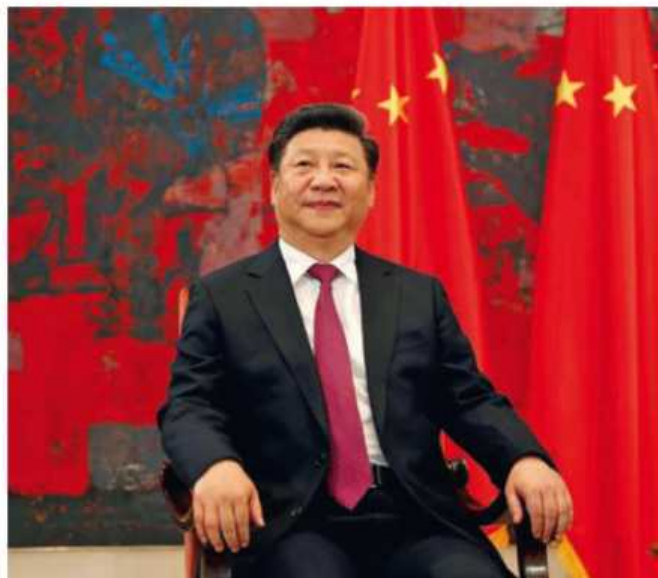
As they gather in the autumn for their five-yearly congress, the nearly 400 members of the Chinese Communist Party's Central Committee will see their place in history take shape. This congress, the 19th, comes after 68 years of uninterrupted rule by the party. If it stays in power until the 20th, China will have overtaken the former Soviet Union as the world's longest-lasting communist dictatorship. The comrades may be congratulating themselves already: there are few imminent threats to their control. Under Xi Jinping, the leader they appointed in 2012, economic growth has slowed but remained above 6% a year. Pro-democracy dissidents and separatists in Tibet and Xinjiang are easily quelled. America, far from preparing for the collapse of communist rule, is scrambling to cope with China's rise.

Since preserving their own power is their prime motivation, most delegates will nod through Mr Xi's plans for his second term and beyond. They will acquiesce out of timorous self-interest: one hallmark of Mr Xi's tenure, a fierce anti-corruption drive, is a weapon that can be trained on his critics. But far-sighted committee members know that he is leading the party and the country in dangerous directions: politically, economically and internationally.

The dangers of despotism

Mr Xi has spent much of his first term concentrating power into his own hands. The "collective leadership" of his predecessor, Hu Jintao, whereby an anonymous cabal of raven-haired technocrats managed the country, has been supplanted by a more individualised despotism—with the occasional stirrings of a personality cult around Mr Xi. "Small leading groups" within the party set policy in virtually every area, taking control of the economy, for example, away from the prime minister and the cabinet. Mr Xi, China's "chairman of everything", leads most of these groups.

The congress is an opportunity for him to cement his power by putting more of his supporters in key roles. They might allow him to flout the rules that have limited his predecessors to two terms. China has enjoyed nearly 30 years of political stability since the Tiananmen uprising of 1989, but this has partly relied on two orderly transfers of supreme power. If Mr Xi bucks the system,



Mr Xi is taking a big gamble

that stability will be jeopardised.

Mr Xi's supporters might argue that strongman rule is as necessary now as it was when Deng Xiaoping began dismantling the Maoist legacy of collectivism, planning and economic stagnation. After nearly four decades of spectacular growth, China is again at a critical juncture. The workforce is shrinking; China's position as the world's workshop is under threat from rising labour costs; years of debt-fuelled investment threaten an eventual bust.

Mr Xi, however, does not seem to be accumulating power with the objective of executing the bold reforms China needs. Despite lofty promises early in his tenure, his economic instincts run parallel to his political ones. He is suspicious of freedom, risk-averse and unwilling to surrender the party-state's overarching control.

As the economy falters, Mr Xi will rely ever more on Chinese nationalism as a source of legitimacy and popularity. This is dangerous, given that he seems to have decided that American strategic primacy—which facilitated China's peaceful rise—needs to be challenged. His aggressive pursuit of Chinese territorial claims in the South China Sea has rattled the region. China seems unconcerned, apparently confident that in the long run its neighbours will realise that China's proximity is a fact of geography, its growing power an inexorable trend of history, and that American avowals of support against Chinese expansionism will prove empty.

In this, too, Mr Xi is taking a big gamble. A miscalculation could oblige America to push back forcefully, or mutual naval muscle-flexing could lead to an accidental clash that might escalate. Far better to realise that American governments have been willing to accommodate a rising China not out of weakness, but because they are confident of America's own strength.

The workings of Chinese politics are opaque. It is impossible to know exactly how much opposition exists within the Chinese Communist Party to Mr Xi's remorseless accretion of power. We can, however, assume that it is considerable. The world should hope it is also effective. ■

Blond bombast

Europe's centrists will prove powerless against populism, predicts **Matt Steinglass**

Long before Donald Trump's victory in America, fringe parties on the right and left were on the rise in Europe. In 2017 that will end—not because such parties will no longer be on the rise, but because they will no longer be on the fringe. Europe's mainstream parties have tried to freeze out the populists, forming centrist left-right coalitions and creating a cordon sanitaire to keep them from power. These tactics no longer work. In some countries, the radicals are entering government. In others, they are forcing centrists to adopt their policies. That will mean a Europe where immigrants and Muslims are increasingly unwelcome, free trade is unpopular, and the euro and the European Union itself are fragile.

For the populists, the first big test of 2017 will be the Dutch general elections on March 15th. Geert Wilders of the Party for Freedom (PVV), whose platinum pompadour has earned him the local nickname “the big blond Smurf”, wants to close the country's borders, shut down its mosques, and leave the euro and the EU. If the polls hold, he will finish in first or second place. France will follow in April, with the first round of its presidential election. Marine Le Pen of the National Front (FN), another blonde bent on stopping immigration and quitting the EU and the euro, looks certain to make it to the second-round run-off in May.

Mr Wilders will not become prime minister, and Ms Le Pen has only an outside chance to be president (though the same was once said of Mr Trump). The Netherlands will get a broad centrist coalition to lock out the PVV (and the far-left Socialists), just as it did in 2012. In France, the mainstream left and right will form an alliance in the second round in an effort to make sure the National Front does not win.

But Europe's grand-coalition strategy is looking shopworn. When established parties mock populists and their supporters as a basket of deplorables, it only confirms the populists' belief that elites are conspiring against them. Meanwhile, collaboration between the mainstream right and left erodes the identity of both, pushing more voters to the extremes. In Spain, political fragmentation has made it impossible to form a majority government. In Germany, France, the Netherlands and Poland, the main centre-left, social-democratic parties are in disarray.

As differences fade between the mainstream left and right, the populists have become the real opposition. Already, leading contenders in the Netherlands and France are campaigning more



against Mr Wilders and Ms Le Pen than against their mainstream adversaries. Even if they fail to gain power, the radicals have pulled government agendas far in their own direction. In France's Republican presidential primary, the proposal of the former president, Nicolas Sarkozy, to lock up suspected terrorists without trial was so radical that even Ms Le Pen denounced it. If Italy faces an election in 2017, Matteo Renzi's centre-left Democrats will chiefly be battling the far-left Five Star Movement.

Western Europe is beginning to resemble its populist eastern neighbours

After Mr Trump's victory, the popularity of western Europe's fringe parties will no longer seem shocking. Indeed, in the continent's east, the populists began winning years ago. In Hungary, Viktor Orbán's right-wing Fidesz party dominates the landscape through anti-immigrant nationalism and “illiberal democracy”—that is, disregarding minority rights. In Poland, the ruling Law and Justice party has followed suit, adding a healthy dose of state benefits for mothers and the old. Mr Wilders and Ms Le Pen would happily embrace this agenda: conservative on culture and nationhood, statist on economics.

As power shifts towards these identitarian nationalists, left-wingers may feel left out. Indeed, some are abandoning electoral politics. In Poland, Italy, Spain and even Germany, hapless centrist and leftist parties have ceded control of the agenda to radical protest movements built on social media. Ivan Krastev, a political scientist, calls this “democracy beyond elections”. “Young people, some of them on the left, some more libertarian, talk eagerly about street protests or any type of ‘e-democracy’, but for them elections and voting don't matter,” says Mr Krastev.

The better Angela of our nature

Amid all this upheaval, the pro-European liberal consensus that dominated continental politics after the fall of the Berlin Wall finds itself without a convincing defender. “The complete lack of a positive liberal-democratic narrative is stunning,” says Cas Mudde, an expert on the European far right. The remaining believers in that European vision are mostly Greens—along with the last bastion of the Europhile centre-right, Germany's Christian Democrats. If Angela Merkel runs for a fourth term as chancellor in the autumn of 2017, and wins (as she probably would), she will find herself fighting a lonely struggle against the populist tides. ■

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At the gates

Like it or not, immigration to the West will rise, predicts **Joel Budd**

In 2017 Western politicians will crack down on immigration. In America, President Donald Trump will start to build his big, beautiful wall on the Mexican border and order technology firms to hire more Americans. Britain's prime minister, Theresa May, has looked into voters' souls and concluded that they chose to leave the European Union because they want stiffer controls on migration (which, funnily enough, was her instinct all along). In France, Germany and Italy, anti-immigration parties will harry mainstream politicians into soft nativist territory.

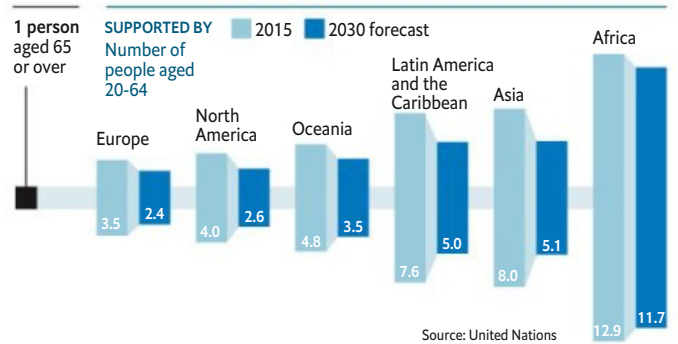
And yet, in the end, everybody will be disappointed. Because just as Western democracies conclude that immigration must be brought down, developments beyond any politician's control are conspiring to push it up. Demography, urbanisation and economic change are pushing people out of poor and middle-income countries and into the rich nations that so dislike them.

Because people tend to migrate in young adulthood, the size of that group determines the pool of potential migrants. It is enormous and growing. In 2000 sub-Saharan Africa had about 48m people aged between 25 and 29, according to the United Nations. In 2015 it had 75m, and by 2030 it will probably have 113m. Some countries with middling or low birth rates today, such as India and Turkey, had high birth rates 20 years ago, and now have lots of young adults as a result. Every month 1m Indians turn 18.

These young people are increasingly poised to move. Although international migration often strikes people in recipient countries as far too easy, it is actually exceedingly difficult and expensive. Indigent rural labourers are rarely up to it; better-educated urbanites more often are. In much of Africa and Asia, the number of literate city-dwellers is rising at a much faster rate than the population as a whole. Bangladesh's rural population is flat, but its urban population is growing by 3.5% a year.

If they could obtain decent jobs at home, the young might well stay put. In the Philippines, the fast-growing call-centre industry has provided a good alternative to emigration. But the Philippines is unusual. The African Development Bank estimates that of the 10m-12m Africans who enter the workforce every year, only 3m find formal jobs. The rest constitute a large, swelling reservoir of potential migrants. Some countries, including China and India, also have an excess of boys and men—a consequence of widespread sex-selective abortion. Unable to find wives, and untethered by children, they will be especially keen to move.

Sliding support ratios



Some people will move from one poor country to another. Others will try their luck on the construction sites of Dubai and Saudi Arabia. But the Gulf states are hot, miserable places to work, especially for women. By far the best opportunities lie in the West.

If many poor countries have an excess of youngsters, rich countries tend to have too few of them. Every European country now has a fertility rate below 2.1—the rate at which the population replaces itself naturally. Deaths in Europe are expected to exceed births by 63m between 2015 and 2050. Unless rich countries are prepared to accept an ever-growing ratio of retired folk to workers, which will undermine their social-security systems, they will have to admit more young foreigners.

What kind of migrants should rich countries prefer?

As the West ages, its hunger for manufactured goods will abate and it will consume more personal services, of the kind often provided by unskilled migrants. In official American estimates of which occupations will add the most jobs over the next decade, the top five are personal-care aides, nurses, home-health aides, fast-food workers and retail-sales workers. Only one of these (nursing) pays above the average wage or requires a bachelor's degree. All are classic immigrant jobs.

It is hard enough to push back against one global trend; resisting two or three is surely impossible. Western politicians who claim they can hold immigration steady are really saying that they will accept a shrinking proportion of the world's potential migrants, and that a growing share of crummy jobs in their countries will be filled by natives. That is highly unlikely. The claim that they can actually suppress immigration is unbelievable.

The real choices ahead

It is also a distraction from some hard policy questions. If movement to the West is bound to increase, what kind of migrants should rich countries prefer? Should they mainly admit people from nearby countries and former colonies, as they mostly did in the 20th century, or try to take people from everywhere, creating a real melting-pot? Should they offer migrants a path to citizenship, or kick many of them out after a few years of working? Should they sweep immigration under the rug, by tolerating lots of illegal workers? The West has plenty of choices. It just doesn't have the option of fewer people. ■

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Unsustainability

Where environmental diplomacy has led, firms should follow, argues **Miranda Johnson**

Enough countries ratified the deal on global warming reached in Paris in December 2015—aiming to keep the increase on pre-industrial temperatures to “well below” 2°C—for it formally to come into effect in November 2016. The world’s governments are starting to act on their pollution-cutting pledges. But two big questions loom large in 2017.

One is the fate of the Paris Agreement under Donald Trump. The president-elect has claimed that global warming is a hoax intended to frustrate American businesses. He will seek to thwart the Clean Power Plan, which sets national standards to limit carbon-dioxide emissions from power plants, and withdraw from the Paris deal itself. However, none of his options is easy. Now that the agreement has entered into force, the country is bound to it for four years. A Trump administration could stymie related environmental efforts, but that would alienate China, among others. The plummeting price of solar and wind power may anyway test Mr Trump’s love of coal. And powerful states, such as California, will lead green endeavours where federal ones fall short.

The second question is whether businesses get serious about curbing their emissions. To stand a chance of limiting the world to warming of less than 2°C, net zero emissions must be reached around the middle of the century. Yet, when totted up, national pledges to curb pollution under the Paris deal will only keep warming to around 3°C. Firms must help bridge the gap.

In many cases they can make money from going greener. Over the decade to 2015 Walmart, the world’s biggest retailer, saved as much as \$1 billion annually by changing the routes of its American vehicle fleet, which doubled its efficiency. And their reputations are at risk. In recent years Lego, a maker of toy bricks, has been lambasted for its relationship with the oil industry, and snack giants such as Nestlé have come under attack for the deforestation caused by palm-oil plantations.

Bad company

But how serious will businesses’ efforts be? In Mr Trump’s America, the pressure may be off. And in the wider corporate world “sustainability” has too often been jargon for activities designed to fob off environmentalists.

Confusion over measurement has not helped: firms lack an agreed means of reporting their impact on the planet. Many ways exist to quantify water use, chemical use and emissions from



More green, please

buildings, products and supply chains. Comparing companies using differing standards is tricky enough. Doing so when firms hide key information can be a joke. The Dow Jones Sustainability Index deemed Volkswagen the world’s most sustainable carmaker in 2015; weeks later, news broke that 11m of the firm’s diesel vehicles had been fitted with software to cheat emissions tests.

In 2017 there should at least be fewer excuses. A taskforce on carbon disclosure will deliver recommendations to the G20 and the Financial Stability Board, a global regulators’ forum. The plan is to create a voluntary framework that will allow companies to report their exposure to climate risks consistently. Once they do so the market can go green more efficiently, armed with more information.

Firms must help bridge the gap

A new carbon-disclosure framework for firms could therefore spur progress on national pledges to curb emissions. Other trends could help cut waste. Talk of the “circular economy”, predicated on recycling and reusing products, is in vogue. Leasing models, for everything from cars to light bulbs, can save resources.

The Paris Agreement includes mechanisms to crank up national pledges. Fresh talks will be held in 2018 to take stock of progress; countries will then decide on new goals for themselves in 2020. Even if America has fallen back by then, dreadful air pollution in India and China means their governments cannot ignore emissions. Tree-hugging Europeans will demand further action. So, despite the temptation, in America at least, to shelter behind the new climate-change denier-in-chief in the White House, the best long-term strategy firms can pursue is one that lowers their own impact on the planet. ■



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Tom Standage has a stab at identifying the hottest new jobs of 2017

Fears abound that robots are about to cause mass unemployment. But so far there is no sign of this. Instead, automation seems to be pushing people from routine jobs, such as factory work, into non-routine ones, particularly those that require cognitive and social skills. Technological progress will cause a shift in the nature of jobs available and the skills they require.

It is impossible to know for sure what these new jobs will be—the Luddites who campaigned against the mechanisation of weaving in the early 19th century could not have imagined that new fields such as railways, telegraphy and electrification were coming. But two tools can help us take a stab at identifying the jobs of the near future: hard-nosed statistics, and predictive intuition.

First, the statistics. America's Bureau of Labour Statistics helpfully produces a survey every two years that extrapolates current trends to predict the growth rates of different job categories (most recently for 2014-24). So which are growing fastest?

At the top, with 108% growth, is the job of wind turbine service technician. This is not surprising, given the rapid expansion of renewable energy, a trend that seems likely to continue for several decades. There will be a lot more wind turbines in future, and they will need to be fixed when they go wrong.

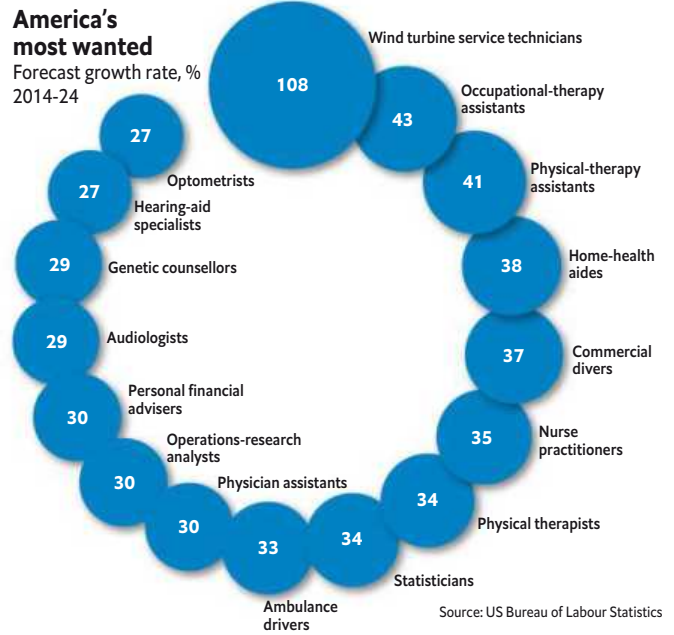
Another multi-decade trend sure to generate jobs is the ageing of populations in many countries. This is creating jobs for occupational-therapy assistants (+43%), physical-therapy assistants (+41%), home-health aides (+38%), audiologists (+29%), hearing-aid specialists (+27%) and optometrists (+27%). These are all tasks that require empathy and social skills.

In business, companies are accumulating more and more data about their customers and operations, and being able to extract insights from this information provides a competitive advantage. So it is little surprise to see statisticians (+34%) and operations-research analysts (+30%) on the list of fastest-growing professions.

In medicine, the plunging cost of genetic sequencing is opening up new possibilities for research and treatment—but can also reveal to patients that their genetic inheritance contains unpleasant surprises. This explains the growing demand for genetic counsellors (+29%) to provide advice and support.

Yet these statistics are necessarily limited to measuring the growth rates of job categories that already exist. Imagining the completely new types that might emerge requires guesswork.

My daughter wants to be a robopsychologist



An emerging trend is the practice of dealing with companies and online services through conversational interfaces—speech or text messages. Apple's Siri, Amazon's Alexa and Microsoft's Cortana are the most prominent examples, but many companies are creating corporate "chatbots" that can respond to customer-service queries or dispense information. Rather than visiting an organisation's website, you may end up talking to its bot instead. Just as websites need designers and programmers, bots will need specialists to devise their business rules, write their dialogue and keep them up to date: a job category that might collectively be termed bot-wranglers. Already, there is talk of Silicon Valley firms hiring poets and comedians to write elegant, witty banter for conversational computer systems.

Wanted: bot-wranglers and virtual-fashion designers

Meanwhile autonomous vehicles, or drones, are taking to the air and to the roads. Drones are already being used in agriculture, wildlife conservation, scientific research and humanitarian relief. They will need armies of support staff and technicians.

The need to feed growing urban populations is leading to rapid progress in hydroponic and aeroponic food production in closely controlled environments, creating new jobs for indoor farmers. The combination of biology with three-dimensional printing is being exploited by synthetic-tissue engineers to create replacement human organs. And though the field is still in its infancy, expect augmented reality—the overlaying of computer graphics on the real world—to create demand for virtual-fashion designers to create jewellery, clothing and accessories with which to adorn yourself digitally.

Inspired by Isaac Asimov's classic robot stories, my 16-year-old daughter wants to be a robopsychologist—a trouble-shooter who figures out why robots are misbehaving. "That job doesn't exist," complained her school's career adviser. "True," my daughter replied, "but it probably will in 2025." ■



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Our selection of events around the world

JANUARY

It's ten years since Steve Jobs of Apple unveiled the iPhone.
 America's 45th president, and the 44th person to do the job (Grover Cleveland's two separate terms count twice), takes office.
 Lovers of Asterix and other comic strips meet in Angoulême, France, for the Festival International de la Bande Dessinée.
 For Chinese, the year of the rooster begins: those born in rooster years are said to be straightforward, sociable and punctual.

FEBRUARY

Women around the world are encouraged to experience what it's like to wear a headscarf on World Hijab Day.
 A giant television audience tunes in to American football's Super Bowl LI, played in Houston, Texas. Sapporo in Japan hosts the Asian Winter Games.
 It's red-carpet time as Hollywood revels in the Academy Awards.

MARCH

Same-sex marriage becomes legal in Finland.
 Hong Kong chooses its chief executive. The Dutch vote in a general election.
 The binoculars come out for the world's richest horse race, the \$10m Dubai World Cup.
 The championship game of the World Baseball Classic, a 16-nation tournament held once every four years, is played in Dodger Stadium in Los Angeles.

APRIL

Americans look back at the first world war, 100 years after Congress voted to enter it on April 6th 1917.
 Some 1 billion people celebrate Earth Day, the largest secular holiday in the world.
 Rather fewer people celebrate National Jelly Bean Day in Britain.

MAY

France picks its president, in the run-off round of voting. Iran also holds a presidential election.
 The leaders of the G7 big Western economies gather in Taormina, Sicily. Contemporary-art lovers also head to Italy, where the Venice Biennale opens.
 B-movie time: both a "Baywatch" film and a "Barbie" one are scheduled for release.

JUNE

Europe's football season reaches its climax with the final of the UEFA Champions League in Cardiff, Wales.
 The world's most glamorous yacht competition, the America's Cup, races to its finish in Bermuda.
 Europeans rejoice as the EU abolishes roaming charges for mobile phones.

JULY

Germany welcomes leaders of the world's biggest economies to Hamburg, for the annual G20 summit.
 Canada celebrates the 150th anniversary of the British North America Act, which united three British colonies as "one Dominion under the name of Canada".
 "What are men to rocks and mountains?" – or to Jane Austen, who died 200 years ago.

AUGUST

Kenya's vote in a general election.
 Americans can see a total eclipse of the sun on August 21st.
 Princess Diana died 20 years ago.
 England defends her crown at the Women's Rugby World Cup in Ireland.

SEPTEMBER

Austin, Texas, grooms itself for the world beard and moustache championships, with categories ranging from "Dali" to "Garibaldi".
 Prince Charles becomes Britain's longest-serving Prince of Wales, overtaking Prince Albert Edward's 59 years and 45 days.
 General elections are due in Germany, Norway and New Zealand.

OCTOBER

On a track at the Hakskeen Pan in the Kalahari desert in South Africa, Bloodhound, a Britain-based team, plans to break the world land-speed record of 763mph (1,228kph) set in 1997.
 Revolutionaries of the world unite to hail Che Guevara, who died 50 years ago.
 It's 500 years since another revolutionary, Martin Luther, nailed his 95 "Theses" to the door of the church in Wittenberg Castle—starting the Protestant Reformation.

NOVEMBER

Leaders of 21 Asia-Pacific countries fly into a newly built international terminal in Da Nang, Vietnam, for the 29th APEC summit.
 Russians, some with nostalgia, look back to the revolution of 1917, which brought the Bolsheviks to power.
 The distinctly un-Marxist Museum of the Bible in Washington, DC, is due to open its doors around now.
 The National Hockey League, born in a Montreal room on November 26th 1917, celebrates its centenary.

DECEMBER

South Korea votes for a new president.
 The latest "Star Wars" movie, the eighth in a franchise that began in 1977, is released.
 Kippis! Finland celebrates 100 years of independence on December 6th.
 The first human-heart transplant was performed 50 years ago, in South Africa. And the first text message was sent 25 years ago: it said "Merry Christmas".





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When everything thinks, you can outthink.



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United States



Trumpquake

David Rennie WASHINGTON, DC

The aftershocks of a demagogue's election will reverberate across America and around the world

How much lasting harm have the political tremors that rumbled throughout 2016 left behind them? America in 2017 will have to conduct just such a damage-assessment after the seismic shock of Donald Trump's victory. Even if President Trump ditches or dilutes his wildest promises, the election of a demagogic, secretive tycoon with globe-spanning business interests will test every check and balance put in place by the Founding Fathers.

As the Trump era begins, the new president's defenders in the Republican Party will urge calm. Even during the election campaign they offered briefings that this would be a CEO president, who will delegate day-to-day governing to underlings, starting with his conventionally conservative vice-president, Mike Pence, a former Republican congressman and governor.

To cheerleaders on the right, Mr Trump is a salesman in the Reagan mould, with the rhetorical skills to help Republicans navigate these populist times. Forget Mr Trump's flip-flops on policy, they will say. With Republicans controlling Congress, most governor's mansions and state legislatures, a golden chance exists to pull the country rightwards. If such boosters are correct the president's first 100 days will see a flurry of hard-edged conservative policymaking, starting with the signing of executive orders that undercut big planks of

Barack Obama's legacy.

Conservatives yearn to see Mr Trump pulling America out of the Paris climate-change agreement signed in 2016, dismantling federal rules that curb coal's use in power generation, approving new pipelines and opening federal lands to more mining and energy drilling. Some want him to pick a noisy fight with public-sector unions, by making it easier to sack federal officials.

After so many speeches about wall-building, Mr Trump can hardly avoid taking some visible steps to further fortify the border. Should Congress balk at the cost, Trump allies will warn of the electoral doom facing members who sound weak on border security. Though ambitious immigration reform must wait for Congress, the executive branch has a wide degree of latitude to bar entry to those deemed a terrorist threat. Expect Mr Trump to order more foreigners deported when arrested for even minor offences, and to reverse Obama-era executive orders that shield migrants with strong ties in America from deportation.

Congressional Republicans will push for Mr Trump to slash business taxes and offer a cut-rate tax amnesty for corporations willing to bring home foreign earnings. Republican bigwigs will try to limit the impact of Mr Trump's promises to renegotiate NAFTA, a free-trade

2017 IN BRIEF

New York City and several other big cities elect new mayors in November



David Rennie:
Washington bureau chief and Lexington columnist,
The Economist

To the victors, a mess

James Astill WASHINGTON, DC

Republican congressmen will regret their support for Donald Trump

Many of the Republicans who stood by Donald Trump, through the obscenities he brought to the election campaign, cited in justification this dream: an end to the divided government that, partly thanks to their own efforts, wrecked much of Barack Obama's presidency. They now have what they wanted: control of both chambers of Congress, after the Democrats failed to overhaul Republican majorities in either; and a Republican in the White House. Yet for Mr Trump's Republican apologists, this dream will become a nightmare in 2017.

Their support for Mr Trump was based on a hope that, once president, he would give Paul Ryan, the Speaker of the House of Representatives, a free hand to push his low-tax, small-state conservative agenda. Mr Trump is not interested in policy details, as he signalled during the campaign by provisionally offering to make John Kasich, the governor of Ohio, his vice-president in charge of foreign and domestic policy. And Mr Ryan has lots of ideas. In the absence of a serious Trump policy platform, the six-issue plan he released ahead of the election, which would,

Whatever intra-party discipline Mr Ryan's successor manages to impose will break down



Paul Ryan, a man who had a plan

for example, make it harder to obtain welfare benefits and easier for companies to pollute, set the policy agenda for conservatives in 2016.

Yet Mr Trump hates Mr Ryan, because the Speaker in effect ditched him a month before the election, after the release of a videotape in which America's president-elect was heard boasting of his ability to take sexual liberties with women. Mr Ryan has also been weakened in the House, where the Freedom Caucus, a faction of anti-government right-wingers, is growing in confidence and itching to pick a fight with him. Rather than stay on to be humiliated by Mr Trump and the Freedom Caucus, Mr Ryan will resign the speakership in 2017, if he is not deposed first.

The Freedom Caucus will try to replace him with one of its own; it will not

succeed. But whichever mainstream Republican replaces Mr Ryan will run into obstacles. The Democrats in the Senate, bruised by their party's rout, would use the filibuster to resist a redesign of the welfare system and a repeal of the Affordable Care Act, Mr Obama's signature health-care reform, which Mr Trump has also promised to crush. Instead, Obamacare may be unpicked in other ways.

Moreover, Mr Trump will also be more than happy to pick a fight with his party, which he reviles as hostile, weak and captured by special interests, in order to score populist points. If, for example, the Republicans were to sneak their desired tax cuts for high earners past the Senate, using a budgeting trick known as reconciliation, the new president might veto them. On the campaign trail he said that he would raise taxes on the rich (to be fair, he also said that he would cut them).

Mr Trump will prefer to exercise power by issuing executive orders. For example, he might use these to slap punitive import tariffs on Mexican and Chinese goods. This will, in turn, compel Republican congressmen, most of whom are free-traders, to oppose their unconservative president.

As the troubles of a Trump presidency become apparent, Republicans will also start to fear the wrath of the electorate at the mid-terms in 2018. And so their opposition will mount. Whatever intra-party discipline Mr Ryan's successor manages to impose will break down.

The Republicans have won a stunning victory. Yet it is about to cost their party much of its remaining identity, credibility and cohesion. ■

James Astill: Washington correspondent, *The Economist*

► pact with Mexico and Canada, prodding him to pick a few fights over "cheating" by trading partners such as Mexico or China, while avoiding a full-scale trade war.

If Trump-boosters are wrong, their hero will be less biddable than they suppose. During the campaign Mr Trump made clear his sighing admiration for President Vladimir Putin of Russia, praising the ex-KGB officer's "great control over his country". That reverence for strongmen and America First disdain for universal ideals will be felt in foreign policy. Advisers call Mr Trump an ultra-realist: a man who believes the world is nasty and dangerous and scorns the idea that America has a sacred mission to make it safe. Mr Trump may seek a geopolitical "grand bargain" with Russia, perhaps lifting sanctions imposed after the invasion of Ukraine in exchange for co-operation against Islamist terrorism.

Donald decides

Mr Trump will have roughly 4,000 political appointments in his gift. A rogue in the Oval Office can appoint cronies to powerful regulators, to head the FBI and spy agencies and to serve as federal judges. He has at least

one Supreme Court nomination to make. He bragged in February 2016 that, if elected, he would "open up" libel laws to make it easier to sue news outlets, adding that the *Washington Post* and its owner, Jeff Bezos, would "have such problems" if he came to power. Libel laws are not actually his to decide. But a president can still make life miserable for enemies. For example, he can demand the tax returns of any taxpayer—a potent weapon in a demagogue's hands.

The news industry has other reasons to fear a Trump presidency. Even outlets that strive to be non-partisan, such as news agencies, will feel obliged to report on every unsavoury nominee and probe every conflict of interest involving Mr Trump's tangled businesses—prompting furious accusations of bias from Trump-backers. If the new president is as unprincipled and vindictive in government as he has been in business, members of Congress, too, will have to choose between party loyalty and holding the executive to account. Frequent official resignations will signal that checks and balances are under strain. A real-life bully has been elected to the world's most powerful bully pulpit. There will be aftershocks. ■

2017 IN BRIEF

Former running back **O.J. Simpson** is eligible for parole in October after serving 11 years of a 33-year sentence for armed robbery and kidnapping





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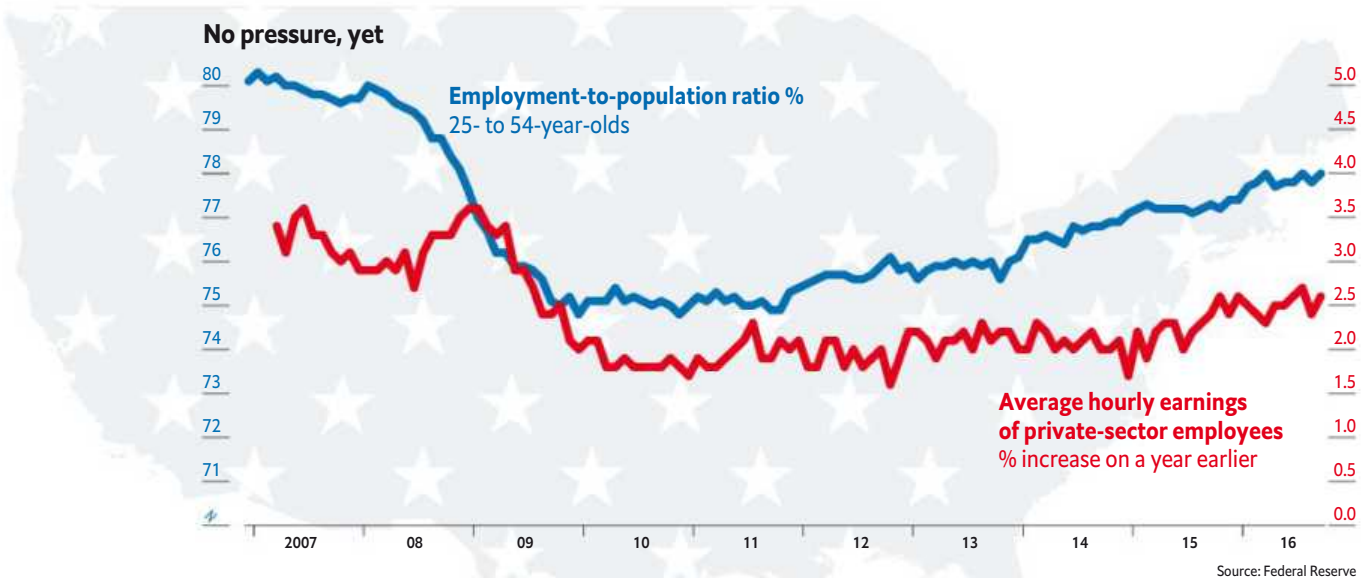


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Making recession great again?

Henry Curr WASHINGTON, DC

2017 IN BRIEF

Ivanka Trump publishes "Women Who Work", the follow-up to her 2009 bestseller, "The Trump Card"



Henry Curr:
United States
economics editor
The Economist

The power and perils of Trumponomics

Donald Trump spent the campaign championing policies that make most economists shudder: trade barriers, huge unfunded tax cuts and mass deportations. These ideas, if enacted, would almost certainly cause a recession. A projection by Moody's, a ratings agency, shows a worker shortage, lower productivity growth and greater government debt leaving the economy smaller at the end of Mr Trump's first term than it is today.

Yet nobody knows how much of this agenda will actually be enacted. The president-elect is no fan of policy details. During the campaign, he issued his tax plan three times—and it still remained muddled. He will need to get his fiscal policies through Congress. The tax policies House Republicans want are only half as expensive as Mr Trump's. Any tax cuts would need to expire eventually, probably after a decade. Otherwise, Democrats would be able to block them in the Senate.

When it comes to trade, regulation and immigration, the president has more power. Trade is particularly worrisome. Mr Trump could withdraw from the North American Free-Trade Agreement with just six months' notice, without consulting Congress. With the

right legal manoeuvres, he could probably impose the tariffs he has floated: 45% on goods from China and 35% on those from Mexico. He has claimed that these are merely threats which will lead to better trade deals. However, "when planning a war, it is not advisable to assume that one's adversary will surrender when the first shot is fired," notes a gloomy forecast from the Peterson Institute, a think-tank.

This could spook investors, derailing growth whatever Mr Trump ends up doing. Looser monetary policy would help alleviate this, as it did in Britain after its vote to leave the European Union. The Federal Reserve could postpone interest-rate rises planned for 2017, or even cut rates. Its worries about inflation could recede: though unemployment is low, wage growth has picked up by only a little; many workers who left the labour-force in the recession have still to return (see chart).

On the other hand, if Mr Trump quickly cuts taxes and, as he also pledges, boosts spending on roads, airports and other infrastructure, higher interest rates might be needed to keep inflation down. That would be fortunate for Mr Trump, who disavowed low interest rates during the campaign, claiming that they had stoked an economic bubble. He even accused Janet Yellen, the Fed's chairman, of keeping rates low for political reasons. (He cannot remove Ms Yellen until February 2018, when her four-year term ends.)

The downside of higher rates alongside looser fiscal policy would be a still-stronger dollar, which—ironically, given Mr Trump's rhetoric—would hit American manufacturers. A hotter domestic economy would also cause the trade deficit to widen. Both trends would increase the pressure on Mr Trump to live up to his protectionist rhetoric.

If he does, do not expect many upsides. Though some manufacturing jobs might eventually appear to replace Chinese imports, the country is not about to sell cheap goods to the rest of the world. And after a while real incomes will fall, not rise, because productivity will tank. The uncomfortable truth is that the fate of America's economy depends on Mr Trump recognising the faults in his thinking. ■

He issued his tax plan three times—and it still remained muddled

Just possibly...

- A Democratic-voting northeastern city tables a motion to become part of Canada.
- Completely driverless vehicles hit the highway in California.
- America opens a new cultural centre and consulate in **Sevnica**, the birthplace of **Melania Trump**.

The Michigan Growth Engine

From tech to R&D to industrial design, innovation is ripe in this state, where manufacturing is second nature and venture capital flows freely. Here's how Michigan adds up for companies who call it home.

No. 1

in the Great Lakes and
TOP 7 in U.S.
for three years in site selection
of new and expanded facilities



1st
in
U.S.

in concentration
of **industrial
designers** and
engineers



**TOP
10**

state for **aerospace
manufacturing** and
R&D facilities



TOP 10

**Pro-
Business
State**

(Increased 14 spots
in rank since 2014)



\$1.7 Billion

in **venture capital** under management

45% increase
in last 5 years

Detroit 3rd in
U.S.

as hotbed for tech jobs



**Within
500 miles**

of almost half
of the major U.S.
and Canadian
markets



370

**Automotive
R&D Centers**
representing 75%
of automotive R&D
spending



\$12 Billion
Invested

in commercial, industrial
and residential properties
in Detroit since 2006



SOURCES: (1) SITE SELECTION, MAY 2015. (2) BUREAU OF LABOR STATISTICS, OCCUPATIONAL EMPLOYMENT STATISTICS, MAY 2014. (3) PRICEWATERHOUSECOOPERS, "2015 AEROSPACE MANUFACTURING ATTRACTIVE-
NESS RANKINGS." (4) POLLINA CORPORATE/AEDI PRO-BUSINESS 50-STATE RANKINGS 2015, NOVEMBER 2015. (5) MICHIGAN VENTURE ASSOCIATION, APRIL 2015. (6) OREGON OFFICE OF ECONOMIC ANALYSIS, JUNE 2015.
(7) CENTER FOR AUTOMOTIVE RESEARCH, JULY 2015. (8) DETROIT REGIONAL CHAMBER.

#

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WHAT IF UNIONS NEVER EXISTED?



Beginning May 1st of 1886, more than 300,000 strikers and demonstrators joined forces across the U.S. for a national strike. They wanted an eight-hour workday at a time when the average workday was an estimated 10 to 11 hours. The size and power of the multi-day, mostly peaceful protest signaled to employers and the nation that an organized push for worker rights was real and growing.

This event has since been preserved in history as the origin of May Day, the international holiday honoring workers around the world. From a contemporary perspective—in which basic worker rights like an eight-hour workday, safety and health standards in the workplace and a national minimum wage seem obvious—the notion of a world without the advocacy of unions is hard to imagine.

Yet, if unions never existed, we would live in a world with lower wages and a society that's even more sharply divided between rich and the poor. Workplace protections that minimize on-the-job injuries and death in dangerous environments might never have been put in place and expanded.

Hard-fought measures such as employer-provided health care coverage and even limits on child labor might never have gained a hearing. Without the economic and political pressure of unions, many of the rights and regulations that make life more livable and fair might never have taken root.

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Written by



Cities v states

Andrew Miller ATLANTA

The new front in America's culture wars will become ever more apparent

If Donald Trump's rise was America's greatest political astonishment in 2016, one runner-up was the sudden salience of transgender restroom use. The spat ultimately drew in the Department of Justice and federal courts, but it began with a more intimate disagreement, between city politicians and their state-level counterparts. The shifting complexion of many states in the South and beyond means that, in 2017, that sort of conflict will spread.

The brawl was sparked when the city council in Charlotte, North Carolina, passed an ordinance that covered restroom etiquette, allowing transgender people to use either men's or women's toilets. State legislators harrumphed—and the rest is a history of copycat bills, lawsuits and boycotts. The underlying story, though, concerns demography.

Encouraged by the thriving finance and technology industries, low taxes and nice weather, migrants from other parts of America have rejuvenated Charlotte and tilted it leftwards. Universities are another magnet for liberals. A reluctance to offend makes the tourism industry tolerant, too. Along with the growth of ethnic minorities and the coming-of-age of open-minded millennials, these trends are reshaping the mood in places such as Nashville and Memphis.



Riding into ructions

Already around a third of residents in Georgia and North Carolina were born outside the South. Yet, for now, the rural and suburban populations of such states ensure that conservative Republicans retain control over their legislatures and most southern governorships. For some, slapping down wayward metropolitans seems a vote-winner. Tension ensues.

And not only over restrooms. Cities and states have tussled over the minimum wage—which Birmingham, Alabama, for example, was recently prevented from raising. The fates of illegal immigrants, and of monuments to Confederate leaders, are all causing ructions. So are dangerous dogs, plastic bags and fracking, all of which some liberal communities want to ban.

Faced with urban free-thinking, state

legislators tend to forsake the arguments for local autonomy that they energetically wield in stand-offs with Washington. Some have passed pre-emptive prohibitions to hem in wayward councillors.

This overlooked front in America's culture wars will rumble on in 2017. New municipal efforts to decriminalise marijuana will help fuel the conflict. So will the two biggest flashpoints: anti-discrimination policy, which more cities will try to extend to cover sexuality and sexual identity; and guns, the prevalence of which more city politicians will attempt to limit, even as some statehouse headbangers strive to make them ever more available. The battle for the White House is over, but the state-level skirmishes are just getting started. ■

Andrew Miller: Southern correspondent, *The Economist*

A whole lot of Loving

John Prideaux

A time to reflect on the rise of interracial marriage

If you are American and over 50, then you were born in a country where, in some states, it was still illegal to marry someone of another race. The 50th anniversary of the Supreme Court ruling that struck down those bans, *Loving v Virginia*, falls in 2017. Though there will undoubtedly be many news stories lamenting racial bias in areas of American life from policing and employment to housing, the rise of interracial marriage over the past half-century tells a different story. In the coming year, calculates William Frey of the Brookings Institution, a think-tank, nearly a fifth of all new marriages in America will be between people of different races.

Such unions reflect America's talent for taking people in from all corners of the world and blending them together. But the notion that mixed-race marriages are markers of a healthy society is a fairly new one. During the first half of the 20th century, plenty of progressive eugenicists agreed with old-fashioned racists that people with differing concentrations of melanin in their skin ought not to procreate. "Almighty God created the

racess white, black, yellow, Malay and red, and he placed them on separate continents," wrote Judge Leon Bazile when convicting Richard and Mildred Loving (who gave the case its name) under Virginia's Racial Integrity Act. "The fact that he separated the races shows that he did not intend for the races to mix."

Five weeks after the Lovings were married, police burst into their bedroom and shone torches in their faces. Press reports at the time record that Mr Loving was asked, "Who is this woman you're sleeping with?" The answer ("My wife") landed both of them in prison. Mrs Loving, who was black, spent more time behind bars than her white husband. Rather than divorce, they moved to the District of Columbia. When a civil-rights lawyer found the couple and saw a chance to challenge anti-miscegenation laws, Mr Loving gave him straightforward instructions: "Tell the court I love my wife, and it is just unfair that I can't live with her in Virginia."

Fifty years ago, according to Gallup polls, just 20% of the country approved of marriage between blacks and whites. Now the figure is 90%. Arguments about race in America tend to divide between those who say racism is ancient history and those who say America can't escape its racist past. The anniversary of the Lovings' hard-won victory is a reminder that both these views are wrong. ■

2017 IN BRIEF

The National Archives releases the remaining 3,063 withheld files relating to John F. Kennedy's assassination



John Prideaux: United States editor, *The Economist*



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Canada on a high

Madelaine Drohan OTTAWA

Life beyond the honeymoon and the birthday party

Married couples will recognise the feeling in the air as Canada's Liberal government led by Justin Trudeau heads into a second full year in power. The honeymoon has been long, stretching back to the Liberals' surprise victory in the general election in October 2015. At times it has been euphoric: for evidence, look no further than the millions of selfies of grinning Canadians standing beside their youthful, charismatic prime minister (with and without his shirt). As new couples are wont to do, Canadians and the Liberal government have spent much of the past year talking about how they will change the country and the world.

In 2017 it will be back to real life. The spate of public consultations on how to improve everything from the way Canadians vote to how they dispense international aid will end. Policy decisions will follow, and will not please everyone. Mr Trudeau will face his first full-blown crisis if, as president, Donald Trump follows through on his threat to tear up trade deals. The United States is Canada's most important trade partner, buying almost 77% of its goods exports in 2015.

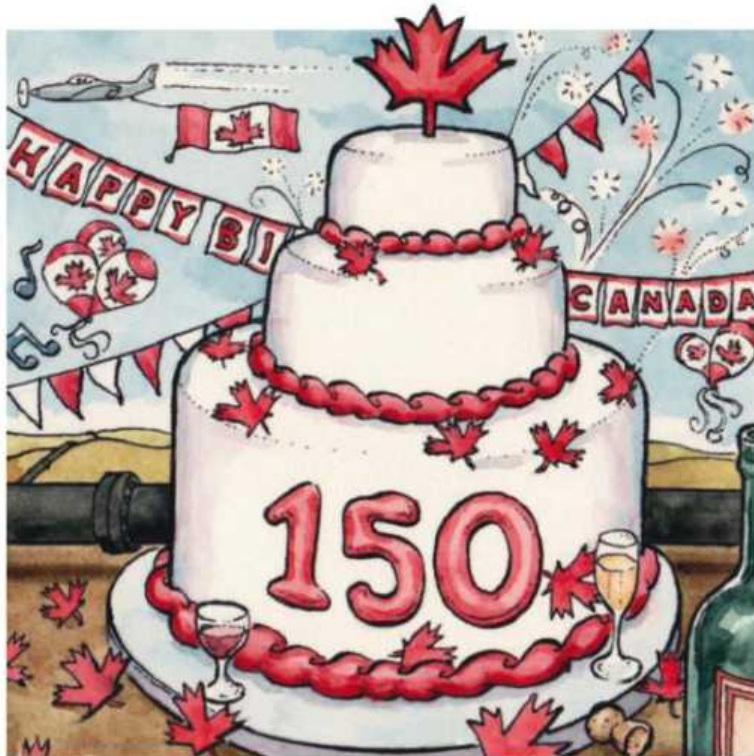
The honeymoon may be over, but the country has a happy event to look forward to: its 150th birthday party on July 1st. Canadians will be celebrating the creation of the Dominion of Canada by an act of the British Parliament in 1867. The British North America Act brought together the self-governing colonies of Ontario, Quebec, New Brunswick and Nova Scotia and gave them a written constitution. The other provinces and territories joined later—Nunavut was created as late as 1999—and Canada's constitution existed only as an act of the British Parliament until 1982, but Canadians date the birth of their country to 1867.

Well before the summer festivities, a tough decision for the government is fast approaching: whether to approve a pipeline to bring crude oil to the west-coast port of Burnaby, British Columbia, from the energy-rich, western province of Alberta.

Among Western governments, Canada is an outlier

The national energy regulator has approved the Trans Mountain pipeline expansion with conditions. Now it's up to the federal government to say yes or no or send the project back to the regulator for review. Anything but an outright yes will anger Alberta, struggling with recession and a record budget deficit owing to low oil prices. But approval will alienate environmental groups and Canadians drawn to the Liberals because they

The Americas



promised a greener Canada than the pro-energy Conservatives delivered.

Mr Trudeau is trying to placate both factions. After fraught negotiations, he told the provinces in October they must adopt a carbon price by 2018 or have one imposed. Disgruntled premiers will at least be able to keep the new revenue. Seven of the ten provinces face budget deficits, so a few dollops of federal cash for expensive programmes like health care could silence their objections. Environmentalists, already upset by approval of a liquefied-natural-gas pipeline to the west coast, will kick up a fuss if the oil pipeline gets the nod. Mr Trudeau has until the next election in 2019 to win them back. Fulfilling a campaign promise to phase out subsidies to fossil-fuel producers worth C\$3.3bn (\$2.5bn) a year would be a good start.

The prime minister won't get much of a breather before the government's next big test: deciding on what will replace the current first-past-the-post electoral system. Mr Trudeau promised the 2015 election would be the last held under this system. Once a special committee holding cross-country hearings reports in December 2016, the government will have to move fast to meet a deadline of May 2017 set by the chief electoral officer for legislation to be in place for the 2019 election. The Conservatives, who form the official opposition, are insisting a national referendum be held on any proposed changes. The government, with Britain's

2017 IN BRIEF

Many happy returns: **Canada** offers free entry to its **National Parks** and completes the Great Trail: 14,864 miles (23,921km) of paths across the length of the country



Madelaine Drohan:
 Canada correspondent,
The Economist

2017 IN BRIEF

Alaska Airlines launches flights from Los Angeles to Havana, the first non-stop service to Cuba from America's west coast



► Brexit vote in mind, has refused.

Canadians are undecided about the need for change (only 41% think it necessary) and what variety to choose. A version of the “mixed-member proportional” system used in Germany and New Zealand is the favourite. The government will probably choose this option—in which people vote both for individual candidates and more broadly for the share of parties’ seats—but it will have a stiff fight on its hands.

Canadian exceptionalism

Even as they struggle with these and other campaign promises like getting back into international peace-keeping operations and resetting the relationship with indigenous peoples at home, the Liberals will have to bring in their second budget. They have already ticked off three big priorities. First, a tax cut for the middle class and an increase for the wealthy, which in Canada means those earning more than C\$200,000 a year. Second, a revamped and more generous child benefit. And third, the first tranche of a C\$60bn infrastructure

plan. These will send the budget deficit soaring to at least C\$25.1bn from C\$1bn in 2015. Canada’s modest net government debt leaves room for more spending. However, it will lead the Liberals further away from their professed goal of eventually balancing the books.

Among Western governments, Canada is an outlier. It is pro-immigration while others are closing their borders (Mr Trudeau personally welcomed a group of Syrian refugees at Toronto’s airport in December 2015), pro-globalisation while others are turning against trade and pro-fiscal-stimulus when others have opted for austerity. But the longer these policies take to pay off in better economic growth, the harder it will be to sustain them. Growth was a meagre 1.1% in 2015 and the central bank reckons it will be the same in 2016 and 2% in 2017. A housing bust in the overheated markets of Toronto and Vancouver or growing global protectionism could knock the economy off this course.

Should that occur one of Mr Trudeau’s other promises—to legalise marijuana—will come in handy. It will let Canadians, if not the economy, end 2017 on a high. ■

Halifax’s explosive history

Barbara Beck

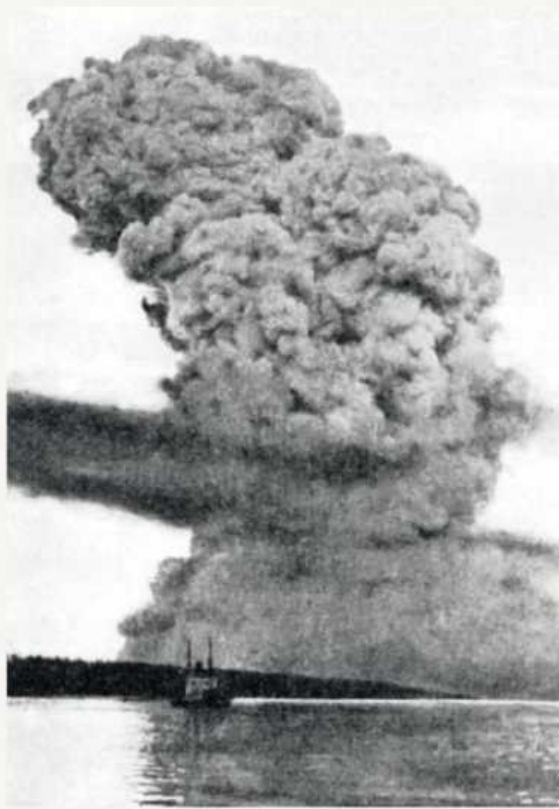
Lessons of a blast from the past

On December 6th 2017 at 9.05am, Halifax, the capital of the Canadian province of Nova Scotia, will hold a ceremony in a local park to mark the 100th anniversary of what at the time was the biggest man-made explosion the world had ever known. On a combination of measures such as scale of devastation and number of victims, its record remained unsurpassed until Hiroshima and Nagasaki were reduced to rubble in 1945 by atomic bombs (the design of which had benefited from studies of the blast effects of the Halifax detonation). Yet although the Canadian inferno also took place in wartime, it was only indirectly related to the conflict. Its direct cause was tragic human error.

During the first world war Halifax, which has one of the world’s best natural harbours, was used as a base to assemble large Allied convoys taking supplies and troops across the Atlantic. On the morning of December 6th 1917 a French ship, the *ss Mont-Blanc*, fully laden with enormous quantities of high explosives, had arrived to join a convoy headed for Europe. In a narrow part of the crowded harbour it tried to pass a Norwegian vessel, the *ss Imo*, but after a series of manoeuvres the two ships collided at low speed. The *Mont-Blanc* immediately caught fire. Unaware of the nature of the

cargo, everyone watched the spectacle.

Twenty minutes later, shortly after 9am, the *Mont-Blanc* blew up, instantly killing and injuring thousands of people and flattening almost everything within a radius of several kilometres. The explosion set off an 18-metre-high tsunami



The biggest bang

that caused further mayhem; white-hot debris falling from the sky caused fires all over the city. The eventual toll was nearly 2,000 dead and about 9,000 injured. About 12,000 houses were badly damaged and 6,000 people were left homeless. Not a pane of glass in the city remained intact.

Yet for all the horror, the response was swift, competent and heartening. Well-organised relief work got under way almost immediately. Generous help soon arrived from other parts of Canada as well as from the United States.

Identification of the dead was aided by a system devised five years earlier when many of the victims of the *Titanic* disaster had been brought ashore in Halifax. Temporary housing started to go up within weeks, and eventually the city was

The response was swift, competent and heartening

rebuilt on new plans with an improved layout. Harbour regulations, marine laws and disaster planning were all tightened, and medical advances that came about from the treatment of the victims, especially those who suffered damage to their eyes from flying glass, were made widely available.

So when the bells ring to commemorate the centenary, those present will not just be mourning the victims. They will also be celebrating the triumph of the human spirit over appalling adversity. ■

Barbara Beck: special-reports editor, *The Economist*

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Hypothetical yield curve: A chart that plots the yields of similar bonds across different maturities. The yield, as of 10/3/2016, for commonly referenced indices representing bonds with 1–5 year maturities, is as follows: U.S. Treasury securities (0.95%), Barclays 1–5 Year Municipal Bond Index (1.12%), Barclays 1–5 Year U.S. Credit Bond Index (1.76%), and Bank of America Merrill Lynch 1–5 Year BB/B Cash Pay Index (4.72%). Sources: Barclays Live, Bank of America Merrill Lynch.

¹Interest rate sensitivity is based on the annualized standard deviation of monthly total returns for the 10-year period ending September 2016, with the overall U.S. credit bond market represented by the Barclays U.S. Credit Bond Index (all maturities), and short-term bonds represented by the subset of bonds within the index with maturities of 1–5 years (Barclays 1–5 Year U.S. Credit Bond Index). Source: FMR.

²Frequency of reinvestment based on the percentage of bonds maturing within 3 years as of 10/3/16—21.26% for the overall U.S. credit bond market (represented by Barclays U.S. Credit Bond Index), and 53.20% for short-term bonds (represented by Barclays 1–5 Year U.S. Credit Bond Index). Source: FMR.

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Red retreat

Michael Reid

South Americans will turn away from the left

The long hegemony of the left in South America is over. An ongoing shift back towards the centre-right will be reinforced in 2017 in several ways. Left-wing governments may be replaced in presidential contests in Chile and Ecuador. Venezuela's long agony may produce a negotiated transition, signalling the beginning of the end of *chavista* rule. And in Colombia the guerrilla army of the FARC may begin its disarmament and its conversion into a civilian political party.



Yesterday's colour

2017 IN BRIEF

The **Dakar rally** sets out from Asunción, Paraguay, for the first time in January, before speeding into Bolivia and Argentina



Michael Reid:
Bello columnist and senior editor, Latin America and Spain, *The Economist*

One reason for the change in the political climate has been the economic stagnation left by the end of the great commodity super-cycle. After six successive years of economic deceleration, in 2017 Latin America will see a timid recovery. The region's economies, taken as a whole, shrank by roughly 1% in 2016; they may grow by up to 2% in 2017. This tepid revival depends on Brazil and Argentina pulling out of recession.

In Brazil Michel Temer, the successor of the impeached Dilma Rousseff, will strive to get enough fiscal reforms in place to allow lower interest rates and a stronger recovery. He will hope the mud from the Petrobras corruption scandal will not mire his government. The trial of Luiz Inácio Lula da Silva, a former president, on corruption charges will dominate headlines.

Argentina's centre-right president, Mauricio Macri, faces a crucial mid-term congressional election in October. With luck, by then the economic news will be good enough to allow him to make political gains. Lose, and the rest of his term will be turbulent.

After four lacklustre years of left-wing government under Michelle Bachelet, Chile's election in November will lack novelty. Sebastián Piñera, a businessman and former president from the centre-right Alliance, will probably defeat Ricardo Lagos, a Socialist and another former president, who is 78.

At an election in February, Ecuador will say *hasta*

luego (though not *adiós*) to Rafael Correa, a left-wing populist who has ruled the once-volatile country for a decade. With the oil-dependent economy in recession, his chosen successor, Lenín Moreno, faces a tough battle against Guillermo Lasso, a conservative banker from Guayaquil, the country's sprawling commercial hub.

Back in 2009 Honduras suffered a bloodless coup against a bid by Manuel Zelaya, a Liberal president who veered left, to consult the public on changing the constitution to allow re-election. Now Juan Orlando Hernández, a conservative, has pushed through that change. Despite endemic crime and corruption in the country, Mr Hernández is likely to defeat Mr Zelaya at an election in November.

Away from the ballot box, attention will focus on how effectively the region's politicians deal with the aspirations of a swelling middle class whose expectations of continued progress are being frustrated by economic stagnation. More street protests over corruption and public services are to be expected.

The underlying story in Latin America is the steady progress of democracy. Venezuela is the big exception. Nicolás Maduro, the embattled president, will try to cling to power by force. Against the constitution and the will of the people, he scotched a recall referendum which might have seen him replaced in 2017. Instead, expect conflict on the streets, and, perhaps, a negotiated transition involving the armed forces and the region's governments.

Farewell to the FARC's arms?

The year might bring good news for Colombians—provided the government and the FARC guerrillas can tweak their peace agreement to take account of its narrow rejection in a plebiscite. All being well, the 6,000-odd guerrillas and 10,000 or so militiamen will disarm. But peace may yet evaporate if the government cannot persuade their leaders to accept tougher punishment.

