



THE FUTURE SPECIAL

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AIQ

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THE FUTURE OF...

- Retirement • Europe • Cities
- Capitalism • Energy



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Brave New World?

Peter Drucker, the 'father of modern management', wrote: "The only thing we know about the future is that it will be different." He might have added it is difficult to predict, but that is what the editorial team at AIQ have attempted to do; looking at the longer-term factors that could influence the future in everything from retirement to capitalism.

With people living longer and declining state support, thoughts of a comfortable life of leisure in retirement are making way for a reality that will involve longer working lives and new approaches to financial planning. We consider the implications – good and bad – of the transition to a multi-stage life.

Experts have been predicting 'peak oil' since the 1970s; five decades on, we are still finding new reserves and methods of extraction. Today, changing demand dynamics are more likely to be the cause of oil's decline: we explore which alternative sources are primed to benefit.

Elsewhere, we look at cities. Climate change, digital disruption and increasing populations have led some to fear that cities of the future will resemble the dystopian nightmare of Ridley Scott's Blade Runner. But as we uncover, some cities are adapting well to these challenges – good news for investors as well as their citizens.

Rutger Bregman was an unlikely hero of this year's World Economic Forum. In calling out wealthy attendees to the Davos shindig for not paying their fair share in taxes, Bregman was tapping into a groundswell of resentment towards capitalism – or at least its biggest beneficiaries. We ask whether this is a temporary phenomenon or the start of something more permanent and radical.

From Euroscepticism in Italy to weakening growth across the region, the European Union faces several long-term challenges. But will these be the catalyst for closer integration or a fractured future?

In our Big Interview, David Miliband talks to AIQ on Brexit, the retreat of the West and the humanitarian crisis engulfing war-torn countries. We also consider whether central bank independence is at risk and speak to Parag Khanna on the future of Asia.

We welcome your feedback, so please send any comments to me at the email address below.

I hope you enjoy the issue.

Rob Davies,

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¹ Socially responsible assets under management globally grew to \$23 trillion in 2017, up 27 per cent on 2014, according to the Global Sustainable Investment Alliance



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DAVID MILIBAND

THE WEST IN RETREAT

In our Big Interview, David Miliband talks to AIQ about the growing humanitarian emergency in war-torn countries, the retreat from global engagement by the West and the future of centre-left politics.



David Miliband is not cut out for the quiet life. In his role as president and chief executive officer of the International Rescue Committee (IRC), Miliband oversees the agency's humanitarian relief operations in over 40 war-torn countries. It is a job that has grown significantly during his tenure, reflecting the mass-displacement of citizens in countries such as Somalia, Syria and Yemen.

Miliband took up the role in 2013, relocating to the IRC's US headquarters in New York. As the son of refugees – Miliband's parents fled to the UK from Belgium and Poland during World War II and its aftermath – there was a personal connection to the job that made it a natural step following his departure from frontline British politics.

He admits the scale of the task facing the IRC and other agencies doing similar work is “overwhelming”, with over 68 million people driven from their homes by conflict or persecution in the past year alone – more than at any time since the Second World War.

No wonder then that Miliband refers to this as a “humanitarian emergency” and one that has major implications for global stability. But the stakes have been raised further due to what he describes as the “retreat from global engagement by the West”; evident in everything from the rise of Trump to Brexit.

His views on the latter have seen Miliband back in the headlines over the past year. The former foreign secretary [Miliband held the role from 2007 to 2010] is one of the most prominent voices calling for a second referendum on Brexit and has not given up hope of it happening. In an article for

The Guardian, published on December 24, Miliband wrote: “A people's vote is not an admission of defeat or a poke in the eye to those who voted leave. ‘Better safe than sorry’ is the right approach when buying a house, and so makes sense when making a momentous national decision.”¹

Some believe Miliband is positioning for a return to UK politics, with reports in November suggesting he is being lined up to lead a new political party.² Miliband declined to be drawn on the speculation during a wide-ranging conversation with AIQ, but offered a passionate defence of centre-left politics; as well as discussing the linkages between the humanitarian crisis in war-torn states and global political developments.

You've said before the IRC is sadly “a growth business in a growth industry”. How critical is the current situation?

I see it as a double emergency. The first part of the emergency is the growing gap between the number of people in humanitarian need and the amount of help they receive. One in every 110 people in the world has been driven from their home by conflict or persecution. The scale of tumult is overwhelming the humanitarian system. That is why you have the nutrition crisis that is in the headlines. These are not people killed directly by war, but indirectly by the consequences of war.

These people are not arriving in rich and stable countries. Only two per cent of the world's refugees are in America and eight per cent are in Europe: 88 per cent are arriving in poor and lower middle income

countries that are struggling to support their own populations.

Secondly, these people are not going home. Less than two per cent of the world's refugees went home last year. That is why you have cumulative growth in the number of people displaced by conflict or persecution. Thirdly, the image of a refugee is someone in a refugee camp, but 60 per cent are in urban areas. These people are not penned in to separate lives; they are part of the global system and the urbanisation process.

The fourth aspect is that half of the world's displaced people are children. I would argue we need to help not just for reasons of heart but for reasons of head and global stability. It is a huge gamble to have children recruited as soldiers, which is what I saw driving from Sana'a to Hodeida in Yemen. I saw 11-year olds with Kalashnikovs manning the checkpoints, chanting “death to America”.

When I started this job five years ago, I knew humanitarian crises were a product of political crises. What I have learned is that an unattended humanitarian crisis leads to political instability. People do not stay in the country or the region they come from.

What's the second part of the emergency?

The second part is that Western countries, the anchor of the global order over the past 70 years, are in retreat from global engagement. I feel this especially strongly living in New York. When switching on the news, you get a sense of the political polarisation, but this pre-dates Trump's election.

There is a retreat from the norms that underpin the global system, most obviously the rights of refugees. The US government, which supports the IRC to reunite families around the world, is separating families when they arrive at the US border. I never thought I would see that happen. The US has historically allowed in more refugees for resettlement than any other country – around 90,000 a year. The current administration has reduced the number of refugees allowed in to just 2,000.

The second way in which there is a retreat by the West from global engagement can be put in a bucket called ‘power’. The balance of power is changing, and decisions made by Western countries are contributing to that. There is no question President Trump’s decision to withdraw from the Trans-Pacific Partnership has created a vacuum in the Far East, which gives China the opportunity to be the new lead actor. There is also a power vacuum in the Middle East and, most obviously, people in Syria and Yemen are paying the price.

There is also a retreat from institutions. It is about the US ignoring the climate treaty and withdrawing from the Human Rights Council and a range of other bodies. But it is also about Brexit, which could be a source of instability in Europe as well as Britain.

To me, the retreat creates instability in the global system. That is a trend, not a blip. The Jamal Khashoggi affair is an example of what happens when norms are not defended, and impunity is the new norm. It is dangerous.

In other words, you see clear linkages between the issues the IRC deals with and global political and economic developments?

The issues we tackle are not separate to those broader trends, but part of them. The global displacement crisis is a symptom of fragile states; of weak and divided governments; of resource stress – sometimes tied to climate change; of tumult within the Islamic world. These are all global trends and the products of the displacement crisis, with more refugees in urban areas being a symptom of urbanisation; while the movement of people is to some extent a symptom of globalisation.

Given the scale and complexity of these issues, do you feel you’re fighting a losing cause?

One of our main challenges is operating under enormous resource constraints. Those constraints are acute when it comes to putting in money to the back office. It is understandable people want to see money going to the front line, but unless you fund the back office – your HR, security, IT – you’re not going to be able to deliver front of house. It is challenging for a big NGO, which is resource constrained on the infrastructure side, to clearly establish systems for effective delivery.

Another challenge is that many of our donors are fragmented, including governments. We are running short-term grants for limited amounts of money to tackle long-term problems. We are a three quarter of a billion dollars organisation but run 400 to 500 grants at any one time, with an average size of \$1 million and average length of a year. That’s a real constraint on our ability to have an impact.

What’s at stake from the retreat from global engagement by the West?

The liberal international order was liberal because it privileged human rights alongside the sovereignty of states; it was international because it involved the whole world in the foundation of the United Nations; and it was an order because it built institutions to manage difference.

Clearly the West has made mistakes and we continue to face profound challenges; not least the exploitation of the planet and rising inequality. But the blessings of the last 70 years are at stake: the shrinking of the middle class, the threat to the global environment, the danger that the undermanaged global commons becomes a source of instability, are all real. This is a threat to living standards as well as the norms we have taken for granted. The stakes are very high.

Presumably the rise of nationalistic politics in the US and Europe will make it harder to find solutions to those global challenges?

Yes, and you’re right to use the term nationalistic – or nativistic – politics, which is a better phrase than populist politics. It is a real reversion. The debate between President Trump and President Macron is incredibly important: Trump speaks of nationalism, not globalism; Macron speaks of patriotism, not

nationalism. The nationalists allege there is a zero-sum game and the patriots, like me, argue it is a positive-sum game and there have been mutually-beneficial gains from global integration.

This is a fundamental issue, and the fact nationalists are winning some of the political arguments raises the spectre of what you might call de-globalisation.

I would argue the benefits of having a more connected world are real: they are economic, social and cultural. They are about lifestyles and living standards. However, and without wishing to sound pompous, the exploitation of the planet’s resources – living like there are three planets, not one – is catching up with us. We must recognise globalisation is too unequal; too unstable; and too unsustainable for its own good. That is why the management of the global commons – the way in which we manage the connections between peoples and states – is key to the future. There is no future in trying to address these issues alone.

How do you see the trade spat between the US and China playing out?

It’s an interesting question. Obviously, I live in the US now and spent some time recently in China. The rationale for those two countries to come to an accommodation with each other is enormous. The benefits – even of unbalanced trade – are real. My own instinct is that it is wrong to predict a new Cold War; I don’t think the Trump administration – for all the fire and fury – wants to attack the Chinese system ideologically. They are looking for a modus vivendi with them, but there is obviously a risk that the trade spat becomes a fully-fledged trade war.

I saw no evidence that the Chinese were ready to collapse or abandon their position, but I do think there is a future where China makes reforms that address some of the concerns that not just Americans, but Europeans, also have about the way in which China has followed or not followed the World Trade Organization’s rules since joining in 2001. It’s important to say that issues of intellectual property have not only been raised by the Trump administration.



THE WEST IN RETREAT *continued*

Many European businesses would raise the same questions.

As long as it's not presented as a threat to upend the Chinese system, I can see the Chinese leadership thinking there are reasons for reform and amendments to the way they work. But the US are not going to achieve it just by shouting at them.

Centre-left parties are losing ground in Europe – or, in the case of the Labour Party in the UK, shifting decisively to the left. What are the reasons for this, and is it reversible?

In my view, the historic role of social democracy or centre left/progressive politics has been to prevent free markets from going beyond their own capacity; in other words, to prevent capitalism from overreaching. That's what regulatory states and the Keynesian welfare state after the Second World War were all about.

The historic task of social democracy has been to manage markets in such a way that you gain their benefits but curb their vices. There is a second historic task and that is to help advance and defend the institutions of liberal democracy. The truth is that the age we grew up in was one where we took for granted democratic and liberal norms with regards to individual choices and individual rights. The danger is that those come under threat. We know of the authoritarian turn in countries like Turkey; we know the abuse of power is a real fear, even in a country where the courts are as strong as they are in the US.

So, I think there is a historic task for progressive politics to advance liberal norms and to ensure markets are used to serve people and not the other way around. As to why this is not being achieved, if I had to point to one thing I would say that we – and I put myself on the side of this type of politics – have not yet cracked what is the political economy that reduces inequality while increasing innovation and growth. We're challenged from the ultra left, who

think they have their own solution in going backwards; and from the hard right, who in some ways join with the hard left in terms of protectionism. I don't think you can have an answer to the travails of the centre left without having an answer to the question of what constitutes progressive centre-left political economy today.

In our case, I would argue one of the biggest mistakes was not defending what we did, including reducing inequality. There are all sorts of things we did that were imperfect, but nonetheless positive. I still believe strongly-managed markets are better than free markets; that the politics of inclusion are better than the politics of division; that the combination of free people with strong government and progressive or enlightened business is the way to manage complex economies.

You support a second referendum on Brexit. Why should we expect the outcome to be any different?

I refuse to fall victim to the pessimism that says we're doomed to leave the European Union (EU) with a crash. The deal the prime minister put forward cushions the short-term blow but doesn't answer any of the long-term questions about the relationship we're to have with the EU; it recycles the fundamental question at the heart of the Brexit talks, which is that if you want to gain the benefits of access to a vibrant European economy you need to pay a price for it. The price is adhering to its rules. In other words, if you want to leave the tennis club but still use the courts on Saturday mornings, you have to pay for it.

That dilemma has never been answered by the Brexiteers. The Brexit that was promised at the time of the referendum in 2016 is never going to be on offer: there's never going to be a Brexit that delivers £350 million a week for the National Health Service, for example.

I think it is a matter of democratic principle as well as common sense to say two things:

“*The age we grew up in was one where we took for granted democratic and liberal norms*”

one, you can't not follow the referendum result without a second referendum; secondly, a further referendum is justified on democratic grounds because the options that were presented to people either don't exist any more or never existed in the first place.

Is there any deal that could satisfy all sides?

I don't think there is any exit deal that could be as good as what we have at the moment. Having said that, there would have been ways of exiting that would have left people like me dismayed or disappointed but not able to do anything about it. If the prime minister in 2016 had said: "Look, we've decided and we're going to leave, but I'm going to fashion a Brexit that brings the country together rather than divides it; that recognises the leave side won, but with an unspecific mandate; but also recognises the strength of feeling on the remain side."

I think she could have fashioned a Brexit deal that allowed us to leave in an orderly way and reflected the diversity of opinion and interests in the country. The fact she decided to say at the beginning there would be no membership of the customs union and no membership of the single market condemned us to the position we're in now.

A second referendum, providing a further choice between the terms of departure and remaining, is in the interests of the country. Obviously, crashing out with no deal is worse than having a postponement of the final decisions, which is essentially what the withdrawal agreement does ●

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2. 'David Miliband is tipped for return to frontline politics to lead new centre-left party backed by "Blairite movement"', The Mail on Sunday, November 2018.

THE FUTURE OF RETIREMENT

The idea that in one's sixties it might be time to step out of work and retire into a life of leisure is relatively recent. But with more people living longer, expectations of retirement are being reshaped.



THE FUTURE OF RETIREMENT

Brian Loughans' ninth decade has not been spent sitting on the sofa, slippers on, catching up on daytime TV. This former RAF pilot, air traffic controller and taxi driver has spent his eighty second year delivering Indian takeaways to the good people of West Yorkshire.¹

Brian is not alone. He joins the ranks of people around the world working in later life, like Masako Wakamiya, the 82-year old who began her working life in Japan using an abacus but is now an Apple app developer. Having acquired her first computer at the age of 60, she has gone on to create artwork in Excel,² and built a diverse portfolio of work to inspire silver surfers.

"As you age, you lose many things: your husband, your job, your hair, your eyesight... The minuses are quite numerous," she said. "But when you learn something new, whether it be programming or the piano, it is a plus, it's motivating."

The reality of living longer

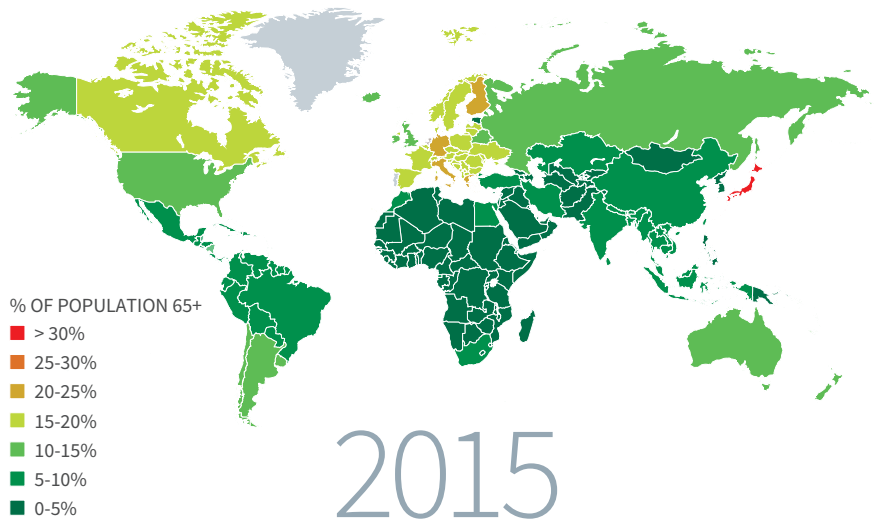
We shouldn't be surprised at such stories. Recently, life expectancy has increased by around one year every five years,³ and the number of older people in employment continues to grow.

"More years were added to human life expectancy in the 20th century than were added across all prior millennia of human evolution combined," says Professor Laura Carstensen of the Stanford Centre on Longevity, California. "In the blink of an eye, we nearly doubled the length of time that we are living."

Although longevity now seems to be slowing in some advanced economies, or not advancing in lower-income cohorts, the world will become increasingly grey in the next few decades, as shown in figure 1.

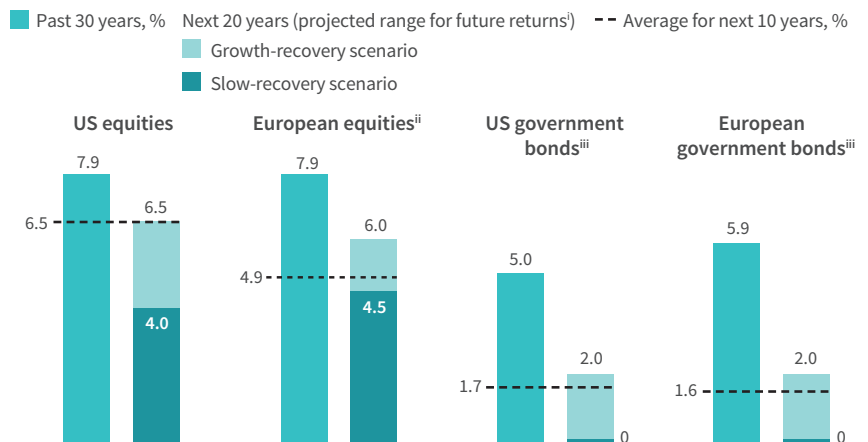
So what does this mean? If a 70-year life equates to around 611,000 hours, a century equates to 873,000 hours. But with the milieu following the financial crisis (low interest rates, lower return expectations),⁵ many will struggle to save enough by their mid-60s to support themselves for an extended period.

Figure 1: Ageing around the globe: a greying population 2015-2050



Source: Transforming World Atlas, Bank of America Merrill Lynch, July 2018.

Figure 2: Investment returns to come back down to earth...



ⁱ Numbers reflect the range between the low end of the slow-growth scenario and the high end of the growth-recovery scenario

ⁱⁱ Weighted average real returns based on each year's Geary-Khamis purchasing-power-parity GDP for 14 countries in Western Europe

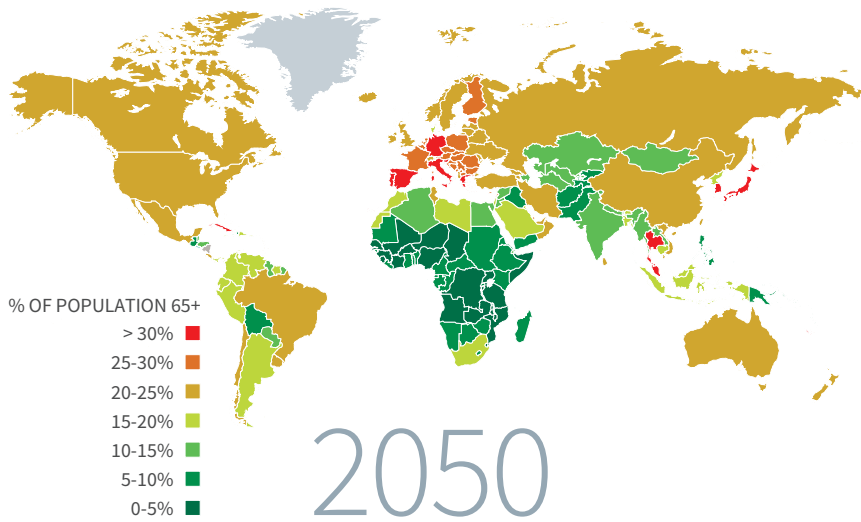
ⁱⁱⁱ Bond duration for United States is primarily 10 years; duration varies by country but is typically 20 years

Source: McKinsey Global Institute, May 2016.

Globalisation and applied technologies have helped suppress inflationary pressures, keeping interest rates low. The exceptional measures taken by central banks after the financial crisis also reduced the cost of capital, sending real long-term interest rates below zero. Rates are yet to recover, continuing to hurt savers more than a decade on.

"Demographic changes are expected to keep rates subdued, as a fall in birth rates and rise in life expectancy has resulted in more savers than spenders," says Rakesh Girdharlal, head of liability-driven investment at Aviva Investors. "That has a dampening effect on interest rates. As more wealth is accumulated by older investors, they

The odds of reaching 100 years old are around 50/50 for someone age 20 in a Western developed economy.³ By 2050, reaching a century won't be exceptional. But the geography of ageing is complex: in many countries a significant proportion fail to reach age 65. That is still expected to be the case in 2050.⁴



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The savings and
consumption habits
of older citizens have
profound implications
”

compete for returns, resulting in a lower return on their wealth.”

This is why the savings and consumption habits of older citizens are expected to have profound implications, contributing to a “permanently lower” natural interest rate, according to the Bank of England.⁶ Significantly, if total returns are low in the accumulation stage of a working life, as many suggest they will be (see figure 2), there will simply be less to go around.⁷

There are two ways of considering the impact of these trends. Firstly, some people will be forced to work longer as budding retirees struggle to save enough to maintain a satisfactory standard of living if they step out of the workforce early. But, on the flip side, others may embrace additional years of work for health and wellbeing reasons – many retirees struggle to replace the sense of purpose they had during their working lives. For some, elements of both may apply.

What is clear is that more work, or frugality and discipline, look inescapable. Retiring in one's 60s or earlier might become the exception rather than the norm. Quite simply, retirement as we know it could be over.

“Making the most of the gift of a long life requires everyone to face the truth of working into your 70s or even 80s. Simple as that,” wrote Professor Linda Gratton and

Andrew Scott in their best-selling book *The 100-Year Life*.

On the upside, work might become more varied, with opportunities to develop skills in new areas. Redeploying into lower-paid work with social purpose, becoming an entrepreneur in later life or bridging two quite different occupations won't be impossible. And less rigid gender roles, with more sharing between income-earning partners, seem likely too.

With more years to fill, education could become as vital for older people as it is for the young. It is unlikely choices made in your teens with training into your 20s will deliver skills for a working lifetime. As technologists believe we are on the cusp of the next industrial revolution,⁸ the world of work looks ripe for a shake-up. Older workers could take up posts in industries that are only just becoming apparent.

There should be more time for leisure, too. Signs are already emerging of a striking upturn in older people heading to the gym, with facilities springing up to meet the needs of older exercisers. “The cardio machines are typically low impact, the resistance training is mainly air-powered and some group fitness classes are taken sitting down,” according to a Reuters analysis.⁹ In tailored gyms like Welcyon

in the US, the music is carefully selected too – the tunes of the 1940s, 1950s and 1960s inspire the workouts.

Lower- or zero-cost outdoor activities – like cycling or walking – are already popular in retirement, and expected to remain so. Cyclists over 50 are already the most active cohort in terms of distance travelled, while those over 70 spend most hours on the road.¹⁰ Perhaps this is a sign of things to come; staying well and active will make all the difference to the quality of a long life.

But, as well as having a dampening effect on real interest rates, a shifting population pyramid suggests dynamism in new areas, and different opportunities in which to invest. Healthcare, medical appliances, personal care services, robotics and other technologies supporting independent living, financial services, leisure and property – these are all fields morphing to reflect grey spending power. “Those businesses that adapt to population ageing will thrive, while those that keep to the status quo will struggle to survive,” says Ben Franklin, an economist at the International Longevity Centre UK.¹¹

Note the number of thematic funds already targeting this area, both active and passive; the longevity investment theme is being embraced.

THE FUTURE OF RETIREMENT

continued

Zero in: more years in the workplace

For anyone dreaming of retirement, it is quite startling to realise that one in five Americans over 65 is already in employment, and one in twelve working over the age of 75.¹² The same trend can be seen in Japan, the world's most aged society. This is partly cultural (work is highly regarded) and partly a necessity. The number of over 65s in work has reached a record eight million,¹³ and the trend does not look set to change any time soon. (See boxed text on p.13.)

"In a recent Japanese poll, 78 per cent of men aged 50 to 54 with full-time jobs said they hoped to continue working past retirement," says Jean-Francois Chambon, Japanese equity fund manager at Aviva Investors. "That figure stayed in the same range for the 55 to 59s, but rose over 82 per cent for those aged 60 to 64."

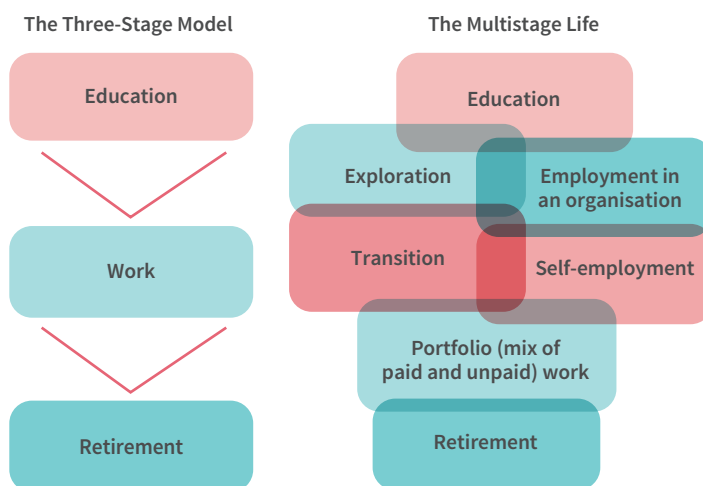
However, he points out that many companies re-hire the same employees after they reach retirement age, but typically under less attractive conditions. The re-hired might be shifted to lower status tasks and paid less than before – painful, or liberating, depending on your point of view.

For those who are not enthusiastic about working on, and looking to the state for an ultimate safety net, it would be advisable not to become complacent about retirement provision: longevity risk is making open-ended pension guarantees increasingly onerous. When the state pension was first introduced in England in 1908, for instance, the eligibility threshold was 70 and average life expectancy was 47.¹⁴ Today, the situation has flipped: the threshold is 66 and cohort life expectancy is over 90.¹⁵

"Right across the globe, the idea that the state should guarantee retirement provision is becoming outdated," says Charlie Jewkes, head of global financial institutions at Aviva Investors. "This is a huge issue, because it will mean that everyone will need to take greater financial responsibility. No-one will be able to get away from that. It's widely known but

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Figure 3: From three to many stages of life



Source: Lynda Gratton and Andrew Scott, *The Corporate Implications of Longer Lives*, Sloan Review MIT, Research Feature Spring 2017.

largely ignored, because most leaders simply do not work within a time horizon where it's worth addressing."

In this environment, auto-enrolment is expected to become more prevalent, introducing the compulsion to save. Ultimately, there may be the impetus for governments to offer means-tested income support rather than a state pension as a universal benefit.¹⁶ Other changes could include compulsory long-term care insurance, to address the uncertainties of access to costly social care. This would transfer responsibilities for looking after the elderly and unwell back to the state in later life: it has the advantage of being fair, ensuring equal access, and is another area where Japan has led the way.

The rebalancing of risk in long-term savings schemes is also ripe for change. There may be a shift to hybrid schemes attempting to address longevity risk better, blending features of defined benefit (DB) and defined contribution (DC) schemes. The intention is that defined ambition (DA) schemes would not leave either employers or employees shouldering most risk (as in DB and DC respectively).¹⁷

Facing the reality of a multi-stage life

As the prospect of living longer combines with recent economic and social transformations (automation, flexible working, more contracting, less certainty),

some contrasting visions of life are starting to emerge. Sociologists see it as moving from a simple three-stage journey (education, work, 'hard-stop' retirement) to a multi-stage future.

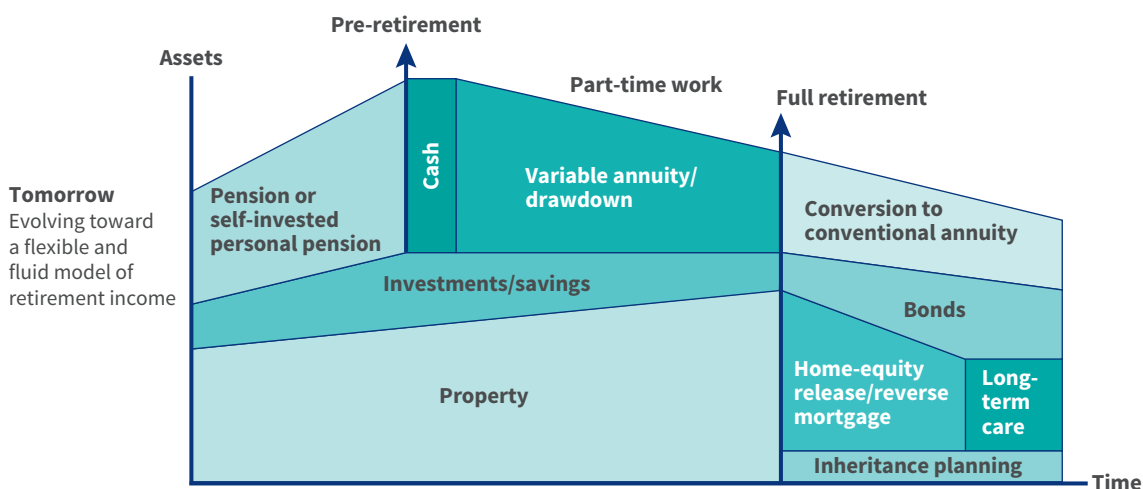
People of different ages will be able to explore varied interests, learn new skills, embark on alternative careers or engage in satisfying but unpaid work. Like Brian and Masako, older people may resist the idea of withdrawing from work, but change what they do to reflect their older selves. Blending work and leisure, education, career changes and volunteering... this is a much more complex vision of what life could be about.

For those with skills and focus, it could be very exciting. Participating in varied activities in later life can help defer mental decline and challenge the onset of depression. The prospect of becoming an undergraduate in one's 40s or even 60s won't be unthinkable. All being well, there will be plenty of hours in which to master new skills.

But a long life might be a precarious one, particularly as old certainties like a job for life with an index-linked pension will be a rarity. Imagine another reality: working on a zero-hours contract on the minimum wage for years. Sociologist Zygmunt Bauman describes it as a 'liquid' life, subject to endless change, beset with anxiety.¹⁸

In a mercurial environment, planning and building assets for all life stages is really important. In an ideal scenario, planning

Figure 4: Moving towards a flexible model of retirement income



Source: Capita, Cazalet Consulting, Money Management, 2014.

starts early, concentrating on growing tangible assets faster than inflation, as well as developing intangible ones such as networks of friends for enjoyment and psychological support. Arguably, these intangibles are just as important as financial assets. Transferrable skills, knowledge, mental and physical health and openness to change will all be needed for a rich later life.

Taking action early will make it possible to transition between life stages more comfortably, and set the foundation for the long term. The International Longevity Centre-UK suggests twenty-somethings should be thinking of saving close to a fifth of their salary, for example, in order to ensure a comfortable old age.¹⁹ But given that many people already spend the bulk of what they earn and have limited savings, multi-staging could be stressful. Retirement won't be a rich gateway for everyone.

Financial planning for a multi-stage life

If current predictions are correct, each individual will have to take greater financial responsibility and spend more time planning.

At present, it can be time consuming to find answers to even the most basic questions – like 'how much do I have in my savings pots?' To get the answers, you might need to deal with multiple companies on various platforms, as well

as the administrators of the state pension. Numerous job changes (more than 11 in an average working life) and house moves make it easy to become disconnected from one's own assets.²⁰

This is a problem initiatives like the UK's Pensions Dashboard Project seek to address, as billions of assets lie unclaimed by savers. In the future, the process might become easier – not only to identify pension savings, but also to monitor and control what is held in investment portfolios.

"Eventually it might be helpful to move to a single online portal," Jewkes says. "Through it, individuals could keep a close eye on metrics like their own life expectancy and net wealth. This would give users the capability to move all the sliders on the asset management side, as their needs change."

As Aviva Investors' investment strategist Vladislav Mikhailov explains: "People are welcoming flexibility in their retirement options, but often underestimate or are simply not aware of the complexity of the investment choices they face. In the UK, the Financial Conduct Authority (FCA) is very concerned about poor decision-making by customers who cannot afford or fail to take financial advice.

"What we have seen is that many retirees end up holding pension pots in cash by default, meaning that they lose out on potential income at a critical time.

Others might be very unrealistic about the potential investment performance of their drawdown product.

"Holistic data on assets and liabilities, better engagement through technology, and the optimisation and simplification of investment choices with clear, understandable outcomes are key to enable people to take action in a timely way."

This would be quite a leap from today, where savers are often poorly informed about the nature of the schemes in which they invest. Meanwhile, the FCA is consulting over how to deliver a small number of carefully-crafted 'investment pathways', to prevent consumers failing to make decisions or choosing options that simply don't match their needs.²¹

A holistic view would encourage greater understanding of the current position and an appreciation of what could be done to improve it. In the accumulation phase, the opportunity costs of undertaking a second degree or a career switch would be clear. In decumulation, it could improve understanding of the implications of certain choices – for example, the cost of shifting part-time, drawing income that exceeds natural equity dividend yields, or how mortgage release will deplete assets overall.

Although there are specific challenges relating to data security, it could deliver the transparency needed to achieve greater financial flexibility. In the process, some tricky

THE FUTURE OF RETIREMENT

continued

questions can be addressed, such as how much should be put aside to fund social care.

“The big problem with this is that you are trying to plan for something that only ‘may’ happen,” says Danny Cox, head of communications at Hargreaves Landsdown, “It might not.”

He mentions the huge variety of potential health outcomes in later life. Without insurance, an older person might need to cover very high costs; not a problem for the wealthy or those on the lowest incomes who will qualify for support, but potentially costly for the ‘squeezed middle’.

Income options for a longer life

Meanwhile, with pensions freedoms allowing investors to take quite radical steps accessing lifetime savings from the age of 55, Jewkes anticipates much greater focus on addressing longevity risk and delivering lifetime income to tomorrow’s retirees. Asset managers in the US and Australia already highlight its importance for those who might go on to become centenarians or even super-centenarians.

Sophisticated multi-asset portfolios that protect on the downside and participate in the upside, combining asset management and capital markets skillsets, are being suggested as one way to deliver income in perpetuity. Unlike fixed income, these products rebase as equity markets rise. Nevertheless, the products are often not indexed, there may be caps on annual withdrawals (so they won’t be flexible enough to deal with large costs like a family wedding), and are likely to be relatively costly as the assets are combined with an insurance wrapper.

Meanwhile, discussions are under way over the precise combinations of assets that could (potentially) enhance investment outcomes quite materially. For example, including an allocation to illiquid assets such as private credit could, in theory, help achieve this.

“People entering retirement still have very long time horizons, and should consider taking advantage of illiquid strategies

with predictable income (like private debt, infrastructure and real estate, for example), to enhance returns and diversify from public markets,” argues Mikhailov. “Over the 30-plus years spent in retirement, a drawdown product with around 15 to 20 per cent allocation to illiquids could potentially add years of income, compared with a similar multi-asset portfolio 100 per cent invested in public market strategies.”

It is hard to implement these strategies in the ‘daily priced, daily dealt’ DC environment, although regulators, who seem to have accepted the principles, are working to simplify the introduction of illiquids in investment portfolios.

Other innovations being considered include retirement-targeted bonds.²² These instruments – suggested by professors of finance Lionel Martellini, Robert Merton and Arun Muralidhar – would differ from conventional bonds in that they would not pay coupons and a lump sum at maturity. Instead, they offer a secure income for an agreed term. The idea is that investors could acquire bonds to cover their income needs in retirement, probably in the later stages of accumulation, before switching to an annuity for late life. Martinelli suggests these bonds could deliver the ‘flexicurity’ investors seek.

Investment circles, where individuals pool assets and then receive a lifetime income greater than that from an annuity (but without the certainty of an insurance-backed guarantee), are also being explored.²³ Modern tontines (an annuity shared by subscribers to a loan or common fund) are designed for those who want to convert a pension pot into lifetime income; some have the advantage of paying longevity dividends to living members, drawn from the assets of those that pass away before them. Although it’s early days, they may have the flexibility to include property, and the option to retain assets to pay a legacy.

It is interesting to note that management consultant Peter Drucker anticipated this race to address longevity risk. Back in 1999,

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We are seeing ‘down-ageing’, where people behave younger than their biological age

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he suggested, slightly darkly, that providing financial protection against the risk of “not dying soon enough” might become a major industry in the 21st century.²⁴ He spotted the need to innovate to serve ageing customers better; this is the direction of travel today.

Youth: a state of mind?

With expectations of life changing radically, it makes sense to step back and consider the reality of being elderly. Interestingly, more time on the planet is not resulting in more time being ‘old’. In fact, it seems to be leading to ‘down-ageing’, where people behave younger than their biological age.

This is partly the result of current trends, but it goes deeper. Swimming the English channel at the age of 73,²⁵ climbing Mount Everest at 80,²⁶ and heliskiing in one’s 90s²⁷ – these physical challenges have all been achieved. A closer look at mortality data suggests important changes have taken place.