Two countries will face particular difficulties in 2017, as they prepare for transitions in 2018. Raúl Castro's regime in Cuba will seek to tighten its grip as the post-Castro era approaches. In Mexico Enrique Peña Nieto's reviled government will have to deal with Donald Trump's threat to tax trade and remittances and to discourage investment. One way and another, 2017 will show that governing has got harder in the region—for administrations of the left, right and centre. ■

Just possibly...

- Mercosur and the European Union sign a **free-trade agreement**.
- Jamaica installs **marijuana-dispensing kiosks** at its airports.
- Uruguay generates 100% of its **electricity** from renewable sources.

The underlying story in Latin America is the steady progress of democracy

A newly connected continent

Laurence Blair BRITO, NICARAGUA

Latin America's governments will dismantle obstacles to trade

The Nicaraguan Canal is a \$50bn megaproject with two ports, cities and an airport attached. It is supposed to be ready by 2021. But the sleepy bay at Brito, where the canal is meant to meet the Pacific, suggests otherwise. Financing was never clear; affected communities are fiercely opposed; secretive land sales have provoked suspicion. Locals reckon the project will be dropped now that Nicaragua's presidential election is over.

Amid a slump in global commodity prices, extravagant, trans-continental projects to bring raw goods to global markets have gone out of vogue. A \$60bn Chinese-backed plan for a trans-Amazonian railway is on ice. But the same underlying factors will in 2017 lead to a surge in Latin American spending on national infrastructure, alongside efforts to boost regional integration. These will be less spectacular but no less transformative, linking isolated communities with markets within and across borders.

For example, a Central American Trade Platform should be in place by the end of 2017, harmonising migration, customs and tax systems. Similar efforts have since 2005 helped to double trade between Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama, to \$9.2bn in 2015.

Other countries are at last recognising the need to increase the proportion of GDP they spend on infrastructure (the regional average was a meagre 2.7% from 2004 to 2014) as a means of boosting anaemic growth. Economic uncertainty and near-negative interest rates in the developed world mean that international investors will provide financing on easy terms: Latin American countries secured nearly \$90bn from global bond markets in the first nine months of 2016, outstripping the total for all of 2015.

In Colombia a \$70bn, 20-year infrastructure plan will move up a gear as a conclusive peace deal with the FARC comes into view. Over 11,000km (6,800 miles) of improved roads will better connect the cities of the in-

terior with Pacific and Atlantic ports. Around \$500m in American aid in 2017 will help link remote villages with markets, giving them an alternative to coca cultivation. Brazil and Guyana hope to tap a more modest \$10bn Chinese Latin American development fund to build a 560km jungle highway between them.

Peru's sprightly septuagenarian president, Pedro Pablo Kuczynski, plans to overhaul the country's creaking communications. Chile's new \$9bn public-private infrastructure fund will get to work in earnest in 2017, perhaps helping to connect the north's abundant solar energy with the country's southern grid. Work may start on a 14km trans-Andean tunnel linking Chile and Argentina—part of a broader “bi-oceanic corridor”. Argentina and Mexico are overhauling their airports; Brazil is courting private investment in its highways, railways and ports.

Paraguay, Uruguay and Argentina will work on dislodging blockages to shipping along the La Plata river system. A merger between Mercosur (a customs union whose biggest members are Brazil and Argentina) and the Pacific Alliance (Mexico, Colombia, Peru and Chile) remains unlikely any time soon. But Mercosur may relax rules restricting members from signing bilateral trade deals; Brazil is already eyeing up Canada, Japan, India and Britain. Meanwhile, Pacific Alliance members will facilitate the flow of migrant workers.

This all adds up to a strange contrast: Latin America is opening up just as the developed world flirts with protectionism and nativism. “We’re basically passing each other on the highway,” says Christopher Sabatini of Columbia University.

Greater connectivity will reduce stubborn pockets of poverty. But the new administrations in Peru and Argentina hold razor-thin majorities; Brazil's new president, Michel Temer, is wildly unpopular. If governments once again neglect human rights or fail to tackle corruption in their rush to free up economies, Latin America's liberal renaissance will prove short-lived.

“If they do it, they should do it properly,” one local fisherman stipulates of the Nicaraguan Canal: without secrecy, and compensating those affected. It sounds like a good formula for the less illusory infrastructure and integration projects of 2017. ■

Greater connectivity will reduce stubborn pockets of poverty



Laurence Blair
deputy editor,
The World in 2017

Why Canada opts for openness

In 2017 Canada celebrates its 150th anniversary. For a century and a half, one simple promise has been at the heart of Canada's success: that here, everyone has an opportunity to build a better, more prosperous life.

For generations parents have been able to promise their children that if they work hard, get a good education and apply themselves, they will get ahead. Today, too many Canadians are worried that this is no longer the case. Those who do most of the heavy lifting in Canada's economy—the middle class—work longer hours for an ever-shrinking piece of the pie. Meanwhile, the rungs on the ladder of opportunity have grown further apart.

Over the past several years I have had the opportunity to meet and listen to Canadians from all walks of life, coast-to-coast-to-coast. I heard from women and girls who still face inequality in the workplace and violence at home, just because they are female. I met parents who wanted to put their kids through university, but worried they wouldn't be able to afford it. I listened to young people who couldn't get a job because they didn't have work experience, but didn't have work experience because they couldn't get a job.

Concerns about losing out are not unique to Canada. We see it today in the Brexit vote, in widespread calls for nationalism over globalisation, and in those who promise to build walls instead of tearing them down. When prosperity isn't shared, people increasingly feel left behind, and they start to look to deceptively easy solutions.

Much of this anxiety can be traced back to the current low-growth global economy. Emerging economies that had helped to drive global growth for so long have slowed down. As household debt rises, families feel tapped out. Real economic growth is hard to find, making it all the more difficult to boost incomes and create the good, well-paying jobs that are needed to strengthen and broaden the middle class.

Embracing the world

Leaders who understand this have a choice to make: do we exploit this anxiety for our own political gain? Or do we take concrete steps to implement policies that will strike at the very root of these anxieties? In Canada we made the choice to build an economy that works for everyone, not just the wealthiest 1%. And we're doing it not by turning inwards or rejecting the opportunities that go hand-in-hand with a global economy; instead, we are embracing the world. We know that if we

want to extend the ladder of opportunity to everyone, we must be an open society—one that welcomes new ideas, creative ways of thinking, and different cultures and people.

Embracing the world also means being open to trade. We know that export-based industries pay wages 50% higher than non-export industries. So reinvigorating our relationships with our top five trading partners—the United States, Mexico, China, Japan and the European Union—was not just smart foreign policy, it was smart economics for Canadians. Stronger trade relationships create more opportunities for Canadian workers to succeed and prosper.

In many ways, Canada's developing relationship with China serves as a good example of the ways in which a more open and cooperative approach can benefit the middle class. This relationship needs to be stronger and more stable if we are to take full advantage of the economic opportunities available to Canadian businesses and their workers. To that end, we are looking at ways to expand our economic ties through a free-trade agreement, and have pledged to double bilateral trade by 2025. These initiatives will generate prosperity for all of our citizens, Chinese and Canadian alike.

At home, we are following through on our commitment to make historic investments in infrastructure—not only because this creates good, well-paying jobs, but because we know that when it is easier for people to get to work on time, ship their products to market or secure for their ageing parents the care they need, the whole economy benefits.

We are also investing in education so that the next generation of Canadians has the tools it needs to make an impact in the careers of today and tomorrow. We are making significant investments in clean technology so that Canadian companies, workers and communities can thrive in an emerging low-carbon economy. And to respond better to the needs of an ageing population, we are strengthening the Canada Pension Plan and making sure that those who have worked hard to keep the country's economy going strong can afford a dignified retirement.

Perpetual progress and relentless ambition have shaped Canada's identity—and its success—for the past 150 years. We know that strong, diverse and resilient countries like Canada don't come about by accident, and won't thrive in the future without a lot of hard work. That is why we will always choose hope over fear, and diversity over division. ■



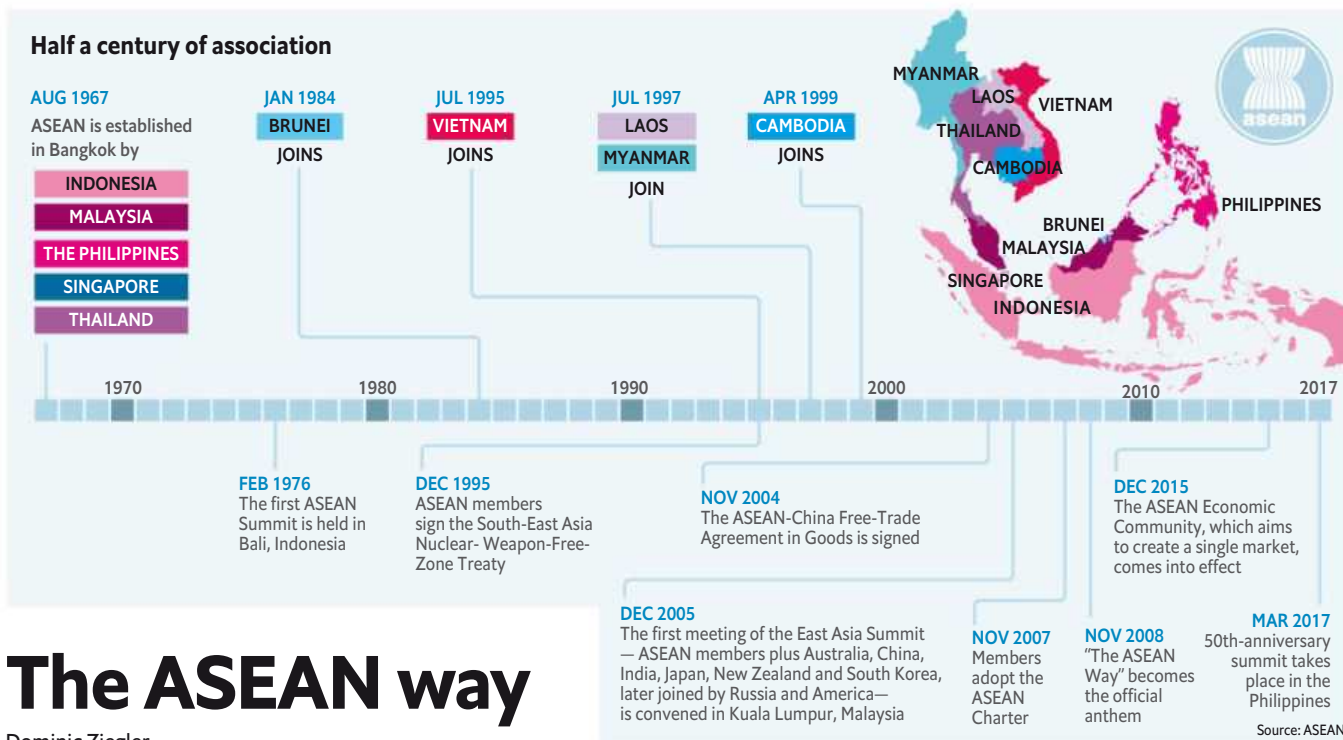
Justin Trudeau, prime minister of Canada, explains why his country will not turn inwards as globalisation comes under fire

We must be an open society—one that welcomes new ideas, creative ways of thinking, and different cultures and people

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The ASEAN way

Dominic Ziegler

China's assertiveness will test the unity of the South-East Asian club, but not to breaking-point

In August 1967 five countries formed the Association of South-East Asian Nations, or ASEAN. Indonesia, Malaysia, the Philippines, Singapore and Thailand had little in common—indeed, Indonesia had until recently been waging an undeclared war against Malaysia in the jungles of Borneo; the acrimony from Singapore's abrupt departure from Malaysia in 1965 was still fresh. Yet one existential threat brought them together: Soviet-backed communism exported from Vietnam.

Fifty years on ASEAN has doubled its membership to include Vietnam itself, along with Brunei, Cambodia, Laos and Myanmar—a total population of 625m, bigger than the European Union. Growing prosperity and a rising middle class are things to celebrate. But in its anniversary year ASEAN will face a fresh existential challenge, threatening this time to blow it apart: being forced to choose sides in China's growing great-power rivalry with America. Some will predict that the outcome will be ASEAN's demise. Yet the regional club will find a way through, and even come out of the year stronger. Call it the "ASEAN way".

Early in 2017 things will not look auspicious, with America's commitment to the region under President Donald Trump in doubt, and the politics of several members lurching backwards. In Thailand the junta that kicked out a democratic government in 2014 will dig in

for the long haul. It will go after "red-shirt" democrats and those with a dislike for the crown prince, Vajiralongkorn, who is soon to ascend to the throne after the death in October of his father, King Bhumibol Adulyadej. The Malaysian prime minister, Najib Razak, immersed in financial scandal, will crack down before a general election in 2018, if not sooner (see box on next page). And in the Philippines (which holds ASEAN's rotating chair in 2017) under the irascible president, Rodrigo Duterte, a vigilante crusade against drug-dealers will threaten to suck society under.

Consensus is reached by turning a blind eye to regimes' behaviour

Grim as the politics of these countries looks, make no mistake: ASEAN does not give a damn about the abuses themselves. The ASEAN way emphasises cohesion, order and civility among its members—and above all an agreement not to disagree. This is its prized consensus, which is reached by turning a blind eye to regimes' behaviour: any other approach would lead to rupture. As for decision-making, consensus rules here too. It means moving at the speed of the slowest. On the one hand, ASEAN can commit, as it did in a charter a decade ago, to move towards "EU-style" integration; on the other, you can wait for a real common market until the cows come home.

But ASEAN would give a damn if China thought that the lurches towards authoritarianism in Thailand,

2017 IN BRIEF

The annual joint military exercises between the Philippines and America are scheduled to take place—but may be cancelled, given the chill in relations since Rodrigo Duterte became president



Dominic Ziegler:
Banyan columnist,
The Economist

The grey man hangs on

Jon Fasman SINGAPORE

Najib Razak will endure. Too bad for Malaysia

For more than a year, corruption allegations have swirled around Najib Razak, Malaysia's prime minister. Foreign investigators claim that hundreds of millions of dollars from 1Malaysia Development Berhad (1MDB), a state-owned development fund, have somehow wound up in accounts controlled by Mr Najib. Mr Najib denies any wrongdoing; he says much of the money was a donation from an unnamed Saudi source.

Nonetheless, the investigation into precisely where 1MDB's money went has gone global, ensnaring numerous large banks, including Goldman Sachs and arms of JPMorgan Chase and Royal Bank of Scotland. Far from the accusations weakening Mr Najib's hold on power, he appears more entrenched than ever: he has been able to portray himself as the victim of foreign machinations (the real reason investigators are going great guns abroad is because he has in effect blocked them at home). Though Mr Najib won another five-year term just three years ago, many believe, for two main reasons, that he will call a snap general election in 2017. Few doubt he will win.

First, Malaysia's opposition is

in disarray. In the previous two general elections, three parties formed an informal coalition: the Democratic Action Party (DAP), often seen among Malays as favouring the country's ethnic-Chinese minority; the Pan-Malaysian Islamic Party (PAS); and the multiracial People's Justice Party (PKR), founded by Anwar Ibrahim, who served as deputy prime minister and finance minister before leaving the ruling United Malays National Organisation (UMNO) in 1998.

That coalition has fractured. In 2015 Mr Anwar returned to prison to serve a five-year sentence on ludicrously trumped-up sodomy charges. The PKR holds just 29 of 222 seats in the parliament's lower house; that is probably its high-water mark. PAS hardliners evicted progressives, who have since formed a new opposition coalition with the DAP and PKR, but one that lacks a charismatic leader such as Mr Anwar. Mahathir Mohamad, a former prime minister who has turned from Mr Najib's mentor to

his most bitter foe, has launched his own party, but he may find it difficult appealing to those he banged up while in office.

Second, all of the goodies with which Mr Najib buys goodwill among rural Malays are now in increasingly short supply. Low oil prices help most of South-East Asia; they hurt Malaysia, the region's only net exporter. Prices for rubber and palm

Many believe he will call a snap general election

oil, Malaysia's other major commodities, have also plummeted, as has its currency. Growth is slowing. If Mr Najib is going to reap the electoral

harvest from his largesse with the public purse, he will need to do it quickly.

Some speculate that, behind the scenes, UMNO will arrange a face-saving exit for Mr Najib before the 2017 polls. Perhaps. But UMNO is likely to win either way.

What will change when it does? Not much, unfortunately. The country's economic health depends largely on global demand for its commodities and manufactured goods. Educated, middle-class voters may be horrified at Mr Najib's alleged corruption, and Chinese and Indian voters worry about his stoking of racial tensions and pandering to religious conservatives. But if those constituencies cannot dislodge the party from the administrative capital, Putrajaya, they will not be able to put much pressure on him once the voters return it to government. ■

Jon Fasman: South-East Asia bureau chief, *The Economist*



Cover your nose and vote for Najib?

- ▶ Malaysia and the Philippines made those countries susceptible to Chinese blandishments in ways that risk dividing the club. At issue is the South China Sea, where China's expansive claims overlap those of Brunei, Malaysia, the Philippines and Vietnam. China's territorial claims were dealt a legal blow in 2016 when an international court at The Hague ruled them to be inadmissible under the law of the sea. China rejected the ruling and has pressed weaker ASEAN members to do the same. As a result, ASEAN has struggled to find consensus on the issue. It has not helped that China looks to have "turned" Mr Duterte. It was his country that had brought The Hague case to court; soon after, though, the new president was praising China as the new power in the neighbourhood, while cursing America, the Philippines' long-standing ally.

ASEAN has been here before. At a summit in Phnom Penh in 2012, China applied huge pressure through Cambodia, a quasi-client state, to block any criticism of it. As a result, ASEAN's foreign ministers failed for the first time to agree on even the blandest joint statement. Given that post-summit communiqués are the outward form of the ASEAN consensus, diplomats say that it was a near-death experience they do not wish to repeat.

And so in the anniversary year a push will be made to coalesce around a new, firmer consensus not to let China rock the ASEAN boat. This time it won't be left to flaccid foreign ministers; national leaders will get involved, starting with Lee Hsien Loong, the prime minister of Singapore. That city-state will co-opt Indonesia, ASEAN's biggest country but under President Joko Widodo strangely unwilling to show regional leadership. Even Mr Duterte will confound sceptics by joining the initiative, because of fresh Chinese building on contested reefs in 2017 that will end the love-in with China (bear in mind too that Filipinos are the most pro-American people in the world).

That will leave only Hun Sen, Cambodia's ageing strongman. At home he is a thug, and he allows Chinese cronies to plunder his country. But he is still susceptible to flattery, and in private other ASEAN leaders will tell him that his greatest moment is about to come in saving ASEAN. And so it will have its 50th-anniversary pageantry and celebrations. As for the summit that will follow, its joint communiqué will surprise China with its bluntness. But China will have to grin and bear it, or risk looking the party-popper. ■

2017 IN BRIEF

New Zealand rolls out the 2017-27 stage of its **Kiwi Recovery Plan**, to boost the national bird's numbers towards 100,000



Open up, Japan

Japan propelled itself into the economic stratosphere thanks to its strength in precision manufacturing, churning out world-class cars, consumer electronics and petrochemicals. In 2017 and beyond it must reinvent itself as a digital-services superpower, encouraging tourism and embracing artificial intelligence, big data, deep learning and the sharing economy—all the while welcoming talented foreigners.

Some promising signs are visible. Although my homeland benefits from a bounty of tourist attractions, from Tokyo's neon skyscrapers to Kyoto's temples, we have long suffered from a reputation for being inaccessible, inscrutable and expensive. Encouraged by the yen's drop and some visa deregulation, this perception is changing. We're now welcoming new, mostly Asian tourists, with visitors rising by more than 50% in the past two years to surpass 20m in 2016. The Japan Association of New Economy (JANE), of which I am the representative director, urges Japan to aim for 100m visitors a year by 2030.

That will require a new openness to the internet. On a basic level, we need translation apps, greater acceptance of cashless payment options and increased Wi-Fi access to overcome language barriers. On a deeper level, we need to embrace digital-driven collaborative innovations, such as Airbnb-style home-sharing and ride-sharing.

Ride-sharing will not only attract tourists. It will aid cross-cultural communication, increase mobility in our underpopulated countryside and boost the entire economy, adding ¥3.8 trillion (\$36.7 billion) to GDP, according to JANE's estimates. Ride-sharing will also facilitate a flexible way of working, as almost anyone can drive part-time.

Home-sharing is a must too. Hotels in Tokyo and Osaka already operate at 80-90% of capacity. Many tourists wishing to attend festivals in Hokkaido, Aomori and elsewhere find that there are not enough rooms to go round. New regulations on *min-paku* (private home-sharing accommodation) are under discussion, which may restrict hosts to renting out properties for a limited number of days a year. Airbnb-style sharing could fill the gap, almost overnight. An estimated 2m properties are suitable for home-sharing. If these come onto the market, 25m foreign visitors could be accommodated, boosting the economy by some ¥10 trillion a year. Encouraged by a wider choice of lodging and easier transport, tourists will explore farther-flung regions, and taste Japan's tra-

ditional cuisine—another under-exploited Japanese resource.

Other new industries also beckon. My company, Rakuten, recently tested a drone delivery service on the golf course—bringing snacks and equipment to players out on the fairway. In the future, we see drones providing deliveries in sparsely populated areas and mountainous regions and transporting supplies to help confront natural disasters.

Artificial intelligence needs to become a priority. Rakuten is using it to personalise the online shopping experience. Without any human intervention, we aim to have computers recognise customers and match products to their needs—helping both our shop-owners and their clients. Using artificial intelligence, we hope to replicate online Japan's famed *omotenashi* spirit of hospitality, whereby hosts anticipate and fulfil guests' needs before they even voice them.

Tokyo could blossom into Asia's innovation hub. Our capital boasts superb infrastructure and an exciting combination of engineering talent and tech-savvy consumers. In order to create the kind of combustible energy that exists in Silicon Valley, we need to put in place incentives for startups, particularly by lowering corporate taxes.

Another potential strength is advanced, affordable medical care. Japan could explore the idea of building new hospitals that cater to non-resident foreign nationals. This would both increase our openness to the world and enable us to compete in the growth industry of medical tourism.

Sayonara, insularity

An open, internet-savvy and revitalised Japan means overcoming our historical resistance to change and to outsiders. Japan's demographic difficulties are well known. We need to encourage labour mobility and welcome skilled foreigners. Too few Japanese change jobs and embrace new challenges. Too few study computer coding and English to a level that is useful in business. Rakuten has made English its official language. About 80% of our new engineering hires are non-Japanese—as are about a fifth of all our employees, representing more than 60 nationalities.

Japan is a success story. Our social system and economy remain among the world's strongest. Our problem is too much regulation. If we eliminate barriers to innovation, I'm convinced a new, even more prosperous and digitally minded Japan will bloom. ■



Hiroshi Mikitani, founder and CEO, Rakuten, argues that, to reinvent its economy, Japan needs less regulation and more foreigners

Too few Japanese change jobs and embrace new challenges. Too few study computer coding and English to a level that is useful in business



2017 IN BRIEF

India and Pakistan mark **70 years since independence** from the British Empire and partition



Max Rodenbeck
South Asia bureau chief,
The Economist

Strength in numbers

Max Rodenbeck *NEW DELHI*

India, not China, is the giant with momentum

Can a lumbering Indian elephant overtake a soaring Chinese dragon? The idea has long seemed far-fetched. Having surpassed India's GDP growth almost every year for the past four decades, China's economy is now five times bigger. The trade balance between the Asian giants is embarrassing: India's exports to China (mostly raw materials) are worth barely a sixth of what it imports (mainly finished goods).

But the tables have begun to turn. For two years running India's economy has smartly outpaced China's in growth, and it will do so again in 2017. Its population is growing faster, too. Some time in the next decade there will be more Indians than Chinese. And as China's population ages, India will continue to enjoy the demographic dividend of a swelling number of workers with relatively fewer dependents to support.

Overtaking China in other ways will be a long slog: India is today just achieving the 70% literacy rate that China reached in the 1980s and the per-head income it reached in the early 2000s. Yet India has momentum, and in 2017 the country will show that it can sustain and even accelerate it.

India is a far more cacophonous and litigious place than China, with bickering economists to match. Yet one thing they tend to agree on is that India is currently in the sweet spot. Low oil prices and plentiful rains are quietly lifting the rural economy, while falling inflation and interest rates are tempting urban consumers. Urjit

Patel, the newly appointed governor of the Reserve Bank of India, will probably stick to a low-inflation strategy. Narendra Modi's government may have fallen short on its electoral promises of instant good times, but it faces no serious challenge in the run-up to the next general election in 2019. Even detractors concede it has reduced corruption, improved infrastructure and delivered a slew of promising reforms.

Their impact, so far muted, will be felt more strongly in 2017. A long-awaited general tax on goods and services, or GST, due to be rolled out in April, will tear down internal barriers to commerce, help to balance state and central budgets and reduce costs to business. (China introduced such a tax in 1991.) Other reforms have encouraged new players into financial services, invigorating a sector long dominated by sluggish state-owned firms. Many of these upstarts hope to take advantage of government programmes such as Aadhaar, a unique-identification system that has already registered the biometric data of more than 1bn citizens. Their aim is to allow more efficient targeting of services to the poor, in order to bring banking to the unbanked and to pull India's vast informal sector into the formal economy. Optimists speak of leapfrogging the Industrial Revolution and landing in the data-driven age.

India will remain an unruly place for some time, and a difficult country in which to do business. This is not just due to the excessive exuberance of its democracy. India also suffers myriad overlapping jurisdictions, overly enthusiastic bureaucrats and hopelessly tangled courts. Its state schools are terrible and higher education is woefully mismatched to the needs of the market. It has 15 official languages (plus more than 600 lesser tongues) compared with China's single one. And India faces many of the same long-term growth pangs that China has also had to endure, such as calamitous levels of pollution and the inevitable human riptide as vast numbers abandon villages and head to the cities.

So there will be pitfalls aplenty, including in the coming year. Hotly contested elections loom in several states, among them Uttar Pradesh, home to some 200m people. Social tensions have been rising, too, with sporadic clashes across the country pitting rival sects, castes, ethnicities and classes against each other. Relations have also been fraught with India's neighbours, particularly its nuclear-armed cousin Pakistan. As with previous prime ministers, some in the future may thank Mr Modi simply for holding the country together at all. But if his government can keep a lid on the country's internal contradictions, 2017 could be the year that places India firmly on a path to prosperity. That dragon in the distance is looking just a little closer. ■

Optimists speak of leapfrogging the industrial revolution and landing in the data-driven age

Just possibly...

- The exiled former prime minister, **Thaksin Shinawatra**, returns to politics after Thailand's new king absolves him of corruption charges.
- **East Timor** joins ASEAN amid improving relations with Indonesia.
- **New Zealand's** National Party is denied a fourth term after Labour, the populist New Zealand First and the Greens join forces.

Ins and outs in Oz

Robert Milliken *SYDNEY*

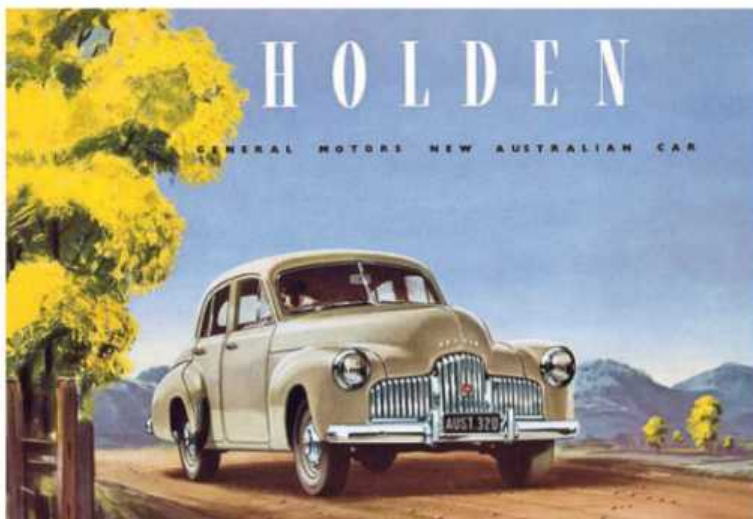
Australia's farewell to a national symbol

There was something symbolic about the first mass-produced car Australia made—a Holden FX—when it rolled off the production line in 1948. It gave the young country confidence of an economic future beyond farmlands and wide, open spaces. But that era will end in 2017 when General Motors, Holden's parent company, stops making “Australia's own car” down under. The departure of Ford and Toyota by then, too, will end carmaking in Australia, and provoke soul-searching for a fresh symbol of economic identity.

Malcolm Turnbull, the prime minister, is confident he has one: Australians must now turn globalisation to their advantage, and become a nation of “agile” innovators. He will offer incentives for startups and small businesses to “take great ideas to market”.

Putting this into practice will not be easy. The economy, at least, will be in his favour. Australia has weathered the end of a mining surge driven by Chinese demand. Low interest rates and a falling exchange rate will help the adjustment. Housing construction, especially in Sydney and Melbourne, will propel an urban boom. Students and tourists from Asia's growing middle class will bring yet more stimulus. Thanks to all this, Australia will enter its 26th year of unbroken economic growth. Nonetheless, the central bank will view the outlook for China, the country's biggest trading partner, as a “key source of uncertainty” for Australia.

For Mr Turnbull, the source of turmoil will be more homegrown: the fractious state of Australia's politics. A bruising general election in 2016 left his conservative Liberal-National coalition government with a lower-house majority of just one seat. The government lacks a majority in the Senate: 20 independents and members of small parties will determine the fate of much legisla-



Holden oldie

tion in the upper house. Mr Turnbull's key proposal to stimulate growth by cutting company taxes from 30% to 25% over ten years could be a casualty. Mr Turnbull wants all groups to “meet us in the sensible centre”. His real problem, though, will be rightists in his own party who have never accepted his progressive instincts.

Those tensions will complicate another symbolic change on the horizon: a referendum to recognise indigenous Australians in the constitution. Mr Turnbull had hoped the vote could happen in May 2017, the 50th anniversary of a previous referendum, passed with 90% support, which abolished a ban on aborigines being counted in the census. But conservatives want to insert merely a token acknowledgment of aborigines in the country's 1901 founding document, which ignored them. Others call for a treaty, as well, which could involve reparations. With a vote now unlikely before 2018, the task in the year ahead will be to find a formula to match the great consensus of 1967. ■

2017 IN BRIEF

Vanuatu hosts the tenth **Pacific Mini Games** for 22 or so of the region's smaller nations



Robert Milliken:
Australia
correspondent,
The Economist

Ban's the man

Stephanie Studer *SEOUL*

Disenchantment and division will produce a President Ban Ki-moon

When South Koreans go to the polls in December 2017 to elect a successor to President Park Geun-hye, some will be roused by the memory that, 30 years ago, they helped shape democratic South Korea. In 1987 the country held its first free elections in decades. That generation of student protesters, known as the 386ers (a nod to Intel's then-ubiquitous microchip), are now in their 50s and the biggest bloc of swing voters. Though some helped to elect a conservative Ms Park in 2012, their vote is newly up for grabs.

Ms Park's tenure has underwhelmed. She was saddled with South Korea's most

inefficient legislature ever; her Saenuri party lost its majority for the first time in 16 years. In late 2016 her presidency was buffeted by influence-peddling charges against a confidante, fuelling enormous popular resentment.

Her party's ebbing hopes of another win now hinge on a split in the liberal camp: between Moon Jae-in of the Minju Party of Korea and Ahn Cheol-soo, a software mogul whose star has dimmed since a botched foray into politics in the 2012 race.

Saenuri will desperately try to groom Ban Ki-moon, the UN's secretary-general, to lead it into the election. Though some view Mr Ban as among the dullest to have done the job, in South Korea he has a lot going for him. His distance from party factionalism appeals. He served as foreign minister under the progressive government of Roh Moo-hyun in the mid-2000s, so should garner liberal votes. He hails

from North Chungcheong province, a vital swing region in a country that votes as much based on geography as ideology. Mr Ban's time at the UN suggests to many that he is a mediator and problem-solver—an attractive proposition as a nuclear North Korea becomes more unruly.

The most immediate problem is how a future president would help lift South Korea's pensioners out of poverty, and its youngsters out of crippling unemployment—a full quarter are not in education, training or a job. On that, Mr Ban's authority is lacking. The frustrated young (they call their country “hellish”) turned out at parliamentary elections in relatively high numbers. To attract them, the 72-year-old Mr Ban will need to put forward a compelling case. But if he does, he will have a winning combination: the votes of the twenty-somethings and the 386ers. ■

Stephanie Studer: Seoul bureau chief, *The Economist*

Turning Taiwan into a tiger again

In 1996 Taiwan held its first-ever presidential election, marking our transition into a full democracy. There was an atmosphere of optimism and change across the country. The economy was strong, with low unemployment and rising middle-class incomes. As a trade negotiator, I saw first-hand how Taiwan was overcoming hurdles—both domestic and international—to joining the World Trade Organisation.

Taiwan was a bright light in a sea of darkness. But lately, for many Taiwanese, that bright light has dimmed amid an uncertain global environment. I now find myself Taiwan's leader at a time of vast economic and political challenges. Slow growth, rising inequality and new security threats are testing economic and political institutions around the world. Taiwan, no less than other countries, will be defined by how it responds to these difficulties.

In 2016 the people of Taiwan entrusted my Democratic Progressive Party (DPP) with the twin tasks of reform and renewal. We want to make Taiwan an Asian tiger once again.

My plan for 2017 is for Taiwan to renew its role as a pioneer, preserving our basic social safety net while revitalising the economy with a new development model. We will simultaneously work to reform political institutions, ensuring that economic and social transformations are combined with transparency and a strong democratic culture.

Taiwan's social safety net is on the brink of bankruptcy. My pension reform aims to make it sustainable and increase the support for the poorest. Taiwan has different pension programmes for different professions: an unfair practice which fuels social divisions. Changing this system will take some effort, but the DPP has a clear democratic mandate to do so.

The proportion of income spent on housing by Taiwanese people has risen sharply amid a real-estate bubble. My administration will help by providing 200,000 units of affordable social housing by 2024 via a public-private investment plan. Our ageing population will also receive new community centres. Our overall goal is to redistribute public resources for a fairer welfare system.

My economic plan for 2017 focuses on upgrading industries and overcoming stagnation. We are laying the groundwork for a more inclusive economic model based on innovation, job creation and the idea that growth should benefit everyone, not just the few. But we will draw on Taiwan's existing strengths: a mature industrial cluster, R&D

capabilities and flexible smaller businesses.

Through smart investment, the government is integrating public, private and global resources to nurture industries of the future: the "internet of things", biotechnology, smart machinery, green energy and defence. A natural extension of our current industrial capacities, these sectors will enable Taiwan to compete better in the future global economy.

We are refining our capital market and making financial policy more inviting to innovation-oriented foreign investment. We are also changing how we use human capital by providing greater support to entrepreneurs and tech startups. Our new technology minister, a 35-year-old former hacker, provides a direct line between them and the government. We have also loosened regulations on foreign professionals so that Taiwan can become a regional talent hub for emerging industries.

Open for business

To complement this economic transition, the government must take the lead in opening new markets for our products and services. We are stepping up engagement with ASEAN, south Asia, Australia and New Zealand via our "New Southbound Policy". This focuses on education, agriculture, culture, tourism and other people-to-people interactions beyond trade and investment.

We have sought to demonstrate that Taiwan is ready to join multilateral trade regimes: by reducing red tape, entrenching intellectual-property rights and streamlining the procedures governing investment. We will seek accession to the Trans-Pacific Partnership if and when it becomes available. We are also working towards bilateral agreements with important trading partners.

All of this depends on a stable regional environment. We will seek dialogue with all interested parties, including China, to build a framework for peace and prosperity in the Asia-Pacific region. My cross-strait policy is to establish consistent, predictable and sustainable relations under the existing constitutional framework.

Ultimately, my administration will be judged by our ability to reform and renew this country. This will demand that we deftly balance a multitude of interests across generations, classes and ethnicities, all in an uncertain international environment.

Yet we go forward with confidence, trusting that our hard-won democracy will rise to the task. Taiwan's reform and renewal will gather pace in 2017. ■



Taiwan's president, **Tsai Ing-wen**, expects reforms to gather pace

Our technology minister, a 35-year-old former hacker, provides a direct line between startups and the government

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Xi's power struggle

John Parker *BEIJING*

A push to dominate the Communist Party's ranks

The outcome of political infighting in 2017 will determine whether China gets back on a path of economic reform, openness and constructive relations with the rest of the world, or wastes even more years on an aggressively nationalist, economically timorous course. The omens do not look good.

The fighting will be fiercest at China's quinquennial Communist Party congress in October. This is the most important gathering in the country's political calendar because it, directly or indirectly, appoints new men—and they are mostly men—to the outfits at the top of China's hierarchy: the 25-member Politburo, its seven-member Standing Committee (the inner sanctum) and the 350-member Central Committee, the embodiment of the elite. The congress provides President Xi Jinping with his best opportunity yet to put his stamp on the party.

The aim of this orderly changing of the guard is to ensure a steady-as-she-goes transition, in contrast to the capriciousness of Mao Zedong's rule. But the coming changes will be more sweeping than usual and instead of predictable, incremental change will bring an uncertainty-inducing power struggle.

Supporters of Mr Xi have long argued that when he gets more people into positions of authority he will be able to give market forces "the decisive role" in the economy that he promised in 2013 but has so far failed to achieve. That would mean introducing competition to China's state-owned enterprises, choking off their

easy credit and reining in the economy's addiction to debt-driven growth. But even if that is what Mr Xi really wants (which is far from certain), doing these things will require more than a successful party congress.

The president has already accumulated more power than any recent leader. He is party boss, commander-in-chief, head of the national security council and chairman of numerous "small leading groups" that influence every aspect of government.

The coming changes will be more sweeping than usual

Yet his authority is concentrated at the pinnacle of the pyramid. Further down the slopes, his influence wanes. Only a handful of China's 31 provinces, for instance, are run by his allies and, on some measures, his network of supporters amounts to less than a tenth of the Central Committee. This is because the committee was picked not by Mr Xi but by his predecessors, Hu Jintao and Jiang Zemin, at the time they selected him as president.

Assuming the normal retirement ages are respected, five of the seven members of the Politburo's Standing Committee will step down, leaving only Mr Xi certain to keep his job and Li Keqiang, the prime minister, likely to keep his. Six of the other 18 Politburo members will retire and many more will exit the Central Committee.

Usually, 40-60 committee members leave when they reach the mandatory retirement age of 65. But 92 slots will have to be filled in 2017, largely because fewer youngsters were promoted in previous rounds. Some

2017 IN BRIEF

The country's first **skytrains** begin shuttling commuters to work and ferrying tourists to scenic spots



John Parker:
Beijing bureau chief,
The Economist

The 20-year itch

Caroline Carter HONG KONG

A tense election ahead for Hong Kong

Even in a city as enthusiastic about fireworks as Hong Kong, July 1st 2017 will go off with a bang. The government will hold two celebrations: the 20th anniversary of the territory's handover from Britain to China and the inauguration of its next chief executive. Both will be greeted with enthusiastic protest by thousands of Hong Kongers. An appearance by Xi Jinping would be the first by a Chinese president since his predecessor swore in Leung Chun-ying (who is commonly called C.Y.) as the current chief executive five years ago. It would also give the authorities just the excuse they need for a heavy-handed crackdown of any dissent.

Twenty years into Chinese rule, assimilation will seem further away than ever in 2017. China's unprecedented interference with Hong Kong's laws in 2016 prompted fears of the premature dissolution of "One Country, Two Systems"—the autonomy Hong Kong was promised for 50 years from 1997. That worry will grow.

China has missed yet another chance to grant Hong Kong residents the right to pick their own leaders. In 2014 China's version of universal suffrage (voters can only choose from a list of government-vetted candidates) drove hundreds of thousands onto the streets. Discussions on constitutional reform stalled in 2015, so the election in 2017 will be held with the same rigged and despised system as before. Elections in September 2016 brought

Few Hong Kongers really want independence



Striking a blow for democracy

new "localist" politicians into the city's Legislative Council (Legco) who advocated self-determination. Just as some were later banned from taking up their seats, the governments in both Hong Kong and China will make sure that such demands are not aired in the future. Anti-mainland sentiment will fester, putting off tourists and breeding hostility towards Hong Kong in mainland China's media.

To satisfy both camps, Hong Kong would, ideally, have a leader who is popular at home and obedient to the leadership in Beijing—characteristics so incompatible that the territory is likely to be lumped with just the latter. Whoever is picked as chief executive will lack a popular mandate. In

early 2017, a 1,200-strong committee dominated by pro-Beijing figures will nominate candidates for Hong Kong's top job; on March 26th the same people will select a winner. To maintain a semblance of competition, pro-democracy candidates are allowed to run (but not to win).

Mr Leung seems to want to run again, but the ABC (anyone but C.Y.) campaign has other ideas. In 2012 he was elected as chief executive with a tiny majority, just 689 votes out of 1,200. Support for him has been sliding ever since. Even China's enthusiasm for him has waned. Under his watch the city has hosted anti-government protests and elected politicians who want to distance the territory from the mainland.

It takes a special sort of person to want such a thankless job. C.Y. Leung's rivals are likely to include

Regina Ip Lau Suk-ye, best known for a failed security law that incited mass protests in 2003, and the financial secretary, John Tsang Chun-wah, whose handshake with Mr Xi at the G20 summit in Hangzhou in September was interpreted by some as an endorsement.

As street protests grow louder and more violent the government will push back against dissent, including another stab at a tighter security law. Few Hong Kongers really want full independence from China. But all would be forced to endure the punishments meted out from Beijing towards those who do. ■

Caroline Carter: Hong Kong correspondent, *The Economist*

► will be replaced on the principle of Buggins's turn. Mr Xi, however, will insist that many of his own people are appointed to the vacancies, adding to the pervasive sense of uncertainty in party ranks.

Beijing and beyond

The crucial first step is under way: picking the delegates to the congress—about 2,300 of them—who vote for the various party bodies. Mr Xi does not choose the delegates himself. Provincial and other party leaders do. But he has been twisting their arms by, for example, promoting allies to top provincial jobs and by reducing the importance of the Communist Youth League, a branch of the party that used to be a route to the top and once controlled a big chunk of the Central Committee.

It seems likely that all this will result in a more pliable group of delegates and an increase in the number of Mr Xi's supporters. It will be as if the American presi-

dent skipped the hustings and simply packed the electoral college, Senate and Congress.

But even if Mr Xi is able to boost his support sharply, it will not necessarily lead to economic reform or a less nationalist foreign policy. For one thing, it is never simple for a leader to change gear after several years in power. For another, Mr Xi will not have a majority on the Central Committee even assuming he gets his people appointed to, say, half the vacant posts. Moreover, those farther away from the centre of power—bosses of state-owned enterprises or party secretaries in China's 2,800 counties, the lowest level of administration—have become used to acting on their own. Lastly, Mr Xi has not been able to overcome resistance to change despite having so much formal power already. He and other leaders are at odds about what to do on the economy.

Mr Xi will extend his power but fail to make it absolute. And the struggle for reform will continue. ■

A very political economy

Simon Rabinovitch SHANGHAI

Beneath a placid surface, China's growth model will become strained

To begin, an ironclad prediction: whatever happens in 2017, China's economy will get off to a better start than it did a year earlier. On the first trading day of 2016, stocks plunged by 7%. Over the next week, as investors rushed for the exits, the yuan hurtled lower, triggering global panic about the state of the economy. China will avoid a similarly stomach-churning start to 2017, not least because it has learned important lessons. Regulators are better at managing financial markets and more attuned to emerging problems. They have earned the credibility that comes from staring down a possible crisis—and delivering stable growth instead.

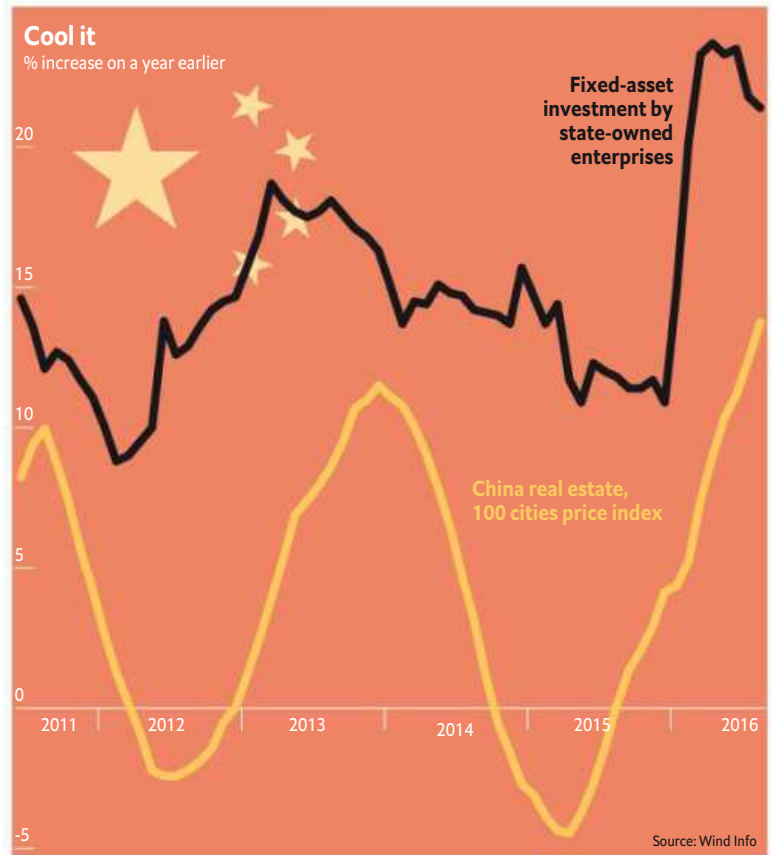
China has also acquired more weapons to fend off extreme financial stress in 2017. One of the main worries of the past year was that the central bank would burn through its foreign-exchange reserves, forcing it into a big yuan devaluation. But with tighter capital controls and a more flexible currency regime, that extreme scenario is improbable. The yuan will continue gradually to weaken next year but China will maintain its reserves at around \$3trn—quite a safety margin. And with an array of liquidity-injection tools now firmly in place, regulators will be ready to douse flames in the banking system.

Nevertheless, several big worries loom in 2017. A boom in the property market will end, depriving the economy of its biggest driver. Home prices soared by 15% nationwide in 2016 (see chart), which led to an uptick in construction. But authorities realised towards the end of the year that price gains were getting out of hand, especially in big cities, and started to tap on the brakes. This sets up a slow-moving chain reaction for 2017: prices will ease, transactions will slow and, with a few months' lag, property construction will wane.

When the housing market went wobbly in the past, China supported growth by splurging on infrastructure. It will do so again in 2017 but the extra kick from all that spending will be smaller, because it already splashed out on railways and roadworks in 2016. As both property investment and infrastructure investment slow, GDP growth is bound to weaken, too. China will probably set itself a growth target of 6.5-7% again. But unlike its performance in 2016, when it comfortably hit that range, it will fall below it in 2017.

A slower expansion, by itself, could be good news, suggesting that the government is focused on the quality rather than the quantity of growth. But in two important areas, reforms will go backwards. First, China will create more big state champions. The number of centrally managed state-owned enterprises will fall below 100 in 2017, down from more than 150 just a decade ago. That is not because the government is breaking

The debt mountain will loom ever larger over the economy



them up and selling off. Instead, it is combining underperforming companies, creating bigger groups that are even more insulated from competition.

Second, talk of deleveraging will again ring hollow. China's total debt has soared to more than 250% of GDP, nearly doubling over the past decade. Increases of that scale usually presage a major slowdown, if not a crisis. For the time being, China will keep a lid on these problems. The government will order banks to lend to troubled companies and will accelerate a debt-for-equity swap that alleviates their burdens. But all the while, the debt mountain will grow twice as fast as GDP, a fearsome sight looming ever larger over the economy.

Under the Communist Party, the Chinese economy has long been a political affair. In 2017 that will be especially true. With Xi Jinping, the president, gearing up for an autumn congress in which he will consolidate his power, officials high and low know their overriding task is to preserve economic stability. All signs thus point to 2017 being a calm, if slightly slower, year for the economy. That will allow Mr Xi to stride assuredly onto the stage after the congress. But his confident display will fail to mask the cracks in China's growth model—another firm prediction. ■

Just possibly...

- Serious unrest among **Uighurs** in Xinjiang forces the government to release several high-profile political prisoners.
- The government bails out **troubled banks** after a bubble in the housing market bursts.
- Facebook, YouTube, Google and Twitter are **unblocked**, with some restrictions.

2017 IN BRIEF

Move over, Disney: Dalian Wanda opens its third **theme park**, in Harbin, with new resorts expected in Qingdao in 2018 and Wuxi in 2019



Simon Rabinovitch:
Asia economics editor,
The Economist

The new long march

Rosie Blau *BEIJING*

Ever more Chinese students will head abroad

China's exports fluctuate over time but one is leaving the country in ever-greater quantities: its people. The rising tide of Chinese students moving abroad to study will swell further in 2017, when well over 700,000 youngsters will venture forth. The largest share will head to America, where students from China account for one in three of the international cohort. The number of Chinese students in America alone is likely to reach 375,000 in 2017, nearly double the total in 2011. By 2020 there will be nearly 450,000.

These Chinese students are part of the growing internationalisation of education: in 2015, 5m students were studying outside their home countries, more than triple the number in 1990; one in six of the total were Chinese. The vast bulk of the emigrés depart for some form of higher education (almost all of China's top science students earn their PhDs abroad), but a fast-growing minority leave at a younger age. From 2005 to 2014 the number of Chinese high-schoolers in America increased almost 60-fold, to 40,000. The ranks of Chinese secondary-school pupils in Britain are increasing

Fully 57% of Chinese parents would send their children abroad

faster than those of any other nationality, also helping to raise national exam results: Chinese pupils consistently perform above the national average in their host nations.

This has created an international contest for young Chinese minds. Australia, where one in four of the international-student contingent is Chinese, has simplified its visa application and now lets students apply in Mandarin. Ever more educational institutions from around the world are embarking on recruitment missions to China.

It was once only the richest or brightest who could study in foreign lands; most went to top universities, often in America. A slow rise in students and visiting scholars going overseas in the 1980s turned into a flood in the 1990s and studying abroad is now an ambition shared by the masses: according to one study by the Shanghai Academy of Social Sciences, 57% of Chinese parents would send their offspring abroad if they could afford it. Many of these children are already preparing for their departure by studying at one of the hundreds of schools in China with an international programme. Though some still go to Ivy League schools and their international equivalents, huge numbers now head off to far less high-ranking and prestigious outfits.

The appeal is not just academic. Of the 4m Chinese who have gone to study abroad since 1978, half have not returned, according to the Ministry of Education (and even more by some unofficial counts). Luring students back from foreign campuses constitutes China's new class struggle. ■

2017 IN BRIEF

The *Tiangong-1* space lab crashes back to Earth after six years in service



Rosie Blau: China correspondent, *The Economist*

Macau's low-rollers

James Yan

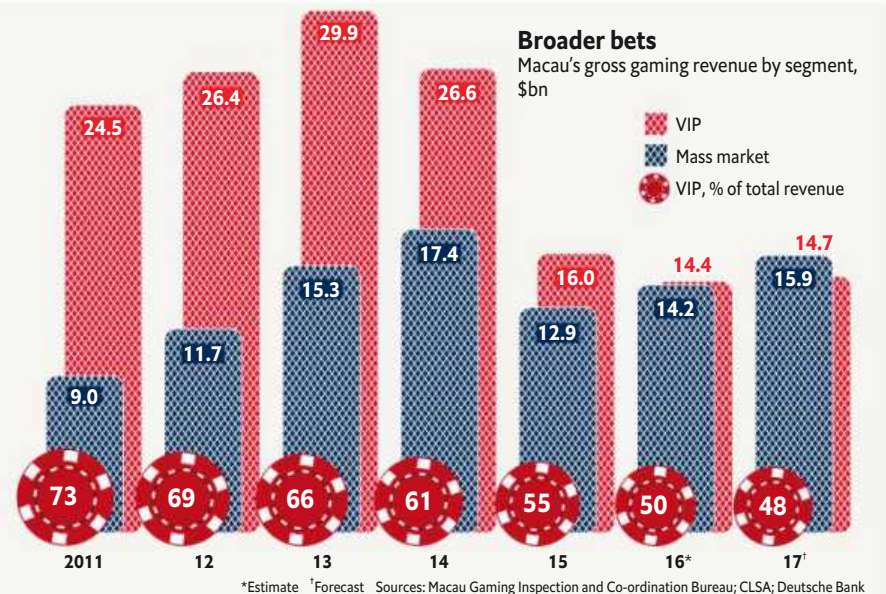
A gamble on China's middle class

In its heyday Macau's casino industry boasted annual revenues of \$45bn—seven times those of its American rival, Las Vegas. But a decade of spectacular growth came crashing down like a pile of chips in 2014 and 2015. Ultra-high-rollers from mainland China—who typically contribute well over half of the industry's total revenue—have folded, deterred from splashing their cash by President Xi Jinping's anti-graft campaign.

Casino magnates are now hedging their bets. They are trying to appeal to the mainland's mass-market tourists, who make up two-thirds of Macau's 30m annual visitors.

A reversal of fortune is on the cards

Their increasing affluence makes them prized customers in the only place in China where gambling is legal. Two casino-cum-shopping mega-resorts that opened in the second half of 2016—Wynn Palace, developed by Steve Wynn, and Sheldon Adelson's Parisian Macao—have allocated the vast majority of their gaming tables to the mass market. MGM Cotai, a



casino resort scheduled to open in the first half of 2017, will dedicate all of its tables to regular punters.

As a result, a reversal of fortune is on the cards. Already, gambling revenue in August 2016 notched up a 1% year-on-year increase, the first rise in 27 months. Gross gaming revenue will stage a comeback in 2017, registering a 7% gain over 2016, according to CLSA, a Hong Kong-based broker. This will be thanks to the swelling

ranks of low-rollers, whose smaller but more frequent wagers will help to offset the fall in the VIP segment.

As a result of this shift, in 2017 gambling revenues from the mass market will for the first time make up over 50% of the total (see chart). After two dismal years Macau's casinos are trading in a bad hand, and doubling down on the rise of China's middle class. ■

James Yan: editorial assistant, *The World in 2017*

"BELT & ROAD IS BIGGER THAN CHINA ALONE, IT'S THE WINDOW INTO TOMORROW'S GLOBAL ECONOMY."

Helen Wong — Chief Executive, Greater China, HSBC

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Doing development the Asian way

Globalisation was a defining feature of the late 20th century, enriching the lives of the people of participating countries to varying degrees.

But the easy economic gains are now behind us, and maintaining and furthering the integration inherent in globalisation is proving more challenging than many expected.

With global economic risks rising, capital gravitates to low-risk assets and tends to stay there. In the same way, human capital is embarking for a better chance across borders at an ever-increasing rate—precipitated by geopolitical volatility and the uneven distribution of wealth across the world. Yet as global growth stagnates more nations are turning inwards, shunning globalist policies in favour of nationalist ones.

Those inside a nation tend to share core beliefs. But globalisation has brought varying cultures, values and beliefs into contact in ways that were not possible before. New values can be interpreted as a threat to one's way of life. Whether newcomers integrate or not can determine whether the threat is merely perceived or becomes real.

In 2017, many nations appear to find themselves at a crossroads. The next step in any direction—more globalisation or less—looks risky. We must ask ourselves: if globalisation defined the 20th century, what will define the 21st?

I ponder this question because it relates to our strategy. As a new organisation, the Asian Infrastructure Investment Bank (AIIB) has to work out the way it contributes to regional and global integration and brings broad-based economic and social benefit to our member countries as a whole, without leaving one single nation behind.

Globalisation has yet to bring benefits to all nations caught up in it, and it must do so more fairly. The rules governing international trading arrangements must be reformed to include more popular scrutiny. So too must access to the benefits of increased connectivity. It is the deficiency in integration, not over-integration, that has created problems for those nations and sectors that have been sidelined for too long. Making a U-turn is not an option. Moving forward with the right approach is the only solution.

Adopting the right approach means we must first recognise that circumstances vary from country to country in the developing world. Bespoke development approaches are needed. This is the challenge faced by multilateral development banks (MDBs) and

bilateral donors working with marginalised countries. Nevertheless, few would disagree that investment in infrastructure is an important means of development.

China and other emerging markets in Asia testify to the effectiveness of investment in infrastructure for development. Since China's era of opening up began, over 800m people have been lifted out of poverty, largely as a result of wide-ranging economic and social development underwritten by infrastructure investment.

It is from this experience that AIIB can contribute to and find its niche among the MDB family. We will be open-minded in our endeavour to explore new development concepts that meet the needs of each and every country. We will pioneer a new approach by zeroing in on investment in infrastructure, as well as other productive sectors. While infrastructure boosts efficiency and supports growth, by definition it also supports society as a whole. Thus, in order to foster truly inclusive growth that can transform an economy and generate jobs, we must also bear in mind how other productive sectors benefit from infrastructure in different ways.

It is not enough to have a new mandate as a new institution; we must also ensure innovative approaches to solving 21st-century problems. We aim to be cost-effective, fast-moving without compromising environmental or social standards, and to prioritise close co-operation. AIIB is already working closely with other MDBs such as the World Bank and Asian Development Bank. But it is also important to nurture the ownership of development programmes and encourage "buy-in" on the part of the borrowing countries.

Fewer strings attached

In this regard, excessive conditionality has turned out to be counterproductive. Development programmes and projects certainly have to measure up to certain standards. But sound macroeconomic policies and environmental protection have to be adopted willingly by the borrowing countries, not imposed upon them.

The experience of recent decades shows us that the best results are achieved through collaboration. AIIB was founded on the belief that this world will be better off when we are better connected. So let us build on past successes while adapting them to varied local circumstances. In this way, we can ensure that the 21st century is defined by shared prosperity and not lost opportunity. ■



Jin Liqun, president, Asian Infrastructure Investment Bank, explains why his new institution will innovate and collaborate

Sound policies have to be adopted willingly, not imposed

Middle East

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When IS becomes WAS

Christopher Lockwood

In 2017 Islamic State will be defeated. What happens then?

Predictions about terrorists have often proved wrong. But it looks increasingly probable that in 2017 the most vicious jihadist regime ever seen, the self-styled “caliphate” of the Islamic State (IS), will be destroyed by local forces and an international coalition of some 60 countries led by America. Barack Obama promised to do so in September 2014, three months after IS shocked the world by seizing Mosul, Iraq’s second city; finishing the job was one of the campaign commitments made by his successor, Donald Trump.

By November 2016 IS had been expunged from almost all of Iraq, where at one point it held more than a third of the country and had reached the outskirts of Baghdad. Only Mosul and a few small towns remained in the hands of the caliphate. And an operation launched on October 17th involving some 7,000 Iraqi troops and large numbers of irregulars, helped by up to 5,000 American special forces and international air support, was pushing into Mosul. Victory seemed likely soon. By the time of the assault most of IS’s leadership had been killed by American airstrikes, and many of its fighters had already fled. Its leader, Abu Bakr al-Baghdadi, was thought to be in hiding outside Mosul. In November, he called on his forces to die fighting.

In Syria, IS has already been driven from much of the territory it once held, and is holed up in the desert east of the country, in and around the city of Raqqa. In early

November, American-backed Kurdish forces moved on the city. A combination of Kurdish fighters, Sunni militia, and heavy American and Russian firepower will almost certainly prevail in 2017.

None of this means, however, that the terrorist blight will be lifted from Iraq or Syria. Islamic State, an entity devoted to controlling territory, will be smashed. But many of the extremists who fought for it will survive, just as they survived America’s destruction of al-Qaeda in 2007-08. The challenge will be to limit the damage they can do. At worst, something like the anarchic al-Qaeda years might return. Syria seems sure to remain blighted by war and terror. But at best, Iraq at least could start to become a normal country.