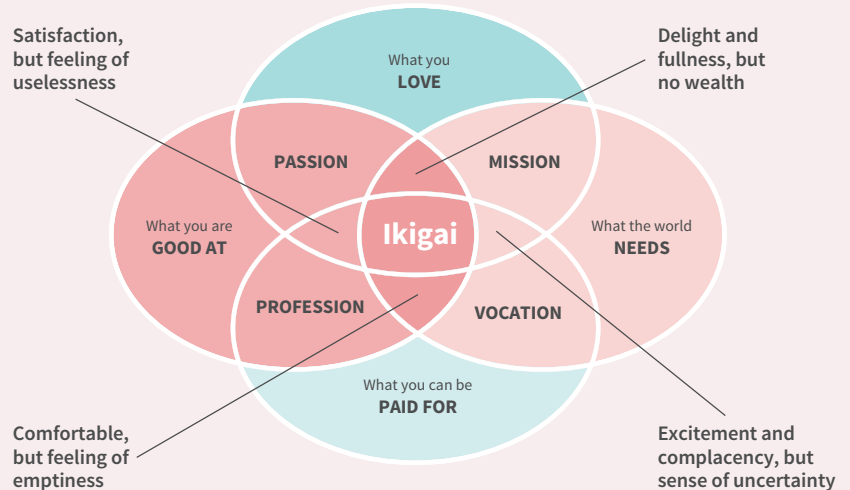
“A 65-year-old today is very different from a 65-year-old in the past,” according to Scott. “They are fitter, healthier, more productive and work for longer. In 1922, a 65-year-old British male had a mortality risk or chance of dying of 4.3 per cent. Today that is down to 1.3 per cent. The question is ‘Who in 1922 had a 1.3 per cent mortality risk?’ The answer is: 52-year-olds! 65-year-olds today are the equivalent of 52-year-olds in 1922.”

The message from those who have lived for decades is that they do not feel elderly. Take the outspoken 69-year old Dutch pensioner Emile Ratelband. In 2018, he argued in the courts that his real age (69) did not reflect his state of health, which was equivalent to someone in their 40s. In his view, his biological age was inhibiting.²⁸ Legal approval to slice off 20 years could give him opportunities to finance a new house or car, and improve his prospects in work and online dating.

Although Ratelband’s challenge was rejected, it brought some interesting issues to mind. How effective is biological age as

FINDING MEANING IN RETIREMENT: THE JAPANESE EXPERIENCE

Figure 5: Ikigai: a reason for being



Source: 'Is this Japanese concept the secret to a long, happy, meaningful life?', World Economic Forum, 9 August 2017.

a marker of capacity? Not very effective at all, according to geriatrician Claire Steeves, a lecturer at King's College, London.

"Older people are really very varied. They are more varied than younger people in almost every way," she says. She cites studies of identical twins that have shown environment trumps genetics when it comes to ageing. Factors like exercise can have a marked effect on age-related decline. As a result, there can be extraordinary differences in the capabilities of people of the same age, even with an identical genetic make-up.

"Aerobic exercise increases the number of connections in the brain; the synapses," Steeves explains. "It does this through encouraging hormones that make nerve cells grow. It increases levels of key neurotransmitters; the way nerve cells talk to each other, like acetylcholine and dopamine, and it increases the brain's blood flow, giving the brain more resources to do its work." Being active in later years will slow ageing, and help keep neural networks alive.

Age and psychological orientation: seeking the positive

As for differences in the way older people respond to emotional stimuli, psychologists believe it is possible to draw broad conclusions.

"All things being equal, older people direct their cognitive resources, like attention and memory, to positive information more than negative," says Carstensen. "If we show older, middle-aged and younger people images, and we ask them to recall all the images they can, older people remember more positive images than negative images."

This tendency to look to the positive and draw on past experience makes older people better able to negotiate emotionally-charged situations, Carstensen believes. There are other psychological differences. "We take less

How to find meaning is one of life's big philosophical questions. With more hours to spend, the question does not go away.

In Japan, the world's most aged society, a whole concept has emerged that tries to set out 'a reason for being'. Ikigai is an approach based on staying active, which is proving popular for the older generation, as well as those suffering from inertia or depression.

Ikigai suggests staying involved for as long as possible in different spheres of life, including work, leisure and vocational interests. The concept aligns with an old Japanese proverb: "Only staying active will make you want to live a hundred years." Not only does Ikigai encourage people to engage with their personal interests, it also means stepping outside the self; for example, by taking part in activities with wider social benefits.

Although they come from completely different philosophical traditions, there are certain similarities with the views of the 19th century philosopher John Stuart Mill. He suggested concentrating on 'higher' capacities. Using one's intelligence, engaging and speaking to others, for example, would ultimately be more satisfying than searching out life's 'lower' pleasures, like eating or just relaxing.*

What is important about Ikigai is the way it encourages the elderly – and others – to search for balance and be actively engaged.

* Julian Baggini, *What's it all about? Philosophy and the meaning of life*, 2004.

notice of trivial matters. We savour life. We're more appreciative, more open to reconciliation. We invest in more emotionally-important parts of life, and life gets better, so we're happier day-to-day."

Overall, it seems older workers may have slower high-level brain function (less rapid information processing and memory),

but this can be offset by other areas of cognitive strength (more rounded knowledge, better communication and emotional intelligence).²⁹ Greater understanding of these differences is likely to challenge traditional approaches to

THE FUTURE OF RETIREMENT

continued

human talent. Forward-thinking companies will use this insight to understand and harness their older workers better. Indeed, when we interviewed Andrew Scott for *AIQ* last year, he pointed out that while much progress had been made around the political correctness over race, gender and sexuality, when it comes to ageism we still have a long way to go.

Rethinking the corporate conveyor

Traditionally, companies have used retirement as a way to ease people out of senior positions, refresh teams and keep the corporate conveyor moving. But as skills shortages emerge, using existing talent for longer, drawing on the knowledge of multiple generations and reducing staff turnover make sense. But to do so, companies need to be more flexible.

These considerations are important for companies struggling to fill posts, and will be more so in the future as the active workforce shrinks. Think of Japan, where unemployment is at a record low, and where job adverts welcoming applications from the over-60s have increased eightfold over the past two years.³⁰ Looking to older workers may also be pertinent for companies simply seeking to engage better and more directly with their greying customer base.

The economic rationale for accommodating older workers is strong. German studies have shown mixed-age teams encompassing older members in a sensitive way (with age-related adaptations) can deliver higher productivity than more youthful teams.³¹ Professor Peter Cappelli from Wharton Business School, author of *Managing the Older Worker*, goes further: he cites evidence of better all-round performance from older employees.³²

Studies of entrepreneurs also suggest those seeking businesses with scope to grow should be wary of any age-related preconceptions.

“We find that age indeed predicts success, and sharply, but in the opposite

way many observers and investors propose,” noted Pierre Azoulay and colleagues from MIT Sloan School of Management in a 2018 working paper, ‘Age and High-Growth Entrepreneurship’. “The highest success rates in entrepreneurship come from founders in middle age and beyond.”³³

According to their study of US growth-oriented start-ups, they suggest experience in a specific field is the most important predictor of success.

So there is a strong case for age diversity and inclusivity. “Companies will miss an opportunity if they do not accommodate the very large and highly experienced baby-boomer cohort currently approaching retirement,” Scott believes. Doing away with the rigidities of retirement and employing or backing older workers is not virtue signalling; it makes business sense. Expect more of it in the future.

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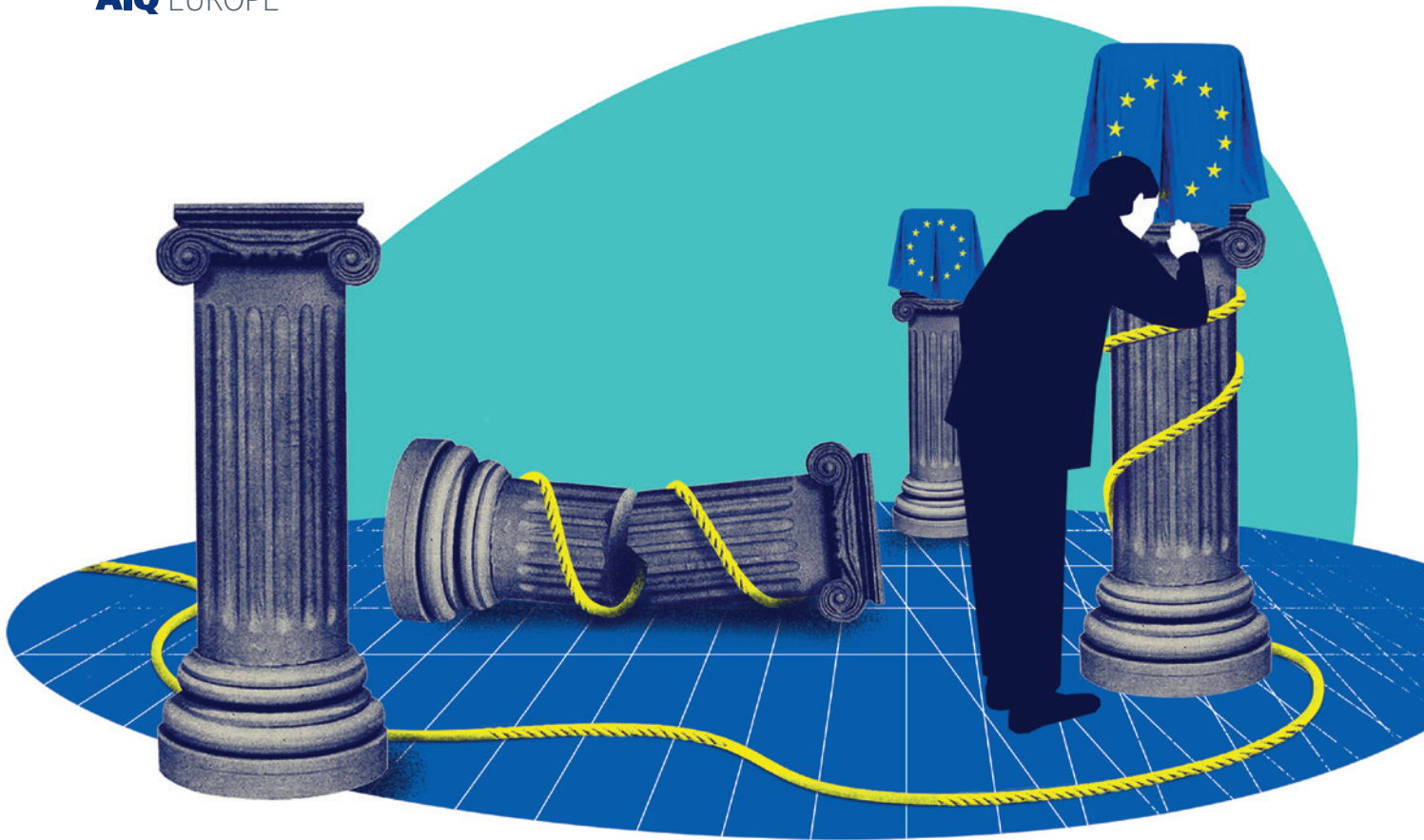
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“*The economic rationale for accommodating older workers is strong*”

Living with longevity: a gift, not a curse

Longer lives have changed the nature of work and retirement irrevocably. Although having more time on the planet is a wonderful opportunity, it also brings practical challenges, including the need for income to sustain oneself over a long period.

To make the most of retirement in the future, it might be best to shelve assumptions about what it means. The man who began working as a waiter at 89 as he was “dying of boredom” will be an inspiration to many.³⁴ Varied paths that combine paid employment, work with social purpose, learning new skills, plenty of interaction with others and health-giving exercise are all worth investigating. It’s time, Masako Wakamiya believes, to think differently and “plant your own tree in your mind...” ●



THE TIES THAT BIND THE FUTURE OF EUROPE

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The EU faces a vacuum of political leadership during a daunting period

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Brexit continues to dominate headlines in the UK, but the European Union faces other long-term challenges, from the rise of Euroscepticism in Italy to the stalled progress of euro zone reform.

Wearing a sharply tailored suit and a twinkling smile, France's new president Emmanuel Macron strides across a calm blue ocean. Behind him, UK prime minister Theresa May's leopard-print shoes float listlessly on the water – a symbol of the doomed Brexit project. But Macron presses on, eyes fixed on the limitless horizon.

The Economist's cover image of June 2017 neatly encapsulated Europe's grand hopes for the Macron presidency. Having created a new party from scratch and trounced his far-right rival in the French election, Macron – liberal, centrist, staunchly pro-European – was hailed as the man who would revive France, see off the threat of populism and save the euro zone.

Fast forward 18 months and Macron is not so much walking on water as frantically trying to keep his head above the surface. His approval ratings have dropped amid mass street protests, ostensibly a revolt against new fuel and pensions taxes. Nationalist parties are on the rise in the south and east of the European Union, complicating Macron's hopes for EU reform. To make matters worse, his close ally Angela Merkel will soon step down as German chancellor.

With Macron and Merkel losing authority, the EU faces a vacuum of political leadership during a daunting period.



THE TIES THAT BIND

continued



Brexit could yet cause market disruption and Eurosceptic parties look set to make gains at the European Parliament elections in May. Italy remains economically vulnerable. Over the medium term, the euro zone's half-finished institutions are ill-equipped to handle another debt crisis, while divisions over migration could cause deeper rifts.

"Europe is at a turning point," says Stewart Robertson, senior economist for the UK and Europe at Aviva Investors. "The EU has much to celebrate, not least healthy

democracies, affluent economies and the world's most liveable cities. But if the EU is to prosper into the future, it will need to fix some pressing problems, notably the political and economic fault-lines in the euro zone."

Europe in 2019

Start with the immediate challenges. At the time of writing, the UK was set to leave the EU on March 29, 2019, although the details of its departure remained unclear. If the UK prospers independently, other

EU member states could be encouraged to follow its example; an economically damaging Brexit, on the other hand, would prove a cautionary tale.

Neither side would benefit from traffic-clogged motorways or grounded aircraft – the risks of a 'no deal' scenario – but the euro zone economy looks better positioned than Britain's to absorb any shock. Euro zone GDP growth stood at a solid if unspectacular 1.5 per cent in 2018, lower than in 2017, but a sustainable level within the long-term capacity of the bloc.

INVESTMENT IMPLICATIONS: A TALE OF TWO MARKETS

The political future of the European Union will have an enormous impact on markets across the continent. As of early 2019, investors are monitoring events in Germany and Italy particularly closely. The received view is one of German strength and Italian weakness, and while this broadly holds true, a closer analysis reveals some nuances.

Germany is in the grip of great change. In the wake of costly defeats in regional elections in 2018, Angela Merkel was replaced as leader of the Christian Democratic Union (CDU) by Annegret Kramp-Karrenbauer, who may also succeed Merkel as chancellor. Economic issues may partly explain why voters turned against Merkel: GDP growth has started to slow and looks increasingly unbalanced by the dominance of large export companies in the industrial and auto sectors.

An indication of Germany's reliance on its car industry came when figures for the third quarter 2018 showed a 0.2 per cent contraction in GDP growth, which analysts attributed to a sharp drop in production among companies such as Volkswagen and Daimler. Germany's auto giants are scrambling to tool up new vehicles to meet the emissions standards enshrined in the EU's Worldwide Harmonised Light Vehicle

Test Procedure (WLTP), introduced last September. According to the latest official figures, the economy is estimated to have grown 1.5 per cent in 2018, the slowest rate in five years.

"Regulation is likely to continue to weigh on growth in the German auto sector over the medium term," says Ed Kevis, European equities fund manager at Aviva Investors, who also points to the impact of rising trade protectionism on German exporters. "If trade wars result in slower Chinese growth, this will hit car companies too, as well as German multinationals in other sectors with exposure to China, such as Bayer and BASF."

The DAX, the German benchmark stock index of mostly multinational companies, fell more than 18 per cent in local currency terms in 2018, its worst performance for a decade. In addition to the big carmakers, shares in electronics firms (Siemens),

pharmaceuticals (Bayer) and banks (Deutsche Bank) slumped. Kevis says regulation will continue to weigh on the big exporters in 2019 – as will trade tensions, if they persist – though German banks could rebound in line with the wider European financial sector if the European Central Bank (ECB) starts raising interest rates this year.

As for German bonds, fixed income investors are keeping a close eye on the effects of the ECB's withdrawal of quantitative easing (QE) in December. Despite some political grumbling in Germany about the programme supporting spendthrift economies in southern Europe, QE has helped keep German bond yields low (the ECB's purchases of German bonds have exceeded the country's allocation under the 'capital key', which divvies up each member's share of bond purchases based on the amount it has paid in).

"German 10-year bond yields have fallen and hovered around 0.2 per cent since the beginning of 2019, but as the ECB starts normalising policy we can assume yields would move higher," says Geoffroy Lenoir, head of euro sovereign rates at Aviva Investors in Paris. "That would apply to other countries as well; a risk to this scenario is that macroeconomic data disappoints further."

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The European Parliament elections will provide a gauge of post-Brexit political sentiment across the EU

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Escalating global trade tensions remain a threat to growth, but the European Central Bank (ECB) has left some room for manoeuvre when it comes to normalising policy.

The European Parliament elections in late May will provide a gauge of post-Brexit political sentiment across the EU. Though the body will reduce in size following the UK's departure, the vote is still a massive undertaking: 705 MEPs will be elected from across 27 member states, representing nearly 500 million people. The European

Parliament is the only institution in the EU whose members are directly elected; most MEPs sit in loose alliances that work together to pass legislation.

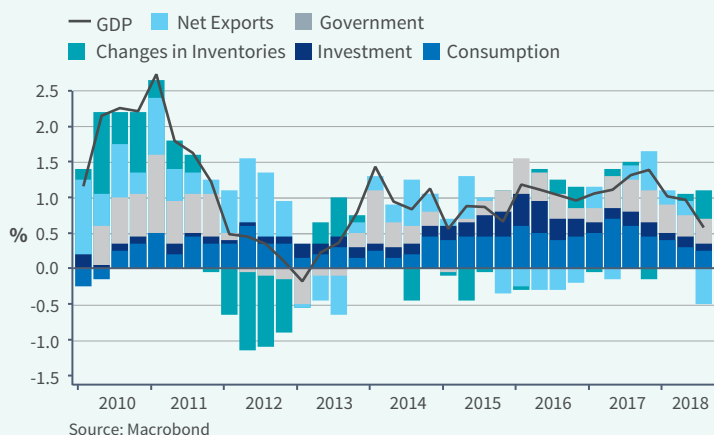
“The European Parliament elections will be important,” says Chris Bickerton, Cambridge University academic and author of *The European Union: A Citizen's Guide*.

“They are the first test of Macron really, and it is quite likely that he does rather badly. Who picks up his votes will be interesting – in France, possibly the Front National or the centre-right.”

Having advocated closer integration of the euro zone and mounted a vociferous defence of liberal values, the French president has become a lightning rod for Eurosceptic discontent across the continent. At home, the *Gilets Jaunes* protestors continue to crowd the streets of Paris in their high-vis vests, despite the government's attempts to placate them by boosting the minimum wage and scrapping proposed new fuel taxes.



Figure 1: Slowing exports weigh on German growth



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The German economy looks unbalanced by the dominance of large export companies

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So what about Italy, commonly regarded as Europe's most vulnerable economy? Some of the key investment risks have dissipated since the resolution to the stand-off between Italy and the European Commission over the Italian budget in December. This reduced the spread between German and Italian bonds – the so-called ‘fear gauge’ – which means Italy should be in a better position to weather the normalisation of ECB policy.

The budget agreement should also benefit Italian financial stocks this year, although some of the country's smaller banks remain

vulnerable due to funding concerns. In early January, the ECB appointed temporary administrators at troubled northern Italian lender Banca Carige, which is struggling to complete a €400 million capital strengthening plan.

Despite these issues, the benchmark FTSE MIB index was up more than ten per cent as of February 19, making it one of the best performers among European equity markets, according to Bloomberg data. The budget agreement has calmed investor nerves surrounding Italy's public finances, while the addition of football club Juventus

to the index, along with strong gains at oil services company Saipem, have given the market a further short-term boost.

Over the longer term, Italy still faces big political and economic issues, although investors' worst fear – an Italian exit from the euro zone – is unlikely to be realised. It remains a wealthy country in per capita terms. Leaving the bloc would probably involve redenominating the currency at a sharp devaluation, wiping out much of this wealth. “When push comes to shove, we don't believe voters would countenance this,” Kevis says ●

THE TIES THAT BIND

continued

“Macron’s attempt to force a common consensus [in Europe] is going to be affected by domestic developments,” says Professor Jean Pisani-Ferry, an academic at the Hertie School of Governance and formerly Director for Programme and Ideas on Macron’s presidential campaign. “Macron is weakening as a consequence of the *Gilets Jaunes*. What we’re seeing in France is a specifically French manifestation of a much broader phenomenon: the economic, social and political frustration of the middle and lower middle classes, which we saw in the Brexit vote and in the election of Donald Trump.”

Analysts believe the European Parliament elections are unlikely to result in a clear winner for any of the existing parliamentary groupings, with the socialist parties aligned

with the Progressive Alliance of Socialists and Democrats expected to lose seats. This means MEPs may need to create a grand coalition to pass legislation over the next five years – not an outcome likely to assuage complaints that the Parliament is ill-equipped to respond to Europe’s most pressing issues.

Italian exit?

Of these problems, Italy’s Eurosceptic turn is arguably the biggest threat facing the European project. The ruling coalition government, an unusual alliance between the far-right Northern League and the anarchic, broad-church Five Star Movement, has threatened to flout the euro zone’s fiscal rules, although it reached a belated agreement on spending with the European Commission in December 2018. The new budget will see Italy’s deficit rise to just over two per cent, higher than a previously mandated limit but below the 2.4 per cent projected in the original proposal.

The end of the ECB’s quantitative easing programme in December may have been a factor in the Italian government’s climb-down. Policymakers were especially worried about widening yield spreads between Italian and German bonds as the continent’s biggest buyer of government bonds reduced its purchases. Italy’s public debt stands at more than 130 per cent of GDP, a debt burden that could quickly prove unsustainable if yields spiked.

“The agreement between the European Commission and the Italian government should calm the situation,” says Robertson. “Italy’s public finances were at risk of

heading down explosive and hugely unsustainable paths. But there are still weaknesses in the Italian financial sector, and political tensions could flare up again. Italy is not out of the woods yet.”

Italy’s combustible mixture of Eurosceptic populism, high debt and anaemic growth has led some to fear it could eventually follow the UK out of the EU. Given Italy is part of the single currency, the consequences would be far more damaging than Brexit – redenominated into lira, Italy’s wealth stock would plunge and its euro-denominated debts would become unpayable, potentially sending shockwaves across the euro zone and wider financial markets.

Carlo Bastasin is a senior fellow in the Foreign Policy programme at the Brookings Institution in Washington D.C. and author of *Saving Europe*, an in-depth study of the euro zone crisis. He points out Italy is still an affluent country, with high levels of per-capita wealth. According to Bank of Italy figures, Italian households are sitting on a collective €10.5 trillion of private wealth, of which €4.2 trillion is held in financial assets. When push comes to shove, Italian citizens would be unlikely to put this wealth at risk.

“In a way, Italians have used patrimony and wealth as a self-defence against an inefficient state,” says Bastasin. “A recognition that the fiscal situation is wobbly, and that one day the government may not be able to repay its debts and meet its pensions commitments, has led Italians to accumulate real estate and savings. Paradoxically, the low level of economic growth in Italy makes it more important to defend the wealth levels vis-à-vis income levels.”

All of which means a change in the Italian government – perhaps prompted by a worsening of the country’s economic fortunes – is more likely than an EU exit in the medium term, according to Bastasin. “Italy’s fiscal situation is not consistent with

“*Southern European nations are still suffering the economic consequences of the sovereign debt crisis*”



Figure 2: North-South divide: change in purchasing power during the euro zone crisis, 2008-2014

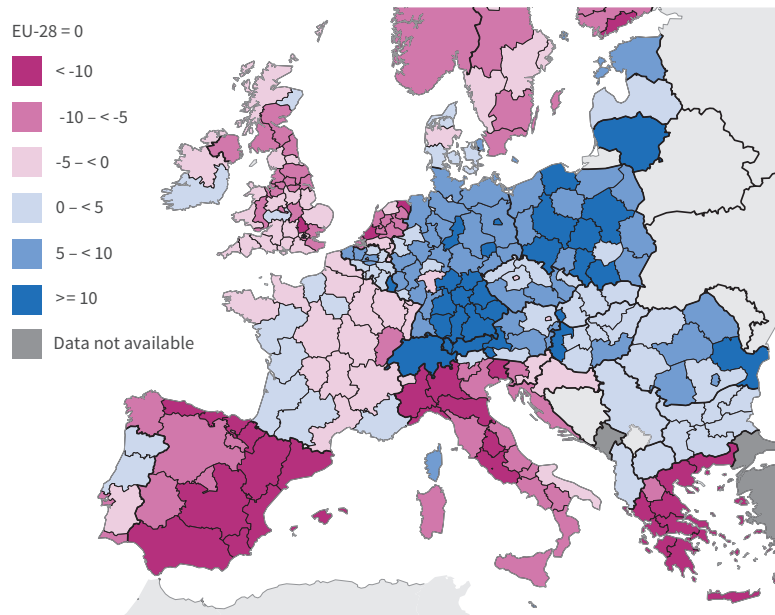


Chart shows percentage change in GDP per inhabitant in purchasing power standard (PPS), in relation to the EU-28 average. Source: eurostat, 2016.

the government's economic policies. Either the fiscal position proves unsustainable or we have a change in government, and the latter is easier to bring about. Even if you had only one populist party in the coalition government, rather than two, the fiscal situation and the agenda of the government would become more consistent."

The north-south divide

The stand-off between Italy and the European Commission points to a deeper fissure between north and south in the euro zone. Like Italy, other southern European nations – including Greece, Spain and Portugal – are still suffering the economic consequences of the sovereign debt crisis that followed hot on the heels of the global financial meltdown in 2009.

Bound to the single currency, these weaker economies were unable to take the conventional route out of hardship – slashing interest rates to devalue their currencies and make their exports more competitive. Instead, they had to push down wages and prices to achieve the same result. Austerity and widespread unemployment left economic scars that persist to this day – 'hysteresis effects', in economic parlance – and contributed to populism in these nations. Meanwhile, northern European states have recovered much more quickly.

In his book *EuroTragedy: A Drama in Nine Acts*, economist Ashoka Mody likens the accelerating gap between the euro zone's north and south to the 'great divergence' that occurred following the Industrial Revolution in the late 18th century, during which growth in some European countries sped up while other regions such as Latin America and Africa entered a long decline. In his view, endemic and interrelated problems such as poor institutional quality, rapidly ageing populations and low productivity will continue to weigh on southern European economies and test the integrity of the euro zone.

At the same time, Europe's northern countries will continue to perform robustly, accumulating large surpluses that contribute to imbalances across the bloc. Germany ran an estimated current account surplus of US\$300 billion (7.8 per cent of GDP) in 2018, according to the Munich-based Ifo Institute for Economic Research – the largest in the world for the third year running.

"Europe needs a rebalancing of the German economy, but it's politically difficult for Germany to give up its hard-earned current account surplus," says Ed Kevis, European equities fund manager at Aviva Investors. "Germany has benefited from an artificially weak currency; even as other countries have suffered. Ideally, the German government would invest in infrastructure both at home and in wider Europe to redistribute some of that money."

If another crisis hits, a more direct fiscal transfer from north to south might be required to rescue the indebted economies. But bailouts are a politically sensitive issue in Germany and other northern nations such as Denmark, Finland, Ireland, Sweden, the Netherlands and the Baltic states; a group dubbed the New Hanseatic League after a confederation of guilds that

dominated trade in medieval Europe.

Robertson contrasts the euro zone with the US, which responds very differently to internal economic pressures. The US savings and loan crisis of the 1980s and 1990s, for example, resulted in the bankruptcy of more than 1,000 small banks, mostly in the American south. A US\$50 billion federal government bailout in 1989 amounted to a fiscal transfer from affluent US states on the east and west coast to these economically weaker areas. But unlike the recent euro zone bailouts, this provoked scarcely a murmur of political opposition.

"In stark contrast to the euro zone's foot-dragging over the Greek bailout deal in 2015, the rescue effort during the savings and loan event was uncontroversial, even though the proportional cost to richer US states was far greater than the hit to Europe's rich nations during the euro crisis," says Robertson. "Until the euro zone is run like the US, with an internal transfer union, you will keep seeing these sorts of problems."

THE TIES THAT BIND

continued

Open versus closed

The EU's divisions are not simply economic. While Europe's mainstream parties are much alike, every populist party is populist in its own way. Where insurgents in southern Europe have set out their stall against the fiscal austerity imposed by northern countries, right-wing leaders in the east, such as Hungary's Victor Orban and Poland's Andrzej Duda, tend to be more opposed to social liberalism and immigration, challenging the values by which Europe has sought to define itself.

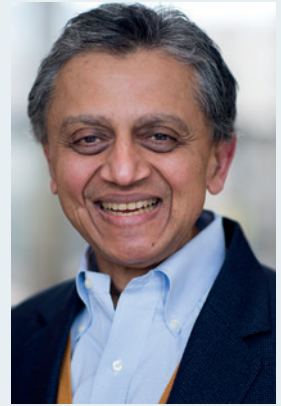
Support for freedom of movement within the EU remains strong, but opposition to non-EU migrants is growing – and not just in the east. Angela Merkel's refusal to turn away two million refugees from the German border in 2015, many of them displaced by the war in Syria, was greeted as symbolic of Europe's social liberalism by her admirers across the West. But it created an opportunity for the far-right Alternative für Deutschland (AfD) party to grow as an electoral force by stirring resentment against immigration.

Pisani-Ferry says Europe's main political divide is no longer left versus right; the key debates are now between those who would advocate 'open' versus 'closed' social and economic models. "On the one hand you have people who would put more emphasis on closing borders to migrants, but also perhaps to goods and services. On the other hand, you have those who are more internationalist. That is becoming a significant divide across Europe."

New alliances are forming along this 'open-closed' political line. Both Orban and Matteo Salvini, the far-right Italian interior minister, are pushing for a new compact between anti-immigration parties to challenge the liberal consensus within the EU's institutions.¹ On the 'open' side of the equation, Belgian MEP Guy Verhofstadt has called for the EU to go further in sanctioning

FUTURE OF THE EURO ZONE

AN INTERVIEW WITH ASHOKA MODY



The received wisdom on the euro zone is that it needs to become more tightly integrated to survive. To ensure the resilience of the monetary union, fiscal transfers to peripheral economies and risk-sharing via the mutual issuance of Eurobonds are necessary and perhaps inevitable.

Princeton economist Ashoka Mody takes a different view. Mody has first-hand knowledge of the inner workings of the euro zone; as a senior official at the International Monetary Fund, he designed Ireland's financial rescue programme in 2010. In his new book, *EuroTragedy: A Drama in Nine Acts*, he tells the story of the crisis and argues the project of ever closer union is politically unworkable. Instead, he advocates a 'decentralisation' of the euro zone to see off future chaos and revitalise the European economy. He spoke to AIQ about his ideas.

In EuroTragedy you argue the euro zone has been hampered by structural issues since its inception. What is the central flaw in the euro zone's construction?

The flaw of the euro zone's construction is that it creates a single monetary policy for a diverse set of countries; by its very nature, monetary policy is going to be too tight for some countries and too loose for others. That creates a conflict. That conflict then leads to decisions which favour or disfavour particular countries, and that is the source of policy errors.

Can we draw a direct link between the management of the euro zone crisis and the subsequent rise of political populism across Europe?

There is no question about it. The link is clearest in Italy and Germany. The German Alternative für Deutschland party was born in late 2012, at virtually the same time as the surge in support for the Five Star Movement in Italy. They are flip sides of the same coin; there was a sense of grievance in Italy that Chancellor Merkel was imposing her will on the Italian people, while in Germany there was a view she was not pushing indebted countries hard enough. This is a consequence of conditions being so disparate that any policy is always going to be seen by one side as unduly favourable to the other side – that's inherent in the monetary union.

Is an Italian crisis inevitable, given the weaknesses in the public finances?

There is no question Italy will have a crisis. Italy has zero or negative productivity growth, so any time there is a tremor somewhere its financial superstructure will remain vulnerable, because the only way to support the large amounts of debt – and the large amounts of banking credit that

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My reading of 70 years of economic and political history shows that euro zone authorities will never create a proper fiscal union

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circulates in the Italian economy – is for the economy to grow. Because Italy isn't growing, it is perennially vulnerable. A combination of factors in the global economy – a slowdown in world trade growth and a rise in global interest rates – will put a huge squeeze on the Italian economy and I don't think the economy will be able to bear that stress.

What can the euro zone do to help Italy?

I don't think it can do very much. Italy is too large for the euro zone to bail out, and the euro zone authorities' first instinct will be to push for more austerity, which will make things worse. The ECB could use what it calls its “outright monetary transactions authority” to buy Italian bonds and try to stabilise the Italian government's finances. But I'm not sure there will be the political will to allow that. The ECB already owns around 20 per cent of Italian bonds and the possibility that it may have to hold 50 per cent of Italy's bonds will cause a lot of anxiety, especially among northern members of the governing council.

Could Italy leave the euro zone? Or would such an outcome be too catastrophic to contemplate?

In Italy you have an economy that has had no growth for 20 years – either zero or slightly negative productivity growth – and no exchange rate appreciation in the sense the dollar-euro exchange rate remains where it was on January 1, 1999 when the euro was introduced. If the Italians shift to the lira it could depreciate by a very large amount against the euro and the dollar; when Argentina exited from the so-called ‘currency board arrangement’ [in 2002], the peso depreciated by 200-300 per cent. A sharp devaluation would mean Italy's euro debts would not be repayable. People say the debt is owed to other Italians, but there will eventually be a foreign creditor at the end of that chain, and those cascading defaults in my view could become completely unmanageable.

In the final chapter of the book you argue that a ‘competitive decentralisation’ of the euro zone is the best way forward. What would be the key benefits of a looser confederation?

My reading of 70 years of economic and political history shows that the euro zone authorities will never create a proper fiscal union because this in effect requires a political union, which requires national parliaments to be subordinate to a European

parliament. I don't believe that will ever happen. I don't believe the German Bundestag will ever become a provincial legislative body inside a bigger Europe.

Given that premise, what's the way forward? I say get rid of the fiscal rules because they make no sense and only make things worse. If you're not going to have fiscal transfers, you need to go back to the original inception of the Maastricht Treaty, with its ‘no bailout’ clause, which means countries will have to enter into debt restructuring arrangements with their private creditors.

Wouldn't the possibility of debt restructurings spook financial markets and make matters worse?

I understand the prospect of a debt restructuring is a very frightening possibility. What I argue is that a) the transition to the new framework should happen over five to seven years, so everyone is warned about what is going to happen; and b) there is no alternative. We pretended debt would not be restructured in the Greek case, which created an extraordinary depression in Greece, and then the debt was ultimately restructured anyway.

I argue we should get rid of the fiscal rules and create a framework for sovereign debt restructuring. Beyond that, the ECB should have a dual mandate, where it is explicitly required to consider unemployment conditions and not just price stability. This would allow for a better balance between north and south in terms of monetary policy.

What would be the longer-term benefits of this plan?

We have to recognise Europe is a declining continent in terms of its ability to keep pace with the most dynamic countries in the world. We know that from the time of the Industrial Revolution growth has been based on productivity, which requires innovation. Europe is falling behind in that race. Competitive decentralisation would revitalise economies, because fixing the problem of low productivity requires a sensitivity to local conditions.

I draw an analogy with the period of the Enlightenment, where innovation was part of a competitive structure in which each country or regional entity competed by creating better universities and attracting the best minds. It is competition to get ahead in a race that leads to a collective upsurge of innovation. In contrast, trying to centralise this process deadens these incentives rather than encouraging them ●

THE TIES THAT BIND

continued

member states that breach Europe's liberal values by eroding democratic norms and attacking the free press.²

Part of the problem is that the EU has little power to tackle the root causes of global instability that contribute to far-right politics. Even Germany, Europe's largest economy, spends only 1.2 per cent of GDP on defence, well below the NATO guideline of two per cent. This means it must reckon with the consequences of global catastrophes – such as the Syrian refugee crisis – without being able to contribute to their resolution.

In an era of rising 'great power' tensions, this could become an ever-more damaging weakness, especially as climate change is expected to lead to greater competition for natural resources and fuel mass migration over the longer term. Germany's continuing reliance on Russian energy supplies via the Nord Stream pipeline further complicates the picture.

"The protectionist threat from Trump; the issue of Nord Stream; the domestic political legacy of the migrant/refugee crisis; the growing influence of Austria within the EU and its ability to make alliances with states like Italy – all these are difficulties that German governments haven't had to deal with in a long time and are not set up to deal with," says Helen Thompson, professor of political economy at the University of Cambridge.

The EU stands to lose its biggest army after Brexit, albeit with agreements about future cooperation between the UK and European forces. As it stands, the EU has been reluctant to summon joint forces to pursue global objectives under its Common Security and Defence Policy. Its only recent combat mission was in the Central African Republic, where it sent 750 troops. (Casualties were more or less non-existent; one French corporal died – but that was from malaria.³) Whether the rest of Europe would be willing to sign up to Macron's plan to create an EU army to take on a

more assertive geopolitical role remains to be seen, although France and Germany have agreed to ramp up their military cooperation under a new treaty signed on January 22.⁴

Future scenarios

Given the deepening political and economic fault-lines across the EU, shrewd statecraft will be needed to ensure the European project survives. And the continent's leaders have shown they are aware of the need for reform.