There are alarming signs but also hopeful ones. The government of the prime minister, Haider al-Abadi, has already passed a devolution law which permits the transfer of many government functions, and the money that goes with them, to the provinces. In 2017 this will give the three Sunni-majority provinces in the centre of the country some limited powers. The hope is that this will go some way towards tackling the sense of grievance that Iraq’s Sunnis, a minority in the land they used to run under Saddam Hussein, still feel.

A bigger problem will be what to do with the Shia militias that burgeoned in 2014 after the Sunni fighters of IS surged across the country. Once their task is done, they must be folded into the regular army, or else given jobs. If not, the looming presence of more than 100,000 heavily armed Shias will add to the Sunni sense

American involvement in Iraq remains unsettled

2017 IN BRIEF

Hamas holds elections after its political leader, Khaled Mashaal, steps down



Christopher Lockwood:
Middle East and Africa editor,
The Economist

► of persecution. Dismantling up to 300 militias, large and small, will not be easy. And many of the militias are equipped and directed by Iran, rather than the government in Baghdad.

A third tricky issue will be control of liberated Mosul and the surrounding province of Nineveh (see box). The Shias and the Kurds, not to mention the Yazidis, Turkomen and Christians, will all want to lay claim to bits of this diverse, yet majority Sunni Arab, part of the country. And finally, the question of American involve-

ment remains unsettled. If Iraq is to have any chance at all, a sizeable American contingent must stay on; President Trump may have other ideas.

Syria will remain, in 2017, a much more intractable problem. Although the last of the caliphate will fall, much of the country will still be a war zone. Bashar al-Assad will stay in his coastal redoubt, immune from overthrow by the rebels thanks to Russian support, but equally unable to reassert control over the bulk of the country. Jihadism will flourish there among the ruins. ■

All too combustible

Nicolas Pelham

A tour around the region's flashpoints

In the history of the Middle East, 1917 was a tumultuous year. A century ago, Western powers beat back the Ottoman Empire in Palestine, Syria, Iraq and Yemen, and bequeathed the region (under their tutelage) to tribes and sects who had hitherto coexisted under Istanbul's rule with relative harmony. The wars that erupted over who gained what parcel of land have flared ever since.

If there is one certainty in the Middle East in 2017, it is that its sectarian flashpoints will remain unresolved. The most brutal will be the transition of Islamic State (IS) from a predominantly territorial force to an extra-territorial guerrilla one. Rolled back by Western bombardment and local armed groups, its fighters could disperse across the region and beyond, revitalising al-Qaeda's original globalist strategy of fighting the "far enemy". Within the region, the vacuum they leave behind will ignite fresh battles for land.

Attempting to reverse their flight from the north in 2014, Iraq's army will struggle to prevent the country's plethora of battling militias from dominating the field. Kurdish Peshmerga, claiming patronage of Christian, Shabbak and Yazidi sects, may swoop down from Erbil to claim the adjoining Nineveh Plain and its lucrative oilfields. Unrestrained, they could clash with Shiite militias heading north along the Tigris in a race to dominate Iraq's second city, Mosul. Divided since time immemorial, Sunni Arab tribes might aspire to establish their own enclave, but will struggle to do more than play off one overlord against another.

Syria's five-year-old civil war will drag on wearily into a sixth. Regional powers will follow global ones in dropping plans

for a future beyond President Bashar al-Assad. Around the capital, Damascus, one pocket of rebel Sunnis after another will succumb to Mr Assad. Sunni armed groups will retreat to the peripheries astride the borders with Jordan and Turkey. Anxious to plug an exodus of refugees (including jihadists with a global agenda), both countries will try to use them as buffers. The closer they get to Israeli forces the more Mr Assad's Iranian and Hizbullah allies could seek to chip at the ring of Sunni Islamist militias around the Israeli-occupied Golan Heights.



Explosive times in Aleppo, and beyond



With both Israel and Hizbullah considering their 2006 war unfinished business, the prospect of confrontation, this time on Syrian soil, is real. Turkey's army, too, will view the Kurdish forces America has built up in northern Syria as an extension of the Kurdish nationalists it is suppressing in Turkey, and could press its violent assault.

A continuation of the war involving the

Arab world's poorest state, Yemen, and its richest, Saudi Arabia, serves no one, but it could still rumble on for want of a formula to stop it. Yemen's north and south will pull further apart. Al-Qaeda's reach in the south-east could spill along well-established smuggling routes into Oman, despite efforts by Yemen's neighbours to build a containing wall.

As budget deficits mount in the Gulf states

(thanks to the costs of their war in Yemen) and Iran (aggravated by America's reluctance to allow it back into global financial systems), they will seek to shift attention away from their internal woes through heightened criticism of each other. The campaign for Iran's presidential election in May 2017—pitting hardline ideologues against President Hassan Rohani's pragmatists—will reduce prospects for compromise. These Saudi-Iranian rivalries will further deepen the region's Sunni-Shia divide, but fortunately there are enough proxies through which the two giants can jostle for influence without them directly waging war on each other.

Just another powder keg

Perhaps the least likely flashpoint is the one which a few years ago would have been most expected to cause trouble. The year 2017 marks the centenary of Britain's Balfour declaration, which promised a homeland in Palestine to the Jews, and the half-centenary since Israel took all of Palestine with its conquest of East Jerusalem, the West Bank and Gaza. Once the catalyst of regional strife, the Israeli-Palestinian conflict is slipping ever further down the agenda. There seem to be simply too many other more pressing places to worry about. ■

Nicolas Pelham: Middle East correspondent, *The Economist*

The Israeli-Palestinian conflict slips ever further down the agenda

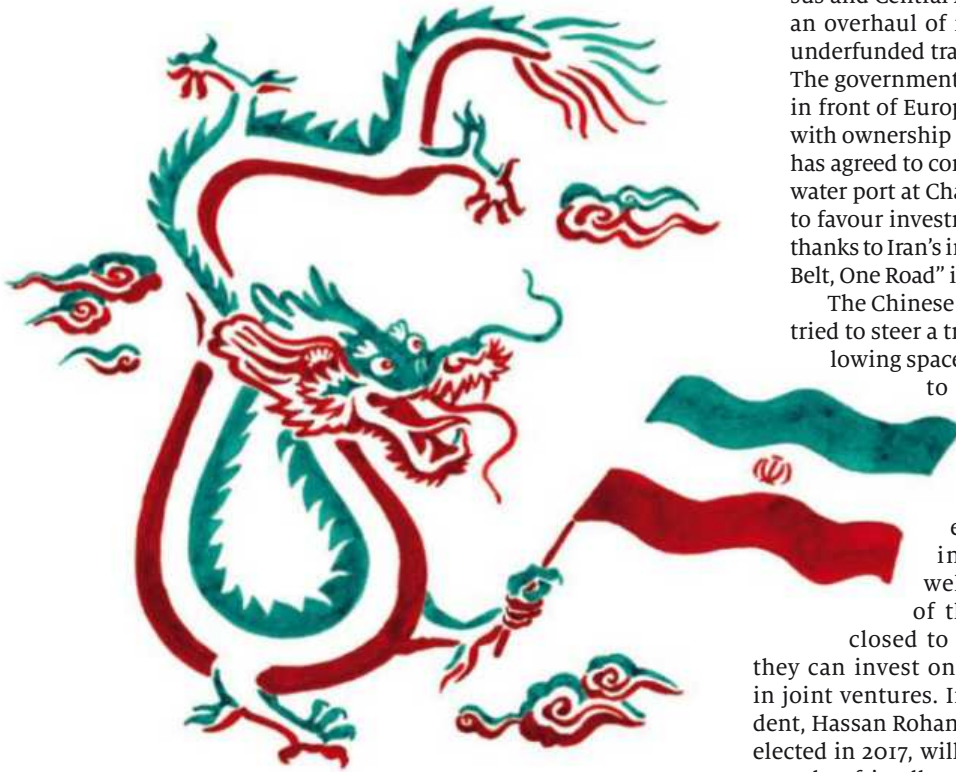
Meet Chiran

Pratibha Thaker

Iran could follow the Chinese model to become a regional economic power

For China in 1990, read Iran in 2017. Iran's emergence from international isolation is rekindling the spirit of entrepreneurial dynamism that has long characterised the nation. For China-watchers, the driver of growth will be familiar: industrial investment. The big risk is that President Donald Trump, who has criticised the nuclear deal with Iran, plays the spoiler. Iranians will hope that he will not want a rift with his European allies.

If the deal holds, opportunities in Iran will be plentiful. The automotive industry is the 18th-largest in the



world. The country has more than 50 pharmaceutical producers, many of which are listed on Tehran's stock exchange. Tourism has the potential to flourish thanks to 21 UNESCO World Heritage Sites. The food and carpet industries are already internationally competitive. Throw in an expansion of trade ties with friends old (in Europe) and new (in Asia), and rapid economic modernisation is not hard to imagine.

China also grew on the back of a huge demographic dividend. Iran is in a similarly favourable position: 60% of its population is under the age of 30. This wealth of labour will keep wage growth contained during the upcoming economic recovery, especially if it is accompanied by a rise in women's participation in work. Reversing Iran's brain drain—around one in four Iranians with college degrees currently lives abroad—would also help productivity.

The rapid rise of China's silicon dragon has allowed domestic firms like Alibaba to dominate the home market. Tehran's young, urbanised and tech-savvy population is already supporting a growing number of startups. Digikala, the local equivalent of Amazon, is a prime example. Launched in 2007, it focused at first on electronics but has since diversified into selling an array of consumer goods.

Since joining the World Trade Organisation in 2001 China has rapidly come to dominate global export manufacturing. In doing so it has taken market share from other Asian exporters, but has also become a major importer of components and parts from the rest of its neighbourhood. Something similar is possible for Iran, if it becomes a manufacturing base and trade hub for the Middle East, the Caucasus and Central Asia. But this requires an overhaul of its overstretched and underfunded transport infrastructure. The government is dangling contracts in front of European and Asian firms, with ownership stakes included. India has agreed to construct a \$500m deep-water port at Chabahar. China is likely to favour investments of this sort too, thanks to Iran's involvement in its "One Belt, One Road" initiative.

The Chinese Communist Party has tried to steer a tricky path between allowing space for the private sector

to develop and ensuring that the state retains control of the "commanding heights" of the economy. Foreign investors have been welcomed, but swathes of the economy remain closed to them, and in others they can invest only as junior partners in joint ventures. Iran's reformist president, Hassan Rohani, who hopes to be re-elected in 2017, will also need to balance a market-friendly approach for investors

with keeping hardline religious groups happy. Protectionist sentiment will prevail, as a powerful elite resists relinquishing its grip on vital sectors of the economy.

The blistering progress made by China in recent decades suggests that an authoritarian political system and an economy built around state ownership can yield rapid increases in incomes. In 2017, firms that have navigated the Chinese market with success would be wise to note the growing similarities in Iran. ■

For China-watchers, the driver of growth will be familiar

2017 IN BRIEF

The world's largest hotel opens in Mecca. The \$3.5bn Abraj Kudai boasts 10,000 bedrooms, 70 restaurants and four helipads



Just possibly...

- Mass protests force **Abdel-Fattah al-Sisi**, Egypt's president, from power.
- The Academy Award for **Best Foreign Film** goes to "Sand Storm", Israel's first submission to the Oscars with dialogue entirely in Arabic.
- The UN brokers a referendum in **Western Sahara** on independence from Morocco.

Pratibha Thaker: editorial director, Middle East & Africa, The Economist Intelligence Unit

Africa

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Get out of girls' way 68

Lifting the curse

Jonathan Rosenthal *RUTONGO, RWANDA*

A prolonged slump in commodity prices may do Africa more good than harm

In the shade of trees on the side of a road at Rutongo, a tin mine in sight of Rwanda's capital, Kigali, groups of women sit with hammers in hand, pounding large rocks into smaller ones, their children playing by their sides. Elsewhere such dusty work might be called hard labour. Here it is called earning a living. The chips of stone are sold to construction firms that make the con-

crete going into the glistening towers that are rising above Kigali. A day's pounding may yield a few dollars. In the next valley men from the local villages shovel broken ore into a gully and spray water over it, washing away rock to leave behind a shiny concentrate of tin-bearing cassiterite that they sell for processing.

By now this mine, which formally employs about 3,000 people, ought to have been providing another 1,500 jobs that pay far better and are far safer (not to mention better for the environment) than making gravel or artisanal mining. But a near-halving of the price of tin since 2011 forced the owners of Rutongo to delay plans to raise money to invest in modern shafts and to build new processing equipment to extract cassiterite. Instead it has struggled on, living hand-to-mouth and investing at a painfully slow pace.

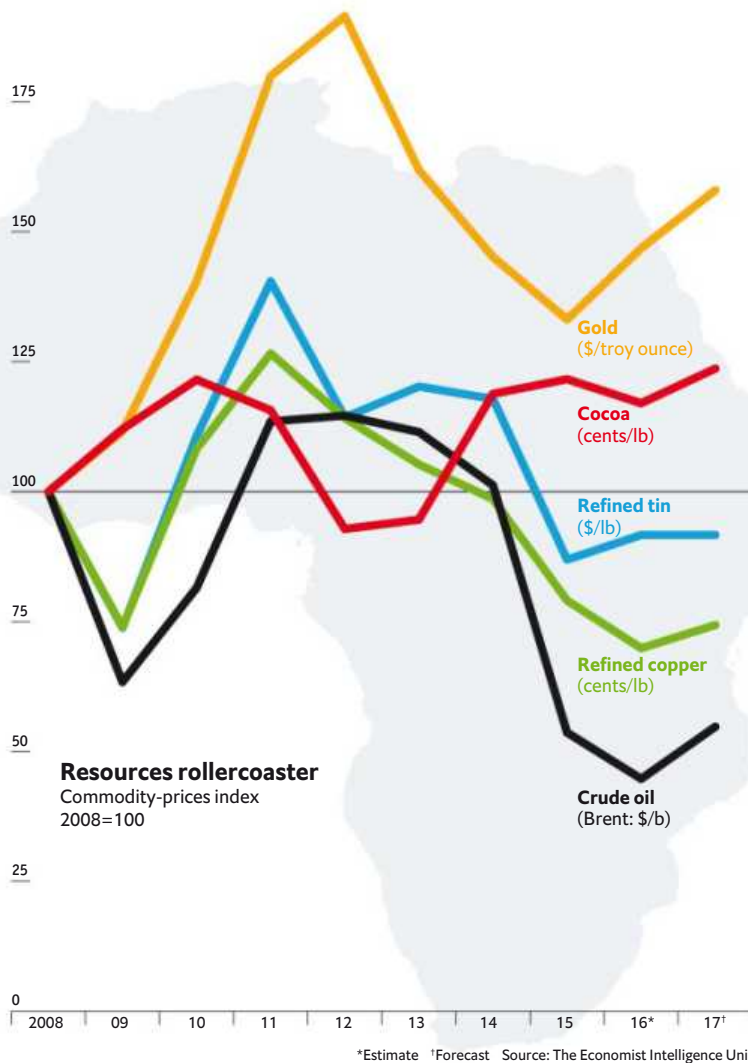
Rutongo's travails are a microcosm of many of Africa's economies after the great boom in commodity prices that spurred regional growth for more than a decade turned to bust in 2014. Hardest hit were oil exporters such as Nigeria and Angola, where the sticky stuff accounted for as much as 90% of government revenues and a similar share of export earnings. Others such as Zambia, a copper producer, or Ghana, which grows cocoa and mines gold, took a hit in the preceding years. The plunge in prices across sub-Saharan Africa has caused a 16% drop in the region's terms of trade (the ratio of the price of its exports to that of its imports). Think of it as those countries taking a pay cut that has halved their rate of economic growth. In 2016 Nigeria slumped into recession and South Africa narrowly avoided the same fate. In both countries economic growth has fallen behind population growth, so that on average their people are now getting poorer.

To Afro-pessimists, this slump is a prime exhibit for how the continent remains stuck on a resource-fuelled rollercoaster of boom and bust that weakens its economies, causes skilled young people to emigrate and undermines democracy, since desperate people are more likely to back coups and rebellions.

Yet there is reason to hope that in 2017 many of Africa's economies will make real steps towards lifting this resource curse. For a start, the slump in commodity prices has not hit all countries equally. Some, such as Kenya or Uganda, import the fuel they need and are

In many parts of Africa renewable energy is now growing faster than the fossil-fuelled sort

Jonathan Rosenthal:
Africa editor,
The Economist



Politics as unusual

Daniel Knowles *NAIROBI*

Strategy shifts for Kenya's election

With the possible exception of English football, there is no topic that obsesses Kenyans more than politics. In August the discussion will culminate in a general election—for the presidency, parliament and a host of local positions. The main hope for many outsiders will be that the vote is relatively fair and passes without the violence that led to the deaths of around 1,200 people following the election in 2007. But Kenyans, the true obsessives, are already talking about what the results will mean for the following election in 2022.

Fighting for re-election is Uhuru Kenyatta, the president who was first elected in 2013, together with his deputy president, William Ruto, in an unlikely alliance across Kenya's tribal divisions. They will probably face Raila Odinga, a veteran opposition politician who ran for president in 1997, 2007 and 2013, and whose alliance, the Coalition for Reforms and Democracy, is the biggest non-government party.

Few expect Messrs Kenyatta and Ruto to lose. Unlike last time, when they won comfortably, they now have the benefits of incumbency

too—and the money that brings. But their strategy is new. In 2013 they exploited tribal divisions, argues Nic Cheeseman of Oxford University. At the time, both leaders faced charges from the International Criminal Court (ICC) of inciting violence in the run-up to the 2007 vote. These they used to electoral advantage: playing on fears that the outside world was targeting the Kikuyu (Mr Kenyatta's tribe) and the Kalenjin (Mr Ruto's) for revenge.

That strategy won't work as well this time, though tribal loyalties remain strong. After witnesses disappeared or recanted their testimony, the charges against Mr Kenyatta were dropped in 2014; those against Mr Ruto fell apart in 2016. Instead, the pair are appealing to national loyalty. Their party, Jubilee, launched in September, has a Swahili slogan meaning "All

Together". The aim is to widen support beyond the pair's communities. One side-effect will be to paint Mr Odinga—whose strongest support comes from his own tribe, the Luo—as a sectional candidate.

Yet many Kenyans suspect that the bigger aim is to give Mr Ruto, long seen as a brutal tribalist, a veneer of broader appeal. He is widely thought to want to take over in 2022, when Mr Kenyatta has to stand down, and to do so he will need to cultivate allies beyond his own backyard. That is a fear shared even by some in Mr Kenyatta's camp. Though both ended up in front of the ICC after 2007, Mr Ruto was on the opposite side to Mr Kenyatta in that election, and the two do not necessarily trust each other.

Investors in Kenya will be relieved

The election will probably be followed immediately by a behind-the-scenes succession struggle. But the vote itself will be quiet and predictable. Investors in Kenya will be relieved: fears of a repeat of 2007's bloodletting are hurting the economy (though so too is the huge spending splurge the government is embarking on). Indeed, after a year in which elections in Zambia and Gabon were marred with violence, Kenya's vote might even seem hopeful. But, sadly, violence avoided may prove only to be violence delayed. ■

Daniel Knowles: Africa correspondent, *The Economist*



Unity drive

► helped by lower oil prices: their economies are likely to accelerate in 2017.

In fact 17 countries accounting for about a quarter of Africa's population will be net beneficiaries from the commodities slump because of cheaper energy. Their bubbly economies, many of which are growing at 5-10% a year, are bursting with innovations such as mobile money, private schools that teach children for less than \$6 a month and cheap solar cells that give people in rural villages enough electricity to watch television and charge their phones for just a few dollars a week. In many parts of Africa renewable energy is now growing faster than the fossil-fuelled sort, giving Africa a chance to leapfrog straight to clean power and freeing it from the vagaries of gas and coal prices. In Kenya, for instance, Africa's largest wind farm will be completed in 2017. It will supply some 18% of the country's electricity.

Don't get hooked, now

Equally important economic shifts are taking place within some of Africa's biggest oil exporters to lift the curse. Nigeria, which for a long time imported almost everything from rice to tomatoes because its oil wealth left it with an uncompetitively high exchange rate, has allowed its currency to fall and is encouraging invest-

ment in farms, processing plants and the infrastructure to get crops to market before they rot. Already its food imports have more than halved and millions of subsistence farmers are becoming commercial ones.

Still, the resource curse is not easily kicked. In mid-2017 Kenya is expected to start exporting oil. Mozambique will learn whether Anadarko, an American firm, will go ahead with a \$15 billion investment to tap a gasfield off its coast, one of the largest discovered in the past decade. Ghana's economic growth rate will double as its oil and gas production reaches full capacity. The temptation facing many of these governments will be to rely on revenues from fossil fuels and hold off essential reforms to open up their economies and make them more competitive. Just as some countries will use 2017 to ease their reliance on commodities, others may just be getting hooked. ■

Just possibly...

- Equatorial Guinea's **President Teodoro Obiang** celebrates his 75th birthday by handing over power to his son after 38 years in charge.
- Construction starts on the Democratic Republic of Congo's **Grand Inga Project**, the world's largest hydroelectric dam.
- Several countries begin issuing **African Union passports** to their citizens, although most visa restrictions remain in place.

2017 IN BRIEF

Kenya introduces **new banknotes and coins** to comply with the 2010 constitution, which prohibits the national currency from bearing portraits



Get out of girls' way

It isn't easy being a girl, especially in Africa. I know this from first-hand experience: as a young woman, I lived through a turbulent time in South Africa's history, seizing the few opportunities available to pursue my dreams of making music and having a family. I'm proud of what I have accomplished, but I encounter so many girls across Africa today who don't have the same chances that I did. To help them, we need not do anything complicated: we just need to get out of their way.

Too many girls still hit barriers accessing fundamental rights. If the world is really committed to achieving the UN's Sustainable Development Goals (SDGs) on security and prosperity, we must take advantage of the talents and energy of young women, by removing the barriers holding them back.

Three areas strike me as particularly ready for change: education, health and sanitation. And change should start in 2017.

First, education. As a child, I had to fight to be educated in my own language. Since then, things have improved. More girls are being enrolled in school around the world than ever before. But despite major gains in primary education, girls attend secondary school and university in far fewer numbers than boys. In secondary education in sub-Saharan Africa, the ratio is 86 girls for 100 boys.

Why is that? Girls face barriers to learning that boys don't often have to contend with. In places such as in Guinea and Niger, the richest boys are at least three times more likely to attend school than the poorest girls. Social and cultural norms such as early marriage and pregnancy, and parental bias towards sons, also often cause girls to drop out.

The OECD's Social Institutions and Gender Index found that countries with higher levels of discrimination in general against women performed worse on development indicators, including education. Yet we know how to demolish these barriers: among other things, improve school infrastructure, promote gender-sensitive curricula, make the cost of attending school affordable and end child marriage. The coming year will bring new developments in higher education, including the opening of the University of Africa in Sagbama, Nigeria, the launch of a regional Virtual Institute for Higher Education and new battles over tuition fees in South Africa. Let's focus the same amount of energy on promoting basic education for every girl everywhere.

Second, health. Infectious diseases like HIV/AIDS, tuberculosis and malaria, and conditions related to malnutrition, dispropor-

tionately affect girls and young women, either as sufferers or as caregivers. These make it far harder for them to attend school or work. The world has made tremendous gains in the fight against HIV/AIDS, but it remains one of the most deadly infectious diseases for women across middle- and low-income countries. In Africa 25% of all new infections among adults are in women aged 15-24. Bodies like the Global Fund to fight AIDS, Tuberculosis and Malaria are pushing for programmes that are designed to take account of women's needs, and we need national and local responses to do the same.

The SDGs recognise how the hidden epidemic of poor nutrition undermines all aspects of women's well-being, rendering them susceptible to illness, weakening their ability to survive childbirth and severely affecting their children's health. But we have failed to invest in eradicating undernutrition. We should enthusiastically support "The Global Nutrition Report", an international collaboration which provides a framework for this by setting—and funding—targets for cutting anaemia in women of reproductive age.

Ending a vicious spiral

Lastly, sanitation. An estimated 2.4bn people live without adequate sanitation. This poses enormous obstacles every day for young women across sub-Saharan Africa.

Lack of adequate facilities at school often forces girls from poor backgrounds to miss lessons every month during menstruation. This makes them more likely to struggle and eventually drop out. They become more susceptible to coercive sexual relationships in order to survive. They are more likely to marry or have children young, increasing the risk of complications. They are less likely to earn a wage, more likely to contract HIV and more likely to raise their own children in poverty. Boys suffer too from a lack of investment in sanitation, but for girls the challenges it creates are long-lasting.

International donors and NGOs can do far more. But with 12 legislative and presidential elections happening in sub-Saharan Africa in 2017, including in Kenya, Rwanda and the Democratic Republic of Congo, politicians have an opportunity and responsibility to highlight these barriers to girls' development.

Some of the obstacles I faced as a girl are now in the past. Yet today's young women, who are hungry for the chance to build a better world, still face the looming barriers of inequality. Let's give them wings to fly. ■



The world must break down the barriers to girls succeeding, argues **Yvonne Chaka Chaka**, singer and founder, Princess of Africa Foundation

We know how to demolish these barriers: improve school infrastructure, promote gender-sensitive curricula, make school affordable and end child marriage

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International



A lower nuclear threshold

Matthew Symonds

It's time to start worrying about the bomb again

The possibility of a nuclear weapon being used in anger for the first time since 1945 is still, mercifully, extremely remote. But in 2017 the chances of it happening can no longer be discounted entirely. The inconvenient truth is that nuclear weapons are a greater danger now than at any time since the end of the cold war. The risks—from geopolitical miscalculation or from rogue actors, whether a state or terrorists—today exceed those of the late 20th century.

What characterised the cold-war balance of terror was the high degree of risk-aversion on both sides. After scares that included the Cuban missile crisis and false alarms that could have resulted in accidental Armageddon, the procedures for managing potential nuclear crises or accidents, including the famous hotlines between Washington and Moscow, evolved into a fairly effective safety net. Today that is no longer the case. When the cold war ended, those protocols withered because they were no longer thought necessary. However, the increasingly antagonistic relationship between Vladimir Putin's Russia and the West has made such assumptions look premature, if not outright complacent. In recent years, Russia has been ever more brazen in lowering the bar

The potential for miscalculation, and nuclear confrontation, is disturbingly high

regarding the circumstances in which it might threaten to or actually use nuclear weapons.

In his drive to restore Russia's status as a great power, Mr Putin has shown himself to be a willing risk-taker. The annexation of Crimea and the covert invasion of eastern Ukraine in 2014 were a taste of how far he will go to protect what he sees as Russia's vital interests. Moreover, he and the country's foreign-policy clique have a paranoid fear that the West—and especially America—is determined to subjugate Russia. This combines with the contradictory belief that, in a major confrontation, the superior resolve of Russia (and Mr Putin) would prove decisive.

Mr Putin has recently taken every opportunity to remind the world that Russia alone has the nuclear capability to destroy America and that in certain circumstances it might use its arsenal. Officially, Russian nuclear doctrine is that it would resort to nuclear weapons only if it was undergoing a conventional attack that threatened the survival of the state. A more insidious version of this now appears to be accepted policy. In a confrontation in which Russia believed its vital interests were at stake, it could "escalate to de-escalate". The idea is that Russia would use a small tactical nuclear weapon against hostile troops to show that it would contemplate a larger nuclear exchange to prevail. The theory is that leaders of Western democracies, with a much lower tolerance for risk, would force their leaders to back down.

2017 IN BRIEF

The UN's new secretary-general, António Guterres, begins his five-year term



Matthew Symonds:
 defence editor,
 The Economist

Uncovered

Daniel Franklin

Our misses in last year's predictions

Conspiracy theorists pored over the cover of *The World in 2016*, with its collage of characters. In online musings they interpreted its “cryptic meaning and cabalistic symbolism”, even imagining that we predicted the shocking shootings in June 2016 at a gay nightclub in Orlando, Florida. All this seems to be based on a belief that *The Economist* has a special window into the future.

If only we did. The cover had lots to look at and put women (Angela Merkel, Hillary Clinton, Janet Yellen) front and centre to show that they would be at the heart of many of the year's big decisions. Yet with hindsight what stands out are two characters—one woman and one man—who are notable for their absence.

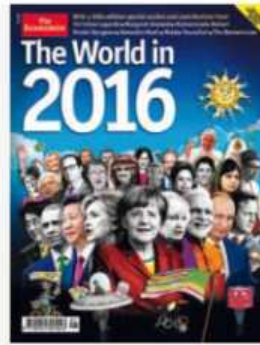
The missing woman is Theresa May, now Britain's prime minister. Our analysis of British politics pictured David Cameron at the end of 2016 nursing a glass of claret at Chequers, the prime minister's country retreat, commanding the politi-

We thought Britons would vote to remain

cal landscape as few of his predecessors had done. In fact he resigned the day after losing the Brexit referendum. True, we said he had a fight on his hands, and warned that if he relied too much on negative campaigning he risked “handing the excitement and all the best lines” to those who wanted to leave the European Union. But we thought Britons would narrowly vote to remain.

The missing man is Donald Trump. We failed to predict his stunning takeover of the Republican Party, let alone his triumph over Hillary Clinton. The Republicans, we expected, would in the end “pick a candidate acceptable to big donors and party power-brokers—someone like Senator Marco Rubio of Florida.”

Yet the angry, anti-globalist mood of voters did not come as a surprise. Our opening leader highlighted the growing threats to liberal internationalism. A guest writer, Doug Miller of GlobeScan, expected a “jolt” in America's election season, on the basis of a prescient reading of opinion polls showing the depth of political disaffection there: “A low-trust political context



Where's Donald?

is similar to a stressed physical environment where invasive species thrive.” Gideon Rachman rightly expected 2016 to be the year in which Mrs Merkel's reputation took a dive and when “the macho style returned to Western politics”.

Plenty of our predictions proved to be correct. We were right in expecting that fears of an imminent Chinese crash would recede;

that among the big emerging markets India would grow fastest; that bond yields would remain exceptionally low. We forecast that Barack Obama's approval ratings would rise, which they have, and that Sadiq Khan would win the election to be London's mayor, which he did. We pointed to virtual reality as the year's hot tech trend.

Yet we underestimated the force of the rebellious tide in politics. We thought Dilma Rousseff would cling on to her job as Brazil's president, but she was swept aside. We did not foresee the victory of the populist Rodrigo Duterte in the Philippines' presidential election. And the characters missing from our cover are the ones who speak volumes about the year. ■

Daniel Franklin: editor, *The World in 2017*

► It is in this context that Russia's harassment of Estonia, Latvia and Lithuania, all NATO members that share a border with Russian territory and have large Russian-speaking populations, appears so threatening. The Baltic states are being subjected to Russian military aircraft probing their air defences, cyber-attacks, deliberately intimidating snap exercises near their borders, political subversion and relentless propaganda from Russian television. Unlike Ukraine, the Baltic states are of no particular strategic value to Moscow. But nothing would bring the Kremlin more joy than if they could be used as the means to test to destruction NATO's Article 5 commitment, which obliges members of the alliance to regard an attack on one as an attack on all.

The potential for a miscalculation by the gambler in the Kremlin leading to a nuclear confrontation has become much higher since Donald Trump's election victory. In July Mr Trump sent shockwaves through NATO after casting doubt on his willingness to defend the Baltic states from Russian aggression.

Testing times

North Korea represents a nuclear threat of a different kind. In early 2016 it conducted its fourth nuclear test. Since then, it has been carrying out missile tests at an unprecedented tempo, culminating in the successful trial in August (after several failures) of a submarine-launched ballistic missile and a fifth nuclear test in September—its largest yet, and evidence that it can miniaturise a warhead to fit on a missile. Japan and America worry about the increasing range of North Korea's mis-

siles. But a bigger concern for now should be how it may be planning to carry out an attack on its neighbour in the south that could penetrate the sophisticated anti-missile forces ranged against it.

Missile experts reckon that North Korea could put nuclear warheads on some of the very short-range systems it possesses in large quantities. If it fired multiple salvos of missiles, mostly conventional, but some nuclear, they would be hidden from missile defences like so many needles in a haystack. To make this an effective tactic, command-and-control has to pass to front-line forces. That raises the possibility that at a time of tension, when the regime's fears of a “decapitation strike” would be at their greatest, the nuclear threshold would be dangerously low—requiring only one jumpy field commander to give the order. North Korea's young dictator, Kim Jong Un, may be rational and cautious. Yet there is plenty of evidence to suggest he is neither.

Finally, although no terrorist group has yet succeeded in getting its hands on a nuclear device, it would require the theft of only 0.01% of the world's stockpile of fissile material to trigger what Harvard's Belfer Centre describes as “a global catastrophe”. No terrorist outfit in history has had financial resources and technical capabilities that even come close to those of Islamic State (IS). As IS continues to lose territory in 2017 to Western-backed forces, the incentive to attempt a spectacularly destructive act of defiance will increase. Its chances of success are tiny, but still enough to make this the ultimate nightmare of the Western intelligence and security services on whom we rely to stop them. ■

2017 IN BRIEF

The World Anti-Doping Agency prohibits nicomorphine, GATA inhibitors and molidustat, among other substances



Anti-globalists on the march

Gideon Rachman

Free trade under fire

Ever since the global financial crisis that began in 2008, pessimists have been predicting a major backlash against globalisation. By and large, they have been wrong. But in 2017 the gloomy forecasts of a reaction against free trade and international capitalism will finally be vindicated.

Nationalism and its sibling, protectionism, are both on the march—propelled by a rampant batch of populist politicians in the West. In 2016 the tone was set by Donald Trump, with his promise to put “America First” and his threat to impose swingeing tariffs on some of America’s leading trading partners, particularly in Asia. In response to the Trump phenomenon—and to a surge of protectionism on the American left—Hillary Clinton felt compelled to come out against the Trans-Pacific Partnership (TPP), a giant new trade deal that she had once enthusiastically supported. Barack Obama may attempt to push the TPP through Congress in the last weeks of his presidency. But the prospects of the agreement coming into force in 2017 look remote.

The travails of the TPP are more than matched by the troubles of the Transatlantic Trade and Investment Partnership (TTIP)—a rather less advanced effort to negotiate a large new trade deal between the European Union and America. In this case, the backlash has come mainly from politicians in Europe. The anti-globalists are on the march on both sides of the Atlantic.

In Europe, as in America, the natural inclination of centrist politicians remains to keep faith with globalisation—and to encourage international trade and investment. But the centrists are under attack from both the left and the right. For the nationalist right, exemplified by Marine Le Pen, leader of the National Front in France, international trade deals are an example of how a globalised elite betrays the interests of the little guy, who remains attached to his country. Those on the far left make similar arguments, though they phrase them differently, preferring to stress the alleged evils of tax-avoiding multinational companies, such as Uber and Apple. The way in which hitherto obscure acronyms like TPP and TTIP are now the stuff of everyday politics in both America and the EU testifies to the strength of anti-globalisation forces. The backlash will intensify in Europe in 2017, as France, Germany and the Netherlands hold elections. Mainstream politicians have already started to adapt to the new mood in Europe. Sigmar Gabriel, the leader of Germany’s Social Democrats, has proclaimed that TTIP is in effect dead,

2017 IN BRIEF

Because the UN says so, 2017 is deemed to be the International Year of Sustainable Tourism for Development



and François Hollande, the president of France, has said that he could never accept the deal in its current form.

Indeed, the backlash against globalisation is now so intense that the key question in 2017 will not be whether big new trade deals, like TTIP and TPP, get passed. The central issue will be whether the anti-globalists succeed in rolling back some of the established rules that facilitate international trade and investment. There is already some evidence of this happening on a small scale.

The way the anti-trade wind is blowing

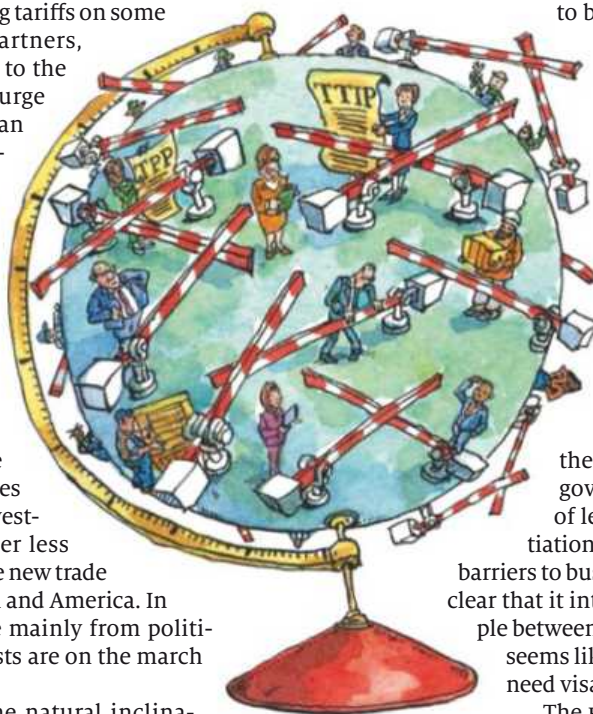
Global Trade Alert, an international research group, has recorded a marked increase in protectionist measures passed by the members of the G20, a club of the world’s largest economies, over the past two years. In the main, the 350 protectionist measures noted in the year to mid-2016 were not headline-grabbers; they were more likely

to be changes in regulations or anti-dumping procedures. In contrast, 2017 could bring much more high-profile moves against central pillars of the globalised order, in particular the North American Free-Trade Agreement (NAFTA), which President-elect Trump has promised to renegotiate or withdraw from.

The Trump campaign pointed to the popularity of creating physical barriers to the movement of people and goods between the United States and Mexico, its NAFTA neighbour to the south. In Europe, meanwhile, Brexit has unleashed a process that will almost certainly erode the integrity of the EU’s single market. In 2017 the British government will begin the formal process of leaving the EU. Depending on how negotiations proceed, this could lead to serious new barriers to business and migration. Britain has made it clear that it intends to stop the free movement of people between the EU and the United Kingdom. It even seems likely that British nationals will once again need visas to work in Europe.

The EU, for its part, has insisted that the free movement of people is inseparable from that of capital, services and goods. If Britain withdraws from the free movement of people, it will also have to withdraw from the EU single market. If so, that will affect the ability of financial firms to operate across Europe from the City of London. And, in a worst-case scenario, it could even lead to the imposition of tariffs on goods moving between Britain and the EU.

Any such move would be very disruptive to trade. It would also send a negative signal to the whole world—demonstrating that even the most well-established free-trade deals are vulnerable to disruption from the rise of the anti-globalists. ■



Gideon Rachman: chief foreign-affairs columnist, *Financial Times*

Just possibly...

- A ten-year international moratorium on elephant-ivory sales expires without being renewed.
- Edward Snowden is pardoned and returns to America from Russia.
- Governments worldwide struggle to deal with outbreaks of the mosquito-borne Mayaro virus.

Data with destiny

James Tozer

Potential milestones of 2017

The European Union is not only set to lose one of its big members, its economic weight in the world is shrinking: in 2017, for the first time, emerging Asian economies will produce twice as much output as the EU (**chart 1**). Asian countries will also retain their supremacy in life expectancy, though Singapore may overtake Japan in the number of years people over 60 have left to enjoy (**chart 2**).

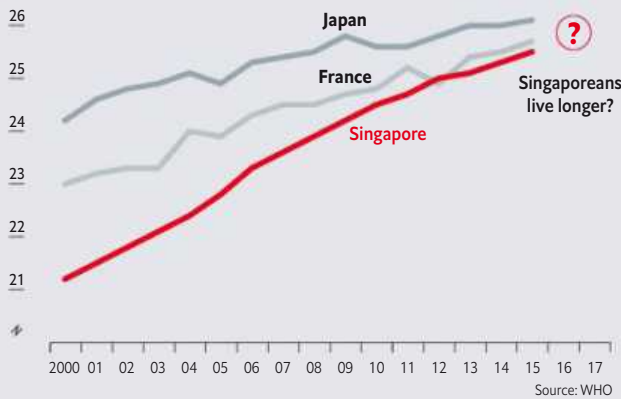
In the Middle East and Africa, health workers hope to eradicate polio at last. In Nigeria, Pakistan and Afghanistan the virus is still active, but cases have dwindled towards zero (**chart 3**).

Americans may feel jaded after a rancorous presidential race, but are better rested than ever. Adults could soon spend more time sleeping than working, eating and doing chores (**chart 4**).

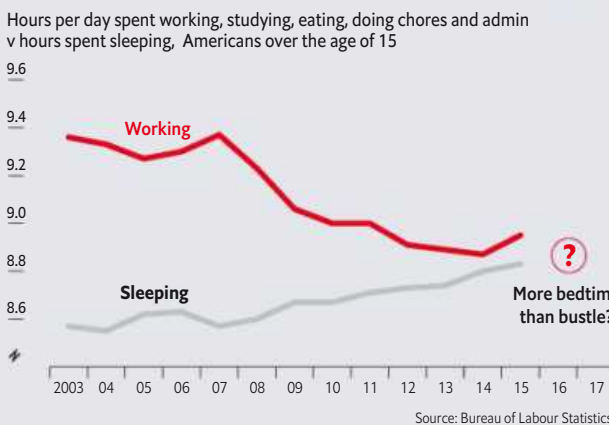
And conspiracy theorists everywhere will be eagerly awaiting October, when the last government records about the assassination of John F. Kennedy are to be released. Lee Harvey Oswald shot the president. But why did Jack Ruby shoot Oswald? And did somebody else fire on Kennedy from the infamous grassy knoll? Expect related internet searches to spike (**chart 5**).

James Tozer: data analyst, *The Economist*

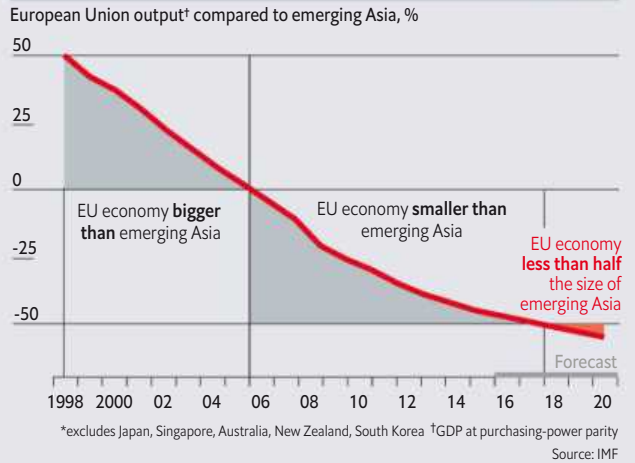
2 Longevity rising Years to live at age 60



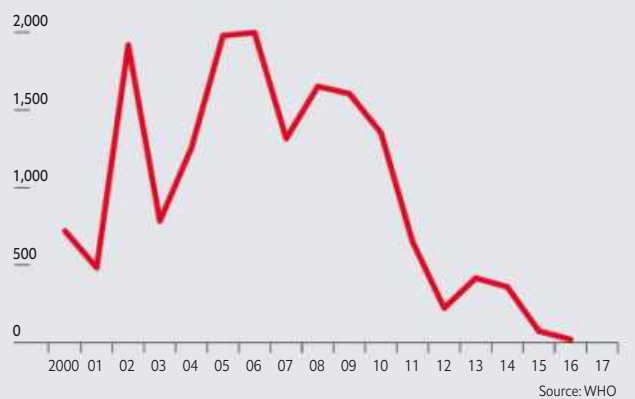
4 Rested Working v sleeping



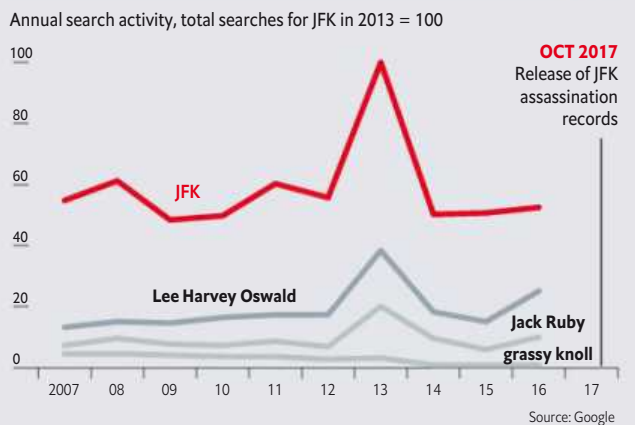
1 Size matters European Union v emerging Asia*



3 Zeroing in Wild cases of polio



5 Curiosity peaked JFK-related Google searches



Pick and Mx

Adam Smith

A fluid approach to gender is sweeping the world

Jamie Shupe could in 2017 become the first American to be issued with a passport with neither an M for male nor an F for female. Mx Shupe (as the former army sergeant prefers to Miss, Mr or Ms) plans to sue the State Department if it fails to allow a third option. "In a lot of ways ancient computer systems are tying this up," Mx Shupe says. "Forms normally just have two boxes."

In 2016 Mx Shupe went to a county court in Oregon to fill out the same paperwork as someone who has undergone sex-reassignment surgery. But instead of ticking one of the two gender boxes, Mx Shupe wrote "non-binary". (This identity is used by people who feel that, regardless of their anatomy, they are a mix of the "man" and "woman" categories.) Mx Shupe became the first American legally to change their gender to non-binary.

One person, two spirits

Less rigid gender identities have a long history in America. Generations before the federal courthouses were built, more than 130 Native American nations recognised "two-spirit" people as having attributes

of both men and women. They performed different roles across different tribes, but were largely viewed as equal; an anthropologist described We'Wha, a 19th-century Zuni, as performing "masculine judicial and religious functions" as well as "feminine duties" like doing the laundry. Many two-spirit people are alive today; other societies accept third-gender people, including the *muxe* of Mexico and Thailand's *kathoey*s or "ladyboys".

Northern European countries, such as Sweden (1972) and the Netherlands (1985), were the first to allow citizens to change their legal gender. But authorities required the applicant to "prove" they had been living as their affirmed gender for some time, and to undergo a physical change including sterilisation. This focus on the body shows how states often confuse sex with gender. "Sex" refers to anatomy; a person's "gender" is a mixture of how they feel and how they present themselves.

Since 2015 Ireland simply asks individuals (transgender or otherwise) to indicate on a form what gender they consider themselves to be. Following the passage of laws in 2015 in Malta and 2012 in Argentina, individuals can affirm that they, like Mx Shupe, are neither a man nor a woman. Britain's government may follow suit in 2017.

In 2014 India's census registered 490,000 *hijras*, largely people seen as boys at birth because of their anatomy but who

behave in a more typically female way. But India is struggling to define "transgender", a term more commonly used in the West. A draft bill sitting before legislators defines transgender people as neither male nor female, stripping them of their right to identify themselves as either.

Activists will push for states to recog-

States often confuse sex with gender



We'Wha and Shupe, proud pioneers

nise their right to describe themselves as they wish, and seek to show that with all the ways that people can be people, gender is a poorer identifier than, say, height or eye colour. Mx Shupe's cause is set to become an increasingly common one. ■

Adam Smith: deputy community editor, *The Economist*

Changing lanes

Adam Roberts

The world should learn from a Swedish switch

Early one Sunday morning, half a century ago, Sweden's motorists pulled off a deft manoeuvre. September 3rd 1967 was H Day, for *Högertrafik* ("right traffic") day. The country, like Britain, had driven mostly on the left since the mid-18th century. But that looked untenable by the 1950s. All its Nordic neighbours were righties, making border crossings tricky.

Voters hated the idea of switching: 83% said *nej* to it in a referendum in 1955. But politicians don't always feel bound by plebiscites. In 1963 parliament told a commission to prepare for lane-changing. By 1967 catchy pop songs, stickers, slogans and even special underpants reminded Swedes to turn right.

It all went like clockwork. No vehicles were allowed to move before 5am, then everyone swapped. The authorities shifted 360,000 road signs overnight. Kenya and Pakistan received 8,000 redundant Swedish buses, with doors on the left. Studies showed accidents fell immediately after H Day.

There are lessons from this, half a century on. One concerns revealed preferences, or how well people can imagine something routine becoming different. Swedes hugely opposed the idea of new driving habits, yet promptly accepted the changed reality with a shrug. A second lesson: other countries coped just as pragmatically. Iceland switched to the right in 1968, followed by Ghana and Nigeria in the early 1970s. Samoa went over to the left in 2009, aligning itself with nearby Australia.

In a shrinking world, what other sorts of H Day—harmonising habits—are overdue? Anyone who has struggled to recharge a laptop or a phone abroad knows the stupidity of the world having at least 15 slightly different types of plugs and sockets. The same goes for different ways of measuring: let's all agree to go metric. People now download recipes from global sites, and regularly shop abroad for shoes or dresses. Why should cooks struggle to remember how ounces, grams, half-cups and quarter-pints relate? Or shoppers have to try to calculate how shoe sizes compare?

Getting more aligned could save lives. Need the police? In Malawi dial 997, but in Gabon it's 1730, in India 100, Pakistan 15, China 110, America 911, Britain 999. At least the EU, that great harmoniser, has a common number: 112 works everywhere, even in Britain, for now. ■



2017 IN BRIEF

Beijing hosts a congress of the International Network for Bamboo and Rattan, which urges more use of these sustainable materials

Adam Roberts: European business correspondent, *The Economist*

A year in the life

Laurence Blair

A connoisseur's guide to the anniversaries of 2017

Two major historical milestones will hog the lime-light in 2017: the centenary of Russia's October revolution, and the quincentenary (500 years, to laymen) of Martin Luther's dissemination of his 95 theses, which sparked the Reformation in earnest. Both were instrumental in forging the modern world (exegesis on both events and their meaning today is to be found elsewhere in these pages). But digging a little deeper throws up not only some other intriguing anniversaries—1,000 years since the founding of the Druze faith, 600 years since the first recorded use of street lighting in London, 60 years since the first Frisbee was thrown—but also questions about what the world remembers, and why.

Much of 2017's retrospective rumination might take on a political character. Marking 600 years since Henry V's decision to restore English as the language of government, Anglophones worldwide may rejoice that they never had to speak French. As with the 950th anniversary of the Battle of Hastings in October 2016, some Brexiteers will contrast England's native tongue and ancient liberties with continental despotism; Remainers will be in frank disagreement with such tendentious angles. Events tend to be remembered or forgotten according to their point-scoring value. The patriots and Whigs who trumpeted the 800th anniversary of the Magna Carta of 1215 will probably overlook 800 years since the Treaty of Lambeth of 1217 (which ended a war started when the same proto-democratic barons begged the king of France to invade).

Several anniversaries will present tempting parallels for foreign-policy wonks and columnists. The passing of 500 years since the first diplomatic mission from western Europe to Ming China—that of Portugal's Fernão Pires de Andrade—may prompt lofty reflections on the rise of China and the pendulum of geopolitics; China's One Belt, One Road initiative is soon supposed to connect economies from Beijing to Lisbon. Those fearful of Vladimir Putin's tsarist revanchism might invoke the Silent *Sejm* (parliament) of 1717, when Peter the Great's soldiers intimidated the Polish-Lithuanian Commonwealth into hobbling its army and becoming a de facto Russian protectorate.

Perhaps Barack Obama had an eye on history in October 2016 when he scrapped limits on tourists bringing Cuban cigars back home, just in time for 2017's bicentenary of the legalisation of the Cuban cigar trade (or perhaps the outgoing POTUS simply fancied a well-earned Cohiba). Also in 1817, a ragged band of soldiers under José de San Martín crossed the Andes from Argentina to liberate Chile—200 years too early for a new tunnel

between the two countries likely to be started in 2017.

The anniversaries of more obscure figures will pass largely unremarked. Germany will issue a special coin to commemorate 200 years since Karl Drais took the first bicycle for a spin, but he died unappreciated and penniless after his pedal-less *Laufmaschine* was taken up only by the trendiest urbanites. Maybe modern-day Hamburg hipsters will be inspired to give his "Dandy horse" another go. Knaresborough, in north Yorkshire, celebrates in 2017 the tercentenary of John "Blind Jack"

Some will (hazily) recall the Summer of Love

Metcalf's birth. He overcame poverty and disability, becoming a fiddle-player, outdoorsman, soldier, stagecoach-owner and the builder of 300km of turnpike roads across northern England: a veritable Jack-of-all-trades. Speaking of idioms, the actor and playwright David Garrick was also born 300 years ago. He was allegedly so engrossed in his own pioneering, naturalistic performance as Richard III that he failed to notice he'd fractured his femur—hence (one fanciful theory goes) the thespian "break a leg" to wish performers good luck. Many of history's heroines are nameless:



Spare a thought for Karl

Russia's February revolution, the centenary of which also falls in 2017, saw women take to the streets in their thousands to demand bread, peace and equal political rights, playing a crucial role in toppling the tsar (Lenin, meanwhile, was still skulking in Switzerland).

It was 50 years ago today

Some in 2017 will (hazily) recall the Summer of Love 50 years previously, and the release of The Beatles' "Sgt. Pepper's Lonely Hearts Club Band", the album that provided the soundtrack for many. But perhaps they should focus instead on the 60th anniversary of the chance meeting of Paul McCartney and John Lennon at a church fête in Woolton, Liverpool, where Lennon's skiffle band, the Quarrymen, was playing. Happenstance and chance encounters may make for less satisfying anniversaries than big events, but are often just as pivotal. ■

2017 IN BRIEF

It is 50 years since James Bedford, a University of California psychology professor, became the first person to be cryogenically frozen



Stop the cash, stop the conflict

The world's newest country, South Sudan, could have been holding its first free elections in 2017. Instead, it faces another year of strife. In the latest phase of the cyclical conflict that has plagued its people for decades, tens of thousands have died, 5m people face hunger or starvation and 1m have become refugees. Yet cleverer global action—especially involving Western banks—can stop the rot.

The local context is important: control of the state is the grand prize in the deadly contest for power. Factions based primarily on ethnic and historical allegiance compete violently for power and the massive opportunities for self-enrichment available through looting national budgets, exploiting natural resources and manipulating state contracts.

This winner-take-all competition for the spoils is the main source of war. Witness how, when President Salva Kiir removed Vice-President Riek Machar from office in 2013, it took only a few months before their two competing factions went to war. After a peace deal allowed Mr Machar to return to Juba in 2016, the groups soon fell out again, plunging the country deeper into conflict. A combination of grievance and greed, connected by extreme corruption, powers the ongoing violence.

South Sudan could be fabulously wealthy; it has abundant natural resources, including oil and gold. But that dream, felt acutely by most South Sudanese on independence in 2011, has become a nightmare. Billions of dollars in oil money have gone missing.

If this rot—the competitive looting of the state—is not stopped there is little chance of ending the violence, as documented in a report by our new investigative initiative, The Sentry. But the task in 2017 is to identify the financial drivers of war and begin to dismantle the violent kleptocratic system. Mistaken for a call for regime change, it is actually about system change. This reform agenda is a prerequisite for lasting peace, in South Sudan and in other states around the world where illicit financial flows fuel bloody conflict.

Hit them where it hurts

Responses to South Sudan's chaos are currently ineffectual. The sound and fury of international indignation signify nothing to the orchestrators of atrocity because there is no enforcement. We counted 65 times in which senior officials around the world have threatened South Sudan's leaders with consequences, but failed to take any meaningful action, since the latest war began in 2013. Its

generals and politicians are largely unmoved by damning human-rights reports or press releases, UN Security Council protests, the deployment of peacekeeping troops, threats of arms embargoes and the unenforced sanctioning of mid-ranking officials. None of these responses affects the calculations of the warring parties because they do not target their pressure points and vulnerabilities.

A more effective approach requires going after the ill-gotten assets of warlords and their foreign facilitators, including businesses and arms dealers, because that is where they are most vulnerable. Experience from efforts in countering terrorism, nuclear proliferation and organised crime is instructive. The lessons include combining measures against money laundering with targeted asset freezes on war leaders and their accomplices. All this requires robust enforcement by banks. In the most successful cases, targeted officials are locked out from the financial system, creating real international leverage.

It's simple: go after the warlords' wallets, bankrupt those who choose the bullet over the ballot, and suddenly the incentives are for peace, not war; transparency, not corruption. This is a lesson that policymakers could apply far beyond South Sudan, particularly in the effort to prevent mass atrocities.

Countless South Sudanese journalists, human-rights investigators, anti-corruption activists, government reformers and humanitarians are risking their lives to change the system. Highlighting their work globally is crucial, as we do in supporting the Aurora Prize, a global humanitarian award. Bringing international pressure to bear on war leaders would further level the playing field for these champions of civil society.

The coming year will provide multiple opportunities to translate talk into action. The G20 will launch its latest anti-corruption plan. A UN fact-finding mission on South Sudan's conflict will report in March. Mr Kiir and Mr Machar, long-time rivals, will have a final chance to drag their country back from the abyss, or step aside for others with less of an interest in disorder.

The world must undermine the pillars of the war economy and disrupt the financial flows that fuel conflict. Western taxpayers and charitable donors have contributed billions of dollars for peacekeeping and humanitarian aid, but policymakers have rarely focused on the key driver of the carnage. Unless the links between conflict and corruption are confronted, peace will remain a distant dream. ■



Tackling corruption is the key to peace in South Sudan and beyond, argue **George Clooney** and **John Prendergast**, co-founders, The Sentry

It's simple: go after the warlords' wallets

A high-quality photograph of two hands, one from the top right and one from the bottom left, both pointing their index fingers towards the center. The hands are rendered in a monochromatic blue-grey color against a light, almost white background. The lighting is soft, highlighting the texture of the skin and the contours of the fingers.

The Economist

F I L M S

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The fight for France

Sophie Pedder *PARIS*

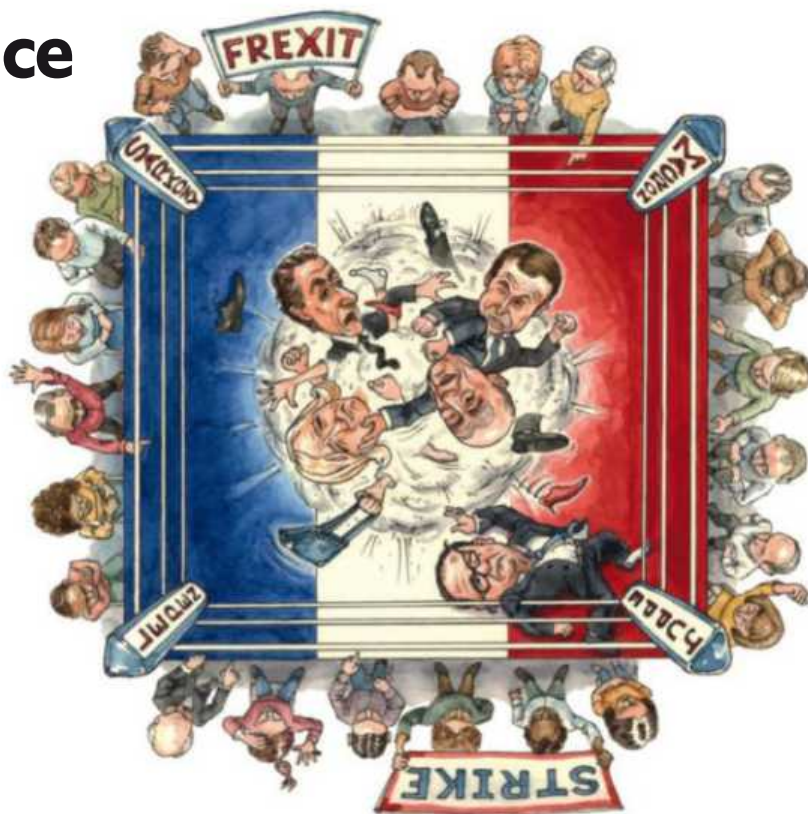
The presidential-election campaign will turn toxic

Fear and introspection will stalk France in a crucial election year, pushing divisive identity politics to the fore. Voters will elect a successor to François Hollande at a two-round presidential election on April 23rd and May 7th, then vote in a new parliament in June. Pressing questions about how to revive the economy and curb unemployment, though, will be eclipsed by a populist debate about churches, mosques, headscarves, pork meals and what it means to be French. As candidates confound worries about immigration, Islam and terrorism, the campaign will turn toxic.