In 2017, the European Commission published a white paper on the future of the EU, which set out various possible scenarios.⁵ These options included "nothing but the single market", a plan that effectively gives up on closer integration on security and defence issues and re-centres the European project on maintaining an efficient trading bloc. The paper also outlined a so-called "two-speed" EU in which core states, including economies in the euro zone, step up political and economic integration while those on the periphery retain greater independence. The final scenario sees all EU states do "much more together", with improved coordination on fiscal, social and defence matters within euro zone and non-euro zone states.

In 2018, Macron and Merkel made tentative progress on a model for new reforms. At a conference in the German town of Meterberg in June, they agreed the euro zone should create a budget to respond to financial crises, albeit one administered by the EU's existing institutions. A joint Franco-German statement issued to EU finance ministries did not specify the size of the putative budget and stipulated it would be financed through joint contributions from euro zone states, via instruments such as a financial transaction tax (which doesn't yet exist, despite originally being proposed in 2011).

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The continent's leaders have shown they are aware of the need for reform

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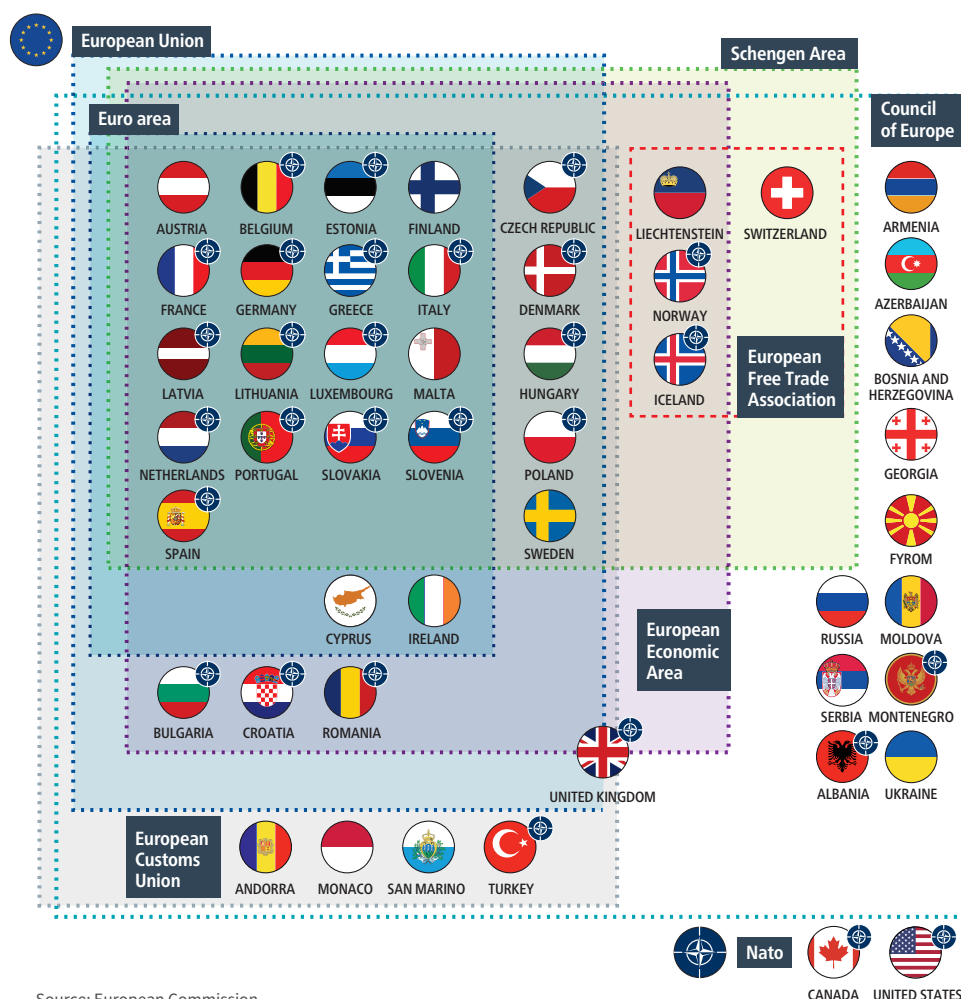
Given the Macron-Merkel proposal forms part of the EU's financial infrastructure, it would need all the EU's member states to accede to it, which is far from certain. Merkel herself is due to step down as German chancellor before 2021, having already been succeeded as leader of the Christian Democratic Union (CDU) party by her one-time protégé Annegret Kramp-Karrenbauer. It is unclear whether Kramp-Karrenbauer would be willing to push through the Merkel plan in the face of domestic opposition should she become chancellor as expected. The Dutch-led Hanseatic group, which is resistant to financial risk sharing, is also likely to prove a stumbling block.

Ever closer union, or decentralisation?

Where does this leave the European project? Claus Offe, a German sociologist, argues Europe has become "entrapped" by competing imperatives.⁶ Political considerations mean it cannot move forward to closer integration without great difficulty, but neither can it easily shed members or split into northern or southern currency blocs. The only economy likely to be strong enough to survive the disruption caused by a redenomination of its currency is Germany.

Bastasin argues greater integration might yet happen as a result of external factors. In an ever-more fraught geopolitical environment, Europe might be compelled to come together to strengthen its digital and military defences, forming the groundwork for closer economic cooperation. In this scenario, the desire for peace and stability – the original motivations behind the creation of the European Coal and Steel Community in 1951 – would spur the necessary completion of the economic framework. In the meantime, progress on financial integration within the Customs Union could improve the resilience of the euro zone's institutions from the bottom up.

Figure 3: Europe's political jigsaw puzzle



Source: European Commission

Another possibility is that Europe becomes more decentralised without fracturing wholesale – a version of the ‘nothing but the single market’ scenario put forward by the European Commission. In Ashoka Mody’s view, such an outcome could revitalise the EU. By giving up aspirations to fiscal integration and handing national governments more autonomy via a new debt-restructuring mechanism, Europe could open the way for a “vibrant competitive decentralisation” that spurs innovation and educational standards (see boxed text, pp.20-21).

True harmony?

For all that populism grabs the headlines, the European project retains the support of vast swathes of the continent’s population.

The European Commission’s latest Eurobarometer survey, conducted in May 2018, showed support for the EU was at its strongest level for 35 years. Two thirds of Europeans polled said their country had benefited from EU membership, while 60 per cent considered EU membership a good thing. The European Union is still seen as a guarantor of peace and economic prosperity by many.

Whether Europe’s leaders back decentralisation or push for closer union, they will need to balance the competing demands of national sovereignty and collective stability to keep Europe’s citizens onside. But then, it was ever thus. In an 1833 essay, the German historian Leopold von Ranke described the development of great power relations on the continent and

envisaged a future based on equilibrium. His words still resonate today: “[With states and nations] the union of all depends on the independence of each ... A decisive positive dominance of one over the other would lead to the others’ ruin. A merging of them all would destroy the essence of each. Out of separate and independent development will emerge true harmony” ●

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DREAM OR DYSTOPIA?

THE FUTURE OF CITIES

Cities will face severe challenges over the coming decades, including digital disruption, population management and climate change. How they adapt to these pressures will determine the winning – and losing – cities of the future.

Flying cars zip through the smoky air, dodging fireballs belched out by industrial chimneys. At ground level, citizens inch their way through traffic-clogged streets, using umbrellas to keep off the acid rain. Genetically engineered ‘replicants’ run amok through neon-lit skyscrapers.

Ridley Scott’s science fiction movie *Blade Runner*, released in 1982 and set in 2019, graphically illustrates the hazards of predicting what the cities of the future will look like. Now that we have caught up with the film’s timeline, some of its predictions seem quaint. Flying cars are still a pipe dream. Artificial intelligence has not yet rebelled against its human creators.

But in other ways *Blade Runner* now looks eerily prescient. Urban centres are struggling to respond to rapidly growing populations and the early effects of climate change, much like the fictional Los Angeles. Photographs of modern Chinese cities – with their crowded boulevards, gargantuan office buildings and pollution-tinted skies – often resemble scenes from the film.

The challenges of population density, resource scarcity and spiralling temperatures will only become more pressing over the

coming years, while the introduction of new digital technologies could unleash further disruption. But for those cities that have the wherewithal to evolve and adapt, the future looks brighter than the dystopian visions of science fiction.

The future is spiky

In a sense, cities today are facing modern variations of problems that date back to the very earliest human settlements. While bringing together large numbers of people in one place yields huge cultural, scientific and economic gains, it has its downsides.

“The whole history of cities can be understood in terms of externalities, positive or negative,” says Chris Urwin, global director of real assets research at Aviva Investors. “Having lots of people in one place boosts productivity and fuels growth. But cities have always struggled with disease and crime; now they are facing issues around sustainability. The key task for policymakers and developers is to ensure the positive externalities outweigh the negative ones.”



DREAM OR DYSTOPIA?

continued

This task is becoming ever more important as the planet urbanises at an unprecedented rate. According to the United Nations, 55 per cent of the world's population now lives in urban areas, and this proportion is likely to increase to 68 per cent by 2050, or an extra 2.5 billion people. Other estimates from the European Commission – which has a different definition of what constitutes 'urban' – put these figures much higher.¹

The rate of change will be highly uneven, however (see figures 1 and 2). Some cities will continue to grow at pace, while many smaller urban centres will slowly depopulate, especially in advanced economies with ageing demographics. Experts have dubbed this trend 'metropolisation', or, more colloquially, 'spikiness'. The leading cities are increasingly hoarding talent and resources, while the laggards are left behind.²

The process is likely to speed up over the coming years, as the leaders look better equipped to mitigate the negative externalities of urbanisation while taking advantage of new technological solutions. And this dynamic has important market implications: for investors in real assets, it will become ever more important to choose buildings and infrastructure projects in strong locations, while the rise of new urban technologies will create corporate winners and losers, bringing risks and opportunities across asset classes.

Human capital

So what will the cities of the future need to stay ahead of the competition? The first requirement is that they attract human capital. As economies continue to shift away from heavy manufacturing towards service-based sectors, knowledge networks will become more important than physical supply chains.

Research shows this trend favours a select group of cities.

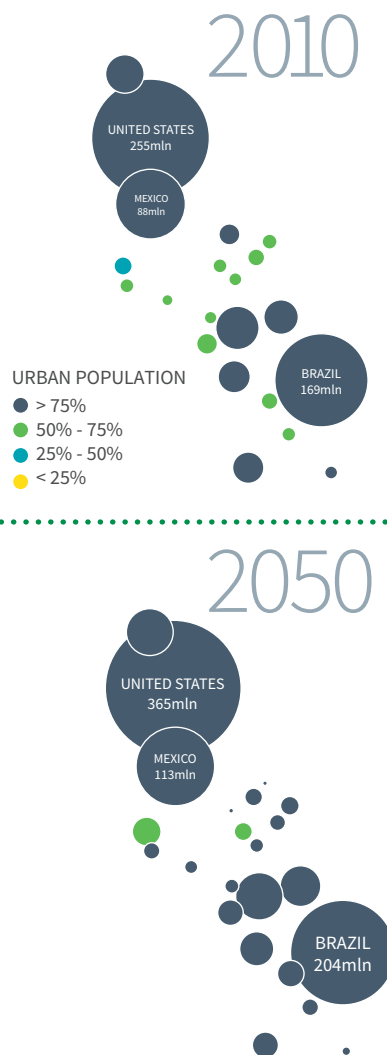
According to Jonathan Rothwell of the Brookings Institution, who has crunched OECD data on the topic, a small number of metropolitan areas account for 93 per cent of the world's patent applications, even though they contain only 23 per cent of the global population.³ The leading cities also receive an outsized chunk of early-stage investment, enabling them to capitalise on technological breakthroughs. Between 2015 and 2017, ten cities attracted an annual average of US\$100 billion in venture capital investment – more than 60 per cent of the global total. San Francisco, Beijing and New York led the field.⁴

"Digitalisation, and the ongoing transition to service sectors, is speeding up the process of metropolisation," says Souad Cherfouh, European real estate analyst at Aviva Investors. "This had led to widening inequality between cities. It's imperative that cities attract tech-intensive sectors and take advantage of the associated concentration effects."

The recent economic tilt towards 'intangible' investments in design and creative talent is contributing to metropolisation. As the academics Jonathan Haskel and Stian Westlake have observed, these investments favour industry clusters because intangible assets gain in value due to synergies and spillovers between innovative firms.⁵ As intangible-focused companies congregate in the same areas, they hoover up the best talent from elsewhere, reshaping property market dynamics.

The 'intangible economy' is already transforming the urban environment, as digital platforms enable the sharing of offices (WeWork), labour (Uber) and residential space (Airbnb). And the rise of intangibles is also hastening another disruptive trend: the automation of jobs.

Figure 1: The rate of urbanisation differs between regions

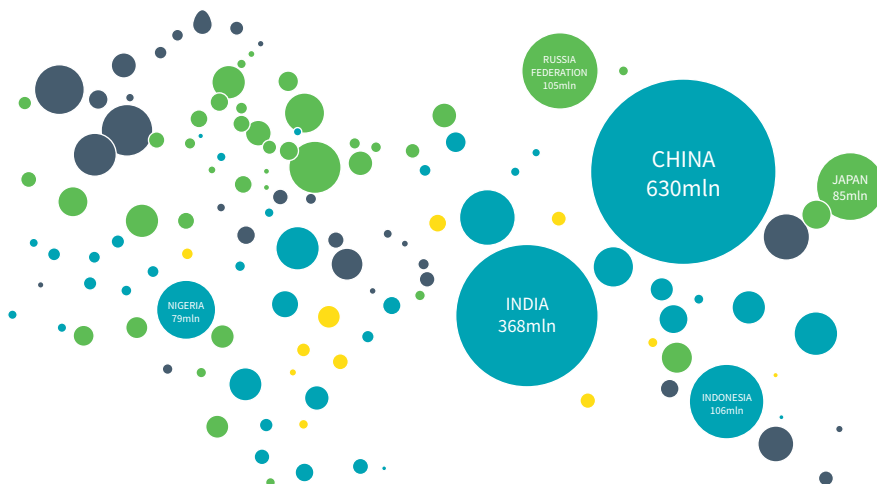


Source: Unicef, 2012.

Cherfouh says cities whose office markets primarily compete on cost are likely to lose out as automation replaces huge swathes of back-office functions, with Eastern European cities such as Warsaw particularly vulnerable. By contrast, areas that boast high-quality universities and burgeoning tech clusters – including many in Europe, such as Paris, Copenhagen, London and Cambridge – should take digital disruption in their stride.

Efficient infrastructure

Attracting human capital is not just about providing employment opportunities and top-quality education – it's about creating



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The rise of new urban technologies will create corporate winners and losers

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an environment in which people feel safe, comfortable and well-connected. To this end, fast-growing cities will need to ensure they have the infrastructure to comfortably accommodate growing numbers of people.

“High-quality infrastructure will be important, as will new technologies that enable the transmission of information, such as mobile apps that authorities can use to canvass public sentiment to inform policy,” says Parag Khanna, author of *The Future is Asian* and an expert on the dynamics of urbanisation.

The type of infrastructure required to keep a young, talented workforce happy will depend on the city's geography. Many coastal cities, where space is at premium, are seeking to increase capacity in central districts by creating massive, state-of-the-art structures. Construction of super-tall skyscrapers, such as China's 2,000 ft. Shanghai Tower, is becoming more feasible thanks to the advent of 'smart elevators'. Some of the newer models can zip horizontally across floors, as well as up and down between them (boxed text, p.29).

As some cities build up, others are building outwards. The latter strategy often requires ambitious new rail projects to ensure central business hubs remain accessible to residents in the suburbs. London's Crossrail railway and the €30 billion Grand Paris project – designed to expand metro connections between the centre of the French capital and its sprawling *banlieue* – are two examples. Once completed, Crossrail and the Grand Paris projects should ensure London and Paris are able to cope with the expected influx of new workers over the coming decades.

“As cities grow, they're increasingly looking at localised transport to enhance their economic value,” says Darryl Murphy, head of infrastructure debt at Aviva Investors. “If you're developing a city, you either build

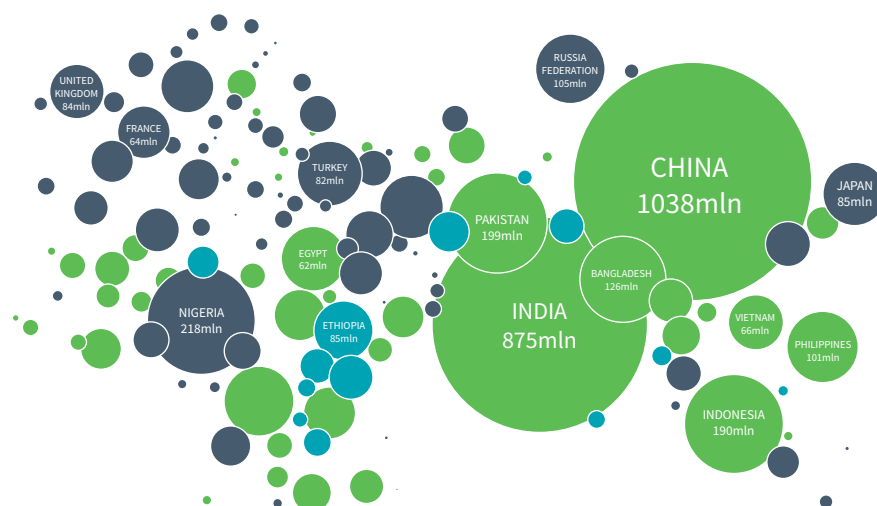
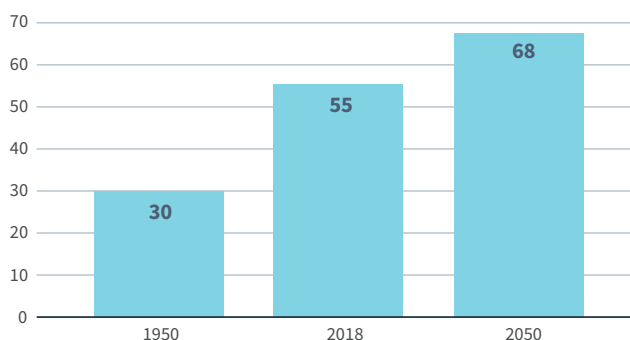


Figure 2: Growing urban population

% of global population living in urban areas



The world's urban population will have grown by 2.5 billion people in just 100 years
Source: UN, 2018.

DREAM OR DYSTOPIA?

continued

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Investment in new urban technologies topped US\$75 billion between 2016 and 2018
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your living areas downtown, and have the workforce closer to the action, or you recognise your workforce is effectively out of the city in the suburbs, and you need to efficiently get them into the city. Improving connections to the suburbs increases a city's competitiveness and productivity.”

Connectedness

Good infrastructure is not just about bulldozing new tunnels and laying new track, it is also about improving efficiency. Digital technologies can provide relatively affordable solutions in this area. The leading cities are likely to be connected in both senses of the word.

Take the leafy Chinese city of Hangzhou, where tech giant Alibaba has been working with the municipal government on a new model for transport management. By using artificial intelligence to process information gleaned from traffic cameras and vehicle GPS data, Alibaba has been able to tweak and optimise the flow of vehicles. Before the project began, Hangzhou was the fifth most congested city in China; it now ranks 57th. Emergency services were able to cut their response times in half.⁶

Data-driven methods could be particularly useful in improving transport networks in fast-growing emerging market cities, which can use technological ‘leapfrogs’ to keep pace, even if they lack the resources to build new physical infrastructure from scratch. Alibaba is currently working on optimising Kuala Lumpur’s transport infrastructure and may soon expand its ‘City Brain’ platform to other Malaysian cities.

In Western economies, too, so-called urban tech is a big growth area. According to research from the economist Richard Florida, investment in new urban technologies added up to more than US\$75 billion between 2016 and 2018, and the sector’s share of global venture capital investment has risen from 13 per cent to 22 per cent. Florida believes urban tech may now be the largest sector for such investment, outstripping pharmaceuticals and biotech.⁷

Established US tech companies are also getting in on the act, seeking opportunities to become involved in end-to-end urban planning solutions. Sidewalk Labs, a unit of Google’s parent company Alphabet, is working on a 12-acre waterfront neighbourhood in Toronto known as Quayside, which will feature an automated transit system.

However, the project has been criticised for its plans to harvest huge amounts of data from the neighbourhood’s residents. This suggests privacy concerns may limit the reach of digital infrastructure in certain cities.⁸ To some urbanites, the prospect of a technology company omnisciently tracking their every move is just as scary as *Blade Runner*’s renegade robots.

To allay such fears, urban administrations are bringing in independent review teams to ensure data is properly anonymised and protected. Take Chicago’s Array of Things project, an urban network of ‘programmable, modular nodes’ that provides citizens with real-time information on local weather patterns and traffic congestion hotspots. The public-private initiative that runs the scheme has appointed Indiana University’s Center for Applied Cybersecurity Research to review all use of citizens’ data on an ongoing basis.⁹

Sustainability

Another characteristic required by future cities is that they need to be sustainable. This is important both for long-term urban planning and resource management and for attracting human capital. A wealth of research shows the millennial generation is particularly concerned about the impact of human activity on the planet and their health. They are likely to choose places to live and work that take these preferences into account.

“Companies recognise the need to provide employees with green, sustainable environments in which to work. This is already transforming the built environment,” says Urwin.



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Companies recognise the need to provide employees with green, sustainable environments

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Shifting consumer demands, along with the prospect of new green regulation in the coming years, will provide fresh incentives for companies to ensure their buildings are energy-efficient. According to CBRE research, the amount of US office space certified ‘green’ or ‘efficient’ by the leading providers of green kitemarks now stands at 38 per cent, up five per cent from

12 years ago.¹⁰ Recognising an opportunity, some investors are deliberately targeting poorly rated assets with the aim of profitably upgrading them to these higher standards.

Carlo Ratti, architect and professor at the Massachusetts Institute of Technology, says digital technologies can improve

sustainability at the municipal level, too. “This process has already started, and its manifestations are everywhere; from energy to waste management, from mobility to water distribution, from city planning to citizen engagement.”



INVESTMENT IMPLICATIONS OF SMART CITIES

The rise of new urban technologies, powered by artificial intelligence and the Internet of Things (IoT) – a digital infrastructure that enables objects to ‘talk’ to each other and autonomously respond to human needs – is likely to create opportunities for investors.

Much hype has surrounded the potential for the IoT to transform cities and improve sustainability – switching on street lights when people walk beneath them; activating sprinklers when public lawns need watering – but from an investment perspective, perhaps the most interesting aspect of the IoT is the way it will enable industrial manufacturers to preserve revenue streams after the point of sale.

Take one of the more futuristic developments – smart elevators. Companies such as German multinational Thyssenkrupp have created IoT-connected lifts that not only move up and down between floors but laterally across them, facilitating the construction of larger, more intricate buildings. Other companies, such as Finland’s KONE and Swiss manufacturer Schindler, are also innovating with smart elevator technology.

Smart elevators have many advantages, not least the fact they are constantly ‘talking’ to their manufacturers, providing data on performance and usage that can

be fed back to optimise the flow of people around a building. This can also provide data on when elevators will need to be repaired, allowing companies to secure contracts for ongoing ‘predictive maintenance’.

“The problem with lifts is that they break down,” says Giles Parkinson, global equities fund manager at Aviva Investors. “But an operator of a smart lift will know whether a particular motor has begun to vibrate, and it will know when that motor will need to be replaced within a certain time period to a 99 per cent confidence interval, so it can fix the problem before the lift fails. This means buildings with smart lifts are more efficient and could charge higher rents.”

Security is another sector that will gain a boost from IoT technology. Electronic locks equipped with video systems and facial recognition are well established in the corporate world, but are becoming more common in residential buildings, too, especially in fast-growing, densely populated cities where security is a concern.

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The security sector will gain a boost from IoT technology

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In South Korea, around 80 per cent of new locks installed in residential properties are electronic. And in the West, Amazon Key, a service that enables customers to unlock their homes remotely to allow couriers in and out to deliver packages, is rising in popularity. As with smart lifts, the manufacturers of the technology can benefit from revenue-servicing contracts and software upgrades.

Citing these examples, Parkinson argues companies able to use smart technologies to develop specific solutions to urban problems are likely to be the chief beneficiaries as the IoT sends out its digital tentacles into cities.

“Companies providing the brute computing power these technologies run on, whether it is IBM’s Watson or General Electric’s Predix, have been hailed as the winners. But I prefer to look at companies that will be able to use these new technologies to build new data-sets and cement a competitive advantage” ●

DREAM OR
DYSTOPIA?*continued*

Smart technology is enabling cities to reduce their consumption of energy and natural resources. Take Barcelona, a city that has long suffered from periodic water shortages: during the sweltering summer of 2008, it was forced to import millions of litres of drinking water. The introduction of an AI-powered irrigation system has made a big difference; the system monitors soil moisture levels to reduce the risk of drought and avoid waste. The municipal water bill has since been cut by 25 per cent, improving the sustainability of the overall water supply.¹¹

Over the longer term, digital technologies reliant on the Internet of Things (IoT) could also enhance food security in cities. New innovations in hydroponic and aeroponic farming offer exciting possibilities for inner-city agriculture: by using data to strictly monitor and control the environment, these methods enable companies to cultivate plants in tight, confined spaces, without deep troughs of soil or large amounts of running water.

Although doubts persist over how scalable these projects are, the early signs are positive. Silicon Valley-based agritech start-up Plenty says it can derive 350 times as much produce out of an acre of land than conventional agriculture, using only one per cent of the water.¹² This prompts optimistic visions of cities in which buildings – perhaps office towers made redundant by automation – are converted into vertical farms, with foliage tumbling from the windows to attract bees and butterflies.

“This technology is potentially a huge breakthrough in improving food security and sustainability,” says Steve Waygood, chief responsible investment officer at Aviva Investors. “By repurposing buildings to create carefully controlled IoT environments, with closed loop feedback systems, companies are creating new ways to grow food. It’s sci-fi stuff, but it provides hope for the future.”

Resilience

As climate change begins to remodel the physical environment, cities will need another key characteristic: resilience. In the *Blade Runner* sequel, set in 2049, Los Angeles is protected by a huge flood barrier to fend off the tides, reflecting contemporary concerns over rising sea levels.

Cities are facing heightened flood risk in the here and now, and existing protections are showing signs of strain. Take London’s Thames Barrier. Constructed for £534 million in the 1980s, it was expected to be raised no more than once or twice a year. It is now being put to work far more often as the tides creep higher; in 2014 the barrier was raised 41 times.

Most large cities evolved near canals, rivers or the sea as a result of maritime trade, and coastal cities in Asia would be particularly vulnerable should climate change lead to a drastic rise in sea levels. Research shows that, if carbon emissions are not curtailed, global temperatures would rise six degrees by 2100, more than enough to unleash disastrous flooding in coastal cities from Miami to Osaka to Shanghai. Buildings in the worst-affected areas may become uninsurable.

The prospect of mass flooding may be decades away, but cities are already taking steps to upgrade their defences. Investing in flood barriers like the Thames Barrier is just one option: in the densely populated southern provinces of China, local governments are investing in huge drainage systems and upgrading urban

“*New innovations in hydroponic and aeroponic farming offer exciting possibilities*”

infrastructure to create so-called ‘sponge cities’, featuring permeable concrete pavements that can absorb water and mitigate the risk of flash floods.¹³

Urban planners are also facing up to the possibility that it might not be possible to completely hold back the tide. As oceans begin to encroach, cities such as New York are considering ways to equip at-risk buildings with docks and elevated walkways.¹⁴ And in other US cities, the risk of flooding has already reshaped property markets. A recent Harvard University study, which surveyed data going back to the 1970s, found that homes on the Miami coast are now worth 10 per cent less than they would be if climate change wasn’t an issue.¹⁵

Urwin says it will be increasingly important for real estate investors to identify and understand their exposures to regions at risk of physical damage from climate change. At a strategic level, they might consider tilting their global portfolios away from at-risk countries (especially those that are not well positioned to invest in the infrastructure necessary to protect them) and favour markets where the local implications of climate change are less concerning, such as parts of northern US, Canada and Scandinavia.

Aside from physical threats, cities need to be resilient in the face of pollution-related public health hazards, cyber attacks and terrorism. As digital technologies become more integrated into urban infrastructure, the risk that these technologies will become outdated – and therefore vulnerable – increases. As Ratti points out, smart cities will need to be “futureproofed”. The need to protect cities’ digital infrastructure could open up opportunities for cybersecurity firms to develop solutions.

Governance and planning

Implementing the necessary adaptations to keep cities attractive, sustainable and resilient is easier said than done, however.





Much will depend on the effectiveness of their governance models. One crucial question is whether cities opt for top-down planning or a less-structured approach, in which a competitive, tech-fuelled decentralisation is the preferred method of generating solutions.

The top-down approach is exemplified by cities built specifically with connectedness and sustainability in mind, such as Masdar City in the Abu Dhabi desert. The project features an autonomous transit system and acres of solar panels to reduce carbon emissions. But as of 2019, Masdar resembles a ghost town, with fewer than 2,000 residents in a city designed to accommodate 50,000.¹⁶

Integrating smart gizmos and sustainability tech is more difficult in older European cities, with their winding streets, heritage architecture and strict planning laws. Then again, these features are part of what makes these cities attractive places to live and work, enabling them to retain the human capital they will rely on in future.

Khanna suggests the ‘top-down’ versus ‘bottom-up’ choice is not as binary as it might appear. “To me it’s a multi-level feedback loop. It is easy to look at countries like Vietnam or China and say, ‘top-down is the way to get things done’. But if that were true, why are cities in democratic countries in Europe still the most desirable to live in?”

“It has to do with wealth, technology, voter preferences, industrial composition. It’s not as easy as to say, ‘if we were all authoritarian the world would be a more sustainable place’. Let’s not focus on politics and regimes, let’s focus on the cost of technology and incentives. That would be the correct way to understand what’s going on.”

Public-private finance initiatives can help governments and companies share the burden – and the rewards – of new projects. For example, city authorities may

be able to monetize the data they collect from smart technologies by charging companies that want to use it to develop new applications, while putting in place the necessary protections surrounding data privacy.

As a recent research paper from Deloitte highlighted, smart city infrastructure investment could result in the reallocation of risk and reward between the public and private sectors, creating “new partnership models for front-end investment and revenue sharing, including pay-for-performance related to service improvements or access to services”.¹⁷

Dream or dystopia?

Getting the right model for sustainable urbanisation could not be more important: the future of the planet literally depends on it. But the commitment of many municipal leaders to fighting climate change – even as federal governments drag their heels on the issue – offers hope.

“This has to do with the growing economic and fiscal authority cities have and the growing sense of responsibility mayors and municipal leaders have taken on,” says Khanna. “Increasingly, people realise that being mayor of the biggest city in a country is as important as being a federal minister. There is also the fact that cities are ground zero for issues such as environmental sustainability and affordable housing and transportation.”

At the International Mayors Climate Summit in June 2018, Los Angeles mayor Eric Garcetti announced the city aims to cut its emissions to a net zero level by 2050 – one of the most aggressive targets in the world. Among the measures Garcetti has introduced are plans to increase the number of energy-efficient buildings and replace the city’s public vehicles with electric models.¹⁸

“*Getting the right model for sustainable urbanisation could not be more important: the future of the planet literally depends on it*”



DREAM OR
DYSTOPIA?*continued*

If it achieves these objectives, Los Angeles' future could look very different from the smoggy conurbation imagined in *Blade Runner*. And, as other cities begin to follow its example, a new model of the future metropolis could emerge: green, sustainable, smart and – above all – liveable; a dream rather than a dystopia ●

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DESIGNING THE
FUTURE CITYAN INTERVIEW WITH
CARLO RATTI

Carlo Ratti is one of the world's leading thinkers on the future of cities. An architect and engineer by training, he currently teaches at the Massachusetts Institute of Technology (MIT), where he directs the Senseable City Lab.

'Senseable' is the word that best encapsulates Ratti's optimistic vision for the future of cities. He believes new technologies will enable urban spaces to become more environmentally sustainable, and more responsive to their inhabitants' needs. His architectural practice has produced innovations of its own: among its projects is the Digital Water Pavilion in the Spanish city of Zaragoza, whose walls are composed of digitally controlled water droplets that can be smoothly reconfigured according to the occupier's wishes. The project was named one of *TIME* Magazine's 'Best Inventions of the Year' in 2008.

In a wide-ranging interview with *AIQ*, Ratti discussed new urban technologies; philosophies of urban planning; the challenges of financing long-term development projects; and the impact of climate change.

What do you see as the key economic and societal benefits of the trend towards smart cities? And what are the main implications for governments and policymakers?

I see the concept of smart cities as reflecting current technological trends: the spaces around us are becoming permeated with digital data. The Internet is becoming the Internet-of-Things (IoT); a fusion of bits and atoms. This process has already started, and its manifestations are everywhere; from energy to waste management, from mobility to water distribution, from city planning to citizen engagement.

However, I prefer the term 'senseable' cities, which better encapsulates the social benefits gained by embedding IoT technologies into urban spaces, as opposed to the technology per se. 'Senseable' implies both the sensitivity of digital technologies capable of sensing and responding to citizens' needs and the more human quality of being 'sensible'; of keeping people and their desires at the centre.

A recent ABI report suggested smart city technologies could drive more than five per cent incremental growth and US\$20 trillion in additional economic benefits over the next ten years. Are such numbers credible?

I have not read the report and I am not an economist. It is also difficult to predict the future: think about McKinsey's famous prediction in 1980 that the number of mobile subscribers in the US by 2000 would be 900,000, which resulted in AT&T deciding not to join the mobile market at the time. McKinsey's prediction turned out to be one per cent of the true number of mobile subscribers in 2000. But I do think, if we look at the broader trend of IoT, it is like a second wave of the digital revolution, 20 years later. Its impact could be huge.

You use Robert Moses vs Jane Jacobs to frame the inherent tension between centralised planning and the tech-fuelled decentralisation that smart cities seem to thrive on. How can this be resolved, if indeed it needs to be at all?

I do not think we need to resolve this tension and pick one side or the other. Ultimately, a number of decisions will always have to be made and implemented in a top-down way. The important thing is to create conduits for participation and feedback loops within these systems. The good news: the Internet allows us to – potentially – increase participation. We could say that it is as if Moses and Jacobs were connected on Twitter and able to make decisions collaboratively.

The role of architects might also change. For instance, instead of the 20th-century breed of ‘starchitects’, commanding figures imposing their designs on people, we should embrace a new role, one I like to call the ‘choral architect’. This term refers to the more collective idea of a chorus with a conductor, who is needed to harmonize different voices and, among other things, start and end the rehearsal.

Your vision for a senseable city throws up all sorts of privacy issues. Given the vast amounts of Big Data that the whole system is predicated on, are we in urgent need of a Digital Deal for Data, as Sandy Pentland and Tim Berners-Lee have both called for? What might this type of deal look like?

The key issue is not in our cities but much closer to us – in our pockets! Our smartphones know everything about our lives and share this information with different operating systems, applications and network operators. A key issue to be addressed today is asymmetry of information, where just a few companies and public institutions know a lot about us, while we know so little about them.

In itself, Big Data essentially means a better knowledge of the urban environment, and its applications can be numerous. It can be used to empower people, supplying them with information and a greater ability to affect their environment. But it can also be used as an instrument of control, as in a super-powerful secret police on a scale never seen before.

To avoid this, we need to find solutions for how to avoid the danger of data monopolies or data misuse. At MIT, we have been working extensively on the ethical and moral issues connected to Big Data. In 2013, we launched an initiative called ‘Engaging Data’, involving leading figures from government, privacy rights groups, academia and business.

Which cities and countries are leading the way in smart city development? Are there differences between developed economies and emerging markets in terms of how much tech companies are getting involved?

We are talking about a worldwide phenomenon, the iterations of which vary greatly. Today, different cities are playing in different dimensions. For instance, Singapore is piloting exciting projects related to future mobility, Copenhagen to sustainability, Boston to citizen participation and so on.

Your question about developed and emerging economies is particularly interesting. Often, in their infancy, it might seem like new technologies exacerbate societal gaps. However, their subsequent dissemination can help reduce the gaps and cause a ‘leapfrogging’ effect. Take for instance what happened with mobile phones. At the start, they were the exclusive preserve of the Western upper classes. However, fast forward a couple of decades and they have become widespread across the world. In Africa, countries without an existing telecommunications infrastructure are leapfrogging and leading the way in many applications – from mobile banking and informing farmers with real-time crop information to the empowerment of fishermen with real-time market prices, to name just a few.

As an architect by background, how important will collaboration be across academic fields and disciplines in creating smart functional solutions?

A few years ago, *Nature* magazine noted that a large percentage of scientific articles are written by more than one person, reporting this as evidence of an increase in collaborative processes. Now, this must happen in design as well. A useful concept here is ‘network specificism’, which can be considered an answer to the risks of a design scene that is growing increasingly uniform and indifferent to its context. This was explored in a 2013 article in *Architectural Review* that I co-authored with Antoine Picon, Alex Haw and Matthew Claudel.

The same happens at our lab at MIT, where we have people from all kinds of disciplines – design and architecture, various branches of engineering and computer science,

mathematics and physics and also the social sciences, which is necessary for understanding the human side of things.

We are also proud of holding a broader definition of diversity, not only trans-disciplinary but also based on provenance, educational path, gender and sexual orientation. It is an approach that educates us to embrace diversity and – as a result – new ideas.

How can public and private finance work most effectively to deliver the outcomes that are optimal for society?

The “invisible hand” of the market, as Adam Smith put it, tends to work well for the majority. However, as we all know, it is not always inclusive of minorities, and the well-being and participation of minorities is essential to cities. By definition, these are places of encounter between different parts of society. Governments need to act to make sure such encounters and exchanges happen seamlessly.