The politician dragging the debate onto nationalist ground is Marine Le Pen, leader of the far-right National Front (FN). Her position as favourite to top first-round voting will turn the campaign into a race to face her in the run-off. In an effort to broaden her base, and decontaminate her pitch, she will airbrush references to the FN and its logo, focusing instead on brand Marine. She will present herself as the candidate of all "the people". But in reality Ms Le Pen will frame a divisive argument, turning on Muslims and migrants from Menton to Calais. She will use Brexit as a precedent to demand a "Frexit" referendum on Europe. Her canny ability to tap into the fearful national mood could secure her party dozens of seats in parliament, a historic result which would alter the political balance.

Could she win the presidency? After Donald Trump's victory in the American presidential election, the question seems far less absurd. A majority of voters, whatever their misgivings about the alternative candidate, tends to gang up in a run-off to exclude the FN. A Le Pen victory remains improbable, and would send shockwaves throughout France and Europe. Yet populist echo-chamber politics elsewhere suggest complacency is ill-advised. Her campaign should be watched very carefully.

The odds are that Ms Le Pen's opponent will be either Alain Juppé, an ex-prime minister, or Nicolas Sarkozy, an ex-president, the front-runners in the centre-right primary to be held (after *The World in 2017* goes to press) in November 2016. Both raise the hope of economic reform through spending and tax cuts, later retirement and longer working hours—but also the prospect of strikes and protests. A President Juppé would be the less



abrasive figure, possibly with a woman as prime minister, such as Valérie Pécresse, president of greater Paris. But he might struggle to forge consensus. A second-term President Sarkozy, with François Baroin, an ex-finance minister, his probable prime minister, would bring frenetic energy, but also division at home. He would be hyperactive abroad, trying to galvanise European leaders into redrawing rules to control internal borders ("Schengen II"), reinforce the euro zone and halt Turkish accession. Strained Franco-German ties would ensue.

As France braces wearily for a cast of has-run candidates, though, there is one exciting new figure to watch: Emmanuel Macron, Mr Hollande's former economy minister. He will make a presidential bid, but outside the Socialist Party—and against Mr Hollande.

The shock of the new

The unpopular outgoing president's own chances of re-election are so low that he could even step aside and leave Manuel Valls, his prime minister, to run instead. But it is Mr Macron's candidacy that will cause havoc on the left, as well as irritation on the right, as he tries to siphon progressive pro-European voters from both sides. A political novice with no established party structure, and derided by many Socialists, his chances are slim. ▶

2017 IN BRIEF

Gauloises blues: in France, all cigarettes must be sold in plain packaging from January



Sophie Pedder:
Paris bureau chief,
The Economist

Sea of trouble

Emma Hogan

Europe's refugee mess will get messier

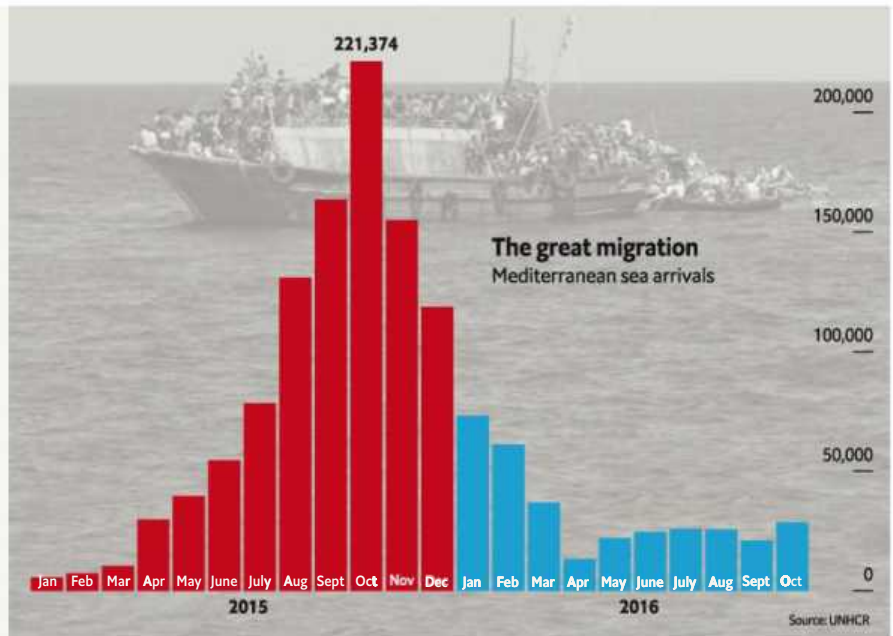
In Europe's drama with refugees, few twists in the plot have been predictable. In 2015, as the war in Syria raged on, 1.3m migrants applied for asylum in the European Union, surpassing previous records. The number of people crossing the Aegean Sea between Turkey and Greece was predicted to fall at the end of that summer, but instead continued to rise precipitously. A last-minute deal struck between the EU and Turkey in March 2016, which required refugees to be sent back to Turkey to have their asylum applications processed there, also took many by surprise. Even more unexpectedly, it appeared at first to deter new arrivals: the numbers landing in Greece dropped from around 55,000 in February 2016 to just over 3,400 in August.

In 2017 the number of people making their way to Europe will not reach the heights of 2015 or 2016. But with an upsurge in populist parties across the continent and an increasingly fractious government in Turkey, the journey will become even more fraught with difficulty. More refugees will risk even more dangerous or unpredictable routes to safety and many will face harsher treatment along the way.

First, the current arrangements concerning migrants will deteriorate. Despite the EU-Turkey deal, around 50,000 migrants remain stuck in camps in Greece, rather than being sent back to Turkey. Most of these camps are heaving with people: in September, thousands fled an overcrowded facility in Lesbos after rioting erupted and a fire swept through the camp.

As winter sets in, migrants will become more restless. Fights will break out; some refugees will go on hunger strike. Meanwhile the number of deaths on the route

As winter sets in, migrants will become more restless



between Libya and Italy will keep rising.

Second, the Turkish government will become far trickier to deal with. As part of the deal Turkey was promised visa-free travel for some of its citizens, provided it meets certain criteria on cracking down on corruption, issuing biometric passports and reforming its broad anti-terror laws. In October these conditions still had not been met, partly because the government was busy prosecuting 60,000 people it accused of being part of an attempted coup against President Recep Tayyip Erdogan in July. The delay on the visa waiver has angered the Turks, who have threatened to jettison the deal. If that happens, then Greece may start letting refugees out of camps to make the journey (with the help of smugglers) through the Balkans to Germany, creating further chaos along the route.

Third, domestic pressures in Europe will stop politicians from doing things that need to be done. A lot more work, for example, will be necessary to ensure refugees can be resettled directly from Turkey to the rest of Europe, and many more interpreters and asylum officials will be required in

Greece, Italy and elsewhere. But both Angela Merkel, the German chancellor who has emphasised the need to help refugees in Europe, and François Hollande, the French president, will be too busy fighting elections to tackle these problems without the help of others. That help will not be forthcoming: governments in eastern Europe refuse to take any refugees at all, while anti-immigrant sentiment is on the rise in Sweden, the Netherlands and Italy.

Such a grim scenario could just about be avoided if the right diplomatic measures were put in place. For the EU-Turkey deal to work, Turkey would need to be seen as a safe country for refugees to return to, says Gerald Knaus of the European Stability Initiative, a think-tank. And more European countries would have to start resettling refugees directly from Turkey, which could enable an unpopular forced-relocation scheme to be scrapped. But neither of these things looks likely to happen in 2017, to the shame of the EU and the politicians who initially opened their arms to those fleeing barrel bombs. ■

Emma Hogan: Europe correspondent, *The Economist*

2017 IN BRIEF

Turkey completes a 911km (566-mile) border wall designed to prevent illegal immigration from Syria



► But there is a hunger for something fresh in France and, just occasionally, political rules get torn up.

This campaign will be played out against the dark backdrop of terror. France will be on permanent alert, with schools undertaking regular terrorism drills that will alarm as much as reassure. More terrorist attacks are, tragically, probable. The French will have to learn to live with fear. The country will struggle to curb the appeal of *jihād* among a disaffected minority; efforts at “deradicalisation” will fall short. France will remain a target for terrorist networks, though this will not deter the country from fighting jihadism abroad, particularly in the African Sahel.

Can the French recover their *joie de vivre*? Morale

has been crushed by terrorist bloodshed, and depressed by the unkept promises of the Hollande presidency. Yet France will produce world-class researchers, tech engineers and exquisite high-end craftsmanship, as well as exhibit a fine taste for the slow life, all of which ought to be a source of confidence. Its regional cities, such as Montpellier, Bordeaux and Grenoble, are thriving, with their tech hubs and freshly pedestrianised centres, dissected by shiny tramlines. In a year that the Pompidou Centre will celebrate its 40th anniversary, 2017 could be a moment to celebrate the country's embrace of forward-thinking innovation and aesthetic daring. The risk is that political conservatism and divisive nationalism will aggravate French self-doubt instead. ■

Lenin's revenge

Arkady Ostrovsky

Vladimir Putin will find it hard to reconcile Russia's revolutionary past with his tsarist ambitions

The centenary of the 1917 Bolshevik revolution will be extremely awkward for Russia's president, Vladimir Putin. On the one hand, the Kremlin has restored so many Soviet symbols and institutions that it can hardly ignore the foundation myth of Soviet rule. On the other, Mr Putin intensely dislikes revolutions, particularly ones that overthrow authoritarian, imperial regimes. Moreover, worldwide commentary on the orchestrator of the revolution, Vladimir Ilyich Lenin, not least in a spate of new biographies, will invite reflections on his modern-day namesake. In 2017, expect to see Mr Putin perform intellectual somersaults to square Lenin's anti-imperialist drive with his own ambitions to restore imperial order.

Lenin's legacy has had its ups and downs since the late Soviet era. In the 1980s Mikhail Gorbachev and his supporters, many of whom were the children of old Bolsheviks purged by Stalin, carried out their liberal reforms under the slogans of returning to Leninist principles. (Their Lenin had little to do with the man who unleashed civil war and terror on his country.) Mr Gorbachev, in common with other Soviet leaders, derived his legitimacy from the founder of the Bolshevik state. Like gods, they would walk through Lenin's mausoleum (the Underworld) and climb on top of it (an Olympus). From there they

would observe military parades and marches by mortals carrying their portraits (icons).

By contrast, Boris Yeltsin presided over the disintegration of the Soviet Union and rejected the communist regime as a matter of principle and politics. Even when his popularity plunged, public rejection of the communist era ensured his re-election.

But Mr Putin makes little distinction between imperial, Soviet and post-Soviet Russia. "What was the Soviet Union?" Mr Putin asked in 2011. "It is essentially the same Russia, only called differently." Following his dream of rebuilding state power and retaining control over the Ukraine and Belarus—the main constituent parts of the Soviet Union—Mr Putin has ignored Lenin and rehabilitated Stalin. For him, the difference between them was their attitude towards the Russian state and its imperial inheritance.

In Mr Putin's version of history, whereas Lenin led a struggle against imperial Russia and rejected its Orthodox faith, Stalin returned to the idea of empire, fanned

Russian nationalism and flirted with the church. Stalin consolidated the country's resources and restored patriotic feeling, which led to Soviet victory in the second world war, used as the main legitimising event of the current state. (Stalin's savaging of Russia's peasantry, clergy and intelligentsia is left out of this narrative.)

Yet, unwilling to stir discontent and lose votes among older communists, Mr Putin left the Bolshevik revolution in peace and Lenin in his mausoleum. To deal with the contradiction between the historical worship of Lenin and Mr Putin's disavowal of any revolution, nowadays the Kremlin drapes the mausoleum in Red Army banners during military parades.

But the centenary of the revolution is too big an event to cover up. In early 2016 a teacher from southern Russia's Astrakhan region asked Mr Putin how best to interpret the Bolshevik revolution for his students: "Your position is very important to us."

Mr Putin's reply: he was once not just a Communist Party member but also an officer of the KGB: "the shield and sword of the party". Unlike many, he said, he never destroyed his party membership card: "I liked and still like the communist and socialist idea." His main disagreement with Lenin concerned Lenin's organisation of Russia as a union of ethnic republics with the right to self-determination. By giving them the right to exit the Soviet Union, Mr Putin said, Lenin "planted an atomic bomb" under Russia's foundations.

Mr Putin sees himself as a restorer of Russia's historic lands, a new tsar. In a recent Kremlin ceremony Vladimir Zhirinovskiy, a veteran politician with a fine grasp of which way the wind is blowing, recited imperial Russia's anthem, "God Save the Tsar", to Mr Putin.

But Mr Putin's regime, which has turned Russia into a centralised state from the federation of the 1990s, is no more capable of resolving the country's growing economic and political contradictions than were the tsars. Russia today is as ripe for reform as it was under Nicholas II in 1917. Mr Putin hopes that by marrying the Soviet and imperial past he can preserve the nucleus of the Russian empire and avoid the fate of the monarchy. Yet as the economy stagnates and Mr Putin's megalomania worsens, the ghosts of the Bolshevik revolution are getting restless. Lenin might allow himself a smile. ■

Just possibly...

- UNESCO declares **Venice** an endangered World Heritage site after Italy fails to ban cruise ships from the city's lagoon.
- **Berlin-Brandenburg Airport** opens its doors, 25 years and €6bn (\$6.5bn) after the first plans were drawn up.
- Ireland holds a referendum on whether to repeal a constitutional ban on **abortion**.

2017 IN BRIEF

The **Eurovision song contest** takes place in Kiev. Ukraine blacklists several Russian artists as a threat to national security; Russia may boycott the event



Arkady Ostrovsky:
Russia editor,
The Economist

The permanent chancellor

Andreas Kluth *BERLIN*

Battered and weakened, Angela Merkel will probably be re-elected nonetheless

Years before Angela Merkel became Germany's chancellor in 2005, she told a photographer that she was determined to find the right time to exit politics, to avoid becoming "a half-dead wreck" in office. She had in mind two chancellors of her own party, the Christian Democratic Union (CDU), who far outstayed their welcome. Konrad Adenauer clung to power for 14 years before withdrawing in 1963, Helmut Kohl for 16 years before retiring in 1998 amid a party-financing scandal. Even so, Mrs Merkel will probably match or beat them both—provided she decides to run again in the federal election in the autumn of 2017.

This is because she remains odds-on to win her fourth four-year term. (Germany has no term limits.) Yes, Germany is bitterly split over her embrace of refu-

gees in late 2015. But the numbers of new arrivals have since plummeted and will stay manageable, given that borders have in effect been closed from Turkey through to the Balkans. As the domestic crisis shifts to integrating those refugees already in Germany, and to keeping the country safe from terrorists, Mrs Merkel will spend 2017 explaining that she, and only she, is up to that job.

But the real reason that Mrs Merkel will be hard to beat is, ironically, a worrying development in Germany's party system for which she is often blamed. For over a decade she has been shifting her once-conservative party to the left, in social, economic and energy policy. This, her critics say, opened space on the populist right for a new party, the Eurosceptic, anti-immigrant and often xenophobic Alternative for Germany (AfD). In 2017 the AfD will enjoy further successes in three regional elections and then, for the first time, enter the Bundestag.

No mainstream party will touch the AfD with a barge pole in coalition talks. So the effect of its entry into the Bundestag is instead to make a majority of the three left

2017 IN BRIEF

Aarhus in Denmark and Paphos in Cyprus are the European capitals of culture



Andreas Kluth:
Berlin bureau chief,
The Economist



Martin Luther, church-splitter

Matt Steinglass

Five centuries since Luther's clash with Rome, Europe faces division once more

The process by which memes go viral has not changed much since the 16th century. On October 31st 1517 Martin Luther, a monk at the University of Wittenberg, wrote out a list of 95 theses objecting to the indulgences authorised by the pope to raise money for building St Peter's Basilica. The story that Luther nailed his theses to the door of Wittenberg's Castle Church (as depicted above) may be apocryphal. But, in the equivalent of an ill-judged late-night tweet, he did send a copy to Archbishop Albert of Mainz, who was taking a cut of the indulgences. Soon Luther and Albert's

allies were engaged in a flame-war using the pre-eminent social-media platform of the time: pamphlets. As usual, things escalated. The pope had Luther convicted of heresy. Luther called the pope the Antichrist. German peasants and princes defected to Luther's side, and Europe was plunged into more than a century of savage war between Catholics and Protestants.

Now, 500 years on, the Reformation has the soft glow of history. Commemorative events are planned across Germany in 2017. Some will celebrate reconciliation: on March 11th Germany's head Lutheran and

Catholic bishops will lead a service dedicated to the "process of healing of memory". Pope Francis got that process moving in 2016, with a visit to Lutheran Sweden.

Some Catholic clergy still object to such ecumenical gestures. After all, Luther tore apart their church by insisting that the pope had no more say than any other Christian. Yet most practising Protestants and Catholics today feel they are on the same side, largely because they are among the few Europeans interested in Christianity at all. In most of Europe less than a third of the population considers religion an important part of life.

Eastern Germany, Luther's homeland, may be the world's least religious region, according to one study.

Today few secular Europeans understand the reasons for the split in the church, or the logic of Luther's doctrine that only faith, not good deeds, leads to salvation. They are far removed from a world where "good deeds" might mean coughing up your savings for a promise that God will release your late relatives from their suffering in the afterlife. For that matter, a few years ago, Europeans thought themselves long past the stage of resorting to violence over religion. That was premature. Intolerance, corruption and religious upheaval are all making a comeback, and not just in the Middle East. Time to bone up on our Luther. ■

Matt Steinglass: Europe editor, *The Economist*

Intolerance, corruption and religious upheaval are all making a comeback

Brakes off

Piotr Zalewski ANKARA

After the coup, Turkey's democratic decline will only gather speed

As a raw, unabashedly Islamist politician, Turkey's president, Recep Tayyip Erdogan, once likened democracy to a streetcar. "When you arrive at your stop," he quipped, "you get off." Having skirted an attempted putsch that claimed some 270 lives in a single night in July 2016, Mr Erdogan's streetcar, whatever its destination, has now reached breakneck speed. Arrests of soldiers involved in the coup and members of the Gulen movement, an Islamic sect believed to have plotted it, have given way to a wider crackdown against Kurdish activists, leftists and opposition news outlets. Human-rights groups have claimed that detainees are being tortured. The government has proposed restoring the death penalty.

Turks are bracing for more turbulence in 2017. Mr Erdogan has announced plans to ditch Turkey's parliamentary system in favour of a constitution that would give him practically unchecked executive powers. The proposed changes are likely to be put to a referendum in the spring, marking the fifth time in three years that Turks will head to the polls. Popular support for the executive presidency has climbed steadily since the coup, but a victory for the increasingly autocratic Mr Erdogan is far from assured. A setback for him could mean yet more political chaos, plus yet another general election.

Conventional wisdom says that Mr Erdogan should have walked away from



The wind is in his favour, for now

the botched coup stronger and more confident. Yet it is just as likely that he feels more vulnerable, sensing danger at home and abroad; he may be more desperate than ever to tighten his grip over the army, the bureaucracy and his own Justice and Development party. Turkey's state of emergency, which allows the government to rule by decree, will let him keep the media and political opponents on a tight leash. Any election or referendum campaign held while it is in place threatens to turn into a farce.

Abroad, Turkey will behave with a mix of pragmatism and abandon. In Syria, having accepted that Bashar al-Assad can no longer be toppled by force, it will try to rebuild bridges with his regime. With the offensive against Islamic State picking up

speed on its southern periphery, Turkey will face the threat of renewed jihadist attacks at home. Determined to crush the armed wing of the Kurdistan Workers' Party, Mr Erdogan may open a new front against the group's wing in Syria.

His relations with America will depend heavily on the fate of Fethullah Gulen, the Pennsylvania-based cleric whom Mr Erdogan accuses of masterminding July's coup. As the evidence against the Gulenists piles up, calls for their leader's extradition will become louder. Even if the new American administration is more amenable to Turkish concerns, the process will take years. If Mr Erdogan decides to push ahead with his death-penalty project, a crisis in relations with Europe will be hard to avert. Regardless of the aims he has in mind for 2017, do not expect Mr Erdogan to take his foot off the gas. ■

Piotr Zalewski: Turkey correspondent, *The Economist*

► parties—the Social Democrats, the Greens and the post-communist The Left—mathematically impossible. This means that even a much-diminished CDU will, as the strongest party of five or six, form the governing coalition. It could team up yet again with the Social Democrats, or with the Greens and the liberal Free Democrats (an outcome Mrs Merkel is said to prefer). In any case, all paths lead to Mrs Merkel staying in office.

The only threat to her comes, paradoxically, from within her own ranks. Since the second world war, the centre-right camp in German politics has had a peculiar arrangement: the Christian Democrats appear on ballots all over Germany except in Bavaria, where a "sister party", the Christian Social Union (CSU), takes the CDU's place. The two are independent but by convention campaign together in federal elections and form one group in the Bundestag.

Horst Seehofer, the CSU's boss and premier of Bavaria, used to be close to Mrs Merkel; the two still address each other with the informal *du*. But since the historic weekend of September 4th 2015—when Mrs Merkel in a humanitarian gesture welcomed in refugees

who were then stranded at a train station in Hungary—Mr Seehofer has been attacking Mrs Merkel relentlessly. He demands a fixed limit to the number of refugees, often borrowing populist rhetoric from the AfD. He may not back Mrs Merkel for another campaign, or might even nominate himself against her, calculating that his defiance makes him popular in Bavaria, which is all he cares about. In the Bundestag election, however, a break-up would damage both sister parties.

It is conceivable that Mrs Merkel, fed up with Bavarian antics, might then remember her determination never to become a half-dead wreck, and to quit. This would cause a political earthquake. But Mrs Merkel is more likely to stay and fight. For one thing, she still has a legacy to build. Adenauer anchored the post-war republic in the West; Mr Kohl achieved reunification. Mrs Merkel has so far been known only for managing crises—in finance, the euro zone, Ukraine and elsewhere. Germany's response to her biggest decision, to welcome huge numbers of culturally alien people, is still a work in progress. She probably wants a few more years to guide the outcome. ■

2017 IN BRIEF

Berezniki in Russia holds its fifth annual **Mosquito Festival** in August. Events include the "tastiest girl" competition, where the prize goes to the girl who collects the most mosquito bites





Post-pain in Spain

Michael Reid *MADRID*

The country at last has a government

Spain can expect a bit more political clarity but a murkier economic outlook in 2017. The opposition Socialist Party almost tore itself apart over the decision, but it granted Mariano Rajoy and his conservative People's Party (PP) a parliamentary mandate in October 2016. That put an end to ten months of drift. Mr Rajoy enjoyed an absolute majority in 2011-15; now he will head a minority government. His position will be less weak than it appears. Under the constitution, a Spanish prime minister can be ousted only if the opposition parties unite behind an alternative leader and programme.

Instead, Mr Rajoy's second government risks being a do-little one. Spain's restored democracy was built around two strong parties, the Socialists and the PP, which had regular recourse to moderate Catalan and Basque nationalists as coalition partners. All of that changed after the collapse of Spain's housing bubble in 2008-09. The traditional parties now share the Cortes (parliament) with the far-left Podemos and liberal Ciudadanos. The Catalans are bent on independence.

Mr Rajoy has struck an agreement under which Ciudadanos will support (but not join) his government, in return for modest reforms to tax, the labour market and pensions. But on some issues, such as measures to prevent corruption, Ciudadanos may ally itself with the Socialists and Podemos in the Cortes.

Spain's economy held up surprisingly well during 2016, growing by 3%. It will face stronger headwinds in 2017, and may expand by only 2% (still not bad compared with many euro-zone countries). Brexit doesn't help: Britain is Spain's single-most-important economic partner. Mr Rajoy will cut the fiscal deficit more slowly than the European Commission would like.

And Catalonia? The government in Barcelona has promised a referendum on independence in September 2017. Such a plebiscite would be illegal. The hope in Madrid is that the tide for independence is ebbing.

Spain is in need of political healing. Among the Socialists, that task might fall to Javier Fernández, who has shown a sure touch as the party's caretaker leader. Podemos faces an identity crisis as it tries to go beyond being a protest movement. Mr Rajoy could offer an olive branch to the Catalans, in the form of a more generous deal on finance. But don't expect him to do so. Despite having played a painstaking game to stay in power, Mr Rajoy will do remarkably little with it. ■

2017 IN BRIEF

NATO deploys a 4,000-strong deterrent force to the Baltic states in May



John Hooper:
Italy and Vatican
correspondent,
The Economist

Michael Reid:
Bello columnist and
senior editor, Latin
America and Spain,
The Economist

Renzi's gamble

John Hooper *ROME*

Italy's destiny hangs in the balance

Let's begin with what we know. In 2017 Italian rescuers will continue—at times, heroically—to pluck migrants from the Mediterranean. Following the closure of the Balkan route in the spring of 2016, Italy became the main country of first arrival in the European Union. By October, however, the number of people who had been brought ashore was only slightly higher than in the same period of 2015. If migrants keep arriving at that rate, Italy can expect another 150,000 in 2017. And, if the past is a guide, another 3,000 men, women and children will die in the attempt.

Italian ministers will again protest that coping with the migrants should be exclusively an EU responsibility. Their complaints will largely fall on deaf ears. However, the European Commission will allow Italy to leave part of its spending on refugee resettlement out of the calculation of its budget deficit. The vigorous efforts by Italy's prime minister, Matteo Renzi, to wriggle out of the austerity straitjacket imposed on members of the euro zone will earn him clearance for a budget shortfall far higher than Brussels's already revised target of 1.8%. He wanted a deficit of 2.3%, only slightly lower than the figure for 2016. If the economy performs tolerably and manages to grow, it should be enough for Italy's public-debt-to-GDP ratio to start falling from its scary level of almost 133%.

But such growth is by no means assured. The economy ground to a halt in the second quarter of 2016 and in September the government slashed its growth forecast for 2017 from 1.4% to 1%. Even that could prove optimistic. And not just because of economic factors.

Which is where we get to what, as *The World in 2017* went to press, we did not know. On December 4th 2016 Italians were to vote in a referendum. Ostensibly, it was about constitutional reform: a reduction in the size and powers of the Senate, making legislation more effective, and sorting out responsibilities between the central and regional governments. Coupled with a new electoral law designed to ensure administrations serve out their terms, the reform aimed to make Italy a more governable country—or, Mr Renzi's critics argued, one that could too easily become a kind of democratic dictatorship.

After the prime minister unwisely said he would resign if he lost, the vote became in the minds of many Italians a vote of confidence in his government. And since his coalition has failed to revive the economy, it was not certain that, as Italy entered 2017, its hyperactive young premier would be in charge. That was by no means the most fateful aspect of a ballot that will set Italy's course for the year ahead.

With a "yes" vote, Italy will start 2017 with a chance of leaving its record of unstable government and inefficient legislation behind it. With a "no", it will find itself confronting a depressingly familiar scenario, of political—and perhaps economic—turmoil. ■

**The reform
aimed to
make Italy
a more
governable
country**

The Russian revolution of 2017

In my passport, in the “place of birth” section, it says USSR—a non-existent country, little more than the shattered dream of various intellectuals of the 20th century. Now 2017 is arriving and with it, 100 years on from the upheaval that gave rise to my country of birth, come questions about revolution.

“Revolution” is talked about as a project, but it’s not a project which one can start and finish, framing it with dates as if in a history textbook. Revolution is life, in which one always faces a choice: to act or to stand aside.

In any protest there will be a moment of despair. Everyone who engages in a fight against the injustice imposed by a regime comes to see that its overthrow will not happen at once. So, on the one hand, I often hear the question, “when can we expect the next revolution?”; yet I also hear the opposite sentiment: “you will not achieve anything, you can’t change the world.”

Many of those who took to the streets to protest against the regime in Russia in 2012 have by now left the country. Hundreds of people are behind bars. Political assassinations are still not a thing of the past. Vladimir Putin’s bombastic rule in 2017 is, to quote Pushkin, “a feast in a time of plague”. People I meet abroad see my country as a killing machine, with President Putin at the controls.

I watched the Soviet film “To Kill the Dragon” many times as a child. And whenever talk touched upon someone who considered himself a leader of some sort, I would think back to this film. It’s not enough to cut off the dragon’s head. Other heads will remain. But how do you cut them all off?

The answer lies in my belief that revolution is a political process within each one of us: the choice to act and overcome your fear, which appears each time you start to act. The experience of the 20th century has taught us not to wait for a Lenin, as then it will become Lenin’s revolution, a switch from a monarch’s will to that of a single leader.

Our enemies are fear and indifference. These are what allow the security services to hold sway over a giant country such as Russia, putting a small, grey and faceless spy, Mr Putin, in power.

How is it possible that within just a couple of years my country has become associated only with Mr Putin? The answer is simple and cynical. This is the image that Russia creates for itself. The common denominator for artists, activists and independent media could therefore be: “building an alternative world to the one formed by official policy”.

From this perspective, the “Iron Curtain” is not a political term from the 20th century, but a wall of mistrust which is built by each one of us when we refuse to take responsibility and to participate in politics. This is the wall of separation between “us” and “them”.

The new Iron Curtain can be broken only by active people and associations. First of all it means that we should stop fearing to look at one another and to get to know one another. We shouldn’t be afraid to trust each other, as only trust can become the core that will help us to overcome political hypocrisy.

What do you think we who aren’t in agreement with Mr Putin’s government are called by the national propaganda? We are called the “fifth column”—a military term from the 1930s. This means there is a war. But this war is invisible, and that is why it is so dangerous. “Enemies among us” is exactly what was written under our photographs on one of the posters that the government put in occupied Crimea in the spring of 2014.

But we are not “others” or enemies of the state. Despite the rhetoric of some, Russia is not the enemy of Europe. And just as any European country can declare war against those it labels as dangerous and alien, war was declared on us—by jailing us in order to protect society from our supposed danger.

In other words, Europe’s migration crisis is about the same fear, mistrust and indifference towards others. How can you consider as “others” those who cross borders and risk their lives in order to live by the same values that you live by? The idea of the superiority of one group of people over the rest is closely related to the regime’s sense of power and its creation of a “norm”.

From Bolshevism to bolshevism

“You won’t achieve anything anyway, you’re crazy”: so says anyone who gets into a position of power over us. Maybe we are. But fighting against “the norm”—which a Russian writer, Vladimir Sorokin, cleverly compares to the shit that the state feeds the obedient masses every morning—is one of the driving forces of my life.

If you think about it, much of what was considered the norm a century ago is now called racism. What was considered the norm half a century ago is now called totalitarianism. It’s up to us how our actions will later be described in the history books.

How many of our children, in the place-of-birth section of their passport, will have a non-existent country? ■



Maria Alyokhina, political activist and member of Pussy Riot, reflects on what revolution means today

The “Iron Curtain” is not a political term from the 20th century, but a wall of mistrust which is built by each one of us when we refuse to take responsibility

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The wait before the fall

Jeremy Cliffe

Painful truths about a hard Brexit will begin to dawn on Britain

When a building is demolished, a brief calm usually prevails at first. The dynamite blasts, the concrete exhales a few wisps and sways a little, there is a stillness for one or two seconds and then, with a groan, the whole thing comes down. Britain will live most of 2017 in that ethereal moment. In the spring, with Parliament's blessing, Theresa May will detonate Article 50 of the EU treaty: the gelignite by which a country belonging to the European Union officially terminates its membership of the club. In Westminster that initial boom will drown out everything else, the puff of dust shrouding almost every other government policy. Yet by the end of the year, for reasons both domestic and foreign, Mrs May will have achieved little of substance.

Of course, Britain is now in unknown, volatile territory. Brexit strains, combined with a working majority of just 16, could force her to seek a personal mandate from voters at an early election, or even bring down her premiership. At times the year will feel like a long series of arm-wrestles between the legislature and the executive. But Mrs May is cautious and, with neither Labour nor the UK Independence Party in a good state, will probably resist the temptation to cash in on her soaring poll leads. Indeed, these should help her keep a lid on impatience and dissent in her party.

When she triggers Article 50, Mrs May will begin a two-year countdown to Brexit. The first couple of months will bring bureaucratic throat-clearing (the European Commission will lead the talks, with the European Council breathing down its neck). In the run-up to France's presidential election, in April and May, mainstream French politicians will talk tough about Brexit to counter Marine Le Pen, the right-wing populist who wants her country to hold its own referendum on leaving the EU. Shortly afterwards German politics will turn inwards ahead of a parliamentary election in September, probably re-engaging in earnest with Brexit only in November, once a new coalition has emerged in Berlin.

On the other side will be the real opposition: the pound

To be sure, things will not remain entirely calm after Mrs May hits the red button. Every morsel of detail about her negotiating strategy will be a new battlefield. On the one side will be Brexiteer ministers including David Davis, the Brexit secretary; backbench Tories such as Iain Duncan Smith; and, most noisily, tabloid newspapers like the *Daily Mail*. These voices will militate aggressively for a rapid and total break from the union.

On the other side will be the real opposition: the pound. As the likelihood of Britain's departure from the single market grows—a corollary of its uncompromising stance on immigration—the country's economic

2017 IN BRIEF

A new law allows **Wales** to raise its own taxes for the first time in nearly 750 years



Jeremy Cliffe:
Bagehot columnist,
The Economist

A Brexit barometer

John Peet

How to judge whether Britain's EU divorce will be "hard" or "soft"

Throughout 2017, observers will read the runes in Britain and the rest of the European Union to see if they point towards a hard Brexit, meaning walking away from the single market, or a soft one that preserves barrier-free access to that market. Here are eight signs to watch.

The economy. If growth slows or the country goes into recession, the balance tips towards a softer Brexit, which minimises future economic damage. If growth stays robust a hard Brexit becomes more likely, as voters will believe that all those dire warnings of big losses were wrong.

The pound and inflation. If financial markets are jumpy, sterling keeps sliding and inflation picks up, Britons will fret that Brexit may make them poorer, boosting the chances of a soft version. If none of this happens, that raises the likelihood of Britain leaping out of the door.

Big foreign investors. The more who hint, as some carmakers and banks have done, that they might switch future investment elsewhere, the more the government will try to stay in the single market. The more investors remain committed to Britain no matter what, the greater the chance of a hard Brexit.

Migration figures. If net migration from the European Union stays high, a hard Brexit that emphasises controlling it becomes likelier. If



net migration falls sharply, the odds of a soft Brexit rise as economic concerns gain greater traction.

Westminster turf wars. If David Davis and Liam Fox, the two main pro-Brexit ministers, retain control of the process, the odds of a hard Brexit go up. If Philip Hammond at the Treasury plays a bigger role, that makes a soft Brexit more likely. The same is true if Parliament gains more say over the Brexit terms, as most MPs backed the Remain side and want to stay in the single market.

Brussels turf wars. If the negotiations are in the hands of the European Commission, the risk of a hard Brexit rises as it has a tougher stance on the four freedoms in the single market. If the European Council (and national governments) have more say, the chances of a soft Brexit rise, as they understand bet-

ter the political pressures on their British counterpart.

European politics. Elections loom in 2017 in the Netherlands, France, Germany and (probably) Italy, among others. If they produce more hardline or more fiercely nationalist governments, that will make it more difficult to negotiate a soft Brexit. If most current leaders are re-elected, it will become slightly easier.

Public opinion. A referendum is a snapshot. If Britain's economy, for the first time in years, does less well than the euro zone, and if numbers of migrants from the EU fall, public opinion may shift. Not only will that make a soft Brexit more likely, it will increase calls for a second referendum—which might conceivably mean that Brexit never actually happens. ■

John Peet: political editor, *The Economist*

▶ prospects will decline. Sterling will struggle to find a floor, inflation will start to hurt, growth will fall below that of the euro zone and investment will slow. Businesses will raise their voices, making common cause with pro-European MPs, the Treasury (in the person of Philip Hammond, the chancellor of the exchequer) and a newly thrusting, liberal wing of the Tory party (led by George Osborne, his predecessor).

The tension between these two armies will grow. Some MPs will try, with limited success, to use the Article 50 debate to shape Mrs May's negotiating position. A summer vote on the "Great Repeal Bill", formally revoking the legislation that took Britain into the European club in 1973 (but also incorporating all current EU legislation into British law), will be another showdown.

But the real conflict will begin at the end of year. Once properly under way in the autumn, the negotiation will divide into two halves. The first, simpler one will concern the basic divorce settlement: the process by which Britain and the rest of the EU divide up the union's institutions and pots of cash; and by which cross-border procedures and migrant populations are

regularised. The second, trickier one will concern the new relationship between the two sides (which may end up resembling Canada's free-trade deal with the EU). But this stands little chance of being sealed by early 2019, so by the end of 2017 the British will feel increasing pressure to do an interim deal covering the period between Brexit and that new, permanent settlement.

Fog in the Channel

Around this point negotiations may well hit deadlock, as Britain demands a temporary arrangement keeping it in the single market without full free movement, and its European partners cleave to their insistence that there can be no EU deal better than full membership. In Britain the role of the European Parliament and its veto over the country's final settlement will become better understood. Brexit proper—the crashing flourish with which Britain quits the club—will play out in 2018 and 2019. But by the end of 2017, with talks struggling to advance and the clock ticking down, it will dawn on Britons that their hand is not as strong as many had once assumed. ■

2017 IN BRIEF

England and Wales celebrate the 50th anniversary of the decriminalisation of homosexuality



Unopposed

Jeremy Cliffe

The Labour Party will drift into irrelevance

For the Labour Party, 2017 began on September 24th 2016, when members and supporters re-elected Jeremy Corbyn as leader after his first abysmal year in the post. The vote confirmed his impunity, for now.

Eruptions will still happen: more scandals over anti-Semitism and far-left entryism. At local elections in May Labour will win the new “metro mayor” posts in Liverpool and Manchester, but will fail in the West Midlands and will lose seats elsewhere, especially in Scotland. Many of Mr Corbyn’s parliamentary opponents will simply focus on their constituencies, nervous of being kicked out when new boundaries are introduced

(revised proposals will materialise in November 2017).

Mr Corbyn will say and do the bare minimum to help Sir Keir Starmer, his shadow Brexit secretary—who along with Sadiq Khan, London’s mayor, will consolidate his status as a vessel for moderates’ hopes. Instead Labour’s leader will focus on internal battles: between his most hardline allies and younger, more nuanced lefties like Clive Lewis, the shadow business secretary; between Unite, Labour’s largest affiliated union, and the more Corbyn-sceptic GMB; between different factions on Labour’s executive, as he tries to rewrite party rules to give members—his ultimate power base—more say.

The result will be something like a one-party state. The Conservative left, the Scottish Nationalists and the Liberal Democrats will try to hold Theresa May and her government to account. But with the main opposition party in such an introspective funk, they will struggle. Britain will be the poorer for it. ■

Jeremy Cliffe:
Bagehot columnist,
The Economist

The age of the train

Charles Read

Construction starts on Britain’s first mainline railway since Victorian times

A century ago, Britain led the way on transport. Tarmacked roads, the train and the jet airliner were all British inventions. But since then it has fallen behind. Politicians have dithered about where to put basic infrastructure. No new runways have been built in the booming south-east since the second world war. Britain’s railways are decades behind the rest of Europe. Apart from the Channel Tunnel link, the country has yet to build a high-speed line. And its clogged roads need at least £12bn (\$14.8bn) to repair them to a good condition.

In 2017 Britain will begin to catch up. Construction will start on the first phase of HS2, a high-speed railway from London to Birmingham and the north, the country’s first new mainline railway since the 1890s. While trains on most of Britain’s mainlines chug along at just 125mph (200kph), trains on HS2 will go at more than 250mph. But construction will be slow and expensive. The first phase, going only as far as the West Midlands, will cost over £28bn and is scheduled to open in 2026.

It is just one of a catalogue of infrastructure projects Britain’s new government wants to get on with. In 2016, after some dithering, Theresa May gave the green light to Hinkley Point, an £18bn nuclear-power plant built with French technology and Chinese investment. In October 2016

she gave the go ahead to a plan to expand Heathrow, though Parliament will vote on this only in winter 2017, prolonging more than 70 years of official procrastination over where to build a new runway in south-east England. Work has begun on the Thames Tideway Tunnel, a £4.2bn super-sewer under London. And the Elizabeth Line (or Crossrail), a £15bn underground railway that will stretch 60 miles across London and its satellite towns, will open in 2018.

Plenty more projects, still in the planning phase, sit in the government’s in-

But the government’s new-found enthusiasm for grand projects needs to be met with more cash. Between 2010 and 2016 the Department for Transport’s budget was cut by 13.4% in real terms, hitting construction and maintenance spending hard. Britain’s roads are more clogged, trains are more crowded and the number of buses has fallen in spite of rising demand. In 2016 the World Economic Forum ranked the quality of Britain’s infrastructure 24th in the world, lower than America’s, and down from 19th a decade before.

Some money will come from the private sector. Under the previous government’s plans, public investment was projected to fall by half between 2010 and 2020. Although much of the money for the Elizabeth Line and HS2 will come from the Treasury, London’s super-sewer and its new runway at Heathrow will be mostly privately funded.

There are hopes that Brexit will loosen the public purse-strings. Since the vote to leave the EU, political support for more infrastructure spending has grown. It would help soften the economic blow from Brexit and boost long-term growth. The new chancellor, Philip Hammond, has ditched the government’s objective of achieving a surplus by 2020. At least in the short term Brexit, though bad for many British businesses, could give infrastructure a boost. ■

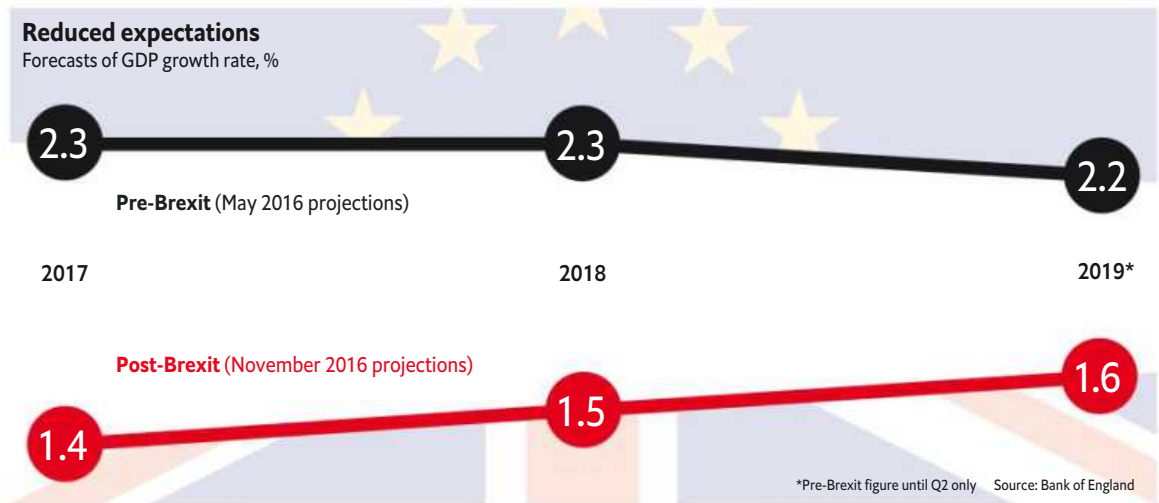
Charles Read: industry correspondent, *The Economist*

Brexit could give infrastructure a boost



A nice line in royal purple

tray. Transport for London, the capital’s devolved transit authority, is lobbying hard for permission and the cash to build Crossrail 2, a new underground service on the same scale as the Elizabeth Line. Other regions are anxious not to be left out. Transport for the North has put forward plans for HS3, a high-speed railway between Manchester and Leeds that would cost £6bn, as well as an 18-mile road tunnel under the Peak District.



Home truths

Callum Williams

Worries about Britain's exit from the European Union will hit growth in 2017

Britain will still be in the European Union at the end of 2017, but the prospect of breaking from its biggest trading partner will crimp economic growth. The latest estimates from the Bank of England suggest that the economy will expand by just 1.4% in 2017, down from the 2.3% it expected the month before the vote in June 2016. (The Economist Intelligence Unit expects GDP to grow by 0.6%.) Britons' pay-packets, already worth 4% less for full-timers than before 2008, may get lighter still, as a weak pound drives up inflation.

Consumer spending is the engine of Britain's economy, accounting for more than 60% of GDP. In the months following the referendum, retail sales were healthy; new-car registrations also held up well. This picture will not change dramatically in 2017. Some people may be more reluctant to open their wallets if there are worrying headlines about the Brexit negotiations. But most British voters appeared to want Brexit, so in 2017 they should be happy shoppers.

Most economists instead expect that the downturn will be caused largely by a drop in investment spending. No one knows what Britain's future trading relationship with the EU will look like. Carmakers, for instance, worry that any vehicles they manufacture in Britain may soon be subject to a 10% tariff to enter the EU. Banks fret that they will lose the ability to offer their services to EU-based customers. With such uncertainty, businesspeople will hold back from expanding their operations. The evidence suggests that since the referendum investment spending has indeed slumped.

This hesitancy will have an effect on jobs, too. Since the vote, the number of advertised low-paid and contract positions has grown, as employers seek to plug gaps without committing to permanent hires. The Bank of England's estimates suggest that by the third quarter of 2017 unemployment will be 0.5 percentage points higher than it would otherwise have been.

Never fear, say the Brexiteers. With the pound

having lost more than 15% of its value since the referendum, British exports will soar, they insist. Recent surveys of manufacturing firms have suggested that foreign buyers are showing more interest in British-made goods. Yet there will be no export boom in 2017. A high proportion of Britain's exports are made up of imports: carmakers, for instance, buy in gadgets from abroad to put on the dashboard. Moreover, British exports compete mainly on "non-price" factors, such as product quality, which makes them insensitive to currency fluctuations. The historical evidence is not encouraging: in 2008-09 sterling fell by a similar amount, but net exports barely improved.

The British economy will rely on the Treasury and the Bank of England to keep growth in positive territory. Since the vote, the bank has cut the base rate of interest from 0.5% to 0.25%, and it has devised "macroprudential" tools to ensure that lower rates are passed on to the real economy. The bank will not put interest rates into negative territory in 2017, given the risk that would present to financial stability. But there is little chance of an interest-rate rise, as would have been highly likely had there been a vote to Remain.

With the bank's hands tied, the government must step in. Philip Hammond, the chancellor, has softened the fiscal stance of his predecessor, which will help growth a bit. But his room for manoeuvre is constrained. As the economy slows, he will worry that tax revenues will suffer. Britain's budget deficit is about 4% of GDP; Mr Hammond cannot let it rise by much.

No recession, no worries?

If Britain avoids a recession in 2017, some commentators will argue that the worries surrounding Brexit were overblown. Such reasoning is confused. Efforts by the central bank and the government to support growth are not costless: ultra-loose monetary policy damages pension funds and the extra government debt must eventually be repaid. More important, most pre-referendum forecasts focused on what would happen in the event of Brexit—which is still years away. The British economy will not crumble in 2017; but that does not mean that a vote for Brexit was a good idea. ■

2017 IN BRIEF

Jane Austen appears on £10 notes from the summer, replacing Charles Darwin



The end of Brent

Henry Tricks *ABERDEEN*

A legendary oilfield is about to bow out

Sometime around May 2017, one of the world's biggest ships will pull up alongside an oil rig in treacherous North Sea waters 320 miles (500km) from the Scottish port of Aberdeen, and conduct the biggest weight-lifting exercise ever done at sea. It will raise the 24,000-tonne "topside" of the Brent Delta platform where, since the 1970s, helicopter-shuttled roustabouts have lived and worked, and ship it to the port of Hartlepool, where it will be turned into scrap. Hardened oilmen have been known to weep on such occasions.

The feat will be momentous. Royal Dutch Shell's Brent Delta is one of four platforms (the others are Alpha, Bravo and Charlie) on one of the world's great oilfields. Only Charlie continues to produce. In its heyday in the 1980s, Shell pumped 500,000 barrels a day of crude out of Brent, providing enough energy to power half of Britain's households. In total it has lined the Treasury's coffers with about £20bn (\$24.6bn) of tax revenues. Its platforms, reaching the height of the Eiffel Tower and the weight of the Empire State Building, were engineering marvels, providing lessons in offshore technology that travelled the world. The intricate Brent system of wells and pipelines has given its name to the world's most widely traded crude.

The removal of the platform will take place on the 40th anniversary of the first oil produced from Brent—remarkable longevity, considering that when it started the oil was expected to last barely half as long. But the death knell is ringing for platforms of a similar vintage around the world, too. The discovery of the North Sea's Forties and Brent fields came shortly before the 1973 Arab oil embargo drove oil prices through the roof and set off a scramble for new discoveries. The prolific offshore platforms of that era are now reaching the end of their lives in the Gulf of Mexico, Brunei, Malaysia and elsewhere. They will borrow from Brent Delta's dismantling experience. "We will take lessons from here around the world," says Alistair Hope, Shell's head of the decommissioning project in Aberdeen.

Decommissioning is a double psychological blow because it comes just as low oil prices (expected to re-

main depressed in 2017) throw the future of the North Sea oil industry in doubt. Many mature fields, able to limp along thanks to rocketing oil prices until 2014, now face a moment of reckoning. New ones are ever harder to find. Alexander Kemp, professor of petroleum economics at the University of Aberdeen Business School, says the average size of new discoveries in the area has fallen to 20m barrels of oil equivalent, from 500m in the 1970s. Such small fields are hard to make money from at less than \$50 a barrel. Removing the platforms, says one industry insider, is the last straw for an oilman. "Their life is spent looking for oil. Decommissioning is the Antichrist."

Shell needs to overcome some final hurdles before the process goes ahead. Its decommissioning plans need

the all-clear from the British government, and the OSPAR convention, which has sought to stop asset disposals in the north-east Atlantic since Shell's frustrated attempt to sink the Brent Spar storage facility in 1995. The oil company believes it has learned from that experience. It says it has engaged extensively with charities such as Greenpeace, which led opposition to the offshore disposal of Brent Spar, to avoid similar damage to its reputation. It argues that it has no choice but to abandon the ballast-filled legs, otherwise known as gravity base structures, and giant storage wells that sit on the seabed. They are so huge that moving them would cause more environmental damage than leaving them where they are, Shell argues.

The Oil and Gas Authority, Britain's Aberdeen-based regulator, is seeking to ensure that the dismantling of the Brent platforms does not disrupt the critical pipeline network underneath, creating a "domino effect" of stranded wells that dooms other parts of the North Sea. In many ways the end of Brent is as much of an engineering conundrum as its beginning. ■

Just possibly...

- The Scottish National Party gets a second referendum on **Scottish independence** in exchange for abstaining on a crucial Brexit vote.
- A new **centre party** is formed, attempting to fill the political void left by Brexiting Tories and hard-left Labour.
- Noel and Liam Gallagher bury the hatchet as Oasis headlines at **Glastonbury Festival**, ending an eight-year split.

2017 IN BRIEF

A new **BBC charter** comes into force. Oversight is handed to Ofcom, the telecoms regulator, and the salaries of staff earning over £150,000 (\$185,000) in 2016 are made public



Delta, prepare for lift-off

Henry Tricks:
energy and
commodities editor,
The Economist

Maybe it's because I'm a Londoner

As mayor of one of just a handful of truly global cities, I've seen firsthand that big cities are assuming an even greater role in our globalised world. From London to New York, Paris to Beijing, cities link together to form the nervous system of our global economy, dominating business, trade and enterprise. They account for the vast majority of investment and innovation and are at the forefront of everything from science to culture. If the 19th century was defined by empires, and the 20th by nation-states, the 21st century will be remembered for the rise of cities—and the social, economic and environmental progress they help to unlock.

The dynamism of cities stands in stark contrast to the increasingly dysfunctional character of many national governments, which too often seem gripped by paralysis. In many cases, nation-states have proved ill-equipped to deal with the economic challenges of our time. They appear powerless in the face of globalisation, unable to respond to the needs of citizens or big businesses, which can relocate overseas at the drop of a hat.

Many nation-states have become too centralised to govern effectively. Whether it's the economy, housing, transport or energy, few policy areas require a one-size-fits-all national solution. In countries where government is over-centralised, it takes too long to make decisions that are of paramount national importance. Cities are more nimble, more attuned to the concerns of their citizens and able to respond quicker to their needs.

In a world of fast-paced, relentless change, cities can cope better with digital disruption, turning technological upheavals to their advantage. Cities are also more resilient to economic shocks, as they bounce back faster. And in great cities like London, we've been able to show that we'll always remain open for business and new talent, irrespective of the national backdrop.

Our major cities are increasingly driving modern economics, and we have much to gain from cities working together to address a host of common challenges. In every area, from stimulating economic growth and financing new infrastructure to tackling air quality, mobilising investment in clean energy sources and protecting the natural environment, cities are leading the way and leaving central governments lagging behind. And in a world in which people of different ethnicities, faiths, backgrounds and nationalities are living side-by-side more and more,

cities are pioneering new ways to make the most of our diversity, promoting community cohesion and encouraging social integration.

By collaborating ever more closely and sharing best practices, our cities can make significant progress on tackling all the pressing issues we face. That's why, since taking office, I have made building relationships with other cities, such as Paris, New York, Montreal and Chicago, a priority. I want to learn about what does and doesn't work in these great cities so I can apply the best ideas for the benefit of all Londoners.

But if British cities, and others around the world, are going to fulfil their potential, drive growth and reform over the decades ahead, then they need more control over their own destiny. Currently, London's government controls only 7% of all the funds raised in the capital, compared with 50% in New York and 70% in Hong Kong.

Giving London and other big cities more autonomy will not only help unleash our creativity, but will deliver greater innovation and growth too. This should be a major global trend in 2017 and beyond. Cities should get more control over the money that is spent on things like skills, housing, transport, health and education.

America's federal system has empowered cities and states for decades. This has proved highly successful in nurturing growth and spurring progress. London's population is the same size as that of Wales and Scotland combined, but we have far less control over how the capital is run and fewer levers at our disposal to effect meaningful change.

Taking back control

The need for cities to have more control has been made all the more urgent by Brexit. London is the engine of our national economy, and while it is right that the British government seeks to spread prosperity across the country, it needs to realise this is not a zero-sum game. Britain succeeds when London succeeds. The wealth generated in our capital spreads far and wide. It is in Britain's interest to have greater devolution to London.

In addition to maximising the benefits globalisation brings, if national governments around the world are serious about helping those left behind as a result, they need to acknowledge the pivotal role that cities will play in creating fairer and more prosperous societies in the 21st century. We need the tools required to maximise that growth, and ensure it is inclusive and available to all. ■



Cities are increasingly shaping the future and should get more control over the money they spend, argues **Sadiq Khan**, mayor of London

It is in Britain's interest to have greater devolution to London



As artists, activists, entrepreneurs and inventors, young people are shaping the future in new and powerful ways. We invited a select few, all born since 1985, to give their predictions for 2017 and beyond

Fourteen on '17:

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Sam Altman: president, Y Combinator, and co-chairman, OpenAI

SAN FRANCISCO

Building the future

The next century should be pretty incredible. We are likely to develop machine intelligence that exceeds human capability. We will probably engineer biology to create new life forms. We might eliminate most diseases. The cost of energy may drop by an order of magnitude, and we will set out on our path off Earth to spread among the stars.

A century is the blink of an eye in human history, and an eternity compared with the timescales humans usually plan for. These will be great but complex transitions, and they are not without risk. **In 2017 we should start thinking seriously about how we reach this incredible future.**

At Y Combinator we fund innovation. Startups are excellent vehicles for delivering new technology, so we try to help as many get started as we can—more than 1,300 so far, worth more than \$75bn in aggregate. I think 2017 will be better than ever. More people are starting companies, the ideas seem to be improving and the problems tackled are increasingly important.

We also fund basic research—not all new ideas can or should be developed by startups. So far, this includes OpenAI (a non-profit to develop safe AI systems with human-level intelligence), and research on basic income, new cities and the future of education.

Our efforts are, of course, a very small part of what we need to do as a species. We must figure out how to direct our resources towards solving our most important problems and make the future great for everyone.

It sounds far off and it will take decades to unfold. But technology accelerates at an exponential rate. I'm optimistic we'll make visible progress faster than most people think.



Siyanda Mohutsiwa: blogger and student

IOWA CITY

The tweetstorm is coming

I predict that 2017 will be the year of the Social PanAfricanist: activists who use the internet and social media to co-operate across borders to challenge, and even topple, failing policies and regimes. In 2016 we have already witnessed an unprecedented rise in online movements that sought to take on oppressive systems, give witness to human-rights violations and spread awareness about issues affecting ordinary Africans. These will go stratospheric in 2017 for several reasons.

South Africa's #feesmustfall movement erupted in 2015-16 as universities and the government recommended big tuition-fee hikes. In 2017, when these changes come into force, South Africans will use all the online tools available to challenge police brutality and educational exclusion.

In Zimbabwe, #thisflag was, in 2016, the rallying call for people to vent their frustrations with the corrupt and kleptocratic regime of the 92-year-old "president for life", Robert Mugabe. With presidential elections due in early 2018, much of 2017 will be occupied by battles within the government and opposition parties. Online activists will have a key role in holding both groups to account.

Numerous other African countries will hold elections in 2017, and as technology spreads—around a third of Africans will have a smartphone in 2017, according to some of the most optimistic estimates—these will be driven as never before by a youthful, tech-savvy voice. In Botswana social media are allowing an otherwise conservative society to voice its opinions on gender politics and our ongoing water crisis.

Many Africans in different countries are taking to the net for political action. It is only a matter of time before these movements link up. From ridiculously high tuition fees to corruption, flawed foreign intervention and failing public services, young Africans are angry. Thus far, regional bureaucracies like the African Union have failed to harness these common grievances to create change. It is time for a less formal and more social means of finding common solutions.

Social PanAfricanism is the answer. With protesters across the continent being met with ever greater violence, it is now clear to young Africans that we can't rely on our own governments. If we are to be rescued, it will be by ourselves. In 2017 online movements will merge and gain strength by sharing resources, strategy and empathy.



Isaac Hernández: lead principal, English National Ballet

LONDON

Dance to the rescue

In 2017 the arts face big challenges, and with them an opportunity to rethink the social value of creative endeavour. The arts have been a common ground for interaction between different cultures for centuries. As the world enters a new era of division, it is imperative that we recognise that **the arts can be an unparalleled tool for social integration and personal development.**

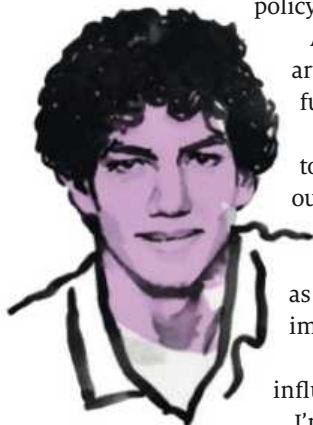
The Brexit vote has created an atmosphere of uncertainty. The biggest questions ahead concern the free movement of talent, access to EU cultural funding and cross-border collaboration on cultural policy. These issues hold the power to reshape our cultural life, in Britain and across the continent.

Another major issue on a global scale needs our attention: the lack of free, high-quality arts education. We need to find a way to provide universal access to creative learning as a fundamental human right, especially for children and young adults.

I'm driven by the need to rectify this collective failing, and conscious of my responsibility to create and promote projects with social value. If as artists we reflect more keenly on what our work can do for others, this will lead us into a more pragmatic and collaborative future.

The world is changing rapidly. All the different artistic fields need to work together to create the environment needed to achieve our full creative potential. In this objective, as in the future of the arts more broadly, exponential technological change will be hugely important.

Technology has changed the way we see and interact with the world. We are already being influenced by this in the arts, and we are moving towards a new dimension in artistic creation. I'm with Dostoyevsky. I dare to believe that, one day, artistic beauty will save the world.



Daisy Ridley: actor

LOS ANGELES

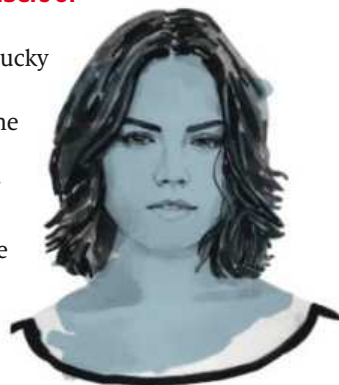
Lights, camera, time for action

There has been a lot of discussion about women in film recently, and although it is glaringly obvious that the industry still has a problem with gender equality and diversity, I've been so fortunate that my experience has been very different.

What I have noticed is the lack of female talent in technical roles on set. Although film sets have a wonderful mix of brilliant men and women behind the camera—in costume, hair and make-up departments in particular—in **areas like cinematography there are incredibly limited numbers of women**. In fact, in 2015, only 3% of cinematographers on the top 100 films were women.