Joint ventures representing a variety of different interests might help – such as PPP or, even better, what we could call PPPP (public-private partnerships with people).

We read a lot that private investors are looking at infrastructure but there is a dearth of opportunities. Could the smart city phenomenon address this?

I do not think that there is a dearth of opportunities; to the contrary. For instance, recently I was talking to my colleague and friend Richard Florida, who is currently carrying out research in this field. He believes ‘urban tech’ – a lot of the tech that underpins smart cities including ride-hailing apps, smart construction, etc. – is now the largest investment area in the world, even bigger than biotech.

Similarly, how would smart cities deal with the timing mismatch of having to make long-term capital commitments required to build out the infrastructure, and the increasing rate of change these cities will be exposed to? Infrastructure projects require large capital outlays and often



DREAM OR DYSTOPIA?

continued

expensive capex to keep them relevant. And if the world keeps changing faster and faster, it makes it difficult to know which ideas to invest in over the long term and which new ideas will themselves be disrupted.

You are right, this is a very important point. The urban 'hardware' we build today might last 50, 100 or 200 years. But the 'software', the way we use it, might change radically in just a decade.

To address this, I believe 'futureproofing' is an important concept. Futureproofing means recognising that we do not know how the future will shape up and need cities to be compatible with various outcomes. We need architecture and urban design with built-in flexibility and adaptability, and the potential to develop along with changing technologies and realities without becoming obsolete.

One practical example is the design of a flexible parking garage we developed at CRA-Carlo Ratti Associati as part of a wider project for an office building in Singapore. As of today, due to city regulations, we need many parking spaces in urban areas. However, urban mobility patterns are evolving quickly, and with the advent of self-driving cars and the increase in car-sharing and bike-sharing platforms, the presence of vehicles in cities might decline – making such huge parking garages obsolete, occupying precious urban space. Our concept of a parking lot was inherently adaptable: we imagined that many spaces for cars would eventually be freed up for other activities.

Many of the projects you are involved with feature significant amounts of green space as an integral part of building design. How important is green space in the development of cities, and to what extent do you see these

integrated green spaces evolving beyond 'high-end' or 'iconic' developments to standard office space or affordable housing?

Nature is crucial to the development of 21st-century cities. Ever since the ancient Greek poet Theocritus wrote his pastoral idylls romanticising rural life, people have pondered how to build cities that are in concert with their natural surroundings. But with rates of urbanisation growing exponentially around the world, the need for greener cities has never been more urgent. Fortunately, innovation and technology can help strike this long-elusive balance.

In the late 20th century, most early urbanisation in the West was characterised by sprawl: development patterns that crashed against nature; connected not by green spaces and parks but by endless ribbons of impervious pavement. As planners recognise the shortcomings of such approaches, we should reverse the equation: how can nature be returned to the city?

As an example, last spring in Milan we unveiled our Living Nature exhibit, a 500-square-meter (5,381-square-foot) pavilion that can recreate four seasons simultaneously under the same roof. The goal of the project was to spark conversation about sustainable design and illustrate the surprising ways nature will be integrated into cities and homes of the future. For example, we are currently developing one of the tallest skyscrapers in Singapore for CapitalLand, along with Bjarke Ingels Group (BIG), which will include a tropical urban forest at its core. Our proposal for the new scientific campus of the University of Milan also stresses green spaces: in addition to the greenery we have designed for its courtyards and roofs, we have planned a series of botanical gardens, experimental greenhouses and sports fields linked to the area's waterways in a completely pedestrianised campus.

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We need architecture and urban design with built-in flexibility and adaptability

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More generally, advances in hydroponic and aeroponic farming techniques, together with efficient LED lights, make it easier to grow vegetables in confined spaces. While cities will never replace rural areas as the world's main source of nutrition, a higher percentage of food can be cultivated in urban areas. This applies not only to 'high-end' or 'iconic' developments but to more standard office space and affordable housing.

More than a century ago, the French geographer Élisée Reclus astutely predicted that people would always need “the dual possibility of gaining access to the delights of the city... and, at the same time, the freedom that is nourished by nature.” Reclus' ideal was visionary, if premature. But today, thanks to new technologies and bold thinking, the urban-rural divide in city planning is slowly closing.

With global warming and cities already significantly hotter than surrounding areas (not to mention more polluted), what new building techniques and technologies do you see emerging to combat this?

There could be various strategies. The first is to make cities more efficient: as they consume up to 50 per cent of the planet's energy, small improvements can have a significant impact at the global scale in reducing CO2 emissions. The second strategy is to plan for adaptation, as I mentioned before when talking about 'futureproofing'. We need to plan and design with the realities of climate change in mind, embedding adaptability and responsiveness to future climate eventualities. A third strategy will be needed in case things were to spin out of control: would it be possible to implement geoengineering strategies that will put the planet back on track? ●



THE FUTURE IS ASIAN

AN INTERVIEW WITH PARAG KHANNA

How will the rise of emerging Asian economies affect the global balance of market and economic power? AIQ speaks to a leading authority on the subject.

The idea that China will come to dominate global affairs in the 21st century is now widely considered a truism. But a new book offers an alternative view.

In *The Future is Asian: Commerce, Conflict & Culture in the 21st Century*, Parag Khanna argues the rise of China has obscured a bigger, more interesting story. Asia is dizzyingly vast and diverse, containing five billion people and contributing two-thirds of global economic growth. Beyond China, Asian economies are growing increasingly rich and populous, counterbalancing Beijing's influence in many areas. What we are seeing, Khanna says, is not Chinese hegemony, but the beginnings of a radically "multipolar world".

Khanna is a well-established authority on global geopolitics. The founder and managing partner of FutureMap, a data- and scenario-based strategic advisory firm, he has authored a series of books on great power relations. He holds a PhD from the London School of Economics and has worked as an adviser to the US National Intelligence Council's 'Global Trends 2030' programme.

In this interview with AIQ, Khanna discusses the implications of the rise of Asia, from consumption patterns in Vietnam to infrastructure projects in Africa to military standoffs on the Himalayan plateau. He points to the emergence of a dynamic new order based on "transparency, sovereignty and openness".

In your new book you argue the West's view of the Asian continent is overly focused on China. What are we missing?

First of all, China is part of the rise of Asia; it is a very big part of it. It's the most powerful and populous state in Asia. But the correct way to understand the evolution of Asia is not to look at countries like Japan, China and India as inherently competitive entities but rather as waves of mutually reinforcing growth. The modern Asian growth story begins with post-war Japan in the 1950s and 1960s; then the Asian Tigers of Taiwan, South Korea, Hong Kong and Singapore in the 1970s and 1980s; and then China in the 1990s and 2000s to the present. Each wave has been a key investor in the next wave.

And the story doesn't stop there. If you think about it from a demographic standpoint, Asia's greatest growth wave hasn't even begun yet.

There are about five billion people across the Asian continent and the vast majority of them are not Chinese. This is something that is sadly overlooked by most people in the media, and even the analytical community, who conflate China with all of Asia. This is a pretty egregious oversight. And it is problematic from an economic standpoint and a market standpoint,

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People conflate China with all of Asia. This is a pretty egregious oversight

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THE FUTURE IS ASIAN

continued

because whenever there is a souring of the mood towards China, a slowdown in growth, investors tend to throw out the baby with the bathwater. They say, "Oh, that's it for the Asian growth story, let's pack up and leave now". That's not the correct way to look at it. It's essential to prepare for the next wave of Asian growth.

Where in Asia will this growth wave occur?

South and southeast Asia. Take India, Pakistan and the ASEAN grouping: many of these economies are already growing as fast or faster than China. Together, their GDP will equal China's in less than ten years' time if the present growth rate continues. I see more and more ASEAN integration each year, based on functional infrastructure, supply chains and diplomatic instruments; in all of those areas you see greater and greater coordination. That will help propel further growth among these economies.

How will the trade war affect wider Asia?

There has been a diversion of capital and investment to the countries of south and southeast Asia, reflecting the wider growth story. That process was already underway, but the trade war is certainly going to accelerate the process.

As for China, it's important to remember import substitution is the law of history. It's how every empire has become an empire, how every superpower has become a superpower. Whether it's the British or the Americans or now the Chinese, the story begins with import substitution; there's an indirect arc from import substitution through to nuclear superpower status. America began practising import substitution when it was just a collection of 13 colonies and that's the origin of its economic growth, its seizing of the reins of the industrial base from Britain. China is doing the same

thing in modern times, making sure it captures the latest technologies from its erstwhile benefactors to become the world's factory floor. That doesn't necessarily make what it is doing legal or fair, but its approach is much more consistent with history than people want to admit.

You argue China is far from hegemonic in Asia, despite its rise to superpower status. Which countries are challenging China's influence?

India has become a critical contributor to non-China Asia, geopolitically speaking. There was an incident last year on the Doklam Plateau on the border between India and China, in which India stood up to China and China backed down. That proved instructive for other Asian countries. It has fed into the general sentiment across Asia that countries need to stand up to China to avoid being pushed around.

People assume Asia is going to be unipolar under Chinese hegemony. But if you understand Asia in its proper, full geographic breadth, the last time Asia was under a true singular hegemony was the Mongols 700 years ago. That's not going to happen again. It's important to recognise Asia's inherent multipolarity. The most counter-intuitive argument in my book is that the Belt and Road programme – which is planned, funded and spearheaded by China – is not going to accelerate Chinese hegemony; instead it will lead to the return to a more multipolar Asia. This is because of the way infrastructure finance operates. What infrastructure does is help countries modernise, gain confidence and sovereign credit ratings, and more foreign investment. This will ultimately dilute Chinese influence rather than strengthen its hand.

What are the implications of a multipolar Asia for global geopolitics?

The conventional wisdom is that the US is passing the baton to China. I see a much more complex geopolitical landscape in which you have a permanent multipolarity. North America will remain very powerful, most definitely a superpower, and one with more economic autarchy, or self-sufficiency, than any other. I see Europe in the same light, even though many people don't; by most important measures of power Europe remains a superpower. Then you have Asia balancing out the picture. The result is a global multipolarity the likes of which has never existed before.

I talk of a world in which Asian leadership is exercised more and more, but I don't talk of an Asian-led world. My argument is that there will not be a single leader. This disappoints people who want a parsimonious and hierarchical view of the world. But we live in a world in which even 'weak' countries refuse to submit to the hegemony of a large country, let alone the entire world. Poor and under-developed Myanmar was able to cancel Chinese debt without any reprisals from China, because China was afraid about hurting its global image.

We don't live in a world where Chinese gunboats colonise Africa; we live in a world where Chinese construction engineers and diplomats working in Africa or Asia are thrown down mineshafts or shot in the head. That's the world we live in. This is not 18th century-style colonialism; it's a world of radical transparency, sovereignty, openness and scrutiny over everything China does.

So you think talk of China's imperial ambitions is overdone?

China shares borders with more countries than any other in the world, so it is acutely aware that any geopolitical misstep is going to result in a massive

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*Asia used to make for the
West and now the West makes
for Asia*
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backlash all around its periphery. People have to be much more sophisticated in their thinking. China is not going to bow to the US and the US isn't going to bow to China and Europe isn't going to bow to either. I find those kinds of conversations facile. It's a much more exciting world than we've ever seen before – it's totally globally multipolar and that's the first time that's happened in human history.

Your research shows that of the US\$30 trillion in global middle-class consumption growth between 2015 and 2030, only US\$1 trillion is expected to come from Western economies. What are the economic implications of this rapid growth in the spending power of Asia?

It has been well established for some time Asia has the fastest growing middle class in the world, driven at first by Japan and South Korea and now of course China. India is catching up gradually. Once you add in the demographic clusters in southeast Asia, with their teeming megacities and financial centres, this dynamic will only continue. It shifts the consumer gravity for luxury brands or retail companies. Asia used to make for the West and now the West makes for Asia. That's very tangibly how things are playing out in sector after sector. This trend enhances Asia's leverage quite significantly, in terms of its ability to conduct its industrial policy, to continue to attract foreign investment and to rewrite the rules of global trade and FDI.

You argue 'demographic stagnation' will hamper many rich economies in the years ahead. Are Asian economies better placed than Western ones to tackle this problem?

Confronting this challenge comes down to reforming immigration policy and

improving productivity. Infrastructure quality is also a big factor. You have this peculiarly ironic situation in which the most evolved cities and societies and urban geographies in the world, such as those in Western Europe, North America and northeast Asia, are the ones that are most rapidly depopulating and won't be able to survive without higher rates of immigration. But while some Western cities such as Berlin or Toronto (and indeed Canada as a whole) have very liberal immigration policies and are very good at attracting talent, the US and the UK are doing their best to scare it away – and are already feeling the economic pinch as a result.

By contrast, countries in northeast Asia, even culturally insular nations such as South Korea and Japan, are opening up quickly to let in more people. Japan has recently radically changed its immigration policy and is trying to bring in at least half a million workers across various sectors over the next five years. Because of Asia's enormous demographic catchment area, and because countries are liberalising immigration policies and reducing barriers for entrepreneurs and migrants, Asians are attracting other Asians much more effectively than before. Internal migration within Asia is proving to be a very important stopgap solution for those cities that have high-quality infrastructure but are rapidly depopulating, like Tokyo or Seoul. Australia is another example: it has a strict but very open immigration policy, a large foreign-born population, and is now attracting a number of high-net worth individuals from all over Asia. That's proving to be very beneficial for the Australian economy.

You've written about the sustainability pressures on cities. In which areas has progress on sustainable urbanisation been made, and in which areas do we need urgent action?

We need action on everything from carbon emissions coming out of industrial areas to the creation of an urban agricultural ecology that would reduce the footprint of agricultural supply chains that cities depend on. We need to reduce automobile emissions and use much more off-grid power. The good news is that the cost of green technologies is coming down substantially. We're designing buildings of the future more cheaply.

Which cities are doing it first and fastest? Many people would be surprised at how innovative a place like Ho Chi Minh City is. A city with 20 million people, it is developing a whole new eco district. Vietnam has a command economy that has partly enabled this. But the lesson is not that you need an authoritarian government to be sustainable; the lesson is that because the cost of sustainable urbanisation is now so substantially reduced, even poor countries can take decisive action. The great hope is that a poor country like India is going to implement some of these technological 'leapfrogs'. There is evidence it is already doing this, with programmes around waste energy and wind power and so on ●

“What we may be witnessing is not just the end of the Cold War, or the passing of a particular period of post-war history, but the end of history as such: that is, the end point of mankind’s ideological evolution and the universalization of Western liberal democracy as the final form of human government”

Francis Fukuyama, 1989¹



THE TROUBLE WITH CAPITALISM

Around the world, political and economic liberalisation have gone hand in hand since the early 1980s. However, as more countries turn to populist leaders, could the world be about to fall out of love with free-market economics too?

In an essay entitled 'The End of History', published in 1989 as the Berlin Wall was about to fall, US political scientist Francis Fukuyama famously declared, with the imminent collapse of communism across eastern Europe, the last ideological alternative to liberalism had been eliminated.

If you imagined history as the process by which liberal institutions – representative government, free markets and consumerist culture – become universal, it might be possible to say history had reached its goal.

While Fukuyama's thesis provoked no shortage of criticism, the idea the world was indeed moving towards 'the end of history' did not seem totally fanciful. For most of the following two decades, it was possible to argue his views were borne out by events.

The collapse of communism rapidly spread beyond Eastern Europe, with Cambodia, Ethiopia, Mongolia and South Yemen among those to abandon the ideology between 1989 and 1991. Having stood at 27 when Fukuyama wrote his article, by 1992 the number of communist regimes had dwindled to just five.

The globalisation paradox

The collapse of communism and corresponding pivot towards democratic governance was widely seen as the logical culmination of a process that had begun a decade earlier. A series of radical reforms initiated by Ronald Reagan and Margaret Thatcher proved to be a catalyst for the widespread adoption of free-market capitalism. Governments around the world

privatised state-owned institutions and assets, deregulated markets for both goods and services, encouraged greater labour market flexibility and cut taxes. Perhaps most significantly, reducing impediments to free trade in goods and services and capital flows became the axiom of countries everywhere.

China provides a useful analytical counterpoint, however. In the unipolar world that followed the end of the Cold War, political theorists assumed the liberalisation of China's economy would eventually lead to the democratisation of its political system. But that has not happened. While leaders opted to pursue a series of wide-ranging reforms in the 1990s – including large-scale privatisations and the reduction of trade barriers and regulations – in Xi Jinping, China has its most autocratic leader since Mao Zedong. Now, with populist politicians making big strides across Europe, the Americas and beyond, it is as if the West is mimicking China; questioning the same liberal democratic ideals it once hoped the latter nation would adopt.

As to why this is, perhaps it was the eagerness of politicians to uphold the consensus about the merits of globalisation, with little or no concern for the consequences. Unfortunately, sluggish economic growth over the past decade has challenged that by drawing attention to the inexorable rise in inequality that has taken place in much of the West over the last 40 years or so. Voters increasingly see the capitalist system as rigged in favour of political elites, big business and the mega-rich.



THE TROUBLE WITH CAPITALISM

continued

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*The gains from
globalisation have
been spread unevenly*

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As Ian Shepherdson, the founder of Pantheon Macroeconomics, an economic consultancy to the financial services industry, told *AIQ*: “Globalisation has proved to be the definitive example of the law of unintended consequences.

“Few in policymaking circles in developed economies ever imagined it would unleash an unprecedented backlash against the establishment and the basic validity of the capitalist model.”

Is protectionism really the solution?

However, even if it is hard to dispute the benefits of globalisation have been spread too thinly, and the process has created issues politicians have been slow to tackle, it is far from clear resorting to protectionism will solve advanced economies’ ills.

For a start, the fact the gains from globalisation have been spread unevenly does not imply rising levels of international trade have made any country poorer in aggregate. As Harvard professor and former US Treasury Secretary Lawrence Summers wrote in April 2016: “No one thanks global trade for the fact their pay cheque buys twice as much in clothes, toys and other goods as it otherwise would.”² Hence, it is not intuitive why a reversal of the process will make any country richer.

Branko Milanovic, an economics professor at City University of New York Graduate Center, estimates that while in relative terms the greatest benefits of globalisation have accrued to a rising “emerging middle class”, based preponderantly in China, the largest gains in absolute terms have gone to the world’s richest one per cent, half of whom are based in the US.³

Even if foreigners are often considered a common foe in troubled economic times, that suggests it is not only ironic for Trump to blame globalisation for his country’s economic woes, but that his policies could have sizeable negative repercussions for the US economy too.

Moreover, if the arguments of some are to be believed, protectionism is an unnecessary policy response.

Cambridge University lecturer Finbarr Livesey believes market forces could be about to lead the world to de-globalise of its own accord. In his 2018 book *From Global to Local*, he argues with robots becoming ever cheaper and more efficient, replacing cheap workers, manufacturing may well move back closer to where products are consumed in advanced economies.⁴ If Livesey is correct, inequality within the West may rise further.