As a young woman starting my film career, I know I'm fortunate to be doing so now. I'm lucky to be surrounded by brilliant women, both personally and professionally, and to be part of a franchise that continues to break down barriers of gender and race in front of the camera. The fight for gender equality rages on but things are changing, little by little.

The Walt Disney Company has, for example, put some great incentives in place to bolster equality and diversity behind the camera. The British Film Institute is encouraging young, diverse talent with grants and training schemes, and independent production companies are setting up their own programmes to help create a more diverse industry. I hope that, in 2017, those young women who may once have been dissuaded from working in (up until this point) typically "male" positions are encouraged to train and take apprenticeships in these brilliant roles.



Hani Al-Moulia: photographer and student

REGINA, SASKATCHEWAN

A year without frames

Virtual reality (VR) twinned with 360° cameras will be the most significant trend in 2017 in media and education, offering us a whole new way of seeing. These developments are particularly meaningful for me, as a photojournalist and a former refugee from Syria.

Nowadays, many people boast high-powered cameras on their smart devices. But how about a camera that can let you capture everything around you with one click? In fact, 360° cameras—formerly just used for expensive and complicated initiatives like Google's Street View—are getting more and more popular because they are easy to use and incredibly powerful at the same time.

Activists and artists are jumping at the ability to save as many distinct frames as a traditional photographer, while also being able to immerse the viewer in the scene via a VR headset. And for the more snap-happy, who like to save their memories or post them on social media, 360° cameras will let them freeze and remember everything around them at any one moment in space and time.

As with the advent of digital cameras, switching to 360° cameras will be challenging for many professional photographers. The hefty price tag, at least to begin with, will deter many amateurs. Few tech companies offer products that can store the type of file produced by 360° cameras, and most will need professional instruction to get the best out of the 360° view.

But imagine how these kinds of photos and videos might change the world we are living in. For instance, I hope to return to the camp where I used to live to shoot a VR film. I want to work with refugees to show the world what living in a camp looks like, from all angles. In the process, we might discover less obvious but very important needs that call for investment: not just food, water and shelter, but also education and training. This unfiltered view, direct from refugees themselves, could inspire people elsewhere to take a greater interest in their plight, especially if we are able to screen the project at the United Nations in New York.

I strongly believe that these new media technologies will inspire artists and journalists as well. I have started my own project teaching photography to those, especially refugees, who do not have access to education. My aim is to give them a tool that can fill their empty calendars with the hope of a better life.

Virtual reality and 360° cameras have the potential to give a world saturated with images of suffering and violence a stronger sense of what we are seeing. Maybe, then, we will talk about new technologies and the global problems they reveal in the same breath. Thanks to 360° cameras, we may be hearing about the refugee crisis 365 times a year.



Amani Al-Khatahtbeh: founder, muslimgirl.com

NEW YORK

Battle of the brands

For better and for worse, 2017 will be the year in which diversity becomes a commodity. Eruptions of public activism on social media over the Black Lives Matter movement and the refugee crisis have already produced a new form of racial capitalism. Brands and businesses, desperate to capture the attention (and bank balances) of the “woke” generation, have rushed to showcase their inclusivity. Spotify curated its own Black Lives Matter playlist and Facebook and Google showed their solidarity; beauty companies like Lush and L’Oréal donated products and financial support to refugees in Europe and the Middle East. In 2015 brands like Ben & Jerry’s and American Airlines were quick to trumpet their support for the Supreme Court’s legalisation of same-sex marriage.

There is a powerful opportunity for brands and companies to promote diversity. But I fear that many will get stuck on a superficial level to satisfy customers’ consciences. This would not only be a failure to use their influence fully, but it would also risk exploiting the marginalised even further.

Now that we’re no longer fooled so easily by brand activism, 2017 will be the year in which we can ask hard questions of the diversity “product” that companies are selling us.

Which brands are actually increasing minority representation within their ranks—among their managers, their newsrooms, their fashion lines? Which are actually empowering marginalised people to speak and participate?

Brands are already shying away from taking a stand amid an increasingly polarised political climate. When in 2016 Donald Trump junior endorsed a meme comparing refugees to Skittles, Wrigley, their manufacturer, responded only limply to media enquiries—“Skittles are candy. Refugees are people. We don’t feel it’s an appropriate analogy”—and refrained from comment for fear of it being “misinterpreted as marketing”.

Luckily, we don’t have to wait for businesses to do it for us. If mainstream representations of diversity are lacking, innovative use of social media will carve out alternative online spaces for minority communities. The internet has democratised media, giving people with no resources but the keyboards at their fingertips a fighting chance against major corporations. In 2017 the public will reward companies that pay more than lip service to diversity, and steer clear of those that don’t.



Leticia Gasca: executive director, the Failure Institute, and co-founder, Fuckup Nights

MEXICO CITY

Artificial Intelligence’s Galileo moment

In 2017 Artificial Intelligence (AI) will redefine the possibilities of research and academia.

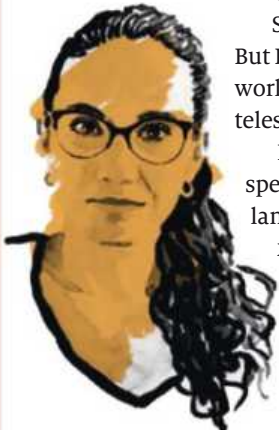
Some doomsayers assume that most human employees will soon be replaced by smart machines. But I think that **AI techniques will make many jobs better and more innovative.** Bringing AI to the world of academic research, for example, will be akin to how Galileo’s creation of the astronomical telescope in 1609 radically advanced the study of cosmology.

For the Failure Institute (the research arm of the Fuckup Nights movement) AI will improve the speed and level of complexity at which we study how businesses and ideas fail. Combining natural-language processing and AI will allow us to ask a helpful robot about the chances of failing in business x in neighbourhood y. Soon we will be able to generate a map showing in real time where firms are being closed around the world and why.

The use of machine learning can help us translate almost instantaneously the 200-plus cases of business failure we gather each month from all over the world into data and trends. With this information we can help governments, the private sector and academia make more informed judgments and decisions.

The quantity of the world’s data doubles every two years, and the cost of storing those data falls at approximately the same rate. This abundance of information raises the question-answering precision of AI to a whole new level.

For example, imagine you work in an environmental think-tank. With the advent of big data and AI,



you will soon have a system that can read from cover to cover all the papers on sustainability published all over the world and digest their content, ready to answer any questions you ask it.

AI already has the ability to “think” and respond to questions. It will soon be an unprecedented tool that magnifies human intelligence and allows us to advance as a species, eliminating hunger, curing disease and saving our planet from environmental catastrophe.

But as with any tool, AI can also be used for nefarious purposes: terrorism, espionage and war. In 2017 citizens will demand that policymakers take more seriously the need to inject transparency into the algorithms used to process and make decisions around citizens’ data. As with the discoveries of Galileo, expect new battles between the authorities and the public over how widely the insights and benefits of this new scientific breakthrough are shared.

Amanda Coletta: editorial assistant, *The World in 2017*

LONDON

The plunder games

“I’m Amanda, and I’m interested in reporting on the politics and governance of sport.” Mystified faces stared back at me on my first day of graduate school in 2013. But two years later, Swiss police burst into a hotel in a dawn raid, emerging soon after to stuff FIFA officials into unmarked squad cars. Later, details of a staggering state-sponsored doping plot in Russia injected a heavy dose of intrigue into the Rio Olympics. Sport is as undeniably political as ever.

In 2017 what happens off the field of play will prove more fascinating than what takes place on it. Sports governing bodies have long defended vigorously the “autonomy of sport”—its need to be insulated from government meddling. But this has provided a cloak for all kinds of dodgy dealings. Determining the balance between self-regulation and public intrusion will be a crucial challenge in 2017.

There will be no Olympics, but the International Olympic Committee (IOC) will have plenty on its plate. Its Extraordinary World Conference on Doping will have to be truly extraordinary to eradicate it. In September it will announce the host for the 2024 games: Los Angeles, Budapest or Paris. With sport mega-events increasingly the playthings of illiberal regimes, put your money on Budapest.

In the same vein, Turkmenistan’s preparations for the 2017 Asian Indoor and Martial Arts games have involved the bulldozing of 10,000 homes and the eviction of up to 50,000 people. The country’s president already makes hay with his supposed sporting skill: a keen horseman, he has recently been honoured with the title “The People’s Horse Breeder” and a giant equestrian statue in the country’s capital.

Legal judgments will be less spectacular but more game-changing. Landmark concussion lawsuits filed by players in the National Hockey League (NHL) and National Football League will meander their way through American courts. The trial for those collared in the FIFA corruption probe will begin in November. The European Commission will decide whether FIFA’s transfer system is legal. And the International Association of Athletics Federations hopes to reinstate controversial regulations which, up until 2015, banned women with high levels of naturally occurring testosterone from competing.

The NHL will decide in early 2017 whether its players will be allowed to participate in the 2018 winter Olympics in Pyeongchang, South Korea. The league and the IOC are facing off over who should pay for the players’ travel and insurance costs. The NHL has always loathed shutting down its season to accommodate the Olympics—and it’s not like the league’s commissioner, Gary Bettman, to compromise.

A “no” would serve as a sober reminder that those overseeing sport are mostly rich, white men seeking to get richer, often at the expense of players and fans. In 2017 the global revolt against political elites could find more worthwhile targets in the world of sports.



Shivon Zilis: partner and founding member, Bloomberg Beta

SAN FRANCISCO

Learning to love the bots

Artificial intelligence (AI) has spread its wings: from Tesla’s self-navigating cars, to Google’s DeepMind defeating the world champion at Go (a board game more complicated than chess), to IBM’s Watson diagnosing diseases. Software is moving beyond executing black-and-white instructions to making complex and often subjective decisions. In 2017 society will begin to trust machines in much the

same way that we trust people.

AI introduces a kind of unpredictability not found in traditional software. In solving complex tasks, it is too difficult to build rules to cover every eventuality. Instead, AI systems learn from experience. The decisions they make evolve over time (as with Google's search results) and it's often impossible for a human being to explain precisely why an AI produced the result it did: both a four-year-old child and an AI image-analysis program can correctly identify a dog in a photo but neither can tell you exactly how they know they are right.

This unpredictability is fine for separating photos of cats and dogs. The challenge arises when AI recommends one form of surgery over another or drives a car at full speed onto a crowded highway.

If ai can be unpredictable, why trust it at all? The value these programs bring is too great to ignore. Almost \$5 billion of private investment went into AI companies in 2015, not to mention the internal research and development of companies like Microsoft, Amazon, Facebook, Google, Bloomberg (in whose venture-capital fund I am a partner) and Uber. AI will not only help to save lives on the road and in hospitals, it will also allow businesses to make better decisions. Business leaders already trust people to be the decision-makers in these markets even though these people, too, are sometimes unpredictable and inscrutable. Society will start to build a "machine trust" in the same way.

But rather than blindly having faith in AI, society will evaluate it over time and gradually give it a longer leash (just as bosses trial new employees). Self-driving cars will go through the equivalent of driving schools and receive permits when they pass; computer radiologists will serve as interns, learning from experts, and receive more responsibility as they make more accurate diagnoses.

The creators of these systems will try to instil ethics, too. AI systems will make mistakes, just as people do, and society will have to decide when to forgive and when to punish. But where AI begins to make better decisions than humans it will earn their trust—and flourish.



Tor Garnett: detective chief inspector, Metropolitan Police, and co-founder, Police Now

LONDON

Blue-line thinking

"The test of police efficiency", said Sir Robert Peel, who founded the Metropolitan Police in 1829, "is the absence of crime and disorder, not the visible evidence of police action in dealing with it." But in 2017, as people's sense of security is informed more by social-media feeds and feelings than by facts, public confidence in policing will increasingly be the key measure of success. So **how do we successfully police people's perceptions of the police?**

The answer, in my view, is by policing our own perceptions—starting with our personal ones. Unchecked unconscious bias is exacerbated by working in communities where there is a race-poverty link and a poverty-crime link. Our fast-thinking human brains can understandably, but wrongly, conflate these into a race-crime link. This is the greatest threat we face in sustaining compassion, connection and credibility between officers and the public.

Second, we must police our institutional instincts: our leader-follower culture needs to be turned on its head. Our command-and-control leadership style might be crucial during a crisis but it is failing to deliver both the radical innovation and the continuous improvement that are needed to manage increasingly complex security risks and criminal threats. Moving away from the "leader as hero" style to a "team of teams" approach, as many lean manufacturing businesses have done, will be difficult but vital to our success.

Third, we need to police our professional prejudices. Are bigger budgets and more police officers a good thing—or do they represent money and resources taken away from the mental-health and education provisions that might prevent problems in the first place? Is the "job for life" model the best one? Does it provide the right mix of skills, experience and motivation in the modern world? Programmes such as Police Now (built on the learning acquired by Teach First, a graduate scheme for teachers) might demonstrate that more flexible entry-and-exit routes can produce real benefits for both the general population and the profession.

If we can meet these three criteria, I'm confident that we can do the public proud—and perhaps meet the high standards set by Peel himself.



Joshua Wong: activist and secretary-general, Demosistō

HONG KONG

Challenging China

I have grown up in Hong Kong's post-handover period, during which China has undoubtedly become a great power. I have thrown myself into the democracy movement here. And I have seen how the one-party dictatorship of **the Chinese Communist Party packages its autocratic ideology as “the China dream”, using its power and wealth to violate universal values and suppress dissent.** Its behaviour truly chills my heart.

When I was young, the government told me that “one country, two systems” would guarantee Hong Kong's prosperity and stability. It was only later that I realised the “mainlandisation” of Hong Kong is becoming ever more serious: traditional Chinese characters and Cantonese are being replaced by simplified characters and *Putonghua* (Standard Mandarin); freedom of the press and assembly is eroding; and China is interfering with business and society. Worst of all, Beijing has continued to violate the Sino-British Joint Declaration. Its repeated refusal to grant genuine universal suffrage to the people of Hong Kong, as promised, was the cause of the Umbrella Movement—a 79-day massive street protest in 2014. Today, Hong Kong is no longer Hong Kong; it is Hong Kong only in name.

Perhaps you think the Chinese Communist Party has nothing to do with you, and that only people directly under China's rule have to worry about it. But whether it is human-rights activists from Taiwan being blocked from entering Hong Kong, or a Swedish citizen who sold books critical of the Chinese communists being abducted to China and held incommunicado, or me being detained illegally by the Thai government for 12 hours after arriving at Bangkok airport and then being sent back to Hong Kong—these incidents, if anything, reflect China's overreach beyond its own borders, extending to South-East Asia and elsewhere around the world.

Given China's influence, I remain worried about the future. Ordinary young people like me who fight for democracy are no longer able to enjoy basic physical security. Values that we yearn for such as human rights, freedom and the rule of law will gradually erode across the world due to the interference of China's government.



Louise O'Neill: author of “Asking for It” (riverrun)

DUBLIN

A feminism for all

As an author of fiction for young adults, I am constantly impressed by teenagers' ability to approach feminism with nuance. **I believe that this sense of nuance is something that distinguishes the next wave of feminism** and I predict it will become even more prevalent in 2017 and beyond.

Nuanced feminists can feel weary about the way in which women's bodies are constantly objectified and still understand the value of sex-positivity and the danger in attempting to police other women's sexuality. They understand that there's a difference between a music video where women are used as props and one where women of colour like Beyoncé, Rihanna or Nicki Minaj are reclaiming their sexual power—and how the latter can be empowering due to the long history of society's hyper-sexualisation of the black female body.

Nuanced feminists can be fearful that sex work contributes to a culture where it's assumed that a woman can be “bought” and also believe that sex workers deserve protection and better employment conditions. They might feel uncomfortable with the idea of abortion but vehemently defend a woman's right to choose. They don't think women who have plastic surgery are “betraying” the sisterhood—they're more interested in discussing an ageist culture in which women feel under pressure to remain eternally youthful.

They refuse to decry women who take selfies as vain, instead exploring the idea that a selfie might be an act of self-love in the face of crushing societal demands that seem determined to make us hate ourselves. They know that there is no “right” way to be a feminist or even to be a woman. Nuanced feminism is inclusive. It is for women of all races and religions, it's for transgender people, it's for men, it's for straight people, gay people and everyone in between.



Tomas del Real: musician*IQUIQUE, CHILE*

The sound of the future

I began making music without much planning. In Iquique, my hometown, reggaeton is very popular, and my music is an echo of my context. In my free time I used to sing, and I recorded myself on a laptop that I'd just bought; I uploaded the videos to social networks, people liked them, and it encouraged me to do things in an increasingly professional way. The music that I make belongs to those people that inspire me. I'm just a normal girl with good ideas, friends, a laptop and Wi-Fi.

Technology has played an important role in adapting sounds, creating new ones and giving us the platforms to be able to spread them. Cultural mixing is now a virus that can't be stopped, and **different influences and connections across borders are changing the way in which we make music today.**

I have been influenced by great musicians that I've come across online who were independently arriving at the same musical feeling: people who make music out of the need to create, and have exactly the same technology in their hands. Artists like the boys from PXXR GVNG (from Spain) were the first people I collaborated with, as well as producers like N.A.A.F.I (Mexico), Deltatron (Peru), Chico Sonido (Los Angeles), and Boris Castro (Chile), and I was helped out by popular DJs like RIP Rosa Pistola (Mexico), DJ Rip Txny (Chile) and Riobamba (New York), among others. Spaces and venues like Hiedrah (Argentina), Traición (Mexico), Versus (Peru) and Perreo 69 (Spain) and many more—all of them have been strong influences on the new Latino sound in the world and brought us together around it.

There are different varieties within the genre. Right now, people are talking about #neoperreo as the new way of making and listening to reggaeton. But reggaeton was born a long time ago, and the sound is one of constant change and evolution.

Reggaeton has known how to transform and adapt itself, becoming the pop music of Latin America and offering a more accurate view of life for real young people. The fantasies of old-style pop music about love and heartbreak have been swapped for something more casual, charged with energy and celebration and leaving moral judgments at the door. This feeling is spreading and it will only get louder in the world's ear. In 2017 I believe that reggaeton will go from being viewed as a sub-culture to being a legitimate genre of its own.

**Boyan Slat:** CEO and founder, The Ocean Cleanup*DELFT, THE NETHERLANDS*

Sea change

Technology is the most potent agent of change. It is an amplifier of our human capabilities. Whereas other change-agents rely on reshuffling the existing building blocks of society, technological innovation creates entirely new ones, expanding our problem-solving toolbox.

Thanks to technology, we have made remarkable progress in the past few decades in many areas, including health, education and material prosperity. Ironically, it is the side-effects of these advances that are now creating the largest challenges of our time, specifically when it comes to the degradation of the environment. **So why not also use the power of technology to take on these challenges and restore the natural balance?**

Big problems require big solutions. However, there currently seems to be a bias towards low-risk/low-reward projects, since we tend to overestimate the consequences of failure.

It wasn't so long ago that high-risk projects were the norm. The 1960s and 1970s readily come to mind: a time when ambitious endeavours like Apollo (the original Moonshot project) or Project Mohole (in which America attempted to drill through the Earth's crust) were commonplace.

Admittedly, many of these efforts were partly a product of geopolitical rivalry during the cold war. I believe we're now beginning a period of similar technological ambition, but in the private sector. This time the common enemy is ourselves—or rather, the way we have put unprecedented stress on the planet through our drive to exploit its resources. Novel modes of transport and innovations in energy generation and storage are just some examples of this new spate of technological creativity.

I predict that this trend will only intensify. And with The Ocean Cleanup's first operational plastic-capturing system scheduled to be deployed in the Pacific Ocean in 2017, I am excited to be part of it.



The world in numbers **Countries**

| | | | | | | |
|---|--|--|---|---|---|--|
| Europe Austria 100 Belgium 100 Bulgaria 100 Croatia 100 Czech Republic 100 Denmark 100 Estonia 100 Finland 100 France 100 Germany 100 Greece 101 Hungary 101 | Ireland 101 Italy 101 Latvia 101 Lithuania 101 Netherlands 101 Norway 101 Poland 101 Portugal 101 Romania 102 Russia 102 Slovakia 102 Slovenia 102 Spain 102 | Sweden 102 Switzerland 102 Turkey 102 Ukraine 102 United Kingdom 102 Asia Australia 103 Bangladesh 103 China 103 Hong Kong 103 India 103 Indonesia 103 | Japan 103 Kazakhstan 103 Malaysia 103 New Zealand 104 Pakistan 104 Philippines 104 Singapore 104 South Korea 104 Sri Lanka 104 Taiwan 104 Thailand 104 Uzbekistan 104 Vietnam 104 | North America Canada 105 Mexico 105 United States 105 Latin America Argentina 105 Bolivia 105 Brazil 105 Chile 105 Colombia 105 Cuba 106 Ecuador 106 | Paraguay 106 Peru 106 Uruguay 106 Venezuela 106 Middle East and Africa Algeria 106 Angola 106 Cameroon 106 Egypt 106 Ethiopia 106 Iran 106 | Iraq 107 Israel 107 Jordan 107 Kenya 107 Lebanon 107 Libya 107 Morocco 107 Nigeria 107 Saudi Arabia 107 South Africa 107 Syria 107 Zimbabwe 107 |
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Top growers

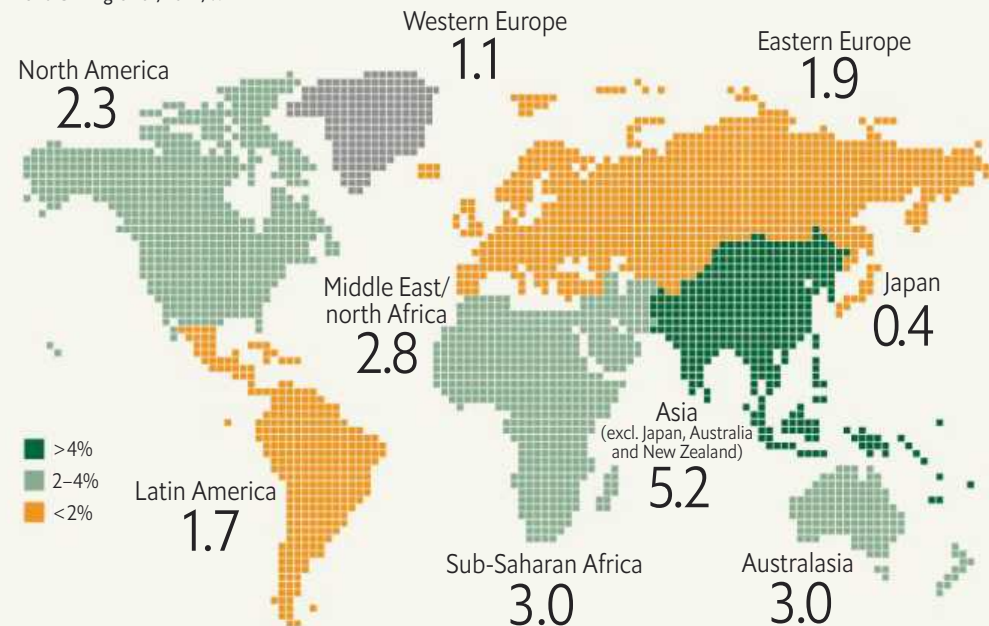
| Rank | Country | GDP growth, % |
|------|---------------|---------------|
| 1 | Yemen | 9.0 |
| 2 | Myanmar | 8.6 |
| 3 | Côte d'Ivoire | 8.3 |
| 4 | Mongolia | 7.8 |
| 5 | Laos | 7.6 |
| 6= | Ghana | 7.5 |
| 6= | India | 7.5 |
| 8 | Cambodia | 7.2 |
| 9= | Bhutan | 6.8 |
| 9= | Djibouti | 6.8 |

Of the world's major economies, India, reaping the benefits of pro-market reforms, is the only one to make the top growers' list in 2017. At the head of the ranking is Yemen, brought to its knees by a regional proxy war but with the potential for a growth spurt if a peace deal is reached in 2017. Myanmar will benefit from its political and economic opening following the settlement between civil and military authorities, while political stability in Côte d'Ivoire will encourage foreign investment. Mongolia will get a boost from a rally in prices for its minerals exports, as will Laos, which will receive an extra kick from infrastructure investment. Djibouti will also gain from ongoing infrastructure upgrades, including a seaport and two airports. Maturing investment projects, this time in oil production, will help Ghana. A similar mix of investment projects and rallying exports will propel the Cambodian economy. Hydropower projects will deliver respectable growth in Bhutan, though not the double-digit expansion the government has promised.

2017 forecasts unless otherwise indicated.
 Inflation: year-on-year annual average.
 Dollar GDPs calculated using 2017 forecasts for dollar exchange rates (GDP at PPP, or purchasing-power parity, shown in brackets). All figures simplified by rounding.
 london@eiu.com

Go figure

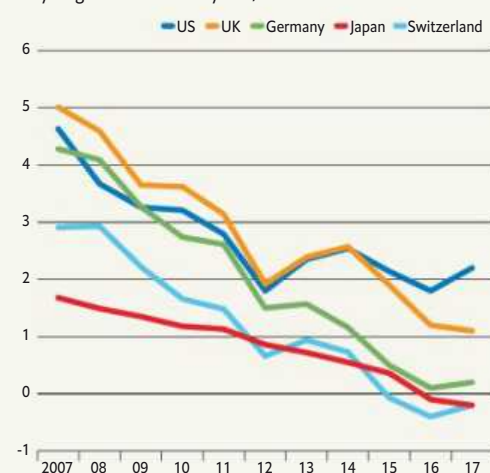
World GDP* growth, 2017, %



* At market exchange rates

Subterranean interest-rate blues

Ten-year government-bond yields, %



Sources: National governments; The Economist Intelligence Unit

Trading down

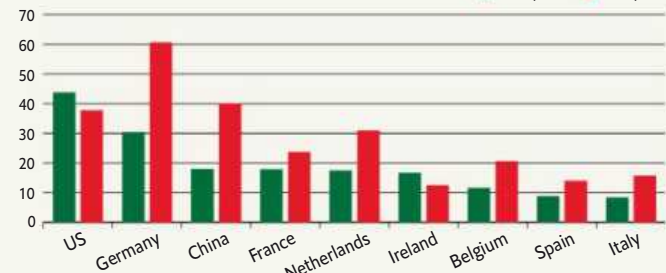
World trade, \$trn



Source: The Economist Intelligence Unit

Europe: Brexit blues

Britain's trade, in 2015, \$bn



Source: IMF Direction of Trade, 2015; merchandise exports and imports only

Europe**Austria**

| | |
|------------------------|--------------------------|
| GDP growth | 1.0% |
| GDP per head | \$45,280 (PPP: \$51,170) |
| Inflation | 1.8% |
| Budget balance (% GDP) | -1.3 |
| Population | 8.6m |

The coalition government of the centre-right Austrian People's Party and the centre-left Social Democratic Party should see out its term, but voters impatient with political skirmishing, rising unemployment and migrant flows will lean towards the far-right Freedom Party (FPÖ). Elections are due in 2018, but may be called earlier. An FPÖ-led coalition should take the prize. The economy will lag Germany's, to which it is closely tethered.

TO WATCH: Cold medals. Austria will host the Special Olympics World Winter Games in March, bringing together 3,000 intellectually disabled athletes from 110 nations.

Belgium

| | |
|------------------------|--------------------------|
| GDP growth | 1.1% |
| GDP per head | \$41,065 (PPP: \$46,160) |
| Inflation | 1.9% |
| Budget balance (% GDP) | -2.4 |
| Population | 11.4m |

A consensus around pro-market economic reforms will keep the centre-right coalition government intact. Policy will focus on improving the public finances, boosting competitiveness and strengthening counter-terrorism after repeated attacks and years of failed efforts by the security services. Tension between Francophones and Flemish speakers will persist, but the state will hold together.

Bulgaria

| | |
|------------------------|-------------------------|
| GDP growth | 3.2% |
| GDP per head | \$7,284 (PPP: \$19,660) |
| Inflation | 1.7% |
| Budget balance (% GDP) | -1.0 |
| Population | 7.0m |

The prime minister, Boiko Borisov, will struggle to manage his minority government, comprising parties from the centre-left to the nationalist right and

reliant on opposition weakness for its survival. The administration will push a pragmatic policy agenda designed to accelerate growth while improving efficiency in public services. The government will tread softly on fiscal tightening after anti-austerity protests brought down a previous Borisov-led government.

Croatia

| | |
|------------------------|--------------------------|
| GDP growth | 2.2% |
| GDP per head | \$11,684 (PPP: \$24,400) |
| Inflation | 0.7% |
| Budget balance (% GDP) | -2.1 |
| Population | 4.2m |

Andrej Plenkovic of the Croatian Democratic Union became prime minister in a new centre-right coalition government after elections in late 2016. The new government appears to be much more stable than its predecessor, with a strong focus on economic policies and little inclination to advance a right-wing nationalist agenda. Consumer confidence will underpin modest growth, but the economy will remain below its 2007-08 peak.

Croatia: closing the gap**Czech Republic**

| | |
|------------------------|--------------------------|
| GDP growth | 2.5% |
| GDP per head | \$18,624 (PPP: \$35,650) |
| Inflation | 1.7% |
| Budget balance (% GDP) | -0.5 |
| Population | 10.6m |

A broadly centrist grand coalition has held power since 2013, and its constituent parties will compete for

supremacy in parliamentary elections scheduled for October 2017. ANO, a centrist party led by a businessman, Andrej Babis, the junior of the two main coalition parties, is topping polls and will be well-placed to lead the next administration, pressing a pro-business and fiscally conservative platform. Hitched to a robust German market, the economic recovery will advance, helped by a car industry in high gear.

Denmark

| | |
|------------------------|--------------------------|
| GDP growth | 1.4% |
| GDP per head | \$53,321 (PPP: \$49,170) |
| Inflation | 1.4% |
| Budget balance (% GDP) | -1.8 |
| Population | 5.7m |

The minority Liberal Party government holds just 34 of 179 parliamentary seats and may not survive 2017, with the Eurosceptic Danish People's Party (DF), boosted by popular discontent with immigration, serving as executioner. The opposition Social Democrats will be the biggest beneficiaries of early elections, but will also have to contend with the DF. To the extent it can implement its own policy agenda, the government will focus on narrowing the budget gap. Growth will rally, but remain tepid.

TO WATCH: Redistribution. Cuts to benefits for asylum-seekers will save the government Dkr1bn (\$148m) by 2020, which will be used to fund tax cuts.

Estonia

| | |
|------------------------|--------------------------|
| GDP growth | 2.6% |
| GDP per head | \$18,763 (PPP: \$30,310) |
| Inflation | 2.3% |
| Budget balance (% GDP) | -0.1 |
| Population | 1.3m |

The country will start the year under new management following the defeat in a confidence vote of the incumbent administration in late 2016. The new government, probably headed by the Centre Party under Juri Ratas, will pursue an agenda based on an open economy and a pro-Western stance. Russia's retaliatory sanctions on EU agricultural exports will weigh on the economy, but growth will be respectable.

TO WATCH: Stand-in. Estonia will take up the EU's rolling presidency for the second half of 2017, occupying the slot vacated by Britain.

Finland

| | |
|------------------------|--------------------------|
| GDP growth | 0.9% |
| GDP per head | \$42,497 (PPP: \$42,810) |
| Inflation | 1.0% |
| Budget balance (% GDP) | -2.5 |
| Population | 5.5m |

The Finns, a Eurosceptic far-right party, has toned down its rhetoric since entering the government coalition in 2015, and the subsequent disenchantment among its supporters could lead to a split, bringing down the

administration. Municipal elections in April 2017 will provide a pointer to voter sentiment. Sluggish European growth and Russian sanctions will cool the economy, which will nevertheless expand modestly.

France

| | |
|------------------------|--------------------------|
| GDP growth | 1.1% |
| GDP per head | \$38,032 (PPP: \$43,270) |
| Inflation | 1.0% |
| Budget balance (% GDP) | -3.0 |
| Population | 64.9m |

The opposition Les Républicains, probably under Alain Juppé, a former prime minister, should form the next government after presidential elections in April, although Nicolas Sarkozy, a former president, may pay him in the primaries. The incumbent Parti Socialiste is deeply unpopular, with a mid-term rightward policy swing compounding discontent on the party's left. The far-right National Front, boosted by terrorism, Brexit and immigration, will do well, but will not make it through the two-round election. Direct and indirect Brexit effects will muzzle the economy.

TO WATCH: Centre stage. The former economy minister, Emmanuel Macron, will contest the presidency at the head of his newly formed centrist En marche! movement, though he won't win.

Germany

| | |
|------------------------|--------------------------|
| GDP growth | 1.3% |
| GDP per head | \$42,281 (PPP: \$49,950) |
| Inflation | 1.3% |
| Budget balance (% GDP) | 0.5 |
| Population | 82.5m |

Angela Merkel will return as chancellor for a fourth term in elections scheduled for October at the latest, despite a dent to her reputation from an unpopular, open-arms migration policy. She will head another grand coalition, but with a reduced majority in the legislature. Her prime task will be preserving the EU despite Britain's departure, while holding tough on Brexit terms to discourage copycats. At home, leftists in the coalition will resist pro-market structural reforms. Economic growth will beat the European average, but lag 2016 levels.

Germany: working economy

Unemployment rate, %



Source: Deutsche Bundesbank

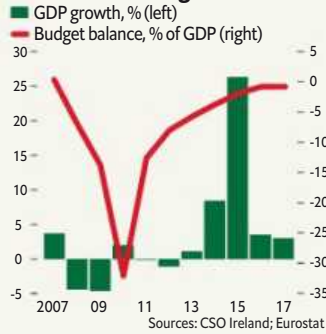
Greece



| | |
|------------------------|--------------------------|
| GDP growth | 1.5% |
| GDP per head | \$18,063 (PPP: \$27,690) |
| Inflation | 0.9% |
| Budget balance (% GDP) | -3.3 |
| Population | 10.9m |

The Syriza/Independent Greeks coalition government has a razor-thin majority in parliament, and unpopular reforms mandated by the terms of the bail-out agreed with the European institutions could cause it to disappear, triggering fresh elections. The centre-right New Democracy party is poised to profit. Despite paring the economy to the quick, anything but a lukewarm recovery remains a remote prospect, and Greece may yet fall out of the euro zone before Britain's departure from the EU has been sealed.

Ireland: balancing act



Italy

| | |
|------------------------|--------------------------|
| GDP growth | 0.9% |
| GDP per head | \$30,616 (PPP: \$38,450) |
| Inflation | 0.5% |
| Budget balance (% GDP) | -2.3 |
| Population | 59.8m |

Matteo Renzi's future as prime minister hangs on the fate of a flagship legislative-reform package, scheduled for a public vote in late 2016. The odds favour approval, though narrowly. Either outcome will probably usher in early elections, with a "Yes" resulting in a strengthening of Mr Renzi's Partito Democratico government, and a "No" leading to his replacement. Political uncertainty, financial-system weakness and the knock-on impact of Brexit will dampen economic growth.

Latvia

| | |
|------------------------|--------------------------|
| GDP growth | 2.8% |
| GDP per head | \$14,656 (PPP: \$19,750) |
| Inflation | 1.7% |
| Budget balance (% GDP) | -1.2 |
| Population | 1.9m |

The centre-right coalition led by the prime minister, Maris Kucinskis, will pursue the country's preference for strongly pro-European, fiscally conservative policies. Relations with Russia will remain tense following its annexation of Crimea; reducing reliance on Russia's economy and tightening ties with NATO will be key goals. Domestic consumption will get a boost from pension reforms and the undeclared economy.

TO WATCH: Centre holds. The ethnic-Russian Harmony Centre party will remain the largest single group in the parliament, but will be kept from power by the ethnic Latvian majority.

Lithuania

| | |
|------------------------|--------------------------|
| GDP growth | 2.8% |
| GDP per head | \$15,785 (PPP: \$31,030) |
| Inflation | 1.4% |
| Budget balance (% GDP) | -0.9 |
| Population | 2.8m |

The general election in October 2016 unexpectedly returned the Lithuanian Peasant and Greens Union as the largest party. Regardless of the outcome of coalition negotiations, support for an

open economy and a pro-Western foreign policy will continue. As with other states on the EU's border with Russia, defence and diversification in gas suppliers will be priorities. Economic growth, helped by rising investment, will strengthen.

Netherlands

| | |
|------------------------|--------------------------|
| GDP growth | 1.0% |
| GDP per head | \$45,005 (PPP: \$51,350) |
| Inflation | 1.3% |
| Budget balance (% GDP) | -1.0 |
| Population | 17.1m |

General elections in March 2017 will produce a change in government, with populist parties on the left and right drawing support from the incumbent "grand coalition" of parties around the centre. The far-right Party for Freedom will do well, but will not find ready partners, so post-election coalition-building will be protracted, with a weak and fragmented government the expected outcome. The economic recovery is well-established and will survive a period of political uncertainty.

TO WATCH: IT happens. The FITC Amsterdam event, set for February, will cover "the future of innovation, design and all the cool shit in between" (according to the official programme).

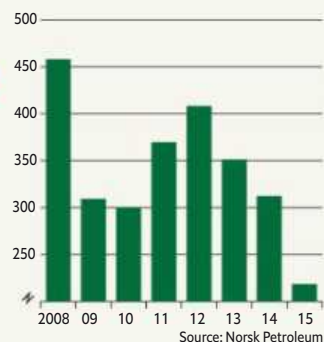
Norway

| | |
|------------------------|--------------------------|
| GDP growth | 1.5% |
| GDP per head | \$75,513 (PPP: \$65,370) |
| Inflation | 2.2% |
| Budget balance (% GDP) | 3.7 |
| Population | 5.2m |

The minority right-of-centre government, comprising the Conservatives and the FrP, an anti-immigration party in power for the first time, is a narrow favourite to emerge victorious from elections scheduled for late 2017. It has been weakened by economic troubles and internal disagreements over immigration, but the opposition centre-left bloc is faring no better in polls. Low prices for oil and gas, which comprise two-thirds of Norway's exports, will hold back the economy, but low international interest rates will help. Growth will be slow but steady.

Norway: oil leak

State revenues from oil, bn NOK



2017 IN PERSON

If Greece's left-leaning Syriza government loses its three-seat parliamentary majority over a new austerity plan—which the EU is demanding in exchange for financial assistance—then the centre-right New Democracy party, under its leader **Kyriakos Mitsotakis**, will shoulder the task of meeting Greece's obligations following snap elections. Implementing this third bail-out plan may be even more politically punishing than the first two. The son of a former prime minister, Mr Mitsotakis may hold Greece's euro-zone future in his hands, as well as the future of the euro zone itself.



Poland

| | |
|------------------------|--------------------------|
| GDP growth | 2.9% |
| GDP per head | \$12,139 (PPP: \$28,610) |
| Inflation | 1.6% |
| Budget balance (% GDP) | -3.3 |
| Population | 38.3m |

The Law and Justice-led government, nominally headed by the prime minister, Beata Szydlo, but with the party's chair, Jaroslaw Kaczynski, wielding the real power, will peel back more of the liberal political settlement installed after the collapse of communism, tinkering with the courts, the security forces and the media. The government will come into increasing conflict with its EU partners and a large section of its own electorate. The resulting deflections, and a persistent economic malaise, may bring the government to an early end, but not in 2017.

Portugal

| | |
|------------------------|--------------------------|
| GDP growth | 1.3% |
| GDP per head | \$19,581 (PPP: \$30,580) |
| Inflation | 1.5% |
| Budget balance (% GDP) | -2.3 |
| Population | 10.5m |

The Socialist Party (PS) government under the prime minister, António Costa, enjoys parliamentary support from three parties farther on the left, but will struggle to honour promises to reverse post-crisis austerity, given slow economic growth and the EU's budget-deficit rules. Nevertheless, the PS remains more popular than the centre-right opposition, and its reliance on its parliamentary allies is mutual, so there is little likelihood of early elections. The economy will rally slightly.

TO WATCH: Wait for it. Despite pressure from the left to ease austerity, the government will raise the retirement age in January—by a month, to 66 years and three months.

Hungary

| | |
|------------------------|--------------------------|
| GDP growth | 2.4% |
| GDP per head | \$12,755 (PPP: \$27,800) |
| Inflation | 1.7% |
| Budget balance (% GDP) | -2.7 |
| Population | 9.8m |

The second-term coalition government led by the conservative Fidesz party will press on with policies that have been skewed increasingly rightward to fend off the threat from its far-right rival, Jobbik. This will antagonise EU institutions and foreign businesses, although a determined effort to close the budget deficit and curb the public debt will mollify critics. Economic growth will pick up as the government cuts taxes and boosts spending ahead of the next parliamentary election, due in April 2018. Growth will exceed the European norm, but still lag Hungary's performance in 2014-15.

TO WATCH: Festival. Hungary will host EuroHand 2017 in June, an event dedicated to research on hand therapy and hand surgery.

Ireland

| | |
|------------------------|--------------------------|
| GDP growth | 3.0% |
| GDP per head | \$62,717 (PPP: \$70,130) |
| Inflation | 0.9% |
| Budget balance (% GDP) | -0.8 |
| Population | 4.7m |

The Fine Gael-led minority coalition government is shaky, reflecting public exhaustion with the austerity policies that delivered economic recovery after the financial crash. The opposition Fianna Fail will withdraw from the tacit non-aggression treaty (which allows the government to survive) if polls show a sustained lead for the party, so early elections are possible in 2017. Brexit will complicate relations with Northern Ireland, which is part of the UK, and weigh on the economy. Economic and business growth, supported by Ireland's creative corporate-tax policies, will sag after the stellar rates of recent years.

Romania

| | |
|------------------------|--------------------------|
| GDP growth | 3.4% |
| GDP per head | \$10,335 (PPP: \$24,780) |
| Inflation | 2.2% |
| Budget balance (% GDP) | -3.2 |
| Population | 19.2m |

The caretaker government installed after public protests toppled the elected regime in 2015 was to be replaced following elections at the close of 2016, probably by a broad and weak coalition, reflecting widespread political discontent by voters. The state bureaucracy is bloated, and backsliding on modest reforms after the financial crisis will swell the budget deficit, although the resulting surge in consumption will allow the economy to outgrow the rest of the EU for now.

Russia

| | |
|------------------------|--------------------------|
| GDP growth | 0.7% |
| GDP per head | \$10,119 (PPP: \$25,320) |
| Inflation | 5.7% |
| Budget balance (% GDP) | -2.2 |
| Population | 146.4m |

The authoritarian, anti-Western regime of Vladimir Putin will enter its 18th year with little sign of weakening. Public discontent festers, and the slimmest of economic recoveries in 2017 after two years of contraction will persuade few that the good times are back. Still, centralised control of the organs of state, a careful balancing of power among elite factions and Mr Putin's own personal popularity mean the regime will endure. Living standards will decline as resources are steered towards propping up the regime. The EU's economic sanctions against Russia, a response to Moscow's aggression in Ukraine, will be extended from January 2017, while Russia's retaliatory sanctions will remain in place.

TO WATCH: Running on empty. The Reserve Fund, one of two fiscal rainy-day pots of cash, will run out in 2017, deepening cuts to spending.

Slovakia

| | |
|------------------------|--------------------------|
| GDP growth | 2.7% |
| GDP per head | \$16,502 (PPP: \$31,660) |
| Inflation | 1.1% |
| Budget balance (% GDP) | -1.9 |
| Population | 5.4m |

An unwieldy left-right coalition government, led by the centre-left Direction-Social Democracy (Smer-SD) party, will retain the previous Smer-SD majority government's focus on improving education and health care and fighting corruption, although progress will be slow, particularly on the latter. The economy will shift from a reliance on foreign demand to a more robust consumption model, but difficult demography and external conditions complicated by Brexit will weigh on economic growth.

TO WATCH: Power vacuum. If the prime minister, Robert Fico, stands down when Slovakia's six-month presidency of the EU ends in January 2017, the resulting power vacuum could bring down the government.

Slovenia

| | |
|------------------------|--------------------------|
| GDP growth | 2.0% |
| GDP per head | \$20,820 (PPP: \$33,490) |
| Inflation | 1.2% |
| Budget balance (% GDP) | -2.4 |
| Population | 2.1m |

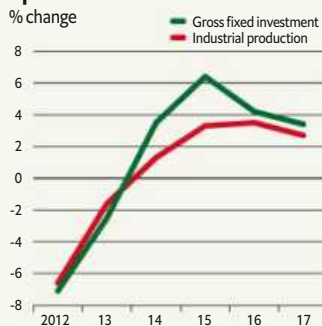
The economy is chugging along, and the government in 2017 will enjoy its first year of fiscal freedom in a while, having emerged from the EU's excessive-deficit procedure in mid-2016. Discord reigns within and among the parties of the centre-left coalition, however, and the government may founder despite its majority. The privatisation programme, though modest, is a particular bone of contention and will proceed slowly at best.

TO WATCH: Standing on ceremony. Slovenians will elect a new president in 2017, but the contest for the mainly ceremonial role will have little impact.

Spain

| | |
|------------------------|--------------------------|
| GDP growth | 2.0% |
| GDP per head | \$27,311 (PPP: \$37,950) |
| Inflation | 1.7% |
| Budget balance (% GDP) | -3.7 |
| Population | 46.1m |

Mariano Rajoy, head of the centre-right People's Party, was at last sworn in as prime minister at the head of a minority government late in 2016, after the main Socialist opposition party voted to abstain in the confirmation debate. Mr Rajoy, who had headed a caretaker administration since an inconclusive election in December 2015, is unlikely to complete his term, and the chances of a coherent government programme are slim. Nevertheless, the economy will benefit from reforms already implemented, and will weather the turbulence.

Spain: a bit less fizz

TO WATCH: Budget bashing. Spain could be in for a scolding from the EU if it fails to show progress on meeting its 2018 target for a 3% government budget gap.

Sweden

| | |
|------------------------|--------------------------|
| GDP growth | 2.5% |
| GDP per head | \$51,542 (PPP: \$49,100) |
| Inflation | 0.9% |
| Budget balance (% GDP) | -0.3 |
| Population | 10.1m |

A minority government comprising the Social Democratic Party (SAP) and the Green Party is vulnerable to being toppled by the opposition Alliance, on whose acquiescence it relies in the legislature. Early elections are unlikely, however, as they would probably deliver a higher vote share to the right-wing Sweden Democrats (SD), anathema to the more moderate parties. Public anxiety over immigration, the root of SD's popularity, will be acute, despite tighter policy and an increase in spending on immigration services. Brexit will dent external demand, but domestic consumption will buoy up the economy.

TO WATCH: Home thoughts. A tightening in banks' capital requirements will come into force in March, in part to ease pressure in a housing market inflated by low interest rates and migrant arrivals.

Switzerland

| | |
|------------------------|--------------------------|
| GDP growth | 1.5% |
| GDP per head | \$80,883 (PPP: \$65,650) |
| Inflation | 0.5% |
| Budget balance (% GDP) | 0.2 |
| Population | 8.2m |

The four-party coalition government is required by a 2014 referendum to impose restrictions on immigration by February 2017, potentially breaching agreements with the EU on freedom of movement. The lower house of parliament passed a "light" implementation measure in late 2016 that should lead to a deal with the EU. A consensual approach to policymaking means there will be little drama around management of the economy. Any reforms will focus on balancing the budget over the business cycle.

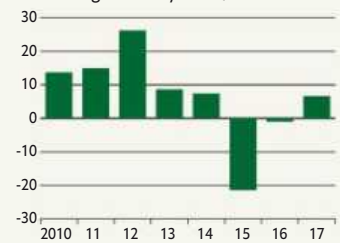
Turkey

| | |
|------------------------|-------------------------|
| GDP growth | 3.3% |
| GDP per head | \$9,821 (PPP: \$21,800) |
| Inflation | 7.2% |
| Budget balance (% GDP) | -2.0 |
| Population | 77.9m |

A failed coup in 2016 consolidated public support for the moderately Islamist Justice and Development party government under the president, Recep Tayyip Erdogan. It also provided an opportunity for a purge of the regime's opponents. In light of the coup attempt, Mr Erdogan will redouble efforts to centralise state control in his office, a long-held ambition. If constitutional change can't be agreed upon with the opposition, he may opt for early parliamentary elections.

Turkey: confidence and capital

Inward portfolio investment, net of foreign-currency bonds; \$bn



TO WATCH: Reduced ranks. Around one-third of the country's top brass was sacrificed in the post-coup purge, and Turkey will struggle to implement a complex military strategy inside and outside its borders.

Ukraine

| | |
|------------------------|------------------------|
| GDP growth | 2.6% |
| GDP per head | \$1,989 (PPP: \$8,690) |
| Inflation | 9.8% |
| Budget balance (% GDP) | -3.5 |
| Population | 42.4m |

Roiled by Russia's annexation of Crimea and a hot stand-off with Russia-backed separatists in the east, the government has struggled to make progress on administrative and economic reforms, but recovery from a deep recession will take root in 2017. Economic stability will underpin support for the beleaguered government, permitting some acceleration in reforms, though uprooting entrenched oligarchies will take a generation. Early elections are possible as the government seeks to lock in economic gains.

TO WATCH: You croon. Ukraine will host the 62nd Eurovision song contest after its singer, Jamala, won the 2016 edition with a song lamenting Russian aggression in Crimea.

United Kingdom

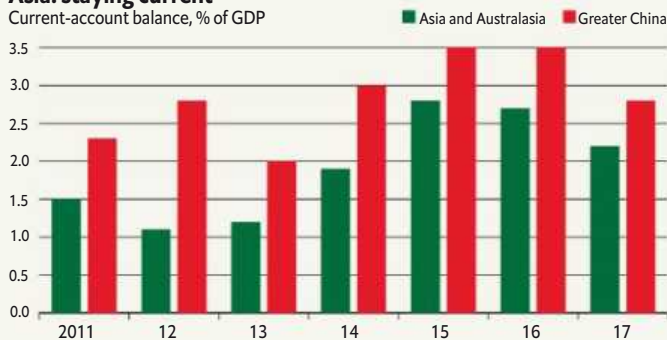
| | |
|------------------------|--------------------------|
| GDP growth | 0.6% |
| GDP per head | \$37,317 (PPP: \$43,812) |
| Inflation | 2.8% |
| Budget balance (% GDP) | -4.5 |
| Population | 65.3m |

The next few years will be coloured by the formation of a new relationship with Europe and the wider world following Britain's vote to leave the EU. The vote didn't stipulate exit terms, but Britain is hoping for a deal that preserves a degree of access to Europe's single market while permitting curbs on the movement of people. The economy will need stimulating as the cooling effects of Brexit kick in. With the central bank's policy quiver close to exhausted, the onus of stimulus will shift to fiscal policy.

TO WATCH: Trade-off. A compromise Brexit settlement will need popular ratification, either via a new referendum or early elections. Hardline "leavers" will feel betrayed.

Asia: staying current

Current-account balance, % of GDP



Asia

Australia



| | |
|------------------------|--------------------------|
| GDP growth | 2.9% |
| GDP per head | \$51,459 (PPP: \$48,880) |
| Inflation | 2.2% |
| Budget balance (% GDP) | -1.8 |
| Population | 24.6m |

The Liberal-National coalition was granted a second term in mid-2016 elections, but with its lower-house majority reduced to a single seat. The real trouble will be in the upper chamber, where the government must rely on support from strong-minded independents. The 2016 election was triggered when the chambers could not agree on a series of government bills; given the fragmentation in parliament, a repeat can't be ruled out. The economy will shrug off politics as investment in mining capacity bears fruit and consumers spend.

Bangladesh



| | |
|------------------------|------------------------|
| GDP growth | 6.4% |
| GDP per head | \$1,480 (PPP: \$3,810) |
| Inflation | 5.8% |
| Budget balance (% GDP) | -5.3 |
| Population | 166.2m |

The Awami League government enjoys legislative freedom since the main opposition Bangladesh Nationalist Party boycotted the last election. Political opposition is expressed in the streets, however, in the form of strikes and demonstrations, curbing business enthusiasm. Even so, the economy is expanding strongly as the government encourages private investment, and consumption will benefit from progress towards the UN's Sustainable Development Goals.

China



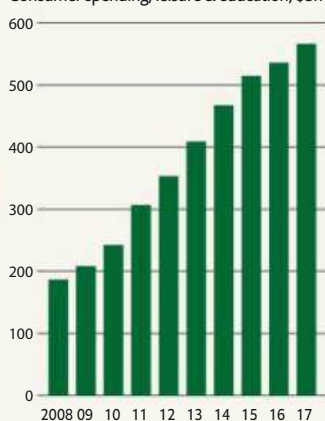
| | |
|------------------------|-------------------------|
| GDP growth | 6.0% |
| GDP per head | \$8,438 (PPP: \$17,050) |
| Inflation | 2.1% |
| Budget balance (% GDP) | -4.2 |
| Population | 1.37bn |

The economy is slowing as it shifts from an investment-for-export model to a spending-for-consumption

approach, but neither economic nor political reform is keeping pace with the requirements of the transformation. Challenges persist in deflating credit-driven asset bubbles, relocating and reskilling the labour force, and injecting pluralism into the political and social landscape. But all such reforms are trumped by the overriding priority of preserving the Chinese Communist Party's power. Abroad, tensions over territorial and economic influence will grow as the government flexes its muscles.

China: leisured classes

Consumer spending, leisure & education; \$bn



TO WATCH: Beijing shuffle. Xi Jinping, the party chairman, is erecting a centralised and personalised power structure. A scheduled reshuffle of the Politburo will give some indication of how this is proceeding.

Hong Kong



| | |
|------------------------|--------------------------|
| GDP growth | 1.9% |
| GDP per head | \$44,391 (PPP: \$59,860) |
| Inflation | 2.2% |
| Budget balance (% GDP) | 0.5 |
| Population | 7.4m |

The voting system means pro-democracy and pro-independence supporters are poorly represented in the territory's parliament, the Legislative Council, but they command a grow-

ing proportion of the vote, while the chief executive, Leung Chun-ying, a mainland appointee, is increasingly unpopular. With the government in Beijing holding most of the cards, there is little prospect of political reform, but low-level popular protest will disrupt business life. The economy will rally from a weak 2016, but the slowdown in the mainland economy and sluggish global-trade growth will tell.

India



| | |
|------------------------|------------------------|
| GDP growth | 7.5% |
| GDP per head | \$1,772 (PPP: \$7,110) |
| Inflation | 5.1% |
| Budget balance (% GDP) | -3.6 |
| Population | 1.34bn |

India is enjoying sustained economic expansion, clouded by a sense that it could do better if investment was stronger and infrastructure better. Part of the problem is that the coalition government, dominated by the Bharatiya Janata Party under the prime minister, Narendra Modi, lacks a majority in the upper chamber, undermining its ability to implement its economic programme. Reform will still proceed—a nationwide sales tax will take effect in 2017, and bankruptcy laws are being rewritten—but the government's focus in the second half of its term will shift towards re-election.

Indonesia



| | |
|------------------------|-------------------------|
| GDP growth | 5.3% |
| GDP per head | \$4,255 (PPP: \$12,530) |
| Inflation | 4.1% |
| Budget balance (% GDP) | -2.0 |
| Population | 260.6m |

After a wobbly start, the administration of the president, Joko Widodo, is pressing ahead with a broad programme of pro-market economic reforms, including simplified approvals for large infrastructure projects and faster approvals of business licences. Nevertheless, big investments have remained hostage to bureaucracy and delays in implementation, which will not be resolved. A mandate to address a culture of corruption will largely remain a dead letter. The economy will be buoyed by infrastructure investment, support for manufacturing after the slide in commodities prices, and the courting of foreign investment.

Japan



| | |
|------------------------|--------------------------|
| GDP growth | 0.4% |
| GDP per head | \$39,083 (PPP: \$39,280) |
| Inflation | 0.4% |
| Budget balance (% GDP) | -7.0 |
| Population | 126.0m |

Commanding a two-thirds majority in both chambers of the legislature, the government may spend considerable time over the rest of its term pressing the case for a less pacifist constitution, though there is no guarantee legislative approval would be ratified through the required referendum. Despite the strengthened position of the coalition government under the prime minister, Shinzo Abe, economic reform will lose impetus. The package of monetary, fiscal and structural reform policies known as "Abenomics" will endure, but the intended boost to growth will remain elusive.

Kazakhstan



| | |
|------------------------|-------------------------|
| GDP growth | 1.5% |
| GDP per head | \$7,739 (PPP: \$25,030) |
| Inflation | 6.4% |
| Budget balance (% GDP) | -2.2 |
| Population | 18.1m |

Nursultan Nazarbayev, leader since the Soviet era, guarantees stability through a combination of patronage and duress. However, the lack of credible opposition and the absence of a clear process of succession mean this stability is lodged in the person of the 76-year-old leader, and is not guaranteed beyond his tenure. A sharp decline in oil revenue and a weakening currency have suppressed domestic demand, and reform plans including privatisation will be passed over in favour of protecting jobs and incomes.

TO WATCH: Doctor's bill. Employers will gear up for the start of compulsory health-insurance contributions in July.

Malaysia



| | |
|------------------------|--------------------------|
| GDP growth | 4.5% |
| GDP per head | \$10,136 (PPP: \$29,560) |
| Inflation | 2.3% |
| Budget balance (% GDP) | -3.1 |
| Population | 31.2m |

The ruling Barisan Nasional (BN) coalition's term doesn't end until 2018, but it may call an election in mid-2017. Its leader, the prime minister, Najib

2017 IN PERSON

If she were just the first female governor of Tokyo, **Yuriko Koike** would have a busy year ahead, preparing for the 2020 Olympic games, cleaning up a scandal-racked city administration and pushing against traditional paternalism. Hard enough, even for a political veteran and former defence minister who cites Margaret Thatcher as an influence. But her sights will be set well beyond the city limits. Forced to run as an independent when her ruling Liberal Democratic Party nominated someone else for the governorship, she has a prickly relationship with the party leader and Japan's prime minister, Shinzo Abe, and will be viewing the capital as a launchpad for a political career on a wider stage.



Razak, is facing pressure to stand down over allegations of malpractice at a state-owned firm. His deputy, Ahmad Zahid Hamidi, could take over after the BN is re-elected. Faced with weak opposition, the government will pursue reforms designed to lift Malaysia to high-income status, though low oil prices will slow the process. The economy will grow, but more slowly than earlier in the decade.

Malaysia: going for growth



TO WATCH: Independence games. Kuala Lumpur, the capital, will host the South East Asian Games in August, coinciding with the 60th anniversary of the country's independence.

New Zealand

| | |
|------------------------|--------------------------|
| GDP growth | 3.3% |
| GDP per head | \$39,134 (PPP: \$38,800) |
| Inflation | 1.4% |
| Budget balance (% GDP) | 1.2 |
| Population | 4.8m |

The centre-right National Party government under the prime minister, John Key, will serve out its third consecutive term to elections to be held by November, and given Mr Key's enduring popularity and the poor standing of the opposition, a fourth term is on the cards. Policy will prioritise restoring fiscal balance, deepening the open economy's international trade integration and getting welfare recipients back into jobs. Dairy prices appear to have bottomed out, but will remain well below 2013-14 highs.

TO WATCH: Debt ceiling. Low interest rates have led to a housing bubble, which the government will seek to contain lest it poison the electoral environment.

Pakistan

| | |
|------------------------|------------------------|
| GDP growth | 5.1% |
| GDP per head | \$1,571 (PPP: \$5,600) |
| Inflation | 5.2% |
| Budget balance (% GDP) | -4.8 |
| Population | 196.7m |

The ruling Pakistan Muslim League (Nawaz) holds a comfortable majority in the lower chamber, but faces an aggressive opposition and is vulnerable to accusations of favouritism among

the country's four provinces. Although keen to upgrade infrastructure and pursue trade links with China, the government has proved less effective in providing security in remote areas, and the army, already active in public life, will extend its influence to this area of foreign affairs.

TO WATCH: Bombing backlash. Terror attacks on urban centres may intensify if moves to enter negotiations with more moderate sections of the Pakistani Taliban make progress.

Philippines

| | |
|------------------------|------------------------|
| GDP growth | 6.3% |
| GDP per head | \$3,164 (PPP: \$8,350) |
| Inflation | 2.9% |
| Budget balance (% GDP) | -1.3 |
| Population | 103.8m |

The economy is enjoying a sustained period of catch-up growth, and the government of Rodrigo Duterte, elected with a strong mandate in mid-2016, will remain faithful to the policies that have borne fruit so far, including improving infrastructure and attracting private investment. The president's deadly anti-crime drive, road-tested during his stint as mayor of the southern city of Davao, will achieve its narrow goals, but will weaken state institutions and the rule of law, and could stand in the way of economic recovery.

Singapore

| | |
|------------------------|--------------------------|
| GDP growth | 2.7% |
| GDP per head | \$52,322 (PPP: \$88,810) |
| Inflation | 0.8% |
| Budget balance (% GDP) | 0.8 |
| Population | 5.8m |

The People's Action Party halted a long slide in its support at the 2015 election, and will press on with policies designed to shore up its popularity, including investment in social housing, health care and public transport. Enhancing the territory's status as a world trade hub through expanded port facilities is also a priority. Behind the scenes, the party will work on succession plans, given concerns about the health of the prime minister, Lee Hsien Loong. The economy will bounce back from a slowdown caused by flagging global trade.

TO WATCH: Baby steps. The government must tiptoe between popular opposition to immigration and a requirement for foreign labour, since the birth rate is running below replacement.

South Korea

| | |
|------------------------|--------------------------|
| GDP growth | 2.6% |
| GDP per head | \$27,830 (PPP: \$37,800) |
| Inflation | 1.5% |
| Budget balance (% GDP) | -0.8 |
| Population | 50.7m |

The president, Park Geun-hye, will approach elections in December 2017

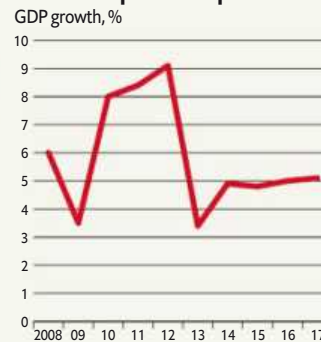
as a lame duck, and her conservative Saenuri party will divert some of its attention to selecting its replacement candidate, so a government that promised liberalising economic reform and underdelivered will end with a whimper. Hit by a global-trade slowdown, the economy will rely on fiscal stimulus to spark domestic demand and ignite growth.

Sri Lanka

| | |
|------------------------|-------------------------|
| GDP growth | 5.1% |
| GDP per head | \$3,995 (PPP: \$12,820) |
| Inflation | 4.2% |
| Budget balance (% GDP) | -4.7 |
| Population | 22.0m |

A national-unity government comprising two long-time rivals, the United National Party and the Sri Lanka Freedom Party, will make halting progress on a reform programme introduced in the wake of victory in the civil war with Tamil separatists, and designed under the auspices of the IMF. The main challenge will be holding the party factions together while a new constitution is drafted and approved. The economy will be helped by the ongoing peace dividend, and measures to improve living standards will deliver respectable growth.

Sri Lanka: profits of peace



Taiwan

| | |
|------------------------|--------------------------|
| GDP growth | 1.7% |
| GDP per head | \$22,235 (PPP: \$49,630) |
| Inflation | 1.6% |
| Budget balance (% GDP) | -0.6 |
| Population | 23.5m |

The Democratic Progressive Party government emerged from the 2016 election with control of both the presidency and the legislature, and is well placed to push ahead with a complex policy agenda. At home, this centres on establishing special economic zones to boost strategic industries and raising the living standards of the younger generation. The stand-off in relations with China will, however, chill the outlook for business co-operation across the strait. Economic growth will be unexciting, but better than in 2016.

TO WATCH: Bits & bots. The World Congress on Information Technology will take place in Taipei in September.

Thailand

| | |
|------------------------|-------------------------|
| GDP growth | 3.0% |
| GDP per head | \$6,070 (PPP: \$18,050) |
| Inflation | 0.7% |
| Budget balance (% GDP) | -2.8 |
| Population | 67.7m |

The army will manage carefully the accession of crown prince Vajiralongkorn, who was due to ascend to the throne in December 2016. Plans for the army to hand back government to an elected administration will be delayed as the junta focuses on stability. The long-term development plan being drafted by the army-appointed administration will set the economic agenda, and growth will be moderate but steady.

TO WATCH: Less majesty. The sometimes bizarre behaviour of Crown Prince Maha Vajiralongkorn has raised doubts about his ability to fill his father's shoes, but the generals may be more concerned about his sympathy towards the "red shirt" movement their coup ousted from power in 2014.

Uzbekistan

| | |
|------------------------|------------------------|
| GDP growth | 4.4% |
| GDP per head | \$2,161 (PPP: \$6,480) |
| Inflation | 12.5% |
| Budget balance (% GDP) | 0.1 |
| Population | 32.3m |

The political system faced a severe test in September 2016 when President Islam Karimov died of a brain haemorrhage. The prime minister, Shavkat Mirziyoyev, was appointed acting president and will win a landslide victory in the December 2016 presidential election, a state-managed affair that will not come close to meeting international standards. No significant policy changes are likely under the new administration. Growth prospects for 2016 are weak, as the regional crisis has depressed external demand and remittances, and global commodity prices are low.

Vietnam

| | |
|------------------------|------------------------|
| GDP growth | 6.6% |
| GDP per head | \$2,245 (PPP: \$6,780) |
| Inflation | 3.4% |
| Budget balance (% GDP) | -4.3 |
| Population | 95.4m |

The single-party state faces little external challenge, but vested interests and ideological differences within the party are a source of instability. Public dissent is also on the rise, particularly over China's activities in the South China Sea. The government will walk a narrow line between meeting public expectations of a robust response and preserving commercial ties with China. Similarly, it must establish labour unions to meet conditions for the Trans-Pacific Partnership trade deal, but will be wary of permitting workers too powerful a voice. The economy's full-throated expansion looks durable.

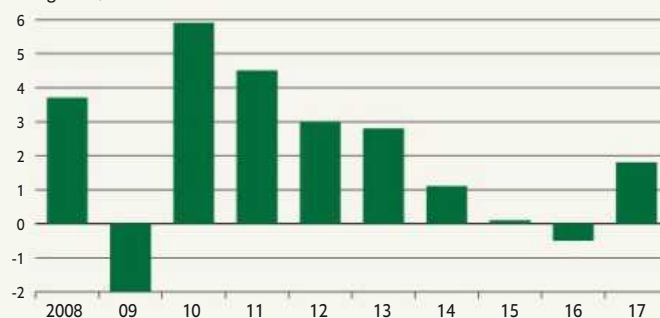
North America: reinvesting

Gross fixed investment, % real change



Latin America: bouncing back

GDP growth, %



North America

Canada



| | |
|------------------------|--------------------------|
| GDP growth | 2.2% |
| GDP per head | \$45,677 (PPP: \$46,580) |
| Inflation | 2.0% |
| Budget balance (% GDP) | -3.1 |
| Population | 36.6m |

The prime minister, Justin Trudeau, and his Liberal Party government will use a comfortable legislative majority to press on with institutional and economic reforms designed to support the middle classes and indigenous communities, and to improve transport infrastructure and housing availability—the latter in part to deflate an ominous housing bubble. The cost of all this will show up in a widening budget deficit. Abroad, forming a relationship with America's new president will be the priority.

TO WATCH: Voting reform. The Liberals want to change the voting system for the 2019 elections, but will need to pass legislation by May to do so.

Mexico



| | |
|------------------------|-------------------------|
| GDP growth | 2.5% |
| GDP per head | \$8,598 (PPP: \$18,270) |
| Inflation | 3.4% |
| Budget balance (% GDP) | -2.6 |
| Population | 130.2m |

The president, Enrique Peña Nieto, will work hard to implement fully the structural reforms—in energy, education and telecoms—approved early in his term, though support for his government is weak. Mr Peña Nieto's political problems will be complicated by subpar economic growth, an uptick in poverty and fiscal constraints

resulting from weak oil revenue. The perennial struggle against institutional corruption and security threats will not disappear: the number of homicides is rising, as are widespread torture of detainees by the police and extra-judicial killings by security forces as part of the war against the cartels. This adds to public frustration with a presidency that once promised so much.

TO WATCH: *Pasión Morena.* Andrés Manuel López Obrador, veteran of two failed presidential bids, will play the anti-establishment card at the head of his radical left-wing movement, Morena.

United States



| | |
|------------------------|--------------------------|
| GDP growth | 2.3% |
| GDP per head | \$59,391 (PPP: \$59,390) |
| Inflation | 2.1% |
| Budget balance (% GDP) | -3.2 |
| Population | 326.5m |

Income inequality and the plight of the middle class dominated the election campaign, but Americans—including those at the very bottom—have enjoyed surprisingly robust income gains of late. Employers will add 2m more jobs in 2017 to the 14m created since 2011, drawing more of the excluded back into the workforce. This will lift spirits, but companies, which haven't been investing much, will await direction from the new president and Congress. One potential area of bipartisan agreement: new infrastructure spending to upgrade America's sagging roads, bridges and ports. This would boost productivity, which has flagged.

Latin America

Argentina



| | |
|------------------------|--------------------------|
| GDP growth | 2.8% |
| GDP per head | \$13,299 (PPP: \$22,470) |
| Inflation | 21.6% |
| Budget balance (% GDP) | -4.9 |
| Population | 44.0m |

Confronting economic distortions bequeathed by the government of Cristina Fernández de Kirchner is creating hardship and testing the patience of voters, but the president, Mauricio Macri, will press on with a degree of support from the opposition-dominated legislature. The government will adjust the pace of reform to keep voters onside, and a new universal health-care system will help. The economy will grow after slumping in 2016.

Bolivia



| | |
|------------------------|------------------------|
| GDP growth | 3.9% |
| GDP per head | \$3,499 (PPP: \$7,550) |
| Inflation | 4.6% |
| Budget balance (% GDP) | -4.0 |
| Population | 11.1m |

The leftist president, Evo Morales, halfway through his third successive term, enjoys substantial freedom in policymaking thanks to a weak and divided opposition, but social groups disappointed with the government will launch street protests. Natural-gas exports have supported strong growth, and rising prices in 2017 will provide an added fillip. The government has also replenished the country's international reserves, which will come in handy if the gaping current-account deficit doesn't narrow.

Brazil



| | |
|------------------------|-------------------------|
| GDP growth | 1.0% |
| GDP per head | \$9,523 (PPP: \$15,620) |
| Inflation | 5.5% |
| Budget balance (% GDP) | -6.9 |
| Population | 207.7m |

Michel Temer, sworn in as president to replace Dilma Rousseff, who was impeached in 2016, will serve out the remainder of the presidential term, which ends in 2018. He will pursue a

market-based policy agenda designed to correct distortions introduced under the Rousseff administration and restore the economy to sustainable growth. After a hefty decline in 2016, the economy will expand modestly as business and consumer confidence returns.

TO WATCH: *Temer-oso.* The sweeping probe into financial irregularities at the state oil company, Petrobras, could yet snare Mr Temer.

Chile



| | |
|------------------------|--------------------------|
| GDP growth | 2.1% |
| GDP per head | \$14,038 (PPP: \$23,580) |
| Inflation | 3.3% |
| Budget balance (% GDP) | -2.0 |
| Population | 18.3m |

The president, Michelle Bachelet, is suffering from low approval ratings, but with the opposition in disarray, her Nueva Mayoría coalition should win a third term in November 2017, with former-president Ricardo Lagos a likely candidate. A sluggish economy, the result in part of low prices for the commodities Chile exports, will reduce room for policy priorities such as improved pensions and health care, but Ms Bachelet will press ahead.

Colombia



| | |
|------------------------|-------------------------|
| GDP growth | 2.7% |
| GDP per head | \$6,311 (PPP: \$14,750) |
| Inflation | 3.5% |
| Budget balance (% GDP) | -2.8 |
| Population | 49.1m |

Uncertainty hangs over a deal with the FARC guerrilla group to end their 50-year insurgency after its terms were narrowly rejected in a late 2016 plebiscite. Renegotiating the agreement and submitting it to a second vote will occupy the president, Juan Manuel Santos, and his government for much of the remainder of his term, but there is unlikely to be a return to hostilities. The economy will benefit in the long term, but in 2017 will struggle to shake off the effects of weak revenue as the prices of most commodities languish.

2017 IN PERSON

Bill Morneau, Canada's finance minister and the economic-policy maestro behind the telegenic prime minister, Justin Trudeau, is swinging the government towards an expansionary fiscal stance, a sea change in thinking from the austerity embraced in much of the developed world as an antidote to the financial crisis. The pro-growth agenda is a hit with voters, and has also been endorsed by that paragon of parsimony, the IMF. With other Western governments now making similar noises, Mr Morneau, who rebuilt the family consulting business before entering politics, is establishing himself as the architect of a new New Deal.



TO WATCH: Pope hope. The faithful will be praying for a papal visit. Pope Francis has promised he will go to Colombia, but only once the peace accord with the FARC has been signed.

Cuba



| | |
|------------------------|-------------------------|
| GDP growth | 1.0% |
| GDP per head | \$8,518 (PPP: \$13,220) |
| Inflation | 4.8% |
| Budget balance (% GDP) | -4.0 |
| Population | 11.2m |

The evolution of the revolution will be ever-cautious as the '59 generation prepares to pass on power. The first vice-president, Miguel Díaz-Canel, looks the most likely successor to Raúl Castro, the president, but not until 2018. Liberalising reforms will gradually gain traction, and private-sector activity will make a growing contribution to the economy. For 2017, business interest and tourism from America will ease the blow of declining inflows from Venezuela.

TO WATCH: Havana good time. Cuba's capital will host a celebration of the island's most famous export, cigars, at the Festival del Habano, in February.

Ecuador

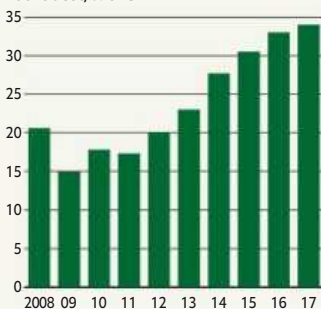


| | |
|------------------------|-------------------------|
| GDP growth | -1.3% |
| GDP per head | \$6,413 (PPP: \$11,620) |
| Inflation | 1.4% |
| Budget balance (% GDP) | -2.9 |
| Population | 15.9m |

The Alianza PAÍS government enjoys the advantage of a divided opposition and will secure another term in elections set for February. Rafael Correa, president since 2007, will head the next administration only if a constitutional block is lifted, but will in any case remain a powerful influence. Protests are likely as the government squeezes finances, and the economy will contract again.

Ecuador: debt mountain

Public debt, % of GDP



Paraguay



| | |
|------------------------|------------------------|
| GDP growth | 3.6% |
| GDP per head | \$4,320 (PPP: \$9,810) |
| Inflation | 3.4% |
| Budget balance (% GDP) | -1.5 |
| Population | 6.8m |

The president, Horacio Cartes, faces aggressive opposition, not least from a

dissident wing within his own Partido Colorado, and there is little chance of progress on his agenda of administrative reform and infrastructure investment. The dissidents, in league with the main opposition party, will try to block Mr Cartes's attempts to lift a constitutional bar on a second term, in which case he will approach elections in 2018 as a lame duck. The economy will rally as Brazil and Argentina put the worst of their troubles behind.

Peru



| | |
|------------------------|-------------------------|
| GDP growth | 4.2% |
| GDP per head | \$6,779 (PPP: \$12,370) |
| Inflation | 3.1% |
| Budget balance (% GDP) | -2.5 |
| Population | 31.8m |

The centre-right Peruanos por el Kambio government under the president, Pedro Pablo Kuczynski, is in the minority in congress and will rely on the forbearance of a hostile opposition to pass laws. But a broad consensus will support the liberal economic policies that have fuelled a strong period of growth. The end of the commodities boom created problems, but new production and a busy programme of infrastructure investment will sustain growth in 2017.

Uruguay



| | |
|------------------------|--------------------------|
| GDP growth | 1.1% |
| GDP per head | \$15,736 (PPP: \$21,830) |
| Inflation | 8.6% |
| Budget balance (% GDP) | -3.2 |
| Population | 3.4m |

The president, Tabaré Vázquez, faces stiff opposition from far-left factions within his own Frente Amplio party, negating the advantages of a clear legislative majority, and he will struggle to make progress on a platform of educational and fiscal reforms. Instead, tax hikes and utility-price rises will be used to address a worrying budget gap. Sluggish recoveries in Argentina and Brazil will help raise growth above 2016's level, but not by much.

Venezuela

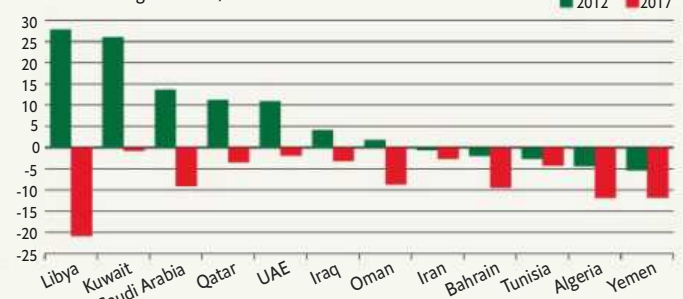


| | |
|------------------------|--------------------------|
| GDP growth | -7.3% |
| GDP per head | \$24,643 (PPP: \$12,620) |
| Inflation | 484.3% |
| Budget balance (% GDP) | -20.2 |
| Population | 31.3m |

The presidency of Nicolás Maduro is unlikely to reach the official end of its term in 2018, but the form of its demise, orderly or violent, will only become clear as the country's chaotic descent accelerates in 2017. Consumption and investment are both declining sharply as an economy reliant on public-sector largesse struggles with oil prices far below production costs. Even with a change of leadership, no economic recovery is feasible before 2018 at the earliest.

Middle East: busting budgets

Government budget balance, % of GDP



MIDDLE EAST AND AFRICA

Algeria



| | |
|------------------------|-------------------------|
| GDP growth | 1.7% |
| GDP per head | \$4,047 (PPP: \$15,080) |
| Inflation | 7.3% |
| Budget balance (% GDP) | -12.1 |
| Population | 41.7m |

In office since 1999, Abdelaziz Bouteflika faces just one threat to his grip on the presidency: his own health. Jockeying for succession will distract the political elite until the contest comes. The threat of militant Islamism from within and beyond porous borders will be another risk. Pro-regime forces will win parliamentary elections in May, and can be relied on to wield the rubber stamp.

Angola



| | |
|------------------------|------------------------|
| GDP growth | 3.0% |
| GDP per head | \$3,591 (PPP: \$7,430) |
| Inflation | 16.6% |
| Budget balance (% GDP) | -3.9 |
| Population | 26.7m |

José Eduardo dos Santos, president since 1979, will lead his MPLA party into elections in August, but has promised to step down in 2018. Even if he does, he will still wield power. As low oil prices curb the state spending needed to satisfy the middle classes, protests will increase. They will further dent a weak business environment, but create little difficulty for the regime.

Cameroon



| | |
|------------------------|------------------------|
| GDP growth | 4.6% |
| GDP per head | \$1,302 (PPP: \$3,390) |
| Inflation | 3.0% |
| Budget balance (% GDP) | -5.3 |
| Population | 24.5m |

The president, Paul Biya, will focus on succession as he prepares to stand down at 2018 elections at age 85. Power will remain within the Rassemblement Démocratique du Peuple Camerounais, which dominates key institutions. The government will borrow to invest in infrastructure and agriculture to offset low oil prices, keeping the economy growing.

Egypt



| | |
|------------------------|-------------------------|
| GDP growth | 4.8% |
| GDP per head | \$2,658 (PPP: \$11,520) |
| Inflation | 15.1% |
| Budget balance (% GDP) | -9.9 |
| Population | 95.3m |

Opting for authoritarianism over pluralism, the government of the president, Abdel-Fattah al-Sisi, will preside over rising public discontent and a tepid economy. Low oil prices will test the generosity of financial supporters in the Gulf and force the government to look farther afield. A lack of organised opposition, whether from Islamist factions or the liberal centre, will help the regime maintain its hold on power.

Ethiopia



| | |
|------------------------|----------------------|
| GDP growth | 5.1% |
| GDP per head | \$595 (PPP: \$1,750) |
| Inflation | 7.9% |
| Budget balance (% GDP) | -3.5 |
| Population | 104.3m |

A drought in 2016 hit agriculture, crimping a 12-year economic-growth spurt, but a pick-up is on the cards as the sector recovers. The government's focus on addressing infrastructure bottlenecks and establishing industrial clusters will bring sustained catch-up growth over time, though short of its ambitious projections. The ruling Ethiopian People's Revolutionary Democratic Front will maintain its grip, harried by opponents from marginalised ethnic groups.

TO WATCH: Top table. Ethiopia will begin its two-year stint as a non-permanent member of the UN Security Council on January 1st.

Iran



| | |
|------------------------|-------------------------|
| GDP growth | 5.4% |
| GDP per head | \$6,144 (PPP: \$19,520) |
| Inflation | 9.0% |
| Budget balance (% GDP) | -1.2 |
| Population | 81.0m |

The president, Hassan Rohani, will win a second term in the election set for May, helped by the economic and

political boost from the nuclear deal with the West. With sanctions lifted but oil prices still low, the government will focus on attracting foreign investment and expertise to ramp up output as quickly as possible. The economy will respond to this and a gradual rally in oil prices with strong growth.

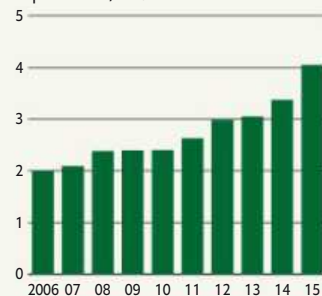
Iraq

| | |
|------------------------|-------------------------|
| GDP growth | 4.0% |
| GDP per head | \$5,283 (PPP: \$15,400) |
| Inflation | 2.9% |
| Budget balance (% GDP) | -1.1 |
| Population | 38.4m |

The government of the prime minister, Haider al-Abadi, will work with Kurdish forces to push back Islamic State but tussle with the Kurds over control of oil exports from Kurdish fields. The Shia-dominated government will have its share of troubles with sectarian constituencies across the country. But the status quo should hold until the election in 2018. The precarious domestic economy will expand under a programme with the IMF.

Iraq: well spring

Oil production, m b/d



Source: United States Energy Information Administration

Israel

| | |
|------------------------|--------------------------|
| GDP growth | 3.7% |
| GDP per head | \$38,127 (PPP: \$38,080) |
| Inflation | 1.1% |
| Budget balance (% GDP) | -2.3 |
| Population | 8.7m |

The right-wing coalition government of the prime minister, Binyamin Netanyahu, is unwieldy and unstable, but should see out 2017—not least because the opposition is itself divided. With the Israeli-Palestinian conflict overshadowed by other regional battles, Israel will seize the opportunity to restructure its alliances, including siding with Saudi Arabia against their common rival, Iran. Economic growth will keep the fiscal deficit in check.

Jordan

| | |
|------------------------|-------------------------|
| GDP growth | 2.4% |
| GDP per head | \$4,648 (PPP: \$10,320) |
| Inflation | 3.7% |
| Budget balance (% GDP) | -7.1 |
| Population | 8.7m |

The king, Abdullah II, will allow modest political reform, but only enough to ensure he retains his hold on power,

backed up by an effective security apparatus. The state will enjoy financial support from allies in the West and the Gulf. The government will seek improvements in the business environment and in employment prospects for a labour force swollen by the influx of refugees.

TO WATCH: Power play. Russia's nuclear agency, Rosatom, will complete a feasibility study by mid-2017 into building two 1,000 MWe nuclear power stations in Jordan.

Kenya

| | |
|------------------------|------------------------|
| GDP growth | 5.9% |
| GDP per head | \$1,546 (PPP: \$3,400) |
| Inflation | 5.5% |
| Budget balance (% GDP) | -7.0 |
| Population | 48.5m |

The election in August will be held under new rules that should reduce the risk of violence. The president, Uhuru Kenyatta, will seek a second term, backed by the newly formed Jubilee Party, competing with the Coalition for Reforms and Democracy under a former prime minister, Raila Odinga. Campaigning will dominate the national scene, but a strong roster of recent reforms will propel the economy.

Lebanon

| | |
|------------------------|-------------------------|
| GDP growth | 1.9% |
| GDP per head | \$7,891 (PPP: \$14,900) |
| Inflation | 2.2% |
| Budget balance (% GDP) | -9.1 |
| Population | 6.3m |

Political arrangements designed to balance Lebanon's competing factions are being tested by power shifts in the region, and by the conflict in Syria. An election, delayed since 2013 and now scheduled for May, will deliver another unstable coalition split along sectarian lines (if it takes place). The central bank will remain the driver of economic policy, though measures requiring parliamentary assent will languish.

Libya

| | |
|------------------------|-------------------------|
| GDP growth | -3.7% |
| GDP per head | \$3,208 (PPP: \$14,740) |
| Inflation | 15.3% |
| Budget balance (% GDP) | -22.1 |
| Population | 6.2m |

The struggle for control between the UN-recognised Government of National Accord in Tripoli and a self-proclaimed parallel administration with strategic assets in the east shows no sign of ending. The two parties' grip on parts of the vital oil infrastructure will deny either side a stable source of revenue, and the country a firm economic base. If attrition forces the two sides to negotiate a settlement in 2017, attention will turn to asserting authority over a fractured national territory and suppressing the activities of Islamic State.

2017 IN PERSON

Isabel dos Santos, named by *Forbes* as Africa's richest woman, is a good bet to be named vice-president of Angola by her father, José Eduardo dos Santos, the president since 1979. With a personal business empire spanning banking, telecoms, retail and diamonds, Ms dos Santos is also the head of the sprawling state oil company, Sonangol, which is at the heart of the economy. The country has been kept guessing for years as to who will succeed Mr dos Santos when he leaves office. He has promised to do so in 2018 and his daughter's promotion will be the clearest sign yet that Angola is being prepared for a dos Santos dynasty.

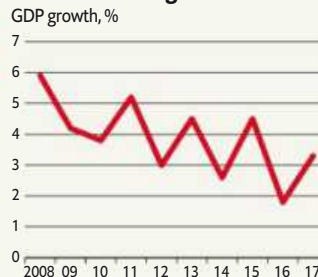


Morocco

| | |
|------------------------|------------------------|
| GDP growth | 3.3% |
| GDP per head | \$3,060 (PPP: \$8,460) |
| Inflation | 2.4% |
| Budget balance (% GDP) | -3.8 |
| Population | 35.2m |

The government of Abdelilah Benkirane will push ahead with political reforms mandated by a revamped 2011 constitution, but the king, Mohammed VI, will remain the pre-eminent power. Economic policy will promote investment in the industrial-export sector and agriculture will rebound after a drought in 2016.

Morocco: rain again



Nigeria

| | |
|------------------------|------------------------|
| GDP growth | 2.2% |
| GDP per head | \$1,865 (PPP: \$6,000) |
| Inflation | 15.4% |
| Budget balance (% GDP) | -2.1 |
| Population | 191.8m |

The oil sector will be held back by unfriendly legislation and separatist disruption in the key Niger Delta, while long-running tensions over ethnic and religious loyalties, in addition to the activities of the Boko Haram Islamist insurgency in the north, will increase the sense of instability. The economy will edge forward after the 2016 recession as oil prices rise and business conditions improve slightly.

Saudi Arabia

| | |
|------------------------|--------------------------|
| GDP growth | 1.7% |
| GDP per head | \$23,833 (PPP: \$56,440) |
| Inflation | 4.1% |
| Budget balance (% GDP) | -7.9 |
| Population | 31.9m |

The king, Salman bin Abdul-Aziz al-Saud, will increasingly delegate decision-making to his son, Muhammad bin Salman al-Saud, the deputy crown

prince. Prince Muhammad will pursue wide-ranging reforms designed to secure long-term economic growth and break the reliance on oil exports, while maintaining the royal family's power. Rising but still-low oil prices will squeeze finances.

South Africa

| | |
|------------------------|-------------------------|
| GDP growth | 1.4% |
| GDP per head | \$5,430 (PPP: \$13,860) |
| Inflation | 5.6% |
| Budget balance (% GDP) | -3.1 |
| Population | 55.4m |

The long-dominant African National Congress is licking its wounds after performing poorly in municipal polls in 2016, and will face a severe challenge from a strengthening opposition in the 2019 general election. In the meantime, the authorities must maintain discipline in both fiscal and monetary policy to contain inflation and protect the country's investment-grade status on international lending markets.

Syria

| | |
|------------------------|------------------------|
| GDP growth | -2.1% |
| GDP per head | \$1,114 (PPP: \$4,170) |
| Inflation | 61.0% |
| Budget balance (% GDP) | -9.8 |
| Population | 16.1m |

Syria's vicious conflict, an intractable struggle between forces loyal to the president, Bashar al-Assad, and dozens of warring rebel groups seeking to supplant him, will rage on, and outside forces will have limited capacity to force the fighting to a conclusion. Many more refugees will depart on perilous quests for safety abroad.

Zimbabwe

| | |
|------------------------|----------------------|
| GDP growth | 4.5% |
| GDP per head | \$925 (PPP: \$1,790) |
| Inflation | 3.3% |
| Budget balance (% GDP) | -3.9 |
| Population | 16.3m |

With politics locked in the withered grip of Robert Mugabe, 92, the country's people will wait for nature to take its course. Even then, with no clear transition plan, there is little promise of stability. The economy will rebound in 2017 from a drought-induced recession, but settle back into its below-par growth trajectory thereafter.



Photo: Aay Kumar D

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Ten business trends for 2017

1 The **US** raises **interest rates** once, by 25 basis points. America's indebted shale-oil drillers make a comeback anyway.

Federal funds rate, % end period

5 **Connecting everything.** More than a third of companies globally will have an "internet of things" project in 2017.

6 **Missile sales** are the hottest corner of the arms trade, growing by 5%. For a delivery to **South Korea**, Lockheed Martin has the bellicose North to thank.

8 Rising incomes and expanding populations, plus economic recoveries in emerging markets like **Russia**, nudge up **agricultural prices**, though by less than 2%.

2 **Retail sales** in countries dependent on commodities suffer: **Brazil's** 2% growth is stellar next to **Venezuela's** 25% drop.

4 Stronger demand lifts **oil prices** to \$54/barrel—too low to sustain **Saudi Arabia's health spending**, which drops to 5% of GDP, half the world average.

7 **India** gains favour with **carmakers** as China's demand decelerates. With just 21 cars per 1,000 people, India has room to advance.

Stock of passenger cars per 1,000 people

9 **China's box-office** takings steal the limelight as they top America's, hitting a peerless \$10.3bn.

\$bn

3 **Emerging-market firms** spread their wings. South Africa's Pick n Pay opens shop in **Nigeria**, where sales volumes rise by 3%.

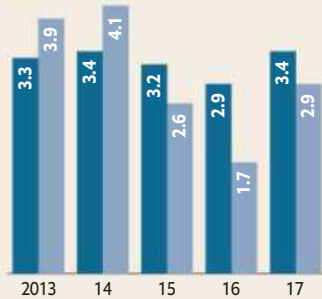
10 **Mobile-phone subscriptions** globally soar to **6.1 bn** as broadband demand in the developing world climbs. Fixed-line connections wither.

Sources: PwC, Vodafone, The Economist Intelligence Unit

Business environment

World GDP and trade

■ World GDP growth (real terms, at PPP), %
■ World trade growth (\$ value), %



Central bankers will keep interest rates low for yet another year, nudging along global growth. Yet cheap credit will strain at the limits of its usefulness: world growth will fail to top 3.3% at purchasing-power parity. Uncertainty will reign—especially in the EU, which will grapple with existential questions. Hopes of a boost from long-discussed Atlantic and Pacific trade pacts look forlorn. Defying free-trade-despising populists, global trade will rise a little more buoyantly in 2017, by nearly 3%. Emerging markets as a whole will grow by a tidy 4.6%, up from 4% in 2016.

2017 forecasts unless otherwise indicated. World totals based on 60 countries accounting for over 95% of world GDP. london@eiu.com



Automotive



Allegations, investigations and litigation: the spreading emissions-cheating scandal sparked by Germany's Volkswagen will drag on into 2017. With diesel cars under extra scrutiny, carmakers will step up investment in electric models. They will trail Tesla, whose vaunted Model 3 sedan, able to go around 350km (217 miles) on one charge, will arrive in late 2017, if the company can boost output. The (still small) market for electrics is growing rapidly: overall passenger-car demand will expand by 3% in 2017; sales of electrics and plug-in hybrids are zooming along over 15 times faster.

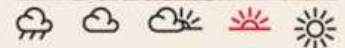
The coolest technologies will coalesce quickly, pointing towards a future of electric-connected cars. Incumbents must either fight or join forces with tech interlopers. Apple's CarPlay and Google's Android Auto entertainment systems are just beginning to tap their potential. Volkswagen will explore ride-sharing, pairing with Gett of Israel; so, too, General Motors, after a \$500m tie-up with America's Lyft. Self-driving will gain momentum, despite safety fears. Volvo and Uber will make self-driving cars in a \$300m partnership; trials start in early 2017. Uber

could go public in 2017 and so might Didi Chuxing, its conqueror in China. Google has started testing its own (predominantly electric) range of driverless cars for ride-sharing. Its nearest Chinese equivalent, Baidu, will be busy developing a (Chery-made) self-driving car—electric, naturally.

As the American car boom fades—registrations are set to advance by less than 2% after reversing slightly in 2016—emerging markets will bring new customers and tougher competition. In pivotal China, locals are clawing back market share, but a tax credit's expiry will slow growth. India is back in favour as its car market revives: Toyota and Fiat Chrysler will invest more. Meanwhile, South Korea's Hyundai is in the midst of a four-year plan, ending in 2017, to roll out 22 new models in Europe as it moves upmarket. Traditional or new-fangled, all players must "localise" to please drivers and control supply-chain costs.

TO WATCH: Electrifying trucks. The improved technology, comfort and handling—and regulated greenness—of passenger cars will spread to heavy vehicles. Tesla will provide a peek at its line of electric heavy trucks and buses in early 2017. Uber, meanwhile, has acquired Ottomotto, a Californian startup making self-driving lorries. Daimler, an industry stalwart, is testing its own autonomous trucks for production in 2017-18. Investments could pay off: **commercial-vehicle sales will accelerate sharply in 2017, by 6%.**

Defence and aerospace



Cheap fuel is a mixed blessing for aircraft-makers. Along with easy credit, it buoys airline profits, stoking demand for planes. Yet it dampens the need for the fuel-efficient models manufacturers are now pushing. On balance, though, they are set to gain altitude as they deliver 7% more jets in 2017, says Moody's, a ratings agency.

Young airlines in Asia are keen customers for big-plane makers and prefer narrow-body jets. Good news for Airbus: orders for its re-engined A320 "neo" models are around 50% higher than those for Boeing's 737 MAX, which is due in 2017. The wide-body A330 neo, a cheaper competitor to Boeing's 787, is coming later in 2017. Given all of this, Europe's standard-bearer will almost match its American rival for market share.

The hangover from austerity lingers, but global military spending is on the rise again, thanks not least to the two-year American budget deal. A wobblier security outlook will also serve to boost global defence spending by up to 4%, Moody's reckons. Proliferating threats include terrorism, Russian adventurism, turmoil in the Middle East and North Korea's nuclear

shenanigans. Turmoil is good for weapons-makers: demand for missiles and missile defence, the hottest part of the arms trade, is growing by 5% annually.

TO WATCH: Print (aero)space. Aerospace and defence firms provide over a tenth of 3D-printing revenue and, as “additive” techniques improve, their interest is sharpening. Printed plane wings are still a long way off. Components for missiles, however, are already being made additively and from 2017 Europe’s MBDA, one of the big three missile-makers, will use printed parts in its Sea Ceptor ship-mounted system.

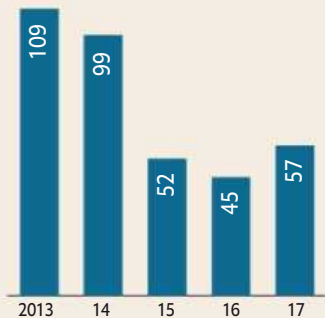
Energy



Cheap oil is forcing commercial drillers to slash investment. But global supplies will grow again in 2017 as OPEC members struggle to implement an agreement on output cuts. Cheating on quotas is par for the course among the group’s members. Resurgent, post-sanctions Iran will pump hard to compete with its adversary, Saudi Arabia, which is spewing out oil at unprecedented rates—above 10m barrels a day. The cartel’s remorseless output (despite languishing prices) has helped stall America’s shale-oil revolution. But 2017 heralds a turnaround for American shale-oil drillers, whose output will roughly stabilise. With more cars on the roads and emerging economies a bit more buoyant, demand for oil will outpace supply for the first time since 2013. The average price per barrel of Brent crude will rise by a fifth to \$54/barrel in 2017.

Oil price

Average, \$ per barrel, Brent



Historically, liquefied-natural-gas (LNG) prices are indexed to oil in long-term contracts. In 2017 the link will be irrevocably loosened. A more efficient LNG market, where spot prices eventually rule, beckons. Emboldening buyers will be huge additions of liquefaction capacity, notably at Chevron’s gargantuan Gorgon facility in Australia and Sabine Pass and Cove Point in America.

In Japan, creeping restarts of nuclear reactors shuttered after the earthquake in 2011 and growing energy efficiency will slow the appetite for LNG. Worldwide, energy consumption will rise by 2%.

Global coal demand will stagnate and a recent price rally will prove short-lived. Indian coal consumption is rising rapidly, but China’s looks to have peaked and will slip slightly in 2017. Green schemes—China says it will launch a nationwide carbon-trading system—will boost capacity for generating power from renewable sources.

TO WATCH: Pemex’s problems. In July 2016 Mexico’s Petróleos Mexicanos announced its 15th consecutive quarterly loss. Production is falling; its pensions bill is worth nearly a tenth of national GDP. The troubles are hastening some tough choices, and the company will at last bring in foreign partners. First up is the Trion deepwater field near the US border, which could require \$11bn of investment.

Entertainment



Cinema is predominantly a China story. China’s box-office takings of \$10.3bn in 2017 will surpass America’s, according to PwC, an accountancy, supplying most of the 8% growth in global revenue. Chinese film fans are underserved, so cinema screens are going up at the heady rate of 15 a day. Yet Hollywood studios will feel short-changed unless quotas on foreign films are axed—unlikely, given protectionist instincts and censors’ insecurities about showing foreign fare.

Superheroes will remain a staple for Hollywood: in November, Warner Bros’ “Justice League” will reunite a raft of DC Comics misfits. Sci-fi will provide plenty of competition. With Episode VIII of Star Wars due in December, Disney will doubtless hope to beat the \$2bn grossed by the previous instalment, “The Force Awakens”.

Studios and traditional TV-players face a run for their entertainment dollars from over-the-top video and streaming. The leader, Netflix, hopes to become solidly profitable in 2017. But subscriber growth is slowing. Content owners will fight back with their own streaming services. Looming threats will come from Amazon and Hulu, which plan to show live TV from 2017.

TO WATCH: Pokémon Go go go. How can Nintendo possibly hope to follow the runaway success of Pokémon Go? Why, with a second-generation version of the “augmented reality” game

2017 WHAT IF?

Here’s a good party game for the festive season: fantasy tech mergers. Deals in the sector have surged. Surely, though, there must be some “synergistic” acquisitions left for Silicon Valley startups-turned-giants seeking to recapture their youth? Might Google swallow Twitter, perhaps, or even a car company? Could Amazon snap up Best Buy to become a bricks-and-mortar purveyor of consumer electronics? Intriguing possibilities abound. But **Apple buying Netflix** (aka Applix?) is particularly beguiling. Tim Cook, Apple’s boss, says it could spend big for “a deal that fits strategically”. It could, for example, be in the market for a video-streaming company. Its own efforts in video, via Apple TV, have not been knock-out successes. Apple needs a boost. While Netflix has its problems (see Entertainment), it is the undisputed market leader. Apple could be a handy financier for its ambitious expansion plans. The company is not known for frittering its cash hoard, now worth about \$230bn. But then Netflix might only cost a paltry \$40bn.



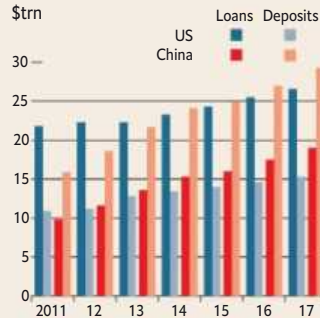
and a movie spin-off, “Great Detective Pikachu”, to begin production in 2017. It will also launch the Nintendo NX console in March—reportedly portable, which should please Pokémon addicts.

Financial services



The opportunity to save, borrow and invest will reach more people than ever in 2017. As financial services spread, total lending will top \$100trn. A bank or investment firm will surely fall here or there, but after years of jangling nerves, financial systems thankfully look fairly stable. Yet for the titans of finance, finding ways to profit will be a frustrating business. Blame flagging rich-world economies, sagging or subterranean interest rates, and suffocating regulations.

Financial services



America will make banks fall into line with stricter rules on liquidity requirements from 2017. Lenders in Europe have been given all of 2017 to swim through the sea of paperwork between them and compliance with the EU’s MiFID II regulations. In the City of London, Brexit will cast a pall of uncertainty over many things, including the need to comply with EU rules.

Rock-bottom interest rates will be a burden for most financial firms, nar-

rowing banks’ interest margins. Growth in lending will expand only weakly in real terms in many slow-growing rich countries. In emerging markets with loftier rates, juicier interest margins and expanding populations, lending growth will reach double digits, as, for example, in Indonesia (17%) Vietnam (15%) and the Philippines (11%).

Deposits in China will approach \$30trn, nearly twice US levels, and lending will grow by 10%, supported by interest-rate cuts in early 2017. As reform advances, smaller beneficiaries will bring the fight to big banks like ICBC, the biggest globally by assets.

TO WATCH: Technophobes to tech-nophiles. Bankers fear financial technology, but will try to harness it. Blockchain, a digital ledger of transactions, is a much-hyped part of “fintech” firms’ challenge to incumbents. Fans point to its potential to save back-office costs. If blockchain works, industry stalwarts will seek to bend it to their own designs. Indeed, the World Economic Forum reckons 80% of all banks will be using it by 2017.

Food and farming



Bad weather for the 2015-16 crop year broke a run of bumper harvests that had long depressed agricultural prices. The El Niño weather phenomenon reduced output in many regions—palm trees took a beating, for instance, and production of cocoa will still feel the effects of El Niño-induced drought in 2016-17. Maize will be a notable exception, as near-record planting in America forces up global production. Largely, though, food harvests will be little better than the preceding season, and in some cases worse. Given high stockpiles, the EIU’s index of agricultural prices will stage a slow recovery, rising by less than 2%.

Agricultural commodities

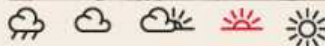


Rising demand in developing countries will also push prices up; population growth, higher incomes and changing tastes will work their magic. The end of recessions in Brazil and Russia will help, although Russia has extended for 2017 its ban on importing European foodstuffs, in response to sanctions over the Ukraine crisis.

Momentously, EU production quotas for sugar will go in 2017, just as prices rise by 10%. Europe, once a major sugar producer, will be on the path to becoming a net exporter of the sweet stuff again. France's Tereos, a global co-operative of 12,000 farmers, is expected to increase its sugar-beet output in 2017 by 20%. Poor sugar-exporting countries in Africa and the Caribbean will need to find new teeth to rot. In Argentina, the president, Mauricio Macri, removed export taxes on wheat, maize and sunflower in late 2015. Unshackled, Argentine wheat production will surge by 25% in 2016-17.

TO WATCH: All the Teavana in China. Starbucks may have once been all-but-evicted from the Forbidden City amid a nationalist outcry, but America's iconic coffee chain now intends to sell tea to the Chinese. It is launching its "Teavana" brand in 16 markets in Asia. Looming largest is China's 63bn yuan (\$9.4bn) market for tea—ten times as big as for coffee, Bloomberg reports.

Health care



After a nasty slip, spending on health is climbing again and in 2017 will rise by 4% in dollar terms globally. A more detailed prognosis depends on local economic conditions. Health-care markets in the Middle East and Africa will lose lustre as the likes of Saudi Arabia, where health-care spending as a share of GDP will fall back below 5% (compared with a world average of 10.5%), pare back lavish plans hatched in the oil boom. South Africa's weak fiscal

position will keep spending flat. Asian countries building universal health-care systems—think India and the Philippines, with health-care spending growing by 7%, Pakistan (9%) and Indonesia (11%)—will help counterbalance a slowdown in China (4%). Thirty percent of new health-care outlays globally will be in Asia.

Western Europe's tentative economic revival will loosen the squeeze on health services. Stricter EU rules on medical devices mean more red tape but, following scandals over dodgy hip replacements and breast implants, should help protect patients. A new problem could come from unproven, unregulated stem-cell treatments, booming in trend-setting America.

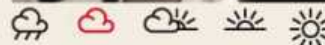
Under the Affordable Care Act, American spending will expand (by 4%) but so will cracks in the system. With health insurers' profits threatened, pressure will mount for higher premiums. If regulators stymie this, insurers' willingness to participate in Obamacare may shrivel. Worldwide, pharma firms face intense pressure to prove value and cut costs. But this will not prevent drug sales growing by 5%, thanks to innovative treatments and fewer medicines coming off patent.

Health-care spending



TO WATCH: Oncological connections. Certain antibodies have had striking success in combating cancer. Anti-PD-1s, which act against "programmed cell death protein one", make it easier for the immune system to attack cancer cells. Next, biopharmaceutical firms want to combine them with other effective treatments, from chemotherapy to vaccines. Though most success with anti-PD1s has come in fighting skin and lung cancer, pharma firms are exploring wider uses.

IT hardware



Hardware will play the ugly sister to software's cool sibling. Gartner, a consultancy, says the volume of devices

2017 WHAT IF?

The Economist Intelligence Unit sees sunnier skies for most emerging markets in 2017. Yet corporate debt in the developing world stands at 75% of GDP compared with 50% a decade ago. Could an **emerging-market corporate-debt crisis** suddenly darken the horizon? Quite conceivably, yes. The trigger could be a flight to safety as America's Federal Reserve tightens interest rates in 2017. Venezuela, with gaping fiscal and current-account deficits and a government in disarray, would be most vulnerable. A sharp fall in commodity prices, possibly caused by an **economic hard landing in China**, is another risk for emerging markets. The EIU rates the chances of this at 40%, the biggest threat to its worldview.



sold, ranging from PCs to mobile phones, will grow again in 2017, but only just. Businesses and governments will spend 5% more on computer equipment in 2017, according to another research house, Forrester, thanks to the popularity of PCs incorporating the new Windows 10 operating system and sales of tablets—used by waiters taking orders, for instance, or diners doing so themselves.

Traditional storage- and server-makers will suffer from the cloud-computing challenge. Players like Taiwan's Quanta and Mitac, and China's Sugon and Lenovo, have the added advantage of being based in Asia, the heart of new demand.

Machines will increasingly talk to machines: 37% of enterprises will implement an "internet of things" project in 2017, according to a survey by Vodafone, a telecoms company. Boosters of such wizardry are looking to Chinese factories as a market: the manufacturing powerhouse ranks only 28th globally in automation.

TO WATCH: Robot rights and wrongs. As artificial intelligence spreads, so too will ethical dilemmas. Look at "medtech". Fans claim AI will remake health care, using algorithms to do the grunt work of diagnostics. Yet could a virtual doctor explain its thinking so patients can make informed choices? From 2017 the Realbotix project talks of producing an advanced sex robot equipped with AI.

IT software and services



A somewhat brighter global business environment will lead to a 9% jump in spending on "business technology"—things like programs for managing customer relationships, call centres and supply-chain management. China's market for IT and communications, while one to watch, will be a distant second to America's.

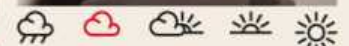
Two related trends should prove lucra-

tive. Titans of engineering will give themselves makeovers for the era of "Industry 4.0" and the "internet of things"; tech giants will be scrambling to convert themselves into purveyors of the "cloud" and services based there. In a tie-up between General Electric and Microsoft to be launched in earnest by the second quarter of 2017, GE will run its Predix software—built for the industrial internet of things—on Microsoft's Azure cloud service. Microsoft wants to close the gap with Amazon, the runaway market leader.

Supplying cloud "platforms" and the "software-as-a-service" applications used there will be two of the best bits of the IT business. Revenues of the latter will grow by 23%, says Forrester. In a nice self-sustaining loop, nobody will adopt "SaaS" faster than app developers: this (still tiny) corner of the market is set to grow by half in 2017. Standing on the shoulders of industrious app-writing, total software spending will expand by 7% to \$640bn, with an only slightly less gargantuan sum spent on consulting and systems integration.

TO WATCH: Just not going Huawei. Having become the world's third-largest smartphone-maker, China's Huawei plans to harry the Western kings of the cloud. It already provides cloud services in China and is expected to spend \$1bn or more a year on R&D to make itself a top global player in data-centre hardware and software.

Media



After a year of telegenic happenings like the Olympics and reality-TV stars campaigning for the American presidency, Magna Global, a consultancy, forecasts slower growth in advertising revenue in 2017, at 3%. TV is where ad men traditionally make most of their money, and America's TV-advertising market is the main event. Yet things are changing. Growth in TV-ad revenue comes increasingly from markets

like India and Brazil. Meanwhile, total internet advertising will expand by 11%, according to PwC. Digital spending could be nearly 40% of the total in 2017, says Magna, more even than TV.

Few would doubt that Facebook and Google will attract most of the fresh online ad spending: recently, they have mopped up perhaps three-quarters of it in America, says a venture-capital firm, Kleiner Perkins Caufield & Byers. Takings from video ads on mobile phones will rise by a third in 2017.

Print publishers are struggling to profit from these trends. Ad revenue from newspaper websites will be only about a fifth of print ads and will fail to grow quickly enough to counterbalance the latter's sinking popularity. Newspapers' total advertising take will slip by 3% and circulation will barely rise; the outlook for magazines is almost as bleak.

Metals and mining



Years of falling prices have battered mining firms. Fortunately, many of them will enter 2017 in leaner shape. A titanic splurge on new pits to feed China's boom has given way to deep cost-cutting: makers of metals like steel and aluminium have been shuttering operations. The biggest, BHP Billiton, has booked record losses but aims for productivity gains of \$2.2bn in the two years to June 2017. Such restraint and a better economic outlook will reward miners with higher prices in 2017. As the cycle starts to turn, the EIU's index of industrial commodity prices will climb by nearly 8%.

Still, metals prices will lag far below those of the boom years. China's appetite for commodities will not rebound to what it once was. Only some of the resulting gap in demand will be filled by South-East Asia and India.

Take steel. Output in China, the biggest producer and consumer, will fall by less than 1% as excess capacity remains: China will produce almost 25% more crude steel than it needs. But Western steel producers will rejoice at new EU and American tariffs on some Chinese exports. Steel prices will rise by 4.5%.

Zinc will be the only major metal to surpass its 2011 price, with an average 25% surge in 2017. Car manufacturers are mostly to thank. The picture is less rosy for copper and aluminium: cutbacks and rising demand will not be enough to raise prices much. Gold will keep glittering. Low interest rates in many countries will suck money into gold exchange-traded funds.

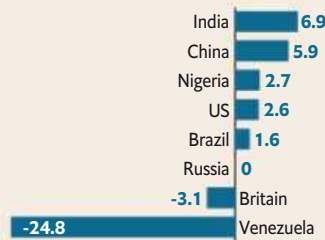
Retailing



Traditional retail and consumer-goods giants will be assaulted by nimble online firms and emerging-market players (China's Alibaba ticks both boxes). To keep up with the Amazons, Walmart will invest \$2bn in grocery services, warehouses and a mobile app in 2016-17; the world's biggest retailer will also be busy assimilating Jet, an e-commerce marketplace.

Retail sales

Volume growth, % change



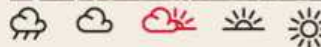
Retail-sales volumes will expand at a tepid 3% worldwide in 2017 as economic and political uncertainty reduce consumer demand. Emerging markets, despite their promise, will be uninspiring. Retail-sales volumes in Russia will not budge in 2017 (albeit an improvement from dire recent form), amid tit-for-tat sanctions with the EU. McDonald's, though, is expanding there and intends to use Russian potatoes in its French fries by 2017. In Brazil growth won't even reach 2%; in troubled Venezuela, sales will plunge by 25%. As mighty China also flags—6% growth is low by its standards—more companies will look to India (7%) to take up the slack. IKEA opens for business there in late 2017.

Brace for more cost-cutting and talk of "synergies" through acquisitions. Consumer spending on food, beverages and tobacco will grow by 5%. But brewers will find the mega-merger between SABMiller and Anheuser-Busch InBev difficult to swallow. The new firm—with around 30% of global beer sales and 50% of profits—will shed thousands of jobs and, to appease regulators, European assets worth perhaps \$6bn.

TO WATCH: Bricking it. Forecasters reckon Amazon will overtake Macy's in clothing sales in 2017. As it struggles to cope with online competition, the biggest American department-store chain will shut most of the 100 stores set to go in its latest closures by 2017. Terry Lundgren, its long-serving chief executive, will step down in the first quarter (but remain as chairman).

Like other bricks-and-mortar chains Macy's, which has a tie-up with China's Alibaba, favours "co-opetition" with online peers in its search for survival.

Telecoms



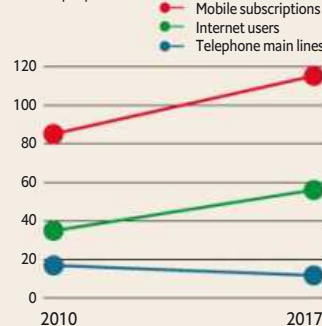
Belying its name, fixed telecoms faces rapid change. By 2017 fixed-line connections will have shrivelled by more than a quarter since 2010, to around 630m worldwide, while mobile subscriptions will have climbed from 4.3bn to over 6.4bn. The number of internet users will surpass 3bn. The future, then, is in mobile broadband in developing countries. Operators will look to this market and buy up spectrum licences so they can roll out advanced fourth-generation (4G) and long-term evolution (LTE) networks.

Cheap 3G smartphones will be at the core of much of the growth in broadband and mobile data in regions like South-East Asia and eastern Europe. But countries from Mexico to South Africa will hold 4G-spectrum auctions. Bidding in America for wireless in the 600-megahertz band, used until now by TV stations, may drag on into 2017. T-Mobile, one of the major players, has been waging an intense price war but is now turning its attention to infrastructure investment.

Everywhere, though, deploying new spectrum will strain operators' balance-sheets. India may need to launch another auction in 2017 to sell leftover 4G airwaves at a bargain. Nonetheless, an Indian giant, Reliance Industries, reckons 90% of Indians will have access to its 4G service by 2017. In the biggest smartphone market, China Mobile alone hopes to begin 2017 with over half a billion 4G subscribers.

Global telecoms subscriptions

Per 100 people



The top twosome of smartphones, Apple and Samsung, will be under-terred. Might Apple's iPhone 8 discard the home button (gas) in favour of an edge-to-edge display? Samsung wants to put its combustible Galaxy 7 phones

behind it, hoping to generate (metaphorical) heat with its Galaxy S8. Yet worthy Chinese adversaries are rising fast. If Oppo maintains its current 60% output increases, by 2017 it could join the world number three, Huawei, in churning out over 100m phones a year.

Partnerships will push towards 5G. Official standards are years away but Sweden's Ericsson says it has agreements with 26 telecoms carriers to deploy 5G, and the components will be ready by 2017. South Korea's SK Telecom plans to launch a trial 5G service using technology made with Nokia and capable of speeds of 19.1Gbps—like downloading a movie in a few seconds.

Travel and tourism

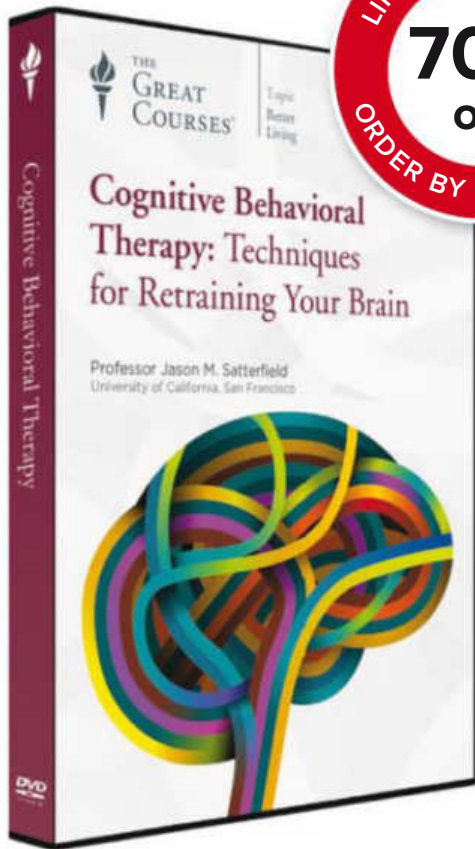


Tourism spending is set to increase by 4% in 2017, surpassing \$5trn. Low fuel prices will help airlines everywhere. Competition will soar, especially in Asia, pulling down airfares there by 1%, according to the Global Business Travel Association and Carlson Wagonlit Travel, a consultancy. Rivalry is particularly ferocious between budget players in South-East Asia, where carriers like Vietjet are expanding quickly. China's big three state airlines will need to hire 100 pilots a week to fly their expanding fleets, Bloomberg reports.

The arrival of super-efficient jets is opening up the new battleground of "ultra-long-haul" flights. Qantas hopes to start flying the almost 14,500km between London and Perth from 2017. The economics of such lengthy journeys remains to be proved. Particularly in Europe, airlines will worry about terrorism in 2017: statistically a tiny safety risk, its power to scare off fliers is outsized.

Entrepreneurs are queuing up to conquer space for commerce. A big symbolic achievement would come if America's Moon Express or Israel's SpaceIL lands safely on the Moon by December 31st, thus nabbing Google's Lunar XPRIZE.

TO WATCH: Your plane or mine? Tourism offers many opportunities for the "sharing economy", with more to come. eMarketer expects 14.5m users of lodging services like Airbnb in 2017, up by 15.5% from a year earlier. Even yachts and private aircraft will be pooled via an array of apps: one, Jet Smarter, talks of moving into Asia in 2017. The ever-expanding ranks of Asia's millionaires aspire to own private jets, and flight-hailing companies hope they will share them.



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Best Consumer Banking-Private Banks - Kalder Customer Satisfaction Index of Turkey



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Business

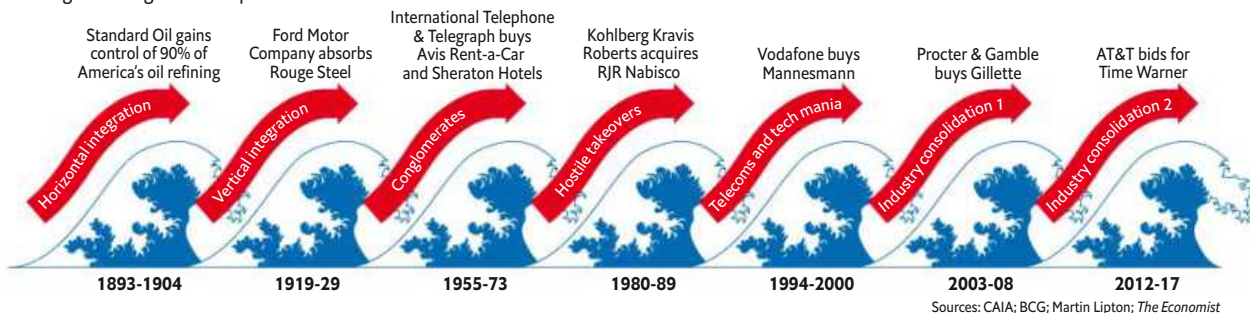
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Swell times

Surges in mergers and acquisitions



Waving goodbye

Patrick Foulis *NEW YORK*

A gigantic bout of dealmaking will draw to a close

Over the past century and a half the Western world has seen seven great waves of mergers and acquisitions (see chart above). In the late 19th century, in the first such wave, firms combined to create national giants in metals, oil, railways and consumer goods that stretched from the redwood forests to the waters of the Gulf Stream. By the 1980s sharp-suited raiders who were too tough to have lunch used junk-bond financing to undertake hostile takeovers of conglomerates. In 2017 the latest wave of dealmaking will finally ebb. Mediocre bankers and bosses will twiddle their thumbs and rue lost fees and bonuses. Clever ones will try to imagine what the eighth wave of dealmaking, which will peak in the early 2020s, might look like.

The present bout of deals began in 2012, with \$18trn of transactions announced since then (see chart below). Dealmakers have reacted to the post-financial-crisis world of low economic growth, cheap money and caution. They have sought to axe expenses, boost market shares and cut tax bills. American firms have accounted for half of all activity. Combinations including Dow Chemical and DuPont, and Kraft and Heinz, are expected to yield over \$100bn of annual cost savings in total. The health-care industry became addicted to “in-

versions”, with American firms taking over European ones to shift their legal domicile and cut their tax bill. Cross-border deals have aimed to create global monopolies. The \$120bn purchase by Anheuser-Busch InBev of SABMiller will create a beer monster that sells almost one in three bottles emptied around the world.

This seventh wave of M&A will end in 2017 for three reasons. First, there will be a resurgence of antitrust regulation, just as there was in the early 20th century, as a growing body of analysis suggests that declining competition may explain low growth. Several deals in America have already been blocked, and AT&T’s proposed \$109bn blockbuster bid for Time Warner will be an early test of the next president’s trust-busting mettle.

Second, populism will make deals harder. In some cases the hostility will be overt: Theresa May, Britain’s new prime minister, says she may block certain foreign takeovers. In other cases it will manifest itself through new technocratic obstacles. America’s Treasury is trying to stop inversions and the European Union is cracking down on corporate tax-dodging, too.

Third, because globalisation is going backwards, in-

2017 IN BRIEF

Emma Walmsley takes over as CEO of GlaxoSmithKline, making her the first female CEO of one of the world’s 25 biggest pharmaceutical companies



Patrick Foulis: New York bureau chief, The Economist



Cane and able

Andrew Palmer

The old will have a firm grip on business life in 2017

The rich world is ageing. So are its business leaders. A third of American boards now set a retirement age for their members of 75 or above, according to a survey by Spencer Stuart, an executive-recruitment firm. Only 8% expected their directors to stick around that long back in 2005. Almost two in every five S&P 500 boards have an average age of 64 or older, compared with 18% of boards a decade ago.

That could still leave many of these leaders with another 20 years or more in the corner office, to judge by some of America's most famous corporate figures. For all the attention bestowed on the youthful revolutionaries of Silicon Valley, the very old will be again making their mark in 2017.

Age is plainly no barrier to managing money. Warren Buffett, a long-termist to his core, will reach 87 in 2017, all being well*; Charlie Munger, vice-chairman of Berkshire Hathaway, the holding company run by Mr Buffett, turns 93 on the first day of the year. T. Boone Pickens, another billionaire moneymaker, will blow out 89 candles in May; George Soros will be 87 in August; Carl Icahn will be an activist 81.

It is not just in finance that the elders thrive. Sheldon Adelson, a casino magnate,

Investors will have mixed feelings about such longevity



What's age got to do with it?

will celebrate his 84th birthday in 2017. Rupert Murdoch, a media mogul (pictured, with his wife Jerry Hall), will mark his 86th. Li Ka-shing, Hong Kong's richest man, will become 89, not far behind 92-year-old Serge Dassault, boss of the Dassault Group, a French conglomerate.

At the age of 85 Bernie Ecclestone is likely to retain an active role in running Formula 1, a car-racing championship, even if control of the sport is passing to the next generation in the form of John Malone, an American magnate who will be 76 in March. The new American president, too, will strike a blow for pensioners.

Investors will have mixed feelings about such longevity. Few Berkshire Hath-

away shareholders want to see the back of Mr Buffett, for example. But plenty worry what will happen when he and Mr Munger have gone: succession planning is keenly watched when the boss is an octogenarian.

Another concern is that an elderly boss may stay on too long. The mental competence of Sumner Redstone, the 93-year-old controlling shareholder of Viacom, a media firm, was the subject of lurid testimony in a 2016 lawsuit, for example. Another ageing tycoon, Donald Sterling, was found to be cognitively impaired in a case brought by his wife in 2014. Now that age is not wearying bosses as once it did, such cases will become more likely in future. ■

Andrew Palmer: business affairs editor, *The Economist*

*Disclaimer: Ageing can stop as well as continue.

2017 IN BRIEF

Norwegian Air launches one-way flights from Cork to Boston for as little as £52 (\$64)



Investors will get nervous about creating planet-straddling multinationals through deals, particularly given their lacklustre performance. The return on investment that America's multinationals make abroad has dropped from 12% in 2008 to 8% today. The technology stars of the past decade have gone global without Wall Street's rainmakers. Google, Apple and Facebook, which are among the world's five most valuable firms, make a majority of their sales abroad yet have not done any big cross-border deals.

Pieces of eight

As the old wave of acquisitions peters out in 2017, the makings of the next boom will become clearer. Some sprawling Western multinationals will be unwound in the coming decade. Financial firms such as AIG, ING and Royal Bank of Scotland have already been partly dismantled. Other industries could be next. General Motors and Ford make, respectively, 92% and 90% of their profits in North America, which suggests that their foreign operations destroy value. So far investors have been tolerant of such sloppiness, but their patience will

start to wear thin.

Forward-looking bankers will hop on a plane to Europe. If the continent muddles through Brexit and avoids another currency crisis, there will be inexorable pressure for its firms to merge in order to create regional champions. The continent's companies have lost their seat at the top table of global business over the past decade: they are 40% smaller than American ones, measured by the median profits of the top 500 listed companies in each region.

Last, outbound deals will gush from China. Chinese buyers have already bought Italian football clubs, Swiss seed-manufacturers and American sausage-makers. But the incentive for Chinese savers and companies to diversify more away from their home market remains overwhelming. Of course, the experience of other countries and companies suggests that expanding abroad through takeovers is fraught with pitfalls. But then if dealmakers paid attention to the lessons of history there would have been only one or two waves of mergers and acquisitions in the past 150 years. ■

Hired help

Alexandra Suich *SAN FRANCISCO*

Virtual personal assistants will become smarter—and push into more people's everyday lives

Not long ago, a startup founder in San Francisco was trying to organise a meeting with someone visiting from Europe, and setting a time required dozens of e-mails back and forth. The European arrived with a bottle of wine for the founder's personal assistant, Clara, as a gesture of thanks for putting up with the scheduling hassle. But the assistant could not accept the gift. Clara is a software service from a startup of the same name that helps schedule meetings via e-mail. It is powered by artificial intelligence (AI), with some human supervision. One day it will need no help from human beings at all.

January will mark ten years since Steve Jobs unveiled Apple's iPhone and ushered in the smartphone revolution. The coming year will also be another landmark one for the smartphone and mark a turning-point in how deeply and seamlessly people interact with their personal devices via AI. Software secretaries, otherwise known as "intelligent agents", are already on the market. But they are about to become both more commonplace and more sophisticated.

Virtual personal assistants will take two forms. Some services, such as Clara and its competitor x.ai, will perform only specific tasks, such as scheduling meetings via e-mail, which saves consumers time. Others will try to provide more broad-based services, offering information and responding to requests to play music or buy things for their masters. Software will get to know its boss and her tastes so well that in time it will come close to doing what a real-life personal assistant can do.

There are several reasons for believing that 2017 will be a breakthrough year for virtual personal assistants. One is that they are a priority for every big technology company, including Amazon, Apple, Facebook, Google, Microsoft and Samsung, as well as a swarm of startups. They all want to win users' loyalty and embed themselves further in consumers' lives.

In addition, after years of hype, companies are making real strides in AI. This will not only improve the accuracy of virtual assistants but also broaden their skills beyond simple tasks, like searching for restaurants nearby.

And, finally, devices that host personal-assistant technology are becoming ubiquitous, and consumers are growing more comfortable with using them. This will provide an added incentive for companies to improve these services quickly.

The phone will be just one of the devices scattered around homes that will pick up on consumers' needs, gather data and execute tasks. Amazon's Echo, a small speaker that hosts personal-assistant technology, is one early offering that can turn off lights and set reminders. Google is not far behind with a rival called Google Home, and several more products will hit the market in 2017. Just as people started with short Google searches and now know how to ask long, complex questions of their search engines, people will be able to make complicated requests of their personal assistants and the assistants will keep up, says Josh Elman of Greylock Partners, a venture-capital firm.

It will be up to consumers whether they want to speak to their personal assistants or type to them. Many will find speaking an easy way to communicate with

Software will get to know its boss and her tastes so well that it will come close to doing what a real-life personal assistant can do



their virtual secretaries, as they would with a real-life one (see box on next page). But typing, or tapping, will probably become the main point of contact as smartphones grow ever smarter and personal assistants will take on a more important role in the mobile ecosystem. Instead of navigating between dozens of apps, users will rely primarily on their software secretaries as their primary navigational tool on their phones. This means that apps which do not have a commercial relationship with the company that makes a virtual assistant risk being pushed aside.

People who don't need people

The rise of intelligent agents will affect many industries. Customer service will change. Virtual assistants will handle the drudgery of complaining to airlines about

2017 IN BRIEF

BlackBerry stops making phones, instead focusing on mobile software and security



Alexandra Suich:
United States
technology editor,
The Economist

- ▶ lost luggage or delayed flights. Health care will also be transformed: virtual personal assistants will gather information for doctors in advance of visits, or provide unwell users with more detail about their symptoms or where to get medicine.

But the biggest change in 2017 will involve commerce. More consumers will go through intelligent agents to buy services and things. They will use these assistants to book airline and movie tickets, order Uber rides and arrange for groceries to be delivered.

As it becomes more common to buy things through such virtual agents, however, plenty of tricky questions will need to be worked out. For example, is the intelligent agent allowed to share information about its user's schedule or whereabouts with an outside party to book a service, such as a car? There are already plenty of concerns about the data trail that mobile devices leave, which can allow their users to be tracked and their pri-

vacuity to be compromised. As virtual assistants learn more about their bosses, the question of who owns what data will take on even greater significance.

So will the question of divided loyalties. If an intelligent agent is tasked with buying a flight or booking a hotel, is it obliged to go for the lowest rate, or might it instead direct the business to a firm that has a commercial relationship with the company that designed the virtual assistant? One of the advantages of having a real-life personal assistant is that it is generally clear who works for whom. If software makes choices that run against consumers' financial interests, it risks arousing distrust.

As a result, software secretaries are likely to run into controversy in the year ahead, as they push into the personal lives and homes of people around the world. Perhaps they will be smart enough to see this coming, and smooth things over by ordering up a few bottles of wine for their users. ■

2017 IN BRIEF

Microsoft launches **Xbox Project Scorpio**, a console incorporating virtual-reality technology. Nintendo, meanwhile, unveils its mysterious new **NX device**



I know that voice

Ludwig Siegele

Talking will compete with typing when it comes to controlling your devices

Will you ever fall in love with your thermostat? Even after the movie "Her", in which the protagonist starts an ultimately disappointing relationship with a highly sympathetic personal computer, that may seem an odd question. But soon thermostats and many other devices will be able to listen—and talk back.

One reason for this is the rapidly improving artificial intelligence that powers digital assistants. Equally important, the technologies that allow people to use their voices to control devices have been getting better, too. So much so that 2017 may become the year in which this type of computing interface goes mainstream.

Voice-control systems have been around for some time, for instance to give instructions to navigation systems in cars, but the number of commands they can decipher is limited and the devices can't really talk back. Digital assistants, such as Microsoft's Cortana and Apple's Siri, which emerged in the early 2010s, are much more capable. However, it is only now that the technology, in terms of response times and recognition rates, is really getting good enough to be widely adopted. "As speech-recognition accuracy goes from 95% to 99%, all of us...will go from barely using it to using it all the time," says Andrew Ng, chief scientist at Baidu, a big Chinese search engine, which has invested heavily in this area because the abundance of Chinese

characters makes typing commands laborious.

Echo, a device made by Amazon, an e-commerce conglomerate, gives a taste of things to come. Costing \$180 a pop, this "smart speaker" allows users to play music, turn on the lights, call a taxi and, of course, order stuff from Amazon—all using voice commands. Such features have made the Echo an unexpected hit: Amazon is predicted to have sold about 3m units of the device in 2016,

a number the firm hopes to treble in 2017. Soon no tech-savvy household will be without one.

What makes the Echo—and Alexa, the service that powers it—so attractive is its ease of use. Owners can activate the device simply by saying a keyword from wherever they are in the room. They don't have to tap laboriously through a hierarchical menu and type in words. (This is a major improvement: humans can speak at 150 words per minute on average, but type only 40). And the system knows things such as where it is and the previous shopping lists it has been given, which greatly simplifies interaction.

Watch out, the walls have ears

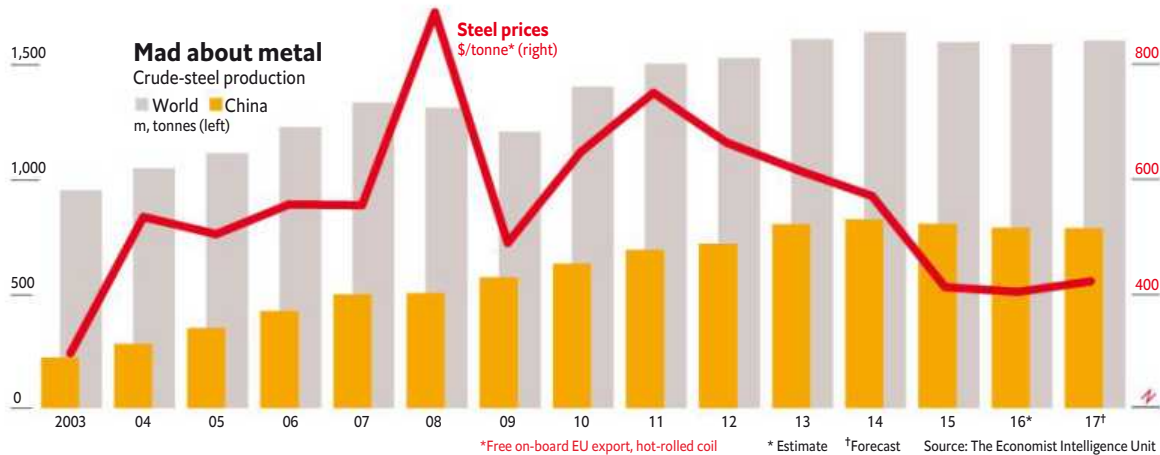
Before people allow such devices into their homes, however, they should think twice: these may be very convenient, but they also pose

a serious risk to their owners' privacy. They are in essence highly sensitive microphones with a connection to the internet. If the recent history of technology is any guide, it won't take long before hackers, spies and virtual intruders find a way to tap into them. ■

Ludwig Siegele: technology correspondent, *The Economist*



Humans can speak at 150 words per minute on average, but type only 40



Melting point

Charles Read

Steel-mill closures and job losses will intensify across the rich world

Even in a world of cheap plastic and microchips, the importance of steel to the world economy is in no doubt: 1.6bn tonnes of the metal, worth \$900bn, are still smelted each year. From ships to skyscrapers and cars to cookers, it is a material that remains necessary for everyday life.

But steelmakers have been feeling the heat since the financial crisis of 2007-08. Steel prices have crashed by nearly two-thirds since 2011 because of flatlining global demand and rising exports from China, which now produces half of global output. In 2016 they fell so low that the industry went into meltdown. One in six British steelworkers lost their jobs, and in April America's second-largest producer, US Steel, fired a quarter of its workforce.

Now that global inventories of steel are low, industry bosses and steelworkers alike are hoping that 2017 will bring higher prices and profits. Such optimism is premature. With no sign of Chinese overproduction abating, life could get even worse for other producers around the world.

Much too much of the stuff

The underlying problem is overcapacity. Steel mills around the world can produce 2.4bn tonnes of the metal a year, but demand is just two-thirds of that level. Around half of that spare capacity—equivalent to mills that together produce 350m-400m tonnes a year—will need to close for the industry to make sustainable profits, according to recent analysis by EY, a consultancy.

Yet the pressure to close inefficient mills will mainly be felt in the West. In January 2016 China's central government promised to cull production by up to 150m tonnes within the next five years. But there is no sign of this so far. Regional authorities, which control and subsidise most of the country's mills, want to keep them open in order to avoid swelling the ranks of the unemployed. As a result, Chinese production fell by just 0.1% year-on-year in the first eight months of 2016. Some other countries, such as Italy and Belgium, have responded by offering their domestic industries sub-

dies to stay open. That will further increase overproduction and push down prices.

There will never be any need for these surplus mills to smelt new steel from iron ore, even as global demand for the metal grows, according to research by Julian Allwood of Cambridge University. As countries develop, they amass all the steel buildings and ships they need, and almost never require more than 12 tonnes of steel installed per person. Instead of buying new steel smelt from ore for construction projects, recycled steel from demolished buildings and scrapyards can be used instead. All future growth in demand for steel can be met in this way, Mr Allwood says. The world will never need more capacity for making steel from iron ore than it has today.

And the capacity that survives the coming shake-out will also require fewer workers to produce the same amount of steel. In America, the steel industry doubles its labour productivity about every 20 years. Advances in robotics have also opened up the prospect of fully automated steel plants that may require virtually no workers at all. The roller mill at Tata Steel's Port Talbot plant in south Wales, for instance, used hundreds of workers when it opened in 1952. But with robotic cranes and computerised controls, fewer than a dozen people are now needed to operate it 24 hours a day.

To survive, mills in Europe and America will need to produce the sort of high-tech steel for cars, planes and railways that still commands premium prices, says Wolfgang Eder, chairman of the World Steel Association and boss of Voestalpine, one of Europe's few profitable steel firms. One of its rivals, ArcelorMittal, is the largest in the world but lost \$8bn in 2015. The firm hopes it can turn its fortunes round with a new range of lightweight steels to be launched in 2017. Whereas in the past the industry focused on making ever more steel, its future now lies in making better sorts instead. ■

Just possibly...

- **Dropbox** launches an initial public offering.
- **Twitter's** fortunes brighten after the company is bought by an economising private-equity firm.
- The opening of the first **Starbucks** in Milan sparks protests.

2017 IN BRIEF

Amazon opens its first grocery outlets in America, available only to users of its online food-delivery service



Charles Read: industry correspondent, *The Economist*

Women take charge

Lucy Kellaway

A power shift in the boardroom

The coming year will be the most remarkable for women in corporations since 1934, when Lettie Pate Whitehead joined the board of Coca-Cola—becoming one of the first women to be made a director of a major American company. Since then women have made progress onto corporate boards, but their advance through the executive ranks has been glacial. More than a hundred years after a young Lettie started managing the family's 80 bottling plants in 1906, the numbers of women doing top management jobs are still very low.

In 2017 expect to see companies take action to make sure more females occupy powerful positions. In the past couple of decades they have messed around with all sorts of programmes designed to encourage women to rise. There have been flexible working plans, mentoring schemes, assertiveness courses, as well as diversity initiatives and cajoling of all varieties. But to little avail. In many industries—particularly in the financial sector—fewer than one in five managers are female, a ratio that is not much better than it was 20 years ago.

From now on the mood will harden. The tool of choice will increasingly be setting targets and quotas for women in management. What has been slow to happen by encouragement will start to occur by edict. Employers will publish demanding targets and declare in public how they are performing against them. They will leapfrog each other in the contest to be the company with the most stretching goals for women in the next three, five or ten years.

They will be persuaded to do this by two things—aside from despair at progress by other means. The first is the success of quotas for jobs on the board, which are now in operation in many European countries. Less directly, the sight of women running several of the strongest economies on the planet can't help but make the cor-

porate world look unfashionably male by comparison.

The weight of public opinion will increasingly punish anyone deemed not to be with the programme. In 2016 Kevin Roberts had to quit as chairman of Saatchi & Saatchi after telling a journalist that there was no longer a problem of sexism for women working in advertising. He demonstrated how such remarks are career-ending and capable of destroying in seconds a personal brand built up over decades. Men will take note—and not only train themselves not to say such things, but not to



think them either.

Instead everyone will claim to believe in the imperative of having more women in charge, whether they do or not. In 2017 the most fashionable thing for a man to do

They won't be able to protest—except possibly in the men's lavatories

will be to refuse to sit on any panel unless there is at least one female on it. To be seen holding forth in all-male company will become an image no-no.

To meet the targets companies will have to drag women through the ranks, rather than enticing them along with a series of limp carrots. This will mean women who do not put themselves forward for promotion, either from lack of confidence or from lack of desire for a bigger job, will be strong-armed into doing so.

With such women in charge, the prevailing management style in big companies will start to shift. For the past two decades a swing away from aggressive alpha management techniques has been widely predicted but has not happened. The addition of a few senior women has not changed things at all, as the ones who have succeeded are the ones who flourish in adversarial conditions.

The new head girls

The next generation of female executives—who have been pulled upwards—may start to manage differently. A more consensual, emotionally intelligent way of leading could start to be a thing at last. In this less flamboyant world, grandstanding and showing off may be rather less fashionable than before. The heroic CEO will be forced to step aside.

The new mood will do wonders for ageism. To get women in sufficient numbers into top management jobs will mean bringing back into the workforce mothers who have dropped out, or promoting those who have dropped into the slow lane to bring up children. This generation of women, in their 50s and beyond, who no longer have to dash home to grill fish fingers will find themselves competing equally with men for the first time since they were at college.

No change is without cost.

A band of mediocre men will lose out. They won't be happy about it, but they won't be able to protest—except possibly in the men's lavatories. Yet even this refuge may soon be taken away from them. As part of a parallel trend not to offend transgender members of staff, the unisex (or gender-neutral) toilet is on the way. Already introduced in some universities, these will start to spread to corporations in 2017. And with their arrival the last thing that physically segregates the sexes at work will go. It will be good for equality, but again there will be a cost. Expect gossip to take a hit. ■

Lucy Kellaway: columnist, *Financial Times*

Unpacking India

Stanley Pignal MUMBAI

The consequences of liberalisation in India will include bafflement and sore thumbs

Weekend mornings spent looking for the exit followed by afternoons trying to work out how part A is meant to fit into hole B—Indians know so much to look forward to in 2017. The country's first IKEA store is under construction and will open its doors in the southern city of Hyderabad late in the year. A decade after the plans were first proposed, and then shelved because of laws restricting the opening of shops by foreign brands, the Swedish chain's arrival marks a symbolic victory for the forces of liberalisation in India. Whether other international investors follow suit will be a gauge of how much India is really opening up under the administration of Narendra Modi.

IKEA was the first foreign retailer to get approval to open stores in India following a liberalising push in 2012. Navigating the thicket of India's central and state bureaucracy has been no easy task, but IKEA clearly thinks it has cracked it: the firm now plans to open 25 stores by 2025, more than it now has in Britain or Sweden, its home market. That is a reflection of India's status as a fast-growing economy, and one rapidly building a middle class with a presumed taste for Billy bookcases and bentwood loungers. Retail sales in India are expected to reach around \$1.2 trillion by 2020,

Many companies are waiting to see how the likes of IKEA get along before taking the plunge



More flatpacks coming soon

nearly doubling in five years, according to a study by the Confederation of Indian Industry and Boston Consulting Group.

The government is trumpeting its openness to foreign investment. But retail is one area where India's protectionist instincts kick in. Foreign stores that sell more than one brand, such as supermarkets, are still in effect banned in order to protect the legions of small shopkeepers that would struggle to compete with them. Single-brand shops are easier to get approval for, but even then many big foreign firms prefer to set up joint ventures with local partners to get treated more like local shops. (Marks and Spencer, for example, has joined forces with Mukesh Ambani, India's richest man.)

IKEA's boss in India, Juvencio Maeztu, says officials have gone out of their way to attract his investment. He

Stanley Pignal:
South Asia business
and finance
correspondent,
The Economist

Lifting the veil

Henry Tricks

Saudi Arabia will make a final decision on selling its most precious asset

The order from on high is loud and clear. Muhammad bin Salman, Saudi Arabia's deputy crown prince, wants Saudi Aramco, the world's biggest and most valuable oil company, to throw itself open to international investors with an initial public offering, possibly in 2018. In 2017 the prologue to that big event will be as intriguing as the IPO itself. The Aramco elite will resist lifting the veil of secrecy that shrouds the company. Other Saudi royals will object to any threat to the oil income that pours into their pockets. Prince Muhammad will seek to forge ahead nonetheless, and the size and scope of the IPO will be a good indicator of how much clout he has.

Some think that he will be unable to fulfil his wish of selling a 5% stake and raising between \$100bn and \$150bn—which

would be the biggest IPO ever. A listing of upstream (exploration and production) assets could require releasing independently audited reserves, which the kingdom has resisted doing for decades. Investors pouring money into a company on which the state depends for almost all its public finances will justifiably fear the government's claim on future revenues. They will worry that Saudi Arabia may resort to using Aramco as a tool of OPEC policy, as it has in the past, even if this is against the interests of minority shareholders.

All this will dampen their appetite, meaning the sale could fetch less than Prince Muhammad hopes. What's more, Saudi Arabia worries about potential legal claims on its reserves if it lists abroad. As a result of the obstacles, Steffen Hertog of the London School of Economics expects the IPO to be limited to downstream assets (such as marketing and distribution), or possibly peripheral upstream ones. Saudi Arabia's oil technocracy "can't be seen to be counteracting [Prince Muhammad], but everyone hates the idea. The company works very well. Dragging it out of its shell

could be counterproductive," he says.

Yet Prince Muhammad also intends to use the Aramco part-privatisation as a symbol of the kingdom's transformation to a future less dependent on oil, and any scaling back of his ambitions would be seen as a defeat. He needs the proceeds from the IPO to establish an investment fund to diversify Saudi Arabia's investments into non-oil assets. And if auditing the reserves is too sensitive, he could ensure they stay off Aramco's books.

Saudi royals will resist any threat to the oil income that pours into their pockets

One thing is for sure in 2017. Investment bankers will be crawling over each other to ensure that the IPO is one of the most lucrative mandates ever. They will urge the deputy crown prince to throw caution to the wind and sell the company wholesale. The Aramco technocrats in Dharan will quietly advise the opposite. ■

Henry Tricks: energy editor, *The Economist*

► hopes a gradual move from a culture of inspection to one where businesses can “self-certify” compliance will make day-to-day running of the stores smoother. IKEA has at least one more hoop to jump through: within five years, 30% of all the stuff it sells must be sourced from India. That is fine for IKEA, which has long made things in India for its international stores anyway. But other firms are not so lucky or flexible.

Where IKEA has forged ahead, will others follow? Amazon is investing heavily in India, even though laws prevent it from shipping its own inventory (it acts mainly as a matchmaker between buyers and third-party sellers). Adidas plans to open stores in 2017—but won’t be allowed to sell its Reebok brand in them. Walmart is restricted to cash-and-carry outlets closed to the general public. Apple’s idea to open its own fancy stores has run into the sourcing hurdle: shifting even a small portion of its production to India looks like a deal-breaker for now.

More broadly, a slew of reforms in the past two years has pushed global businesses at least to explore whether they should put money to work in the world’s second-most-populous country. Many sectors once earmarked for Indian firms have been opened to foreigners—that is, to those willing to abide by several tomes of small print. By April, a single “goods and services tax” will replace a jumble of state-by-state levies which currently make doing business between different bits of India a headache.

Foreign investment has soared as a result, though not in the job-heavy manufacturing sector which Mr Modi has worked hardest to promote. Many companies are waiting to see how the likes of IKEA get along before taking the plunge. If operating in India ends up being no trickier than putting up a flatpack wardrobe, expect even more firms to try to assemble a business there. ■

Easy riders

Simon Wright

Ordinary motorists will get the chance to drive autonomous cars for the first time

A car buff might spot an autonomous Volvo xc90 at the roadside. The discreet sensors and cameras will give away that it is one of a fleet of 100 of the SUVs that Volvo customers in Gothenburg, the carmaker’s home town, will be allocated in 2017 in a trial to gauge how people take to autonomous motoring. Anyone will be able to identify the car in action. As cars piloted by humans whizz past on one of the highways in the city designated for the experiment, the Volvo will draw attention by sticking doggedly to the speed limit. But the Swede in the driving seat, freed to check e-mails or look over her shoulder to keep children in check, may not care that the journey takes a few minutes longer.

Volvo plans to run similar-sized fleets in London and several Chinese cities too. Although carmakers and tech firms, such as Google, have been testing self-driving cars on public roads for some time, no members of the public have yet been handed the keys to one. But Volvo is keen to see how ordinary motorists react to au-



Sit back, relax and enjoy the drive

tonomous driving and the problems they face, such as how to take back control when the autonomous-driving phase of a journey ends.

Those hoping to set their destination into the navigation system and slumber as the Volvo takes the strain are out of luck. The xc90s will operate autonomously—slowing down, speeding up and changing lanes where necessary—on only a few designated stretches of four-lane highways around Gothenburg. Human intervention will be required for the rest of the journey. And if the car runs into difficulties in autonomous mode (say, roadworks appear which the car cannot negotiate), the driver will need to resume control.

This hand-back is tricky. A driver immersed in another activity may need plenty of notice to assume safe control of 2 tonnes of speeding metal. In that sense, the system is scarcely an advance from driver aids that are already available on many luxury cars and are also capable of braking and accelerating independently. Those, however, require drivers to keep hold of the wheel and fix their eyes on the road constantly.

This problem explains a growing interest in “robotaxis”, cars or pods without a steering wheel or pedals, which can make entire journeys on crowded city roads that are complex to navigate. Removing the expensive human component gives these vehicles a clear business case. Ford says that it will develop a mass-market version by 2021. Uber, a ride-hailing giant, is testing a service in Pittsburgh using Ford saloons and adding its own software. Singapore is setting aside a small part of the city for robotaxis based on adapted Renaults and Mitsubishis. GM, in cahoots with Lyft, another ride-hailing firm, has similar plans. Tech firms and carmakers alike are working hard on autonomous cars for business and pleasure, and most hope to have something to show for it in around five years.

So the race is on, but roadblocks abound. Every week a new glitch seems to crop up. Swedish law, for example, requires cars to stop if a roadside policeman holds up a hand; Volvo’s sensors and software can recognise the hand but not if it belongs to a cop or a carjacker. Junctions are tricky at the best of times, but more so when each country has a slightly different traffic-light system. And it is unclear whether a burst of acceleration that breaks the speed limit but gets a driverless car out of danger will be permitted. Having to stick to the speed limit is just one of the brakes on driverless cars. ■

2017 IN BRIEF

Otto, an Uber-owned freight-hauling service, rolls out **self-driving trucks**. Some human input is still needed—for example, in getting the vehicles on and off roads



Practice makes perfect

Vijay Vaitheeswaran SHANGHAI

Sparky management ideas will emerge from China

In 1917 China's first management class was taught at Shanghai's Fudan University. The eastern coast of China was then one of the world's most globalised commercial centres, and entrepreneurship flourished. But war and Maoism left China's education system in tatters. Since capitalism itself was banned for many years, there was little point in teaching business.

When management education returned to China in the early 1990s, many fantasised about a lucrative market training tens of millions. In fact, China awards only about 50,000 MBAs annually, less than half of the number in America. Moreover, though business schools on the mainland have improved a lot over the past decade, most still lack academic ambition.

The re-emergence of the market economy in China after Deng Xiaoping's reforms has produced many frugal innovators like Huawei, a global telecoms-equipment giant, and Haier, the world's biggest white-goods manufacturer. But this striking phenomenon has yet to be the subject of serious academic research in China, laments Lu Xiongwen, dean of Fudan University's management school. "Current research", he says, "is mainly about how to apply foreign-developed knowledge to the Chinese situation, not innovative work." Meanwhile, the most important academic work on management in China is being done by scholars based outside the country.

One explanation is money. Xiang Bing, dean of Beijing's Cheung Kong business school, insists that Chinese business schools must invest heavily in quality research for publication in the world's best journals: "If we do not, we will remain copycats." But many Chinese universities see business schools as cash cows, and siphon off their limited funds to subsidise other departments.

Parochialism is another snag. Western management education knows few borders, and many Chinese companies are going global, but most local business schools prefer to navel-gaze. Classes are taught almost entirely in Chinese, despite the status of English as the language of global business.

Who needs business schools?

The good news is that China's entrepreneurs are reinventing business even as its boffins lag behind. Private firms, in industries ranging from online retailing to smart manufacturing, are global leaders when it comes to innovating management methods, business models and customer service. Alibaba, an e-commerce giant, pioneered the use of escrow in its payment system, which allows suspicious Chinese consumers to trust merchants online. WeChat, developed by Tencent, an online gaming firm, is the world's most advanced messaging and payments platform; Silicon Valley darlings such as Facebook Messenger and WhatsApp are scrambling to follow its lead.

Innovation by Chinese firms extends still further. Edward Tse of Gao Feng, a consultancy, suggests that the best Chinese companies are now rejecting the Western business credo of core competence, which holds that firms should stick to their area of greatest expertise.

Prominent local firms are instead leading the way in something he calls "multiple jumping". Wanxiang rose to prominence as a manufacturer of car parts; it then jumped into making electric cars; now it is investing in internet finance. Baidu started as an internet search firm; it moved into mapping and "online-offline" apps; it is now pouring funding into artificial intelligence and developing autonomous cars. Many other Chinese firms are successfully leaping from sector to sector.

Mr Tse insists this is not merely pointless empire-building. China offers a unique combination of fast growth, huge market size and rapid technological change that presents nimble firms with the opportunity to make massive returns from jumping into vast new markets. "The successful emergence of multiple jumping is the most critical event in global management science in 30 years, and the new inspiration is coming from China," he argues.



Multiple-jumping champions

Zhou Lin, dean of Shanghai Jiaotong University's business school, is sceptical. He thinks much-trumpeted firms like Xiaomi, a once high-flying smartphone manufacturer and enthusiastic multiple jumper, rely too much on low prices and noisy marketing and therefore have unsustainable business models. He also argues that a lot of what seems novel about Chinese business, such as some of Baidu's sexier investments, would not survive without government support.

The debate shows how after decades of global irrelevance, business in China is once again worth watching closely. Peter Drucker, a legendary American management thinker, believed that the great management ideas of the future could well come from the cauldron of creativity that is China. The centenary of the start of formal management education on the mainland is worth celebrating. However, it seems more likely that the great guru's prediction will be borne out amid the cut-and-thrust of Chinese business than in the stagnant halls of the country's management schools. ■

2017 IN BRIEF

Blue Origin, an aerospace firm set up by Amazon's founder, Jeff Bezos, conducts its first crewed test flights to suborbital space



Taking the long view

Corporate America is shrinking—at least by one important measure. In five of the six quarters to June 2016, across the S&P 500, share buy-backs and dividends have exceeded retained earnings. From around 60% in 2009, the ratio of payouts and buy-backs to earnings has risen inexorably, passing 100% at the beginning of 2015 and reaching a staggering 131% in the first quarter of 2016.

If you imagine the S&P 500 to be one company, that company ceased to grow at the start of 2015 and shrank by nearly a third in the first three months of 2016. While the FTSE 100 may not have gone into reverse, a similar trend can be observed. The dividend-payout ratio has climbed from less than 40% in 2011 to over 70% in 2016.

Unsurprisingly in this context, corporate investment as a proportion of GDP has continued to decline. Businesses are choosing to return funds to shareholders rather than invest them back into their operations. Yet there is no shortage of cash to invest. Companies are estimated to be sitting on more than \$7 trillion of net cash worldwide—a form of corporate inertia that will continue into 2017 and beyond.

So why are firms refusing to spend? The collapse of Lehman Brothers, and the carnage that followed, left deep scars on the collective corporate psyche. It has fundamentally changed the attitude to risk of an entire generation of executives.

The past eight years have been an era of low inflation, low pricing power and low growth, with disruption coming from all directions—from tech startups to activist investors and zero-based budgeters. The average managerial life expectancy of a CEO in America is between six and seven years. This falls to between five and six years for a chief financial officer and a mere two to three years for a chief marketing officer.

At the same time, a great flock of geopolitical grey swans (known unknowns) clouds the horizon, draining confidence: the global rise of populism, accompanied by ever-greater mistrust of institutions and corporations; intractable conflicts from Ukraine to the Middle East; the migrant crisis; terrorism. The slowing of major economies like Brazil and China, fiscal-deficit issues in America and Europe, and the eventual reversal of policies on quantitative easing and low interest rates also prey on the minds of business leaders.

Businesses hardly needed another reason to put off or cancel investments. And

then along came Brexit. Its full impact will be known only years down the line. The divorce could take the best part of a decade. The likely consequence is slower growth in Britain, the EU and even globally. And that's before the potential independence domino effect: renewed calls for Scotland to leave the United Kingdom, and the possible disintegration of the European Union.

This cocktail of pressures is not conducive to long-term strategic thinking, and the financial world's obsession with quarterly results doesn't help. One survey revealed that nearly 80% of executives admit they would "take actions to improve quarterly earnings at the expense of long-term value creation".

In this environment, procurement and finance departments (rather than growth-drivers such as marketing and R&D) have the whip hand. Risk-aversion and short-termism rule in the world's boardrooms. This attitude is entirely understandable—and entirely wrong. Calculated risk-taking, in the form of investment, is the lifeblood of any business that wants to be successful in the long term.

This is particularly true when it comes to investment in brands—usually a company's most precious asset. If you were to treat the world's ten most valuable brands from the past ten years (as measured by Millward Brown's annual BrandZ survey) as a stock portfolio, it would have outperformed the S&P 500 index by almost 75% and the MSCI World index by more than 400%.

In search of animal spirits

I don't expect companies to undergo a Damascene conversion in 2017. But there's a chance we will see the beginning of a change for the better. Powerful institutions, including BlackRock, Legal & General and the British government, are pushing for a different approach—one based on investment in growth over the long term rather than slicing costs to meet quarterly forecasts.

An initiative launched by McKinsey and the Canada Pension Plan Investment Board in 2013, called Focusing Capital On The Long Term, is set to gather speed in 2017. In July it appointed its first CEO, who will lead its development into a not-for-profit global organisation dedicated to encouraging long-term approaches in business and investment.

Projects like this may be the first steps towards restoring the animal spirits that have been so conspicuous by their absence in the post-Lehman years. The long-term health of the global economy depends on it. ■



Risk-aversion is shrinking the corporate world, laments **Sir Martin Sorrell**, founder and CEO, WPP

Businesses hardly needed another reason to put off or cancel investments. And then along came Brexit

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Markets at the mercy of politics

Philip Coggan

Investors will need to keep one eye on the central banks and the other on politics

Political uncertainty will once again be one of the biggest issues facing investors in 2017. They must grapple with what the new American administration will mean for them and, in Europe, how Brexit will affect markets. Britain intends to invoke Article 50, the mechanism for leaving the European Union, in March. Negotiations can then begin, but the process will be complicated by the French presidential election (in April-May) and the German parliamentary ones (probably in September). A strong performance by Marine Le Pen in France and the right-wing AfD party in Germany might push politics in both countries to the right—creating a more nationalistic, less co-operative mood.

The question is how much this mood will translate into practical policies—whether investors and businesses will face controls on the flow of capital, or higher taxes, or both. The markets will cope if trade agreements such as the Trans-Pacific Partnership or the Transatlantic Trade and Investment Partnership are not implemented; those relate to enhancements to trade and capital flows. But they will take fright if, as the incoming American president, Donald Trump, has threatened, the United States retreats from existing trade deals.

Central banks will also be the focus of investors' attention, not least because Mr Trump seems to have plans to revise the Federal Reserve's remit. The Fed may

have begun to tighten monetary policy, but is doing so in a stop-start manner that has tended to cause confusion. What isn't clear (either to Fed officials or to the markets) is the extent to which American trend growth has slowed from the rate prevailing before the financial crisis. That matters, since it determines the point at which future growth leads to inflationary pressures, and thus requires monetary tightening.

When economists look at the rest of the rich world (the euro zone, Japan, Britain), they see that central banks will need to keep policy very loose. The argument that economies are suffering from "secular stagnation"—that deteriorating demography and sluggish productivity have permanently damaged the growth rate—looks more convincing in the European and Japanese contexts. That makes it all the more likely that historically low interest rates, and even negative bond yields, will persist for some time.

Those low yields are also, in part, the result of pension funds and insurance companies being "forced buyers" of such securities because of the need to match their liabilities for regulatory reasons. In contrast, other fund managers may be convinced that equities are the only asset class likely to deliver a decent return—the so-called TINA (there is no alternative) approach.

The big test for American equities is whether profits will be able to recover after a very poor start to 2016,

2017 IN BRIEF

The trial of six traders accused of manipulating EURIBOR benchmark interest rates gets under way in London in September



Equity investors risk being caught in a bind

But what about the workers?



Source: Federal Reserve Bank of St Louis

Philip Coggan: Buttonwood columnist, *The Economist*

Chain reaction

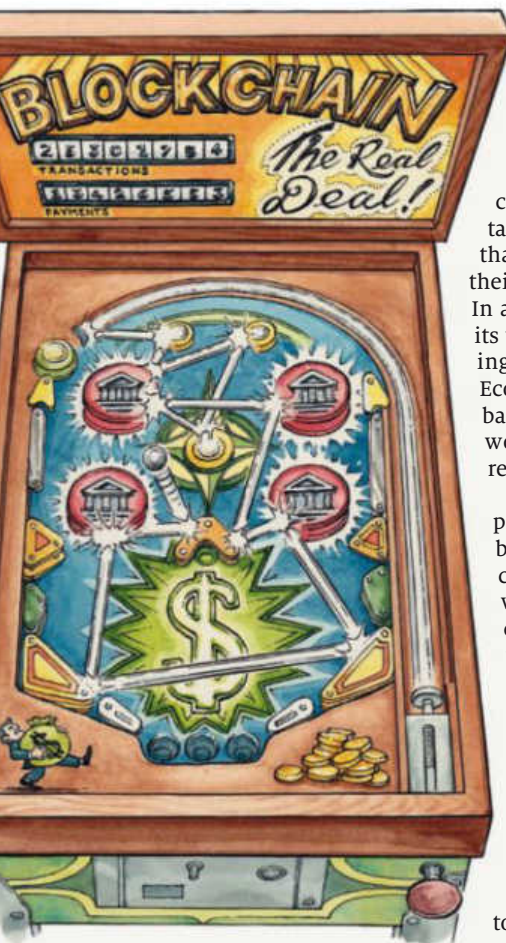
Andrew Palmer

Turning the hype about the blockchain into reality

Is there a problem to which the blockchain is not the answer? The technology that underlies bitcoin, a digital currency, has won adulatory attention from banks, businesses, investors and regulators over the past two years. But 2017 is the year when the potential of the blockchain will start to be properly tested in the real world.

First, a recap. The blockchain is a “distributed ledger”, an online record of transactions that is shared and authenticated through a series of cryptographic steps. If that sounds dull, it isn't. A trusted register has the potential to cut fraud by verifying who actually owns an asset, whether it be a wedge of digital currency or a plot of land. It dangles the promise of huge cost savings: why spend time and money reconciling lots of proprietary databases when a single public version can do the job? And because it can have instructions embedded within it, the blockchain opens the door to “smart contracts” that can be executed automatically without the need for pesky humans to get involved.

That has got lots of people excited. Imagine clinical medical trials whose results can be stored on the blockchain, so that they cannot be selectively reported by drug firms. Or blockchain-based voting systems that guard against electoral fraud



or e-commerce transactions that are programmed to release customers' payments only once a package has been tracked to its destination. Governments will keep cautiously experimenting with the technology in 2017. Australia and Russia both have plans to try out voting systems, for example, and Britain will review the results of a controversial pilot programme

that uses the blockchain to deliver payments to welfare recipients and then track what they spend the money on.

But the real action will be in financial services. Oliver Wyman, a consultancy, reckons that banks spend more than \$200bn a year on IT and fees in their capital-markets businesses alone. In an industry that is struggling to pay its way, the blockchain offers juicy savings. A recent report from the World Economic Forum reckoned that 80% of banks will have started work on blockchain-related projects in 2017.

The real action will be in financial services

Some are already pretty advanced. The biggest blockchain consortium, R3 CEV, whose members include JPMorgan Chase and Citigroup, will launch a platform for settling financial transactions in the coming year. Japanese banks are working with an American startup called Ripple on a ledger for processing payments that is due to launch in the spring of 2017. Another cluster of big banks, including UBS and Deutsche Bank, are beavering away on a digital coin which can be used to process transactions between them more quickly, and which can then be swapped for physical currency at central banks.

The back office of a bank is not an obvious place to look for a glimpse of the future. But the test cases for the industrial use of the blockchain are in finance. If enough go well in 2017, the broader hype about the ledger will seem less Utopian. ■

Andrew Palmer: business affairs editor, *The Economist*

2017 IN BRIEF

The India Post Payments Bank

opens for business, with 650 branches and 5,000 ATMs across the country by September



with second-quarter earnings for S&P 500 companies down by around 3.6% versus the same period in the previous year, and third-quarter earnings expected to be lower by 1%. Some of that decline was caused by a big fall in the oil price, which hit the profits of the energy giants, and some was caused by the strength of the dollar, which reduced the value of the overseas earnings of multinationals. Those factors could fade in 2017, although much will depend on how quickly the Fed pushes up interest rates.

The politics of profits

Profits also matter in a deeper sense. As a proportion of GDP, they rebounded very quickly after the 2009 recession and still remain high relative to history (see chart on previous page). This helps explain why equity markets have performed so well, despite the sluggish economic recovery since 2008-09 (and the gloomy growth outlook implied by low bond yields). But the corollary of a high profit share for investors is a low share of GDP for

workers—companies have kept their labour costs down. And the failure of real wages to grow significantly is one of the main reasons why there is so much political discontent in the developed world.

That suggests equity investors risk being caught in a bind. The kind of real-wage growth that would reduce political risk would have a negative effect on profits—and thus on share prices. Of course, that circle might be squared in a world where economic growth returned to pre-crisis levels, and wages and profits could rise simultaneously. But were that scenario to occur, central banks would rapidly have to undo the monetary-stimulus packages they have put in place, something that might well dent stockmarket valuations.

As a result, 2017 may be another year in which equity markets have a stuttering performance. In the absence of bad news, investors will always be tempted to buy stocks. But bad news—in the form of political risk, falling profits or changes in monetary policy—may never be far away. ■

Too much light?

Matthew Valencia

Arguments will grow over whether fighting financial crime undermines the right to privacy

Light may be the best of disinfectants, but in personal finance there have to be limits: why should your next-door neighbour know what's in your bank account, or what you've parked elsewhere for your children? In 2017 the debate over where the line should be drawn will grow louder, as sweeping transparency initiatives—designed to catch tax evaders and other financial ne'er-do-wells—take hold. Complaints about state overreach will intensify, as will griping that sensitive financial data risk falling into the wrong hands.

Since the global financial crisis, governments have responded to public anger over austerity, and a mounting perception that the rich don't pay their way, by targeting financial secrecy. The United States led the way with legislation that forces foreign financial firms to declare their American clients or face stiff penalties. More than 100 countries have signed up to the so-called Common Reporting Standard (CRS), which will require them regularly and systematically to exchange information on foreign account-holders, starting in 2017. Laggards such as the Bahamas and the United Arab Emirates will, over time, be forced to catch up with the rest.

There are, however, worries that governments have allowed the pendulum to swing too far in their rush to snuff out secrecy, trampling down the legitimate right to privacy. The CRS copies the American model but goes further: it requires all manner of information, not all of it relevant for tax purposes, to be exchanged.

This more-than-is-strictly-necessary approach has some financial experts up in arms. Why, they ask, is government the villain when it demands data from personal smartphones, but the hero when it targets personal financial affairs? Phones may not be vehicles for hiding taxable income, but they can equally be used for all sorts of underhand activities.

A legal challenge to the CRS looks likely at some point. It may even end up before the European Court of Justice, with opponents arguing that the data-exchange standard is irreconcilable with Article 8 of the European Convention on Human Rights, which states that any intrusion into private lives must be proportionate.

Trading in the dark

A related concern is data security. As tax authorities exchange ever more data, the risk of hacking—and of personal financial information being traded on the “dark web”—grows. If banks find it hard to safeguard data, as thefts from the SWIFT network suggest, what hope do underfunded and easily compromised government agencies have? In some countries, tax-agency employees might be tempted to sell data. Or their bosses may pass sensitive information up the chain of government, leading to persecution of, for instance, people who have received money for anti-corruption or LGBT-rights pro-

Relying on open registers could make things worse



Turn them down or we'll sue

jects from charities (which may fall under the “financial institutions” category of the CRS).

Here, too, legal challenges are to be expected. Critics of mass information exchange are backed up by data-protection authorities, who have expressed their own worries. A group of experts set up by the European Commission to look at implementation of the CRS concluded that in many respects it resembled an EU directive that had already been ruled illegal by the European Court of Justice. “This is potentially the biggest data-breach story since [Edward] Snowden,” harrumphs one wealth manager.

Other battles loom, too. With one eye on tax-dodging and another on the looting of poor countries' wealth, some countries are thinking of establishing public registers of company owners, or (like Britain) have already done so. But the argument is not won. The opposing view is that relying on open registers, rather than on better regulation of the “corporate-service providers” that set companies up, could even make things worse if the registers' contents are not properly monitored and penalties for false declarations are not draconian enough.

In short, there is still much to be fought over. The march towards greater financial openness enjoys broad public support, because it is portrayed and widely viewed as a war on crooks. But some people are concerned that fundamental rights and personal security have been caught in the crossfire. The coming year will be a test of whether they can make their voices heard above the chorus of demands to crack down on white-collar wickedness. ■

2017 IN BRIEF

Tighter rules governing online banking and lending come into force in China in March



Matthew Valencia: special-assignments editor, *The Economist*

Just possibly...

- A major stock exchange adopts the **blockchain** system.
- A political drama throws the **euro zone** back into crisis.
- **Mark Carney** departs from the Bank of England citing the attempts of Brexiters to restrict the bank's independence.

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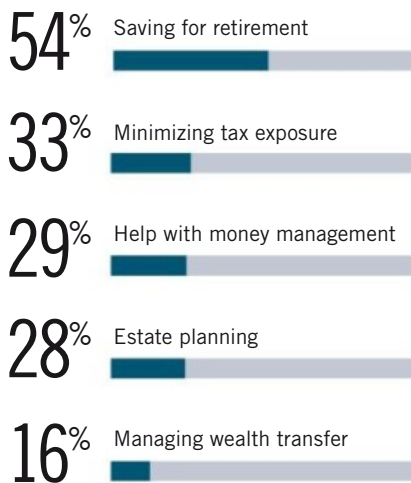
How To Find The Right Advisor – For You

Everyone's financial position is different, and everyone's financial goals are unique. Finding an advisor is a key first step to defining what's important to you and outlining a path to achieve those objectives. What's the best way to find an advisor that will meet your needs for the next 10, 20 or 30 years?

To help answer that, we surveyed individual investors, including high net worth individuals, to find out what matters most to them. Here's what they said:

OUTLINE YOUR FINANCIAL GOALS

Before seeking an advisor, think about what's most important to your financial future. By having a sense of your priorities ahead of time, you can direct your advisor's attention to what matters most.



DETERMINE WHAT QUALITIES ARE MOST IMPORTANT IN AN ADVISOR

Not surprisingly, investors place a premium on advisor integrity. But only 1 in 3 actually know whether or not their advisor is a fiduciary, or someone who is legally bound to put their best interests first. This highlights an opportunity where you could ask more questions in order to understand the type of advisor you're working with.



“With prospective clients, we go through a process and ask a series of questions, starting with, ‘What’s important to you?’ We have a frank and open discussion about their needs and determine how we can best meet their objectives.”

Gregory S.,
Founder of an independent
Registered Investment Advisor firm

DEFINE THE OPTIMAL ADVISOR RELATIONSHIP

The individuals who are most satisfied with their financial advisor identify the below characteristics as the reasons behind their successful relationship. Establishing the kind of dynamic you want with your advisor can lead to a healthy partnership.



Choosing an advisor shouldn't be difficult. The three steps above can help get you started down the right path to finding someone who not only understands your financial goals, but can also help you achieve them.

This article was originally published by Forbes BrandVoice in the 11/8 issue of Forbes magazine. The content is based on a 2016 survey of 328 U.S.-based individual investors, including high net worth individuals, conducted by Forbes Insights in partnership with Charles Schwab.

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Brexit and the City

Lionel Barber

London's financial industry grapples with the biggest demerger in its history

2017 IN BRIEF

The Bank of England holds an additional **stress test** for British banks: a biennial "exploratory" scenario alongside the annual cyclical scenario



This is a deal which has no precedent. Plenty of countries (28, to be precise) have joined the European Union, but none has asked to leave. In the summer of 2016 David Cameron, casually assuming the British people would stick with the status quo, made no contingency plans for Brexit. In 2017 the City of London, with some trepidation, will face the consequences.

Not even the smartest quant can predict the precise terms of divorce or the exact date of British withdrawal. A few brave souls say it may never happen. Yet in 2017 a degree of clarity will come when Theresa May's government formally invokes Article 50 of the treaty on European Union, declaring Britain's intention to leave the EU. She has said she will do so by the end of March.

Once Article 50 is triggered, a two-year clock starts ticking for the completion of talks on separation. The government will spell out the trade-offs, such as access to the single market and accepting the principle of freedom of movement and the supremacy of the European Court of Justice. In 2016 immigration fears trumped business as usual; in 2017 the ledger may look a little different.

The tension between being a rule-maker and a rule-taker will become evident. The City will press for certainty on divorce terms; Mrs May will want to retain flexibility. She will have one eye on the French presidential election in April-May. Victory for the far-right Marine Le Pen, though improbable, would signal "Frexit" and the possible end of the EU.

The City is an ecosystem where big beasts such as

the wholesale banks (JPMorgan Chase, HSBC, Goldman Sachs, Barclays and Standard Chartered) roam alongside omnivores such as the insurers Aviva, Prudential and Legal & General. Asset managers, footloose private-equity firms and hedge funds are in the mix, supported by thousands of accountants, lawyers and tax advisers of every national stripe.

Each will weigh closely whether to sit tight in 2017. They will watch to see if Brexit negotiations tilt towards a clean break (short, sharp but risky), an amicable mutual adjustment (positive but protracted) or a hostile divorce (messy and very expensive). "The closer to the real economy, the more exposed you are to Brexit. The more you play a financial game, the less you care," says one City executive involved in Brexit preparations, though small, domestic insurgents like Virgin Money and Metro Bank will also be less exposed as long as they do not grow by much.

In 2017 three words will enter the vernacular: "equivalence", "passporting" and "transition". Wholesale banks, which provide loans, debt financing, bond and equities trading, and deposit-taking, are highly regulated under EU law. They will seek to preserve their passporting rights to trade in EU jurisdictions or secure something equivalent. At a minimum, they will want transition arrangements to ensure that commercial deals struck with clients do not slide into a legal no-man's-land between, say, 2019 and 2021.

Some firms, fearing that their access to the single market risks being compromised, may simply bolt. No one expects a collective rush for the exit. (People still love living in cool London, despite the cost of housing.) But lines of business will trickle away, with Dublin, Luxembourg, Amsterdam and Paris among those already holding out enticements.

Re-bonjour, Barnier

A familiar Gallic face will re-emerge in 2017. Michel Barnier, the ski-loving scourge of the City in his earlier guise as the internal-market and services commissioner in Brussels, will make a comeback as the EU's chief negotiator for Brexit. He will encounter David Davis, a bruiser with no love for bankers, who will handle negotiations under supervision from the Cabinet Office.

Expect few breakthroughs and plenty of brinkmanship. A bespoke deal will be hugely complicated. The City risks forfeiting advantages such as euro-clearing, but can counter with a bid for offshore renminbi. As a whole, financial activity in London will slowly shrink, though that was happening anyway as a result of post-crash regulation and low interest rates. "It will be more like a slow puncture," says one business leader.

Many will be surprised at the City's willingness to retain EU legislation once dismissed as intrusive, such as MiFID II (covering financial markets) and, less so, Solvency II (for insurance). That will be the price of something close to the associate EU membership for Britain, which some technocrats have in mind—unless opinion hardens and the government opts for a "naked exit".

Neither Britain nor the City can expect a better deal from the EU than was previously offered by membership. On that point, there is unanimity in Brussels, Berlin and Paris. To paraphrase Voltaire, the price of Brexit must be high enough *pour décourager les autres*. ■

No one expects a collective rush for the exit

Dividends or disaster

Peter Blair Henry *NEW YORK*

Why a sustained rise in capital flows from rich economies to emerging ones is sorely needed

After a decade of decline triggered by the global financial crisis, capital inflows to the emerging world rebounded in 2016. This is good news. A rise in capital flows, if sustained, could provide an extremely welcome boost to growth in both advanced economies that need more high-return investment opportunities and emerging economies that need more jobs. Unfortunately, a new mix of populism and nationalism threatens to keep the world from taking advantage of the opportunity that will open up as the working-age population grows in the developing world and shrinks in rich countries.

In 2017 more than 1.1m new workers will join the labour force each month in the least developed countries. Sub-Saharan Africa will experience the most rapid labour-force growth, but many economically and geopolitically important developing countries in Asia and the Middle East will be close behind.

The trend is just getting started. By 2030 emerging economies will add 1.7m workers a month to their labour force. China, by comparison, added an average of 1.1m workers a month from 1978 to 2011. In other words, to absorb these workers developing nations must create jobs at almost twice the rate that China did during one of the most extraordinary episodes of economic growth ever seen.

Manufacturing, and the steady capital inflows needed to finance it, will determine whether these future changes in the developing world yield dividends or disaster. Directing more savings from stagnating rich countries to productive investments in poor ones would boost global growth and the return on retirement savings for an ageing rich world.

Resist now, regret later

But there is a risk that these mutually beneficial gains will not occur. Despite the recent uptick, capital flows to emerging economies are at their lowest level since the 1980s, when leaders of the then-named Third World explicitly prohibited non-residents from investing in their countries. For three decades, freer flows of goods and capital increased living standards and re-

duced income inequality across countries. Today, however, mounting inequality within countries has provoked a backlash against the integration of global markets.

As the United States became more divided during an election year in which neither of the main presidential candidates openly supported free trade, and the ties binding the European Union became more frayed with Brexit, resentment of

A drop in the ocean

Total private capital flows into emerging markets, as % of GDP
25 emerging-market economies*



and resistance to globalisation hit unprecedented levels in 2016 and show no signs of abating. Even the IMF, the guardian of global markets and once a fierce devotee of free capital movements, has publicly supported capital controls in certain instances, inadvertently bolstering the current backlash against globalisation.

With free trade and migration under attack, 2017 will bring greater controls on capital around the world. We can expect more proposals like those in America that seek to prevent corporations from

redomiciling abroad, when we really need comprehensive tax reform. The threat of punitive legislation against firms that try to move capital to places where it can be most profitably deployed is a big disincentive to financing, building or maintaining factories in the developing world.

There are other headwinds against capital flows to emerging markets. Janet Yellen, chairman of America's Federal

By 2030 emerging economies will add 1.7m workers a month

Reserve, has signalled a desire to resume raising interest rates. The "taper tantrum" of 2013 suggests that a rise in American rates will stem the current outflow of foreign savings into the developing world. But the ideological forces which may jeopardise a sustained revival of these flows are even more powerful than the Fed.

The migrant crisis in Europe and the rhetoric of America's election have revealed a hostility towards large-scale immigration among the public and politicians. In this climate, there is little political appetite for talk of facilitating the flow of savings from the developed world to poor countries.

But rich countries must embrace the mutual benefits of policies that enable orderly and sustainable capital flows from the developed world to emerging markets (by, for instance, incentivising equity over debt). The alternative is to brace for even greater immigration pressures as millions of young people—especially young men—from Egypt, India, Nigeria, Pakistan and the Philippines enter the labour force without the prospect of meaningful employment and make their way to rich countries, legally or otherwise, in search of work.

A change in policies and attitudes is needed, starting in 2017. Without it, the renewal in capital flows to the developing world will not be enough to meet the need for investment (not least in infrastructure) and employment brought on by an explosion in the growth of poor countries' working-age population—nor to offset stagnation in the advanced economies that depend on them. ■

Peter Blair Henry: dean, NYU Stern School of Business, and author of "Turnaround: Third World Lessons for First World Growth" (Basic Books)

Tear up the textbook

John O'Sullivan

In a low-growth world, traditional assumptions about the global economy will be overturned

Some things in economics ought to be reliably predictable, year after year. Wage restraint in Germany is one. Economic misery in Argentina is another. Hard-nosed tax officers are almost as certain as tax (and death) itself. But 2017 is shaping up to be a year in which many economic conventions are turned upside down. There are three particular trends to look out for.



First, the slow-burning effects of negative interest rates across much of western Europe and Japan will start to influence behaviour in odd ways, including the manner in which tax is collected. Second, countries with an ironclad reputation for thrift, notably Germany, will start to spend a lot more freely. The third upside-down trend is that unstable trouble spots such as Argentina will register some of the strongest growth in GDP.



Start with negative interest rates, which are strange but hardly new. The European Central Bank (ECB) first reduced its deposit rate, which it applies to the reserves of commercial banks, to -0.1% in 2014, and has since reduced it further. Instead of receiving a small payment for depositing money overnight with the ECB, as is normal, commercial banks are now charged for the privilege. In theory banks could swap their reserves into cash and avoid the negative interest rate;



in practice cash is costly to store and move, so banks have had to put up with the charges. They have shielded retail customers from negative interest rates, for fear that they would otherwise turn their deposits into cash. But they have passed on some of the cost to corporate clients with large deposits: they can do so because other safe stores of value, such as government bonds (and even some corporate bonds) have negative yields.

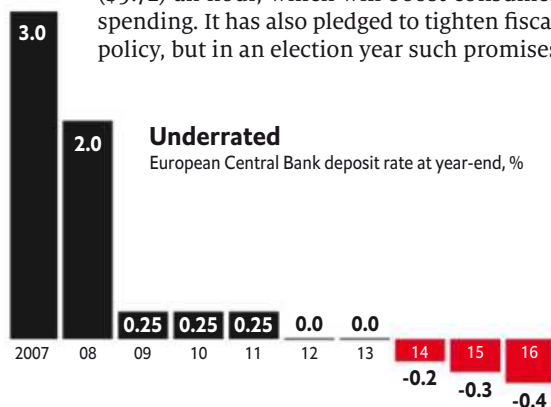
Topsy-turvy times

As firms seek other ways to avoid charges for holding cash, more examples of odd behaviour will emerge. Companies will rush to file their tax returns as promptly as possible. Supermarkets will start to pay their suppliers before the goods fly off the shelves and not months afterwards. The longer that interest rates stay negative, the more likely it is that banks will experiment with imposing them on depositors more widely. Small savers would then resort to any form of prepayment—gift vouchers, long-term subscriptions, transport cards—to avoid the cost of keeping money in the bank. A prepaid mobile-phone card might be a status symbol; paying for services after use, a sign of weakness.

For a second oddity in 2017, look to habitually high-saving countries, notably Germany. Its current-account surplus, a broad measure of its international trade, was above 8% of GDP in 2016. A country with a surplus of this size would normally see an eventual rise in its exchange rate to encourage imports and discourage exports. But Germany is locked in a currency union with countries that are less competitive in export markets: the euro's trajectory must reflect the influence of Spain, Italy and other members, too. So the adjustment will come in other ways: through stronger wage growth, easier credit and faster house-price inflation.

Companies will rush to file their tax returns as promptly as possible

These are already visible in Germany. Unemployment is down to 4%. As the jobs market tightens further, the prospect of a more generous wage round in 2017 increases. The federal government has said it will raise the minimum wage in January by 4%, to €8.84 (\$9.72) an hour, which will boost consumer spending. It has also pledged to tighten fiscal policy, but in an election year such promises



Source: European Central Bank

may fall by the wayside. All told, the outlook for wage growth and consumer spending in Germany is the brightest it has been since the early 1990s.

The third through-the-looking-glass trend in 2017 is that GDP growth will be surprisingly strong in places that are usually known for poor economic policy. Argentina is one of them. Since December 2015 the new administration of Mauricio Macri has floated the currency, lifted capital controls and export taxes, and struck a deal with hold-out creditors. Such measures have come at a cost. Inflation has soared as prices adjust to a more realistic exchange rate. The squeeze on real incomes that has resulted has tipped the economy into recession. But if Argentina stays the course, inflation should fall back in 2017, and the economy will rebound.

Russia's economy is also set to bounce back from recession. Its currency is cheap; inflation has fallen from a peak of over 15% in early 2015 to around 6% and should fall further; and, almost unnoticed, Russia has been reforming. It has moved to 51st in the World Bank's ease-of-doing-business rankings, from 123rd in 2011. Look out for eyebrow-raising GDP growth in Pakistan, Romania, Nigeria (currently in recession) and perhaps even Egypt, which has sharply devalued its currency. These are not places that have got economic policy right in the recent or distant past. But then 2017 will be an upside-down kind of year. ■

Back to the future

This is not a normal business cycle; monetary policy will be a lot less effective in the future; investment returns will be very low. These have come to be widely held views, but there is little understanding as to why they are true. I have a simple template for looking at how the economic machine works that helps shine some light. It has three parts.

First, there are three main forces that drive all economies: 1) productivity; 2) the short-term debt cycle, or business cycle, running every five to ten years; and 3) the long-term debt cycle, over 50 to 75 years. Most people don't adequately understand the long-term debt cycle because it comes along so infrequently. But this is the most important force behind what is happening now.

Second, there are three equilibriums that markets gravitate towards: 1) debt growth has to be in line with the income growth that services those debts; 2) economic operating rates and inflation rates can't be too high or too low for long; and 3) the projected returns of equities have to be above those of bonds, which in turn have to be above those of cash by appropriate risk premiums. Without such risk premiums the transmission mechanisms of capital won't work and the economy will grind to a halt. In the years ahead, the capital markets' transmission mechanism will work more poorly than in the past, as interest rates can't be lowered and risk premiums of other investments are low. Most people have never experienced this before and don't understand how this will cause low returns, more debt monetisation and a "pushing on a string" situation for monetary policy.

Third, there are two levers that policy-makers can use to bring about these equilibriums: 1) monetary policy, and 2) fiscal policy. With monetary policy becoming relatively impotent, it's important for these two to be co-ordinated. Yet the current state of political fragmentation around the world makes effective co-ordination hard to imagine.

The long and the short of it

Although circumstances like these have not existed in our lifetimes, they have taken place numerous times in recorded history. During such periods, central banks need to monetise debt, as they have been doing, and conditions become increasingly risky.

What does this template tell us about the future? By and large, productivity growth is slow, business cycles are near their mid-points and long-term debt cycles are

approaching the end of their pushing-on-a-string phases. There is only so much one can squeeze out of a long-term debt cycle before monetary policy becomes ineffective, and most countries are approaching that point. Japan is closest, Europe is a step behind it, the United States is a step or two behind Europe and China a few steps behind America.

For most economies, cyclical influences are close to being in equilibrium and debt growth rates are manageable. In contrast to 2007, when my template signalled that we were in a bubble and a debt crisis was ahead, I don't now see such an abrupt crisis in the immediate future. Instead, I see the beginnings of a longer-term, gradually intensifying financial squeeze. This will be brought about by both income growth and investment returns being low and insufficient to fund large debt-service, pension and health-care liabilities. Monetary and fiscal policies won't be of much help.

As time passes, how the money flows between asset classes will get more interesting. At current rates of central-bank debt buying, they will soon hit their own constraints, which they will probably have to abandon to continue monetising. That will mean buying riskier assets, which will push prices of these assets higher and future returns lower.

The bond market is risky now and will get more so. Rarely do investors encounter a market that is so clearly overvalued and also so close to its clearly defined limits, as there is a limit to how low negative bond yields can go. Bonds will become a very bad deal as central banks try to push more money into them, and savers will decide to keep that money elsewhere.

Right now, while a number of riskier assets look like good value compared with bonds and cash, they are not cheap given their risks. They all have low returns with typical volatility, and as people buy them, their reward-to-risk ratio will worsen. This will create a growing risk that savers will seek to escape financial assets and shift to gold and similar non-monetary preserves of wealth, especially as social and political tensions intensify.

For those interested in studying analogous periods, I recommend looking at 1935-45, after the 1929-32 stockmarket and economic crashes, and following the great quantitative easings that caused stock prices and economic activity to rebound and led to "pushing on a string" in 1935. That was the last time that the global configuration of fundamentals was broadly similar to what it is today. ■



Ray Dalio, founder, Bridgewater Associates, explains why the 1930s hold clues to what lies ahead for the economy

Although circumstances like these have not existed in our own lifetimes, they have existed numerous times in recorded history

Science and technology

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Medicine gets personal

Natasha Loder

Prepare for tailor-made treatment

In 2015 Barack Obama announced that the American government would invest hundreds of millions of dollars in a “precision medicine initiative”. Although doctors and scientists were thrilled at such a forward-thinking programme, patients could be forgiven for wondering why modern medicine, with all its clever science, isn’t precise already. The problem is that humans are as individual and varied as their fingerprints. Sometimes this wonderful variation does not matter and the drugs that doctors prescribe, such as antibiotics, painkillers and statins, work nicely. At other times this variation matters a great deal. It can mean the difference between success or failure in treating a disease, and it can lead to dangerous, or even fatal, side-effects.

It is this sort of human variation—which might come from underlying genetic differences, or subtleties in the metabolites found inside cells—that precision (or “personalised”) medicine hopes to tackle in order to cure diseases more effectively. Although Mr Obama’s initiative is just getting started, there has been plenty of progress and there is plenty more to expect. Personalised medicine is already having a huge impact on oncology. These days cancer is seen less as a disease of specific organs. Rather, doctors are now classifying it according to molecular mechanisms caused by the mutation of specific genes. So drugs that have been created for colorectal cancer, say, may turn out to be useful for

an entirely different part of the body, such as the breast.

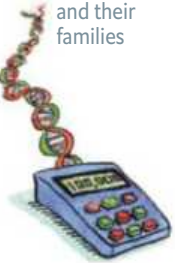
What all this means is that genetic and molecular information is fast becoming essential to the way cancers are monitored and treated. It is already quite common to do genetic tests on cancer biopsies. The range and scope of these tests are growing with every month, as is understanding of their results and potential applications. For example, one new test can identify when women who have been diagnosed with breast cancer might be safe to skip the gruelling process of chemotherapy. The test looks at the activity of genes that control the growth and spread of cancer, and can identify women with a low risk of recurrence of cancer and little to gain from chemotherapy.

Historians may view 2017 as the year that precision medicine blossomed

DNA tests such as Oncotype DX and MammaPrint are among the advances which will help doctors pick treatments. A recent trial found that in one in five patients with advanced cancer, DNA tests could identify therapies that slowed down their tumours. Similarly it now looks likely that genetic testing will help identify those with advanced prostate cancer whose disease is caused by mutations in DNA-repair genes, in which case a different kind of drug could be called for. Personalised medicine also looks promising in deciding who might benefit from some of the powerful but expensive new immuno-oncology

2017 IN BRIEF

Britain concludes a five-year project to sequence 100,000 genomes from patients with rare diseases and their families



Natasha Loder:
 health-care
 correspondent,
The Economist

Gene-ius treatments

Natasha Loder

The age of gene therapy arrives at last

Two years ago, at the age of 38, Arthur lost his sight. The Paris-based consultant discovered he had a neurodegenerative disease of retinal cells that causes profound and permanent loss of vision. Leber's hereditary optic neuropathy is a rare genetic disorder. But Arthur had a lucky break. His doctor was able to sign him up for a trial of a new treatment—gene therapy—being developed by GenSight Biologics, also based in Paris. When he enrolled he was patient 15.

Gene therapy is not new. In the 1990s many enthusiastically hailed its potential to treat terribly sick children born with severe genetic disorders that leave them without a working immune system. One of these was called “bubble boy” disease, because sufferers were forced to live inside sterile enclosed spaces to prevent them from catching infections that would be fatal. The basic idea was to fix the genetic fault inside each cell by delivering a correct copy of the DNA—often via a virus. Despite this early promise, the work faltered because of unexpected side-effects, and the death of a young man during a trial.

Since then the safety and efficiency of gene therapy have greatly improved. Doctors at the San Raffaele Telethon Institute for Gene Therapy, in Milan, have shown that gene therapy can offer a long-term



A revolution in the making

cure for ADA-SCID, a rare immune disorder (which is often fatal in the first year of life). Thanks to a deal with a British pharma firm, GlaxoSmithKline, this treatment was put on the market in 2016. Spark Therapeutics, a biotech firm, has hopes of being

A flurry of approvals is coming

the first American company to receive approval for a gene-therapy treatment in 2017. There seems little doubt that a revolution is on the horizon. The number of gene therapies in development has doubled since 2012, according to analysts at Datamonitor Healthcare.

Thousands of treatments are in clinical trials, with around 100 in late-stage trials. Although success is by no means guaranteed, the sheer numbers making it through the pipeline suggest a flurry of approvals is coming in the next year or two.

A single shot was all it took for Arthur to start recovering. He recovers a bit more each day. He can now read a little, see colour, cross the road and use a cash machine and a laptop. He is excited about the treatment, even though he does not know how much better it will make him. “It is, of course, the future for me,” he says. And for many others as well. ■

► drugs, which seem to work only in a subset of patients.

Many companies are developing “liquid biopsies”—blood tests that seek to monitor the way that cancers respond to treatment. Unlike a conventional biopsy, they can be done frequently without harm to the patient. With multiple companies such as Foundation Medicine, Qiagen, Genomic Health and Myriad Genetics all developing liquid biopsies, patients can expect to see them arriving in the clinic in the next year or two.

The design of drugs, too, is getting more personalised. Researchers are getting excited about a new generation of CAR-T drugs. T-cells (special immune cells) are extracted from cancer patients and implanted with new genes by a custom-built virus. When the T-cells are reintroduced into the patient, this causes them to home in on the patient's particular cancer. It is a highly personalised and very potent treatment, and not without risk. But Kite Pharma, a biotech company, is hoping to bring its drug KTE-C19—for refractory, aggressive non-Hodgkin lymphoma—to market in 2017.

Medicine has a long way to go before the genetic basis of cancer is fully unravelled. The meaning of some

of the genomic variations that can be detected is not yet understood; some genetic tests will reveal variation that a doctor has no way of interpreting. Nonetheless, the ability to do a blood test for cancer opens up the possibility of using this to detect tumours before symptoms are even apparent, rather than just monitoring existing cancers in order to tailor treatments. The biggest manufacturer of DNA-sequencing machines, Illumina, has formed a company called Grail to develop such tests. Using “ultra-deep sequencing” to read DNA in a sample many tens of thousands of times, it hopes to pick up the hard-to-spot signals that might arise from a fragment of tumour circulating in the blood.

Decades from now, historians may look back and see 2017 as the year that precision medicine blossomed. Today 29% of health-care providers in America use it, according to HIMSS Analytics, a research firm. One day all doctors will, as the approach moves into areas beyond oncology. Neurology, for example, is crying out for a switch from disease types based on clusters of similar symptoms to ones based on genetic and molecular changes. Eventually, all medicine will be precision. ■

2017 IN BRIEF

The metallic cylinder that defines the mass of a kilogram (housed in a vault in Paris) is replaced by a calculation



Print me a home

Paul Markillie

Additive manufacturing scales up

Among the many construction sites in the growing metropolis that is modern Dubai, there is one with an unusual sense of destiny. The building that will emerge is the emirate's Museum of the Future, due to open in 2018. And, in keeping with the futuristic theme, parts of the structure will be constructed in a novel way: with a 3D printer.

Making things with a 3D printer is fast becoming commonplace. Millions of false teeth are now made every year with the various additive-manufacturing processes employed by 3D printers. Jewellery, countless plastic parts and even components for

jet engines are also being printed. Now it is the turn of buildings, as giant 3D printers begin to produce much bigger structures.

The printers usually consist of a large gantry that supports a sort of scaled-up, robotically controlled print head that extrudes a mixture of cement and other materials. A bit like icing a cake, it adds successive layers one on top of the other to form the required shape. This allows sections of a building to be printed in a factory and then assembled on site, or the entire building to be printed *in situ*.

Foreign and local contractors used a combination of both techniques to print the Dubai museum's curvaceous office buildings, which are already in use. The rest of the building will be put together

It's a bit like icing a cake

using both conventional construction methods and 3D printing. But more is coming. Dubai has now set itself an ambitious target to have 25% of new buildings produced with 3D printers by 2030, says Noah Raford of the Dubai Future Foundation, a government agency. This, he says, will speed up building work and reduce labour and materials costs.

A variety of groups around the world are working on different ways to print buildings. Winsun, a Chinese company, has produced a number of structures, ranging from a small apartment block to public toilets, by printing in concrete, artificial stone and other materials. Skidmore, Owings & Merrill, an international firm of architects, is working with the Oak Ridge National Laboratory in Tennessee on 3D printing low-energy buildings. There are also plans afoot in Amsterdam to print a traditional-looking canal house to be used as an exhibition centre.

An Italian group called WASP has put together a 12-metre-tall 3D printer to construct an entire village in Massa Lombarda, east of Bologna. The idea is that the village will form a technology centre that will showcase how 3D-printing technologies could be used to make low-cost buildings using sustainable materials. WASP is working on a number of ideas, including using the ancient building material adobe, which is made from earth mixed with organic materials. In this case a concoction of clay and straw is pushed out by the printer. WASP reckons two men could use the same method with one machine to print, quickly and cheaply, basic but comfortable shelters. If so a mixture of new and old technologies could help to deal with the fallout from some of the world's perennial wars and natural disasters. ■

Paul Markillie: innovation editor, *The Economist*



2017 IN BRIEF

The European Space Agency launches **Aeolus**, a pioneering wind-tracking satellite, and **CHEOPS**, an exoplanet-hunting probe



Alun Anderson: science journalist and author

The internet of wings

Alun Anderson

Birds of a feather get tracked together

An ambitious project will start in 2017 designed to track from space the movement and behaviour of animals, large and small, anywhere they travel around the world. In June a Russian rocket will carry an array of sensitive dish antennae up to the International Space Station. Orbiting low over Earth, the antennae will be able to decode faint radio signals from tiny solar-powered tracking tags, light enough for migrating songbirds to carry safely. If all goes well, within two years as many as 20,000 animals may be tagged—and further into the future hundreds of thousands more, as the tags become light enough to be carried even by large flying insects such as locusts.

Martin Wikelski, director of the Max Planck Institute

for Ornithology in Radolfzell, Germany, sees the ICARUS (International Co-operation for Animal Research Using Space) project as a “transformational point” where “animals teach us about our world”. Billions of animals, both huge and tiny, are constantly on the move, responding to the environment they experience through their many senses. If ICARUS can follow their behaviour, they may provide researchers with a living world wide web of information about the state of the planet. And people will gain a much deeper appreciation of their lives too.

Dr Wikelski is riding a wave of rapid technological change, as ever-lighter sensors are being built, to track animals and record what they do. Albatrosses have carried sensors across remote seas where meteorologists rarely venture, tracking wind patterns as they go. Elephant seals have brought the instruments along on thousands of deep dives in the frigid Antarctic Ocean, revealing that fresh-

There is much ICARUS could reveal



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When robots feel your pain

Matt Kaplan

Computers will become prized assistants to psychiatrists

Isaac Asimov, Arthur C. Clarke, Gene Roddenberry and their futurist kin all expected robots one day to play a pivotal part in the realm of medicine. It is safe to say that systems as complex as the heart surgeon in Asimov's "Segregationist" and the Emergency Medical Hologram from Roddenberry's "Star Trek: Voyager" are not going to become reality in 2017. However, artificial intelligence is now in a position to transform psychiatric hospitals for the better in the year ahead.

This breakthrough has been a long time coming. More than a decade ago researchers started feeding videos of people engaged in social interactions to computers so that the machines could analyse the files and learn the meanings of specific facial expressions. An early project of this sort led by Louis-Philippe Morency and Jonathan Gratch at the University of Southern California's Institute for Creative Technologies (ICT) was designed to help computers spot the difference between a nod that meant "I understand what you are saying" and one that meant "I agree with you". Their initial intention was for this technology to help make screen avatars and robots more personable to interact with, but this is not where the technology ultimately proved most useful.

Dr Morency, now at Carnegie Mellon University, Dr Gratch and their colleague Stefan Scherer, also at ICT, have mastered the art of teaching computer systems how to analyse the facial expressions and voices of people suffering from psychiatric diseases so that the machines can help detect those diseases. In recent years they have worked extensively with America's Department of Defence to design systems that can analyse the faces and voices of soldiers returning from tours of

Reliance on expert human judgment is expensive and often results in uneven care

- ▶ water from melting ice is changing the flow of ocean currents. Tracking thousands of mammals in North America has shown that far more are killed by hunters and motorists than by predators.

Despite all this, Dr Wikelski has spent a decade trying to persuade scientists that a giant leap to a space-based global tracking platform could be possible. Thanks to backing from the German and Russian space agencies, he will have a chance to prove his vision in 2017. A new data centre in Germany will make it easy for biologists to log in to a global collaboration.

There is much ICARUS could reveal. Humans rarely see more than fragments of an animal's life: drivers glimpse a moose on a highway amid the Alaskan tundra; a nestling takes flight and is never seen again. Even the greatest field biologists witness only episodes in the lives of wild creatures. By tracking many individuals, seeing where they go, when they interact with others and who lives and who dies, ICARUS could give us a new understanding of animal life. Conservation efforts will be helped, too, as where many migratory species go remains unknown.

ICARUS could answer bigger questions about the global environment. In the past 30 years, at least 421m songbirds have disappeared from Europe. What exactly has happened, where, and what can it tell science about the changing world?

Global health authorities would jump at the chance to track the birds which carry avian influenza, and thus get a step ahead of potential outbreaks. Farmers would like to know where swarms of locusts are heading, as well as the whereabouts of flocks of red-billed quelea, which can show up in sky-darkening flocks and strip African fields bare. Changing patterns of animal movement can provide indicators of impending volcanic eruptions and earthquakes: the insurance industry is sure to be intrigued.

Talking to the animals remains in the realm of children's books and cinema. But if ICARUS's ambition to tap into "the sixth sense of the global animal collective" is realised, animals could inadvertently tell us volumes. What a neat achievement that would be. ■

2017 IN BRIEF

A farm operated almost entirely by robots sprouts up in Japan



Matt Kaplan: science correspondent, *The Economist*

Our forecasting challenge

Congratulations to John Kim, an analytic consultant in Chicago, who has won *The World in 2016* forecasting challenge, organised in collaboration with Good Judgment. The challenge, which asked participants to make predictions on a range of political, business and economic events, ran from November 2015 to July 2016. Mr Kim, a veritable superforecaster, whose correct predictions included the outcome of the Brexit vote and Donald Trump's victory in securing the Republican nomination for president, attributes his success to diligently seeking out news sources across partisan lines, which allowed him to "develop a sense of empathy for both sides of an issue".

Are you a superforecaster? Find out by taking part in *The World in 2017* challenge, which will be running at gjoin.com/economist from November 2016 to October 2017.

- ▶ duty and note whether they are suffering from post-traumatic stress disorder.

Over the past year Dr Morency has been collaborating with a team led by Justin Baker, a psychiatrist at the McLean Hospital in Massachusetts, to teach a computer connected to a camera and microphone in a single room to spot signs of bipolar disorder and schizophrenia. Dr Scherer has been working with a similar system at the San Francisco Veterans Affairs Medical Centre. So far, these computers have been doing the lion's share of the learning, but soon it will be psychiatrists' turn.

Nuances in patients' behaviour help clinicians diagnose and monitor mental diseases, but such reliance on expert human judgment is expensive to maintain, difficult to monitor for efficacy and often results

in uneven care. The need for objective measurements is huge—and this is where the computers of Dr Morency and Dr Scherer are poised to make a big impact. By tuning their systems to analyse and record traits like gaze and speech prosody (rhythm, tone and volume, among other aspects), which are difficult for human eyes and ears to quantify, they are providing a set of measurements that psychiatrists can refer to—in much the same way that general practitioners make use of blood pressure, pulse and respiratory rate.

Robots will not replace psychiatrists as they did heart surgeons in Asimov's work. But in the year ahead they will shed their prototype status and become valuable allies in the battle against some of the most debilitating mental diseases. ■

2017 IN BRIEF

The ArcticDEM project unveils the first satellite-based 3D map of the entire Arctic



So long, Susy?

Geoffrey Carr

In 2017 the idea of Supersymmetry will either be seen to be true, or die

“The great tragedy of science”, said Thomas Huxley, “is the slaying of a beautiful hypothesis by an ugly fact.” That, though, is the scientific method. If nature provides clear evidence that a hypothesis is wrong then you have to abandon it or at least modify it. It is psychologically uncomfortable, no doubt, for those with an interest in the correctness of the hypothesis in question. But at least everybody knows where they stand.

What happens, though, in the opposite case: when nature fails to contradict a hypothesis but stubbornly refuses to provide any facts that support it? Then nobody knows where he stands. This is fast becoming the case for a crucial hypothesis in physics, called Supersymme-

try—or Susy, to its friends. Susy attempts to tie up many of the loose ends in physical theory by providing each of the known fundamental particles of matter and energy with a “supersymmetric” partner particle, called a sparticle. It is neat. It is elegant. But it is still unsupported by any actual facts. And 2017 looks like the year when the theory will either be confirmed or dropped.

Supersymmetry is not a new idea. In its modern form it dates back to 1971. But, until recently, no one worried too much about the failure of sparticles to turn up in particle accelerators because Susy predicts they will be heavier than their familiar partners, and thus require more energy to make. How much more energy depends on which version of Susy you subscribe to. But enough versions said “quite a lot more” for it not to matter that the machines that were around then could not produce them. That changed, though, with the recent upgrading of the Large Hadron Collider (LHC) at CERN, Europe's particle-physics

laboratory on the outskirts of Geneva. This machine reopened in 2015 and is now powerful enough for the sparticles predicted by all of the simple and straightforward versions of Susy to manifest themselves.

They have not. Even a flurry of reports in 2016 that the LHC had found a new particle, which turned out to be incorrect, did not tend to suggest the putative discovery was a sparticle. And, at a subsequent conference in Copenhagen, the absence of sparticles was formally acknowledged in a time-hallowed tradition within theoretical physics. A group of scientists who had bet that sparticles would be found by June 2016 duly handed over the prize to a group of sceptics who had bet the opposite. The stake: a bottle of cognac.

If, despite that bet, sparticles do turn up in 2017, everyone will cheer and physics will be back on track towards explaining such mysteries as dark matter (a constituent of the universe, detectable only by its gravitational effect, which may be made of sparticles) and whether the various forces of nature are, underneath it all, aspects of the same thing. If sparticles do not turn up, though, Susy will (at best) have to be put on life support.

There are modified versions of the theory that might let it linger on for a while. One, for instance, posits that only half of known particles have sparticle partners, and that these are conveniently out of the LHC's reach at the moment. But such finagling smacks of desperation, and it contrasts noticeably with the triumphalism that surrounded theoretical physics in 2013, when the long-predicted Higgs boson was discovered. To say when, precisely, a theory died is often harder than saying when it was born. But unless sparticles decide to reveal themselves at last, the history books may well agree that 2017 was the date of Susy's demise. ■

Geoffrey Carr: science editor, *The Economist*



Searching for Supersymmetry



Planets, planets everywhere

Tim Cross

One possibly habitable planet is already known to exist near Earth. Many more will soon be found

Science-fiction writers have been dreaming up alien planets for decades. That other suns should have planets of their own was a reasonable enough speculation. But science had to wait until 1992 for proof that such planets did exist, when two were detected around a pulsar called PSR B1257+12. A steady trickle of discoveries followed. These days that trickle has become a flood. Thanks to a combination of ground-based telescopes and planet-hunting satellites, particularly one called *Kepler* which was launched in 2009, more than 3,500 such worlds are known.

Unlike their depiction in fiction, reasonably few are much like Earth. Many are gas giants, like Jupiter, whose gravitational pull on their host stars makes them easy to detect. Others orbit dim stars, or super-bright ones. Most are too hot or too cold for life. And almost all are far, far away. *Kepler*, which has discovered the lion's share of these planets, is staring at a patch of space covering about 1/400th of the celestial sphere.

From 2017, though, that will change. In December a successor to *Kepler*, called *TESS* (for Transiting Exoplanet Survey Satellite), will be launched into orbit. It is designed to survey the entire sky, looking for the sorts of exoplanets that are of most interest to humans—ones that are small (like Earth), rocky (like Earth) and relatively close by.

Over its planned two-year life *TESS* will scan hundreds of thousands of nearby stars, looking for the tell-tale dips in their brightness as planets cross them (as seen from Earth). Indeed, *Kepler* has gathered enough statistical information about how common planets are in the galaxy for astronomers to make a reasonable guess of how many Earth-like planets *TESS* should find. Assuming Earth's galactic neighbourhood is average, the new satellite should spot about 3,000 planets in total. About 500 of those should have radii up to twice that of Earth's; of those, perhaps a few dozen will orbit

in the "habitable zone", where liquid water could exist on their surfaces.

Kepler's planets are too far away for scientists to learn much about them beyond their rough size and the length of their orbits. Being much closer, the planets *TESS* turns up will be easier to scrutinise. A new generation of giant telescopes, including the European Extremely Large Telescope, currently being built in Chile, and the James Webb Space Telescope, a successor to the Hubble that is due to be launched in 2018, should have the power to provide intriguing details.

By zeroing in on starlight that has passed through the planets' atmospheres, scientists hope to learn about the chemical composition of the alien air, including the presence of any chemicals (such as free oxygen or large amounts of methane) that could be telltales of life. If the planets are close enough astronomers may be able to take pictures of them directly. Via painstaking computer modelling, it could even be possible to infer basic geographical features, such as what proportion of a planet's surface is liquid or solid. Early trials of the technique, using pictures of Earth taken by distant space probes, have been promising.

The ultimate question is whether humans might one day send probes to a nearby exoplanet. In August 2016 scientists announced the discovery of an Earth-like planet orbiting Proxima Centauri, which, at 4.25 light-years away, is the closest star to the Sun. Yuri Milner, a Russian billionaire and physicist (see next story), is already working with Stephen Hawking, a British theoretical physicist, on plans for a tiny, laser-propelled probe that could cover that distance in about 20 years. It is far from certain that they will succeed. But, in the meantime, *TESS* should give them a comprehensive list of targets. Science fiction is about to get a tiny step closer. ■

Just possibly...

- The first **human head transplant** is a success.
- A vaccine for the **Zika** virus is approved for use in America.
- The first **miniature atomic clocks** are developed using nitrogen atom-based endohedral fullerenes, vastly improving GPS devices.

2017 IN BRIEF

The *Cassini* spacecraft ends a 13-year orbit of Saturn, conducting the first flight inside the planet's inner rings before plunging onto its surface



Tim Cross: science correspondent, *The Economist*

Science for everyone

Humans have been trying to tell the future for at least 4,000 years. But our efforts have mostly been useless. What passed for prediction was prophecy, fantasy or guesswork. In all that time we have found only one reliable means of predicting events: the scientific method.

Scientists are now busy casting predictions not just for the world in 2017, but the universe. Where will this galaxy appear? How will that cell line evolve? Some of their predictions will hold not just for 2017, but for all time. Cosmologists map out the future over tens of billions of years. Even quantum field theory, which holds that the behaviour of particles is fundamentally unpredictable, has itself enabled predictions accurate to ten parts in a billion.

The non-scientists among us are less qualified to make predictions. But here are a couple. First, in the coming year, basic scientific research will produce new breakthroughs. And, second, most of us won't notice.

If this seems hard to believe, let's try a (not very scientific) experiment. Here is a list of major discoveries made so far this decade:

2010: *Humans are hybrids*

Scientists sequence the genome of fossilised Neanderthals, revealing that many of us carry their genes and that the two species interbred.

2011: *Earths are everywhere*

The first Earth-sized planet orbiting a sun-like star is observed, amid data suggesting there are billions of potentially habitable planets in our galaxy alone.

2012: *The Higgs particle exists*

The Higgs boson is found, explaining why objects have mass.

2013: *Genes are rewritable*

CRISPR gene-editing technology is invented, with the potential to revolutionise our control over DNA, cure hereditary diseases and even prevent ageing.

2014: *Memories are malleable*

Neuroscientists erase, restore and transform memories by shining beams of coloured light on genetically modified brain cells from rats.

2015: *Gravitational waves are real*

Ripples in spacetime, released by a black hole collision over a billion years ago, are discovered, confirming Einstein's prediction.

2016: *Earth has a neighbour*

Astronomers discover a potentially habitable Earth-sized planet around the nearest star to the Sun.

How many of those breakthroughs really broke through to the public consciousness? Many people will have heard the announcement of the Higgs boson on July 4th 2012. But by way of comparison, the Korean pop single "Gangnam Style" came out 11 days later. Since then, the most popular YouTube video on the Higgs particle has received over 2m views. "Gangnam Style" has well over 2bn. A catchy tune gripped us more than a profound insight into fundamental reality—by three orders of magnitude.

This is a waste. On a human level, it's a waste of talent. How many born scientists never discover their gift because they are never exposed to science? On a practical level, it's a waste of opportunity. It slows the pace of innovation, which drives economic growth and offers our only long-term hope against existential threats like epidemics or asteroids.

On a more fundamental level, it's a waste of life itself. We humans are a flux of atoms that were forged in stars. But perhaps uniquely in the universe, our atoms are arranged in such a way that we can wonder what the universe is, what atoms are, what it means to wonder. We can question, hypothesise, know. We can predict the future. We have a duty to ourselves, and to the cosmos, to use our improbable intelligence to the full.

A universe of knowledge

There may, however, be signs of a shift in focus. The most promising is the democratisation of knowledge.

A basic education in science can now be gained through Wikipedia alone. A more advanced education is available on YouTube. Whole fields, including much of physics, publish new research online. The open-data movement delivers the raw material of science to anyone who wants it. Crowdsourcing platforms are changing the way science is done, from online collaborations between top-class mathematicians to distributed-computing platforms that allow anybody to comb data and make discoveries. Meanwhile, scientists are realising that a crucial part of the job is communicating their ideas—and their excitement—to the public. As access to knowledge becomes universal, it may kindle the desire for more.

So although most of us can't predict the future, we can hope that in the coming year, we see the emergence of a knowledge culture, in which more of us are invested in the quest that we were born for: the quest to know. ■



Curiosity could catch on, hopes **Yuri Milner**, investor, science philanthropist and founder of Breakthrough Initiatives

We have a duty to ourselves, and to the cosmos, to use our improbable intelligence to the full

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Bodies of work

Jane Morris

Three big exhibitions in Europe's summer of art will use man as their medium

There are museums of contemporary art across Africa, Asia and the Middle East; in 2017 there will even be an Antarctic Biennale. But three major exhibitions will draw attention back to Europe: the Venice Biennale, Documenta in Greece and Germany, and Skulptur Projekte Münster. Together, these three make 2017 a once-in-a-decade artistic blockbuster.

The Venice Biennale, founded in 1895, is the oldest and largest. When it opens in May, it will showcase as many as 150 artists in two massive venues. Around 90 countries will present shows in national pavilions and up to 50 other exhibitions will spring up around the city. Documenta takes place every five years. In 2017, in a gesture of solidarity with debt-ridden Greece, it will first open in Athens in April, then at its usual home, Kassel, in June. Founded in 1955, it is now the most admired curatorial event in the world. The last outing, in 2012, featured work by over 200 artists, as well as conferences, publications and off-site events. In June, Skulptur Projekte Münster—the fifth edition of an overview of monumental works held once every ten years—will flood the medieval German city with people eager to witness cutting-edge installations.

Together, the three events cost as much as €100m (\$110m). More than 2m people are expected to attend, and collectors, curators and museum directors are al-

ready planning their trips from one exhibition to the next. Annual commercial events like Art Basel in Hong Kong and Switzerland and media-saturated auctions in New York may suddenly seem less important.

The last time the big three coincided, in 2007, Ai Weiwei brought 1,001 people from China to Kassel as a work of art. Most had never been able to travel abroad. He gave each a suitcase, some clothes, a place to stay and a modest stipend. They were free to wander the city and interact with locals or not as they chose. “Fairytale”, which cost €3.1m, was one of the most expensive works shown at Documenta. Ephemeral and performance-based, it touched on global inequalities and was made by an artist from a country that was only just entering the mainstream of art. It made Mr Ai a global name.

Performance, the body and participation will feature strongly

It is already clear that performance, the body and participation will again feature strongly in the European summer of art in 2017. “In a digital age, where the body is reduced to data and replicated in bits, the reality of the physical body cannot be ignored,” says Adam Szymczyk, artistic director of Documenta. In Münster a Turkish artist, Ayse Erkmen, will create an “invisible” footbridge, sunk a few inches below the surface of the city harbour. Shoeless visitors will appear to be walking on water; without people, the work disappears.

2017 IN BRIEF

From October New York's Guggenheim Museum hosts a landmark exhibition of **contemporary Chinese art** since 1989, when the country opened its economy to the world



Jane Morris:
 editor-at-large,
 The Art Newspaper

Story time

Leo Mirani *AMSTERDAM*

Virtual reality will give rise to new forms of narrative

Five minutes east of Amsterdam's central station is a cinema unlike any other. Members of the audience are scattered around on swivelling chairs. The viewing areas—two small rooms with 25 seats each—are bathed in natural light, which pours through large plate-glass windows. Passers-by peer in. Yet none of this troubles the audience; they are cut off from all sound and light by their Samsung Gear virtual-reality (VR) kit. Each person is in a world of their own.

The Virtual Reality Cinema opened in March, and runs eight 30-minute shows five days a week. It is self-sustaining as a business, according to its boss, Jip Samhoud, who has also made short VR films for his cinema-goers. Finding an audience is not a problem for Mr Samhoud; the challenge is finding the content. His cinema employs two people full-time to travel the world in search of fresh VR experiences.

Their task should soon become easier. If 2016 was the year of VR gaming, with the release of PlayStation VR and with Pokémon Go capturing the attention of millions, 2017 will be the year of VR storytelling.

Hollywood studios are pouring money into VR. The Tribeca Film Festival will allow VR films to compete for awards in 2017. Tencent, a Chinese gaming and messaging giant, has commissioned VR movies. Other big Chinese firms are watching closely. And the topic will go mainstream with the release in the spring of "Ghost in the Shell", a live-action Hollywood version of the cult Japanese *anime* series, which features virtual reality as a key part of the narrative. In 2017, Mr Samhoud expects, "cinematic VR



will get to the next level".

Yet it remains unclear what exactly that will be. When cinema was pioneered, early film-makers either dabbled in spectacle—a train heading towards the screen—or replicated conventions from theatre, which involved large doses of shouting and melodrama. The first television shows were in essence radio with pictures. It took until the 1950s for the jump-cut to come into vogue. Only with time and experimentation did a language develop for storytelling on screens large and small. A new grammar book is now needed for VR.

The first rules are already being drafted, starting with perhaps the most important: the role of the audience. Oculus, which set off the current VR hype cycle when Facebook bought it for \$2bn in 2014, has created Story Studio, which makes original films. Saschka Unseld, who runs Story Studio, thinks about VR viewers in a way that

The audience is omnipresent

is closer to theatre than to cinema or gaming. The audience is very much present and participating but unable to change or guide a story, he says.

Theatre provides lessons in making movies in VR too, says Mr Samhoud. Actors need to be in character for the duration of the take, not just when they are in frame; the audience is omnipresent. Staging and set-up must be similarly precise. Likewise, far more time goes into pre-production than actual performance.

Gradually, through a process of trial and error, some rules will become golden. But the first step is to start putting films out in the public realm for viewers to decide what works and what doesn't. More cinemas like the one in Amsterdam are planned, which will allow people who don't own the necessary gadgets to experience VR. "Our brains still think in the film way," says Mr Unseld. "It will take a while to separate ourselves from that." That separation will start to become a (virtual) reality in 2017. ■

Leo Mirani: news editor, *The Economist*

2017 IN BRIEF

Elena Ferrante's Neapolitan novels are brought to the stage in London



► Christine Macel, director of the 57th Venice Biennale, says performance will permeate "Viva Arte Viva", the title of her central show. Twelve themed sections, moving from "the artist's inner world to the infinite or eternal", will take viewers on a "poetic" journey. Every Saturday, the public will be encouraged to share lunch with artists and discuss art together.

Documenta will present a participatory critique of political repression. Marta Minujín, from Argentina, will build a huge replica of the Acropolis out of 100,000 banned publications in a Kassel square. The public are invited to donate volumes and take part in an as-yet-undefined activity at the end of the work.

This kind of art will find a growing audience among millennials, who tend to care more about amassing experiences than accumulating stuff. Hans Ulrich Obrist, the Swiss-born artistic director of the Serpentine Gal-

eries in London, has been tracking the activities of 7,000 young artists born since 1989, the first generation who grew up with the internet and after the fall of the Berlin Wall. He says that in a world organised around virtual connectivity, "there is much more interest in the live experience, in the real body, and a fear that the online world is trapping us in a 'filter bubble' of our own, algorithm-controlled predilections."

Olafur Eliasson, a Danish-Icelandic artist, encouraged people to turn his "Weather Project" at Tate Modern in 2003 into a hangout space. In 2010 the Museum of Modern Art in New York could barely cope with the numbers of people who queued for hours to watch Marina Abramovic as she sat impassively at a table (pictured, previous page). In 2017 it will be continental Europe's turn to get a—perhaps sorely needed—dose of performance, participation and empathy. ■

Advance booking

Maggie Fergusson

A reading list for 2017

History-lovers will have plenty to tuck into over the next 12 months. In 2012 Norman Davies set off on a global circumnavigation. "Native Lands", to be published in April by Allen Lane, is his account of the places he visited and the history he found there. In September comes Anne Applebaum's "Famine" (also from Allen Lane), about the Ukrainian famine of the 1930s. Evolving in the same month, "Darwin", by A.N. Wilson (John Murray), is a new look at the great naturalist. A crowd of books before the centenary of the Bolshevik insurrection will include "October: The Story of the Russian Revolution" (Verso), by China Miéville, better known for his fantasy fiction.

It will be a vintage year for memoir, too, starting with "Between Them", by the American novelist Richard Ford (Ecco/Harper Collins); Mr Ford will look back through the lens of his parents' life. Then there is "I Found My Tribe", from the Irish writer Ruth Fitzmaurice (Chatto & Windus); her tribe is her five children under ten and her film-maker husband, Simon, who has motor-neurone disease. The memoir of the artist Ai Weiwei (to be published in the spring) will make waves.

Among the novels to watch out for are "4 3 2 1", by Paul Auster (Faber & Faber), and "A State of Freedom",

by Neel Mukherjee (Chatto): set in India, it explores the theme of migration. "Exit West" (Riverhead/Hamish Hamilton) comes out in March from the author of "The Reluctant Fundamentalist", Mohsin Hamid.

It is hardly surprising that the world's conflicts and their consequences are working their way into fiction. "Dalila", a second novel from Jason Donald (Jonathan Cape), draws on his work with asylum-seekers in Glasgow and tells of institutionalised British brutality; Christopher Hampton has written a script and will direct the film. "Spoils" (Vintage), by an ex-soldier, Brian Van Reet, explores the relationship between a female American soldier and a jihadist in Iraq. In July comes "The President's Gardens" (MacLehose), an epic novel by Muhsin al-Ramli, set in Saddam Hussein's Iraq and translated from the Arabic by Luke Leafgren.

One of the biggest books at the Frankfurt book fair in 2015 was J.P. Delaney's "The Girl Before". A scrum of publishers bought rights in 32 countries, based on just 50 sample pages, and 150 studios around the world bid for film rights (Universal won). Published by Quercus in Britain and Ballantine in America. It is being tipped as the next "The Girl on the Train".

The plot of America's election in 2016 was stranger than fiction, and will yield a bumper crop of books. In March the satirist P.J. O'Rourke offers his distinctive take in "How the Hell Did This Happen?" (Atlantic). Before the election he explained why he would vote for Hillary Clinton: "She's the second-worst thing that could happen to our nation. I endorse her." ■

2017 IN BRIEF

F. Scott Fitzgerald's last unpublished stories are released by Scribner in April



Maggie Fergusson: freelance correspondent

Anything but Somalibland

Conrad Heine *HARGEISA*

A book fair spreads its wings

The capital city of a country not internationally recognised, and officially part of strife-torn Somalia, is an unexpected venue for one of Africa's most confident cultural events. But between July 22nd and 27th Somaliland will hold the tenth Hargeisa International Book Fair, a festival of literature, music, dance and debate, which has grown from tiny beginnings in 2008 to welcoming 10,000 people in 2016. Somali writers, artists and academics will feature alongside guests from elsewhere in Africa as well as Europe and North America.

The fair's longevity sits oddly with images of state failure, as does Somaliland itself, which declared independence from Somalia after the collapse of Siad Barre's dictatorship in 1991. Since going its own way, Somaliland has gradually been building a democratic state; the next presidential poll is likely to happen in the first half of 2017. The flourishing of the book fair marks the resurgence of a city that was once, according to Jama Musse Jama, the festival's founder, "Somalia's cultural hub", before being flattened by Barre's bombers in 1988. It also recalls the description of

Somalia as a "nation of poets" by Richard Burton, a 19th-century British explorer.

In 2017 the ambition is to take the fair's influence far and wide, especially in Africa. "Connectivity" is its theme: "taking Somaliland to the world and the world to Somaliland". South Africa, the continent's economic powerhouse, will be a "guest country". Literary guests could include Jonny Steinberg, whose book, "A Man of Good Hope" (2014), documented Somali migrants in Cape Town, as well as Nuruddin Farah, a Somali novelist based in South Africa. Haadrawi, a poet with rock-star status locally and sometimes described as Somalia's Shakespeare, is also likely to feature.

The ambition is to take the fair's influence far and wide

Despite fierce regional rivalries, the fair has already inspired similar events in Garowe, the capital of the neighbouring Puntland province, and Mogadishu, Somalia's capital. In 2017 Mr Jama plans to co-organise an inaugural event in Malawi, a past guest country. He is happy to share his intellectual property: "The idea was a dream, so why not be happy?"

The fair will keep challenging percep-



A panellist spreads the word in Hargeisa

tions of this corner of Africa: panel discussions are likely to tackle topics such as sexuality and the role of women. In a region where al-Shabab, an Islamist militia makes its presence felt, this is risky (Hargeisa was hit by deadly suicide-bombings in 2008) and has attracted threats. But Mr Jama calls these debates a "good experience—we were able to reach sectors of society that had been distant." In 2017 he expects to push boundaries "probably more than before. People are growing with the book fair." ■

Conrad Heine: freelance correspondent

Saint's relics

Sophie Pedder *PARIS*

Two new museums will pay homage to a legendary fashion designer

In an air-conditioned vault on the upper floor of the former fashion house, 5,000 haute-couture dresses, jackets, trouser suits and coats designed by Yves Saint Laurent are kept lovingly paper-wrapped in dust-free cabinets. Many belong to fashion legend: the Mondrian mini-dress introduced in 1965; le Smoking, the 1966 tuxedo trouser suit which broke dress codes for women; the scandalous 1940s look from 1971; the intricately embroidered pieces inspired by Picasso, Matisse or Van Gogh.

In the autumn of 2017 visitors will for the first time be able to view a permanent collection of such pieces, when two new museums open dedicated to the iconic French fashion designer. One will be at the refitted couture house on Avenue Marceau in Paris,

where Saint Laurent kept his design studio for nearly 30 years. Visitors will walk through the studio, past the designer's cluttered desk and pin-board as he left them, and see sketches, patterns and garments from his 81 collections.

A second museum will open in Marrakech, near the Jardin Majorelle, which was restored by Saint Laurent and his partner, Pierre Bergé, in the city they called their second home. Designed by two young French architects, Olivier Marty and Karl Fournier, known for their minimalist work in Morocco, it will house a cultural centre and a permanent retrospective collection. Hundreds of garments, accessories, sketches and photographs will be shipped out from the YSL archives in Paris.

The driving force behind the projects is Mr Bergé, who is 86. He presides over the Fondation Pierre

Bergé-Yves Saint Laurent, which owns the collection. They will be partly financed by his sale in 2009, a year after Saint Laurent's death, of €374m (\$411m) worth of the couple's art collection.

"From the beginning Saint Laurent wanted to keep everything," says Mr Bergé, behind whose desk hangs a 1972 portrait of the designer by Andy Warhol: "I always said we had to do something with them." Paris was a natural choice; Marrakech "taught Yves about colour". Haute couture, thinks Mr Bergé, died with Saint Laurent. Today's fashion houses are just "money and marketing". Saint Laurent, who empowered women to break convention, was, says Mr Bergé, "the last of the greats". ■



Sophie Pedder: Paris bureau chief, *The Economist*

Déjà vu television

Rachel Lloyd

Familiarity will add depth but also breed contempt

Stories have been reinvented for centuries. Shakespeare reworked Chaucer's poem "Troilus and Criseyde" into a play. "The Lion King" bears a noticeable trace of "Hamlet". In "Wide Sargasso Sea" (1966), Jean Rhys unravelled the history of Antoinette Cosway, Mr Rochester's spurned wife in "Jane Eyre". These works provoke us into analysing the original story: what was left out, and why? Why do its themes endure?

Television networks, too, are increasingly finding new content in old stories: 2017 will see the premiere of shows drawing on "Romeo and Juliet", "The Wizard of Oz", "Anne of Green Gables", "Rapunzel", "Watership Down", the DC Comics Universe and "Star Trek", to name but a few. Each production hopes to offer a new perspective on the existing story. NBC's "Emerald City" promises to remind viewers that "there's no place like Oz". "Still Star-Crossed", on ABC, begins with Montagues and Capulets sparring once again "in the wake of the young lovers' tragic fate". "Taken", another NBC show, is a prequel series to the films that starred Liam Neeson; it will explore how Bryan Mills learned his "very particular, and very dangerous, set of skills".

In many cases, this is a shrewd move. "Powerless", also on NBC, offers a window into the lives of insurance brokers in the world of superheroes, poking fun at the genre and appealing to those left cold by the numerous spandex-heavy spin-offs on the silver screen. Netflix has been astute in taking up Lemony Snicket's "A Series of Unfortunate Events". Fans of the books who felt let down by the 2004 film adaptation are excited: whereas the film crammed three books into 107 minutes, each

book will receive two hour-long TV episodes. This will give scope for greater characterisation, scene-setting and attention to detail. Neil Patrick Harris, who stars as the villainous Count Olaf, says the extra running time allows a "much darker take on the material".

In other cases, however, rehashing stories appears to be money-driven laziness. The CW network's remake of "The Notebook" follows "the romantic journey of Noah and Allie at the outset of their blossoming relationship", which sounds like a rerun of the original. Presumably the film's performance at the box office (having taken over \$115m worldwide) and its legions of loyal fans looked bankable. Likewise there seems little need for Netflix to serialise "Snowpiercer", a South Korean English-language film from 2013. The tenth-highest-grossing domestic film, it is an unimaginative move to appeal to its new South Korean audience (the streaming site launched there in January 2016). In reviving "Prison Break" with its original cast, Fox will demand an unreasonable suspension of disbelief from viewers: it ended in 2009 with the death of its central character.

If there are no new voices or perspectives to add, networks should refrain from adapting old material. Not only does it disappoint audiences (Fox's "Lethal Weapon", which aired in September 2016, is described by Rotten Tomatoes, an online review aggregator, as having a "tired narrative"), it also produces safe bets rather than innovative, unusual screenwriting. It would be a shame if the next "Breaking Bad" lost out to a reboot of "Buffy the Vampire Slayer". ■

Just possibly...

- **Sambo**, a Soviet martial art, becomes an official Olympic event.
- George R.R. Martin publishes "The Winds of Winter", the sixth book in his "Game of Thrones" fantasy series.
- A complete copy of **Jean Sibelius's** 8th Symphony is discovered

2017 IN BRIEF

The **Pulitzer Prize** turns 100. Past winners include Robert Frost, the staff of the *New York Times* and Joyce Carol Oates



Rachel Lloyd: assistant editor, books and arts, *The Economist*

A new world of watching

Not long ago I was in a hotel room with my children, rehearsing a speech I was due to give to some advertising executives. The speech detailed how I saw the role of television changing with the emergence of online video. I argued that television was at the centre of the world I grew up in but that online video had taken the central role in today's world that TV used to play. After I finished my speech, I asked my children, who had been listening, what they thought.

"I don't really know, mom," my son said. "I don't watch TV."

It may be hard for some to believe, but younger generations are escaping the tight grasp TV used to have on our lives. Over the past five years, the amount of time 25- to 34-year-olds spend watching traditional TV has fallen by 25.6%, according to Nielsen. For younger millennials, the drop is even steeper, at 37.9%. This might be why 834,000 people cut their cable in the United States in the second quarter of 2016, setting a new record.

Yet even as TV audiences decline due to on-demand and mobile viewing on streaming platforms, people are watching more video than ever—over six hours a day in 2016 compared with five hours in 2011, according to Activate, a media consultancy. In fact, watching video is the principal way Americans spend their free time, exceeded only by work and sleep. These connected trends—of declining traditional TV viewership but increased video consumption—tell me two things.

First, viewers clearly want more flexibility in how they consume content. The business model of television was built on scarcity: restricting content to specific channels, within timeslots, trapped behind geographical borders. But content that is difficult to access can end up missed or forgotten. Giving viewers easy ways to enjoy content—on-demand and on any device, with limited interruptions—is more important than ever.

Second, viewers want choices in what they watch, too. They want to see all kinds of content, of any length or format, made by people from all walks of life and all parts of the world. That was made clear when a survey in 2015 by *Variety* magazine asked America's teens who their favourite celebrities were. Eight of the top ten were not movie stars or musicians: they were YouTubers. Similar surveys have since produced similar results in Britain, Brazil and Finland.

YouTube is helping these stars build a new media economy, where each creator acts as

their own media company. They do not seek permission from traditional media gatekeepers to appear on air; they create content and share it directly with their audiences. And they do not just appear in their videos; they also produce, direct, edit and market them. Though many of them started by filming in their bedrooms, as their business grows they are expanding their production to include editors, writers and other creators. They are also diversifying by writing books, selling merchandise and touring. These are the media firms of tomorrow.

As not seen on TV

And they are creating content that you could never find on TV. Because they can reach global audiences, they can explore categories that would not otherwise be viable. A yoga channel may not attract enough viewers in America to work on TV, but it could easily be sustained online by millions of worldwide yoga enthusiasts. The on-demand nature of online video also helps make categories like how-to and educational content some of YouTube's most popular. When my son has a maths test, he can't wait in vain for a show on TV that discusses trigonometry; online he can instantly find answers to his questions.

In fact, millions of people are using online video to learn new things. You may think of YouTube as a place for cat videos, but searches for educational content outpace those for cute animals by three to one. People are learning new subjects, working out how to repair appliances, teaching themselves new skills. The 2016 Olympic silver medallist in javelin was Julius Yego, a Kenyan who taught himself how to throw by watching YouTube videos.

The signals viewers are sending are clear: they want a more flexible, more global and more social viewing experience. These desires have big implications for reaching younger audiences in 2017 and beyond. For instance, if you're a politician who wants your message to resonate with millennials, you have to embrace digital media. Perhaps that's why Barack Obama's first interview after his final state-of-the-union address wasn't given to CNN but to three YouTubers: Destin Sandlin, SWooZie and Ingrid Nilsen.

It's clearly a time of great change in media, but it's also a moment of great opportunity. By using new technologies to give viewers what they're seeking—more choice in how they watch and more options in what they watch—we can empower new voices and reach new people across the world. ■



More flexibility and more choice will transform the world's viewing habits, predicts **Susan Wojcicki**, CEO, YouTube

Searches for educational content outpace those for cute animals three to one

Barack Obama's pauses

Ann Wroe

The defining feature / of a presidency

When Barack Obama won election to the White House in 2008, briskness seemed the order of the day. “Yes we can” was his campaign slogan, delivered in a non-sense style, redolent with purpose. With hindsight, listeners should perhaps have noticed that between the “Yes” and the “we can” lay the briefest of hesitations, a micro-gap, deserving of a comma and sometimes even given one. For this, as it turned out, was a president who was to be famous for his pauses.

With the pauses went a crinkling of the chin, sometimes defiantly raised, sometimes somberly lowered. His head, having turned to the right to make his first point and end on an uplift, would then turn to the left to gracefully conclude. His shoulders, though, stayed rigid, his arms by his sides. Meanwhile, his listeners waited for the calm and swift resumption.

The list of notable silences was long. In his presidential acceptance speech in Chicago in 2008, his most stirring sentence contained ten of them:

If there is anyone out there/ who still doubts/ that America is a place/ where all things are possible,/ who still wonders/ if the dream of our Founders/ is alive in our time,/ who still questions/ the power of our democracy,/ tonight/ is your answer.

At a memorial service in Charleston, South Carolina, after the massacre of nine members of a black church in 2015, he waited 13 full seconds between mentioning “Amazing Grace” and beginning, astonishingly, to sing it: the sort of “live silence” treasured by Southern preachers. As he was announcing his new immigration policy in June 2012, he paused for such a time that a rude journalist butted in, assuming he had finished. Stephen Colbert, a comedian, defended the intruder, pointing out that it was often impossible to guess whether the president had finished speaking or not. His pausing was so ingrained that Mr Colbert called it “POTUS Interruptus”. One blog accused Mr Obama of “hypnotic trance induction on millions of unaware Americans”.

Intermission accomplished

Scholars studied it. Some noticed that his speech had undergone a general slowing, from 180-190 words per minute when campaigning to many fewer once elected. Three Turkish professors of linguistics wrote a dissertation on his placing of pauses before or after prepositions; the latter were longer, although Mr Obama “maintain[ed] the integrity of syntactical/lexical chunks” (to general relief). A doctoral student from Utrecht counted the presi-

dent's pauses during a 9.21-minute interview, recording 106 “uhs” and 18 “ums”. George W. Bush, over the same time-span, used only half as many of each; but when he paused, he was taken for an idiot, whereas Mr Obama was hailed as a great orator. The student concluded that Mr Obama filled his pauses with an almost inaudible hum, a musing continuation suggesting cool control; Mr Bush gave the impression he had forgotten what the hell he was saying.

Pundits also argued hotly over what the pauses implied. To Mr Obama's supporters they were a sign of wisdom, of caution and careful thought. This was not a hothead who would rush into foreign adventures, in Libya, over Ukraine or, especially, in Syria. He would weigh the pros and cons. He represented a more circumspect America, after his gung-ho predecessor's forays into Afghanistan and Iraq. Two of his greatest foreign-policy coups, the nuclear deal with Iran and the opening to Cuba,

were the result of long and laborious diplomacy. A third, the killing of Osama bin Laden, showed how decisive he could be, if he chose. Since America's overweening military power gave him a big stick anyway, he concentrated on the “speak softly” part. Or rather, speak loudly enough, and then suddenly, commandingly, pause.

At home, too, he pursued wide-ranging policies—health-care reform, cleaner air, financial regulation—with calm deliberation, and reacted with equanimity when a hostile Congress squashed the rest. He responded to a series of appalling mass-shootings with speeches laced with the pauses of genuine emotion; but even these could not persuade Congress to enact gun controls. Having intervened as best he could, he gave up. Nor did he embroil himself in the dirty business of elbow-twisting on Capitol Hill, but sat apart, like Rodin's “Thinker”, in noble and lofty silence.

His detractors saw his pauses differently. This was a man almost incapable of making up his mind—or, if he did, of following through. The moment he took office, he promised to close the prison at Guantánamo Bay: eight years later, it remained open. He took months to decide whether to withdraw American troops from Afghanistan and, if so, how many. He pursued the rights of migrants' children to be citizens, but then dropped the idea. He said he had drawn a red line over Bashar al-Assad's use of chemical weapons; the weapons were used, but the red line disappeared. The heavy role of commander-in-chief was clearly a torment to him, demanding many and copious intakes of breath. For better or worse, as with Hamlet, “the native hue of resolution” was “sicklied o'er with the pale cast of thought”.

The result, in sum, was a presidency conducted in a state of steadily declining suspense. Things would change! Certainly./ Probably./ Possibly./ Tomorrow./ Next week./ By the end of 2016./ And then time was up—■

Ann Wroe: obituaries editor, *The Economist*



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