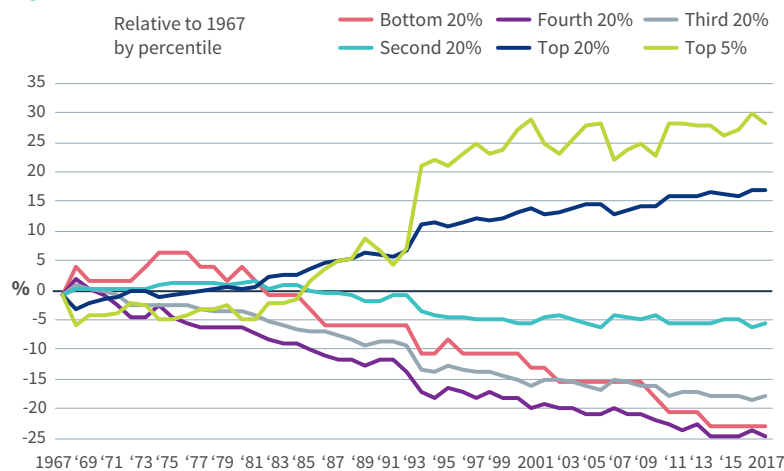
Notwithstanding Milanovic’s findings, according to others globalisation has only been responsible for a small amount of the rise in inequality seen in recent years. In his 2018 book *Globalization and Inequality*, Elhanan Helpman, a professor of international trade at Harvard University, argued: “The chief causes are difficult to pin down, though technological developments favouring highly skilled workers and changes in corporate and public policies are leading suspects.”⁵

Capitalism’s ethical foundations shattered

Nationalists such as Trump have been largely silent on the need for changing other aspects of the capitalist economic model. However, a growing band of commentators believe more fundamental reform is required. For them, unless the West urgently addresses its twin economic woes of insufficient growth and staggering levels of inequality, together with the looming threat of irreversible climate change, more political upheaval will ensue.

In his 2018 book *Can American Capitalism Survive?*, Steven Pearlstein, a public affairs professor at George Mason University, claimed capitalism’s ethical foundations have been shattered by radical free-market ideology, or ‘neoliberalism’.⁶ “We are missing a key tenet of Adam Smith’s wealth of nations: without trust... democratic

Figure 1: Change in share of total real income, 1967-2017



Source: US Census Bureau

capitalism cannot survive. Capitalism isn't dead, but it has to be saved from itself before it is too late," he argued.

While inequality has been rising across the West, the problem is especially acute in the US. According to Shepherdson, changes in taxation policy have played an important role. For example, he notes the top rate of US personal income tax is now 37 per cent, whereas from the end of World War II until 1982 it was never below 69 per cent.

At the same time as tax rates on top earners have plunged, pay differentials have skyrocketed. According to the Economic Policy Institute, a think tank, chief executives of the biggest 350 US firms saw their pay rise by around 1000 per cent between 1978 and 2017. The average worker's compensation grew just 11.2 per cent over the same period. Whereas in 1965 the chief executive-to-worker compensation ratio was 20:1, and in 1989 58:1, today it is 312:1.⁷

The chart above shows over the past half century the richest Americans' share of the national pie has risen substantially, whereas the slice accruing to the poorest 80 per cent has moved in the opposite direction. While incomes at the 95th percentile mark have risen 94 per cent (1.3 per cent a year) when adjusted for inflation, at the 20th percentile they have risen just 28 per cent (0.49 per cent a year).

Steve Waygood, Aviva Investors' chief responsible investment officer, says while government intervention is required, investors have an important role to play

if the issue of inequality is to be tackled.

"Unfortunately, although investors are starting to do a better job in encouraging companies to ensure all their employees are paid a living wage, they've been far less successful in curbing excessive pay at the top. It needs to be addressed urgently," he says.

According to some, inequality is likely to accelerate thanks to the rapid pace of development of digital technologies. In their 2014 book, *The Second Machine Age*, Erik Brynjolfsson and Andrew McAfee of the Massachusetts Institute of Technology wrote: "There's never been a worse time to be a worker with only 'ordinary' skills... because computers, robots and other digital technologies are acquiring these skills at an extraordinary rate."⁸

Workers whose skills have been mastered by computers have less to offer the job market, and will see their wages and prospects shrink. Entrepreneurial business models, new organisational structures and different institutions are needed to ensure the average worker is not left behind by cutting-edge machines, they argued.

Increases in the inequality of wealth have been even more extreme. That is partly because asset prices have risen far faster than incomes – something especially true over the last decade thanks to the unprecedented easing of monetary policy by central banks. In the US, the slice of national income accruing to labour has

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In 1965 the chief executive-to-worker compensation ratio was 20:1; today it is 312:1

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THE TROUBLE WITH CAPITALISM

continued

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*One has to worry
that the big five tech
firms have become
so dominant*
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fallen by close to ten per cent over the past 50 years, while the share attributed to corporate profits has risen by a similar amount.⁹ With the rich owning a disproportionately large percentage of company shares and other assets, it was reported in 2017 the richest one per cent of Americans owned 40 per cent of the country's wealth – more than the bottom 90 per cent combined.¹⁰

Rising industry concentration

Rising inequality between individuals is mirrored by developments in the corporate sphere, with a select group of companies becoming ever more wealthy and powerful. The growing dominance of a few firms is a problem because competition is the lifeblood of any well-functioning capitalist system. Without it, consumers could face higher prices and less choice of products and services, and workers will have fewer job options. Furthermore, since a lack of competition is likely to lead to lower productivity growth, both economic growth and wages will be restrained.

As Harvard economics professor Kenneth Rogoff has put it: “One has to worry that the big five tech firms have become so dominant, so profitable, and so encompassing that it has become very difficult for start-ups to challenge them, thereby stifling innovation.”¹¹

The Economist recently reported market concentration had risen in two-thirds of American industries since 1997. This is partly explained by the large volume of takeovers in recent years, which across the West have been worth US\$44 trillion since 1998.¹²

As a result, the free cash flow of companies is 76 per cent above its 50-year average, relative to GDP. A similar, if less extreme, trend can be seen in Europe. On both continents, dominant firms are becoming harder to dislodge. *The Economist* reckoned the global pool

of abnormal profits was US\$660 billion; more than two-thirds of which was made in America, one-third of that by technology companies.

According to Jonathan Haskel and Stian Westlake, there is a further explanation for rising levels of intra-firm inequality, namely the rapidly growing importance of investment in intangible assets such as design, branding and software. This is partly because unlike a tangible asset such as a factory, intangible investments are radically scalable.

In their book *Capitalism Without Capital*, they say this has not only enabled the likes of Google, Microsoft and Facebook to grow rapidly, but increased the gap in profitability between winners and losers. With the world dividing into low-paying firms and high-paying firms as a consequence, this is feeding back into income inequality.¹³

The one-planet problem

Waygood says capitalism has created and is now struggling to come up with a solution to what is arguably the most pressing issue of all: man-made climate change. He says the asset management industry, and its clients, face significant potential losses because of climate change.

“Our own research conducted with the Economist Intelligence Unit estimates the present value of assets at risk between now and 2100 could be as high as US\$43 trillion – equivalent to 30 per cent of the entire stock of manageable assets – if global temperatures rise 6°C. These losses will only be magnified if the degree of warming in the world is left unchecked and not brought under control.

“In short, climate change is the greatest collective risk we face. If urgent action is not taken to limit rises in global temperatures quickly and substantially, the long-term environmental disaster will





Rising inequality and man-made climate change are two massive market failures



have grave economic consequences for businesses and society,” Waygood says.

As for solutions, he argues that since markets do not price so-called externalities such as carbon emissions and pollution, countries ultimately must work together to tackle it by driving these external costs onto corporate cash-flow statements. They can do this by setting a carbon price via an emissions-trading scheme, setting a tax on carbon, or regulating certain practices out of existence.

While on the one hand it is encouraging supranational institutions and most individual governments have begun to take the issue far more seriously, Trump pulling the US out of the Paris climate accord is worrying, particularly with Brazil, under its new president Jair Bolsonaro, threatening to do the same.

Despite his concern at Trump’s actions, Waygood says there are some grounds for optimism. “In the US, for example, individual states such as California have been helping drive rapid change in new technologies like electric vehicles and renewable energy by providing the private sector with the right combination of incentives and penalties. While capitalism has created some of these problems, it also has a crucial role to play in providing solutions,” he says.

Although Waygood believes in market-based solutions, and while he recognises different countries may head in different directions and at different speeds, on balance he suspects the pendulum is swinging away from unfettered free-market economics and de-regulation and towards government intervention.

“Rising inequality and man-made climate change are two massive market failures. While markets can provide some of the answers, it is clear governments need to take urgent action. Far from undermining the capitalist system, they would be bolstering its long-term productive potential,” he says.

Will countries collaborate or compete?

With Western politics in such a state of flux, predicting the direction in which capitalism is heading is not straightforward. Although, in an ideal world, countries would agree to pull in a similar direction to one another, there is little indication this is likely.

Take the issue of tax reform. It is one of the most obvious tools governments have to address inequality. A Dutch historian recently became an overnight social media sensation after telling an audience at the World Economic Forum in Davos it was a waste of time trying to address inequality and social unrest without first reforming taxation.

“I hear people talking about participation and justice and equality and transparency but then almost no one raises the real issue of tax avoidance and the rich just not paying their fair share. It feels like I’m at a firefighters’ conference and no-one’s allowed to speak about water,” Rutger Bregman said.¹⁴

As a 2012 OECD report explained, not only can tax policy play a major role in making income distribution less unequal, it is “crucial for raising revenues to finance public expenditure on transfers, health and education that tend to favour low-income households, as well as on growth-enabling infrastructure that can also increase social equity”.¹⁵ The year before, Angel Gurría, the organisation’s secretary-general, had called for countries to make their income tax regimes more progressive, to close tax loopholes, and eliminate tax havens.¹⁶

However, while some nations may choose to raise taxes, reversing the trend of the past 40 years, it is unlikely all will. The temptation for others will be to try to lure businesses and highly skilled workers by cutting them. After all, belief in so-called trickle-down economics – the idea taxes on businesses and the wealthy should be reduced to stimulate business investment

in the short term, benefitting all of society in the long term – remains deeply ingrained in the West, especially the US.¹⁷

Recent changes in US tax policy are a prime example. Trump appears to recognise inequality is a problem and tax has a role to play. For instance, when he signed the Tax Cuts and Jobs Act into law in December 2017, he claimed middle-class workers would see a pay increase of US\$4,000 to US\$9,000 and the richest Americans wouldn’t gain “at all” under the plan.

The reality has been somewhat different. According to William G. Gale, co-director of the Urban-Brookings Tax Policy Center, which aims to provide independent analysis of tax issues, most middle-class taxpayers have seen only a modest boost from lower tax rates. The biggest benefits went to the rich and “increased the inequality of income”.¹⁸

Radical, but perhaps unrealistic, solutions have been proffered in the recent past. In his best-selling 2013 book, *Capital in the Twenty-First Century*, French economist Thomas Piketty argued the main driver of inequality – the tendency of returns on capital to exceed the rate of economic growth – threatened to generate extreme inequalities. He said a possible remedy was a global wealth tax.¹⁹ However, while a wealth tax may sound good on paper, global co-operation would be required for it to be effective. The likelihood is that if any country were to introduce such a tax in isolation, its wealthier citizens would attempt to shift their assets abroad.

The same issue applies to efforts to close corporation tax loopholes. Tax accountants have become adept at finding mismatches between tax rules in different countries, helping multinationals relocate valuable assets internationally to minimise their tax. The digital economy – in which companies can do business in countries while having little or no physical presence there – has also encouraged such behaviour.



THE TROUBLE WITH CAPITALISM *continued*

In 2013, the OECD – a group of mostly rich countries – set up a project to combat tax avoidance by multinationals. Although it claims to be making progress in its drive to get countries to collaborate, once again there is a strong temptation for countries to undercut one another. For example, Paul Ryan, who at the time was Speaker of the US House of Representatives, claimed in 2015 the OECD’s proposals amounted to an “attempt to basically grab a tax base of our domestic corporations.”²⁰ Witness too the difficulties the EU is having to get member states to agree a plan to tax US technology giants such as Google (Alphabet), Amazon and Facebook on their revenues instead of their profits.

Shepherdson believes that, while it may make sense for governments to tax companies more heavily if they wish to reduce inequality, without international co-operation there is every likelihood corporate tax rates will continue to fall. According to The Tax Foundation, a US think tank, in 2017 the average corporate tax rate across 202 jurisdictions was 23 per cent, down from 39 per cent in 1980. It seems certain much of that fall can be explained by globalisation, as countries vied with one another to entice multinational corporations to their shores.²¹

Labouring the point

Given these problems, politicians for now seem to be focusing on labour markets. In Australia, for example, the government in 2011 introduced a ‘two-strikes rule’, whereby the entire board of a company is removed if 25 per cent of shareholders reject its remuneration report two years running. In 2018, UK Prime Minister Theresa May said she would improve the rights of millions of workers, including those in the so-called gig-economy, promising them better holiday and sick-pay rights and stronger contracts. She also pledged a crackdown on firms using unpaid interns and to hike fines for companies if they mistreat staff.

Labour Party leader Jeremy Corbyn has proposed government contracts should only be awarded to firms with acceptable pay ratios.

Politicians on the left want to boost labour in other ways, too. Across the West there have been calls for the decline in the power of trade unions to be arrested. In the US, the Accountable Capitalism Act proposed by Senator Elizabeth Warren, a potential candidate in the 2020 presidential election, would require employees to elect 40 per cent of a board of directors of any corporation with over US\$1 billion in revenues.²²

As for addressing industry concentration, Waygood says regulators, particularly in the US, need to have more powers to investigate markets that are becoming dysfunctional. He believes big US technology companies face increasingly closer scrutiny around the world. That is especially true of Google, Twitter and Facebook, given they are being blamed for abusing private data, permitting fake accounts to peddle fraudulent products and disinformation, and failing to stop interference in Western politics.

According to Rogoff, perhaps the most urgent intervention is to weaken Big Tech’s grip on personal data. He says with its new General Data Protection Regulation, the EU has shown one possible path forward. It gives consumers – albeit only those in the EU – much more control over their personal data held by firms. Eric Posner and Glen Weyl go one step further. In their book *Radical Markets*, the US academics propose forcing digital monopolies to compensate people for their electronic data.²³

Veering to the left?

Although nationalist politicians have reaped the biggest electoral rewards by deflecting voters’ anger towards immigration and foreign trade, there are

“*Nationalists have reaped electoral rewards by deflecting voters’ anger towards immigration*”

signs a growing number in the West wish to see less free-market economics rather than more of it.

With electorates increasingly polarised, politicians from the left end of the political spectrum have been capturing votes. In Bernie Sanders, Jeremy Corbyn and Jean-Luc Mélenchon, electorates in the US, Britain and France have in recent years turned in surprisingly large numbers to candidates running on what were once considered extremely left-wing agendas.

Support for these politicians was especially strong among younger voters. In Sanders’ case that is perhaps not so surprising when one considers a 2018 Gallup poll found more Americans aged 18-29 had a positive view of socialism than of capitalism, with support for the latter ideology having plunged by a third since 2010.²⁴

Having said that, it is not always obvious those being surveyed have a clear and consistent understanding of ‘socialism’. Sanders himself seems to have changed his view over the years. A young Sanders once praised socialist governments in Cuba and Nicaragua, but during his 2016 presidential campaign, stated: “When I talk about democratic socialism, I’m not looking at Venezuela. I’m not looking at Cuba. I’m looking at countries like Denmark and Sweden.”²⁵

Part of the reason for the confusion is no country in the world practices free-market economics in its purest form. Government intervention is found in varying degrees in all countries where private capitalism is the primary engine of production.

Danish Prime Minister Lars Løkke Rasmussen responded to Sanders’ remarks by saying: “I know that some people in the US associate the Nordic model with some sort of socialism. Therefore, I would like to make one thing clear. Denmark is far from a socialist planned economy. Denmark is a market economy.”²⁶ In fact, since the 1980s Denmark has moved away from socialist policies, privatising several sectors and deregulating many others.

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*Capitalism will need to reconnect
with its core purpose: the people it
is meant to serve*
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History is alive and kicking

In an interview shortly after Trump's inauguration, Fukuyama conceded he had been wrong. Far from ending with the fall of the Iron Curtain in Eastern Europe, history was alive and kicking.²⁷

“Twenty-five years ago, I didn't have a sense or a theory about how democracies can go backward. And I think they clearly can,” wrote the man who was a key contributor to the formulation of the so-called Reagan Doctrine and an important figure in the US neoconservative movement.

He went on to say in 2018: “This extended period, which started with Reagan and Thatcher, in which a certain set of ideas about the benefits of unregulated markets took hold, in many ways it's had a disastrous effect.”²⁸

Yet, as we have seen, this debate is not about extremes; the limitations of either end of the spectrum have been clearly

exposed. In this age of Big Data, the complexity associated with millions of households making billions of choices to which governments and companies could never respond perfectly is evidence enough against the notion of central planning in its entirety. Equally though, the role of the public sector in, not only producing social goods such as education, healthcare and infrastructure, but also in funding innovations such as the Internet and core technology underpinning the smartphone, undermines the case for unfettered free markets.

It therefore seems improbable any country will abandon capitalism any time soon, particularly since mistrust of big government remains deep-seated in much of the West. Although some have pondered whether China's economic success – not least the fact it emerged from the financial crisis relatively unscathed – will lead people to debate whether the country has established a new model of economic

development, that seems unlikely.²⁹ After all, a Pew Research Center poll in 2014 found 70 per cent of Americans still believed people were better off in a free-market economy. The number in Germany was even higher at 73 per cent and the UK came in at 65 per cent.³⁰

Our temptation to focus on headline-grabbing change is notorious. It is what populists feed off. The reality of today, however, seems not to be a fundamental attack on capitalism per se, but more a challenge to its philosophical and ethical underpinnings. Capitalism as an organising system for society has proved its resilience throughout the last 100 years. To ensure it does so for the next 100 and beyond, it will need to reconnect with its core purpose: the people it is meant to serve. This will necessitate a better approach to distribute wealth, deal with regional and nationalist instincts, and, perhaps most importantly of all, tackle climate change head on ●

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THE FUTURE OF ENERGY

PEAK OIL AND THE RISE OF RENEWABLES

As we approach ‘peak oil’, what does this mean for the fossil fuel industry and alternative sources of energy?

Henry Ford and Thomas Edison became great friends in their later years. They exchanged gifts, bought neighbouring holiday homes in Florida and took road trips around America in a Ford Model T. They even worked together on a project to develop an affordable electric vehicle, although the prototype was eventually abandoned due to high costs.¹

Around this time, the two friends reportedly made a bet that still resonates today: Ford predicted oil would continue to dominate as the world’s principal source of power, while Edison backed electricity. For a long time, it looked as if Ford had comfortably won the bet. Vast underground oil reserves discovered in the Middle East, the US and elsewhere made petroleum more practical and affordable, helping launch the Age of Oil in the second half of the 20th century.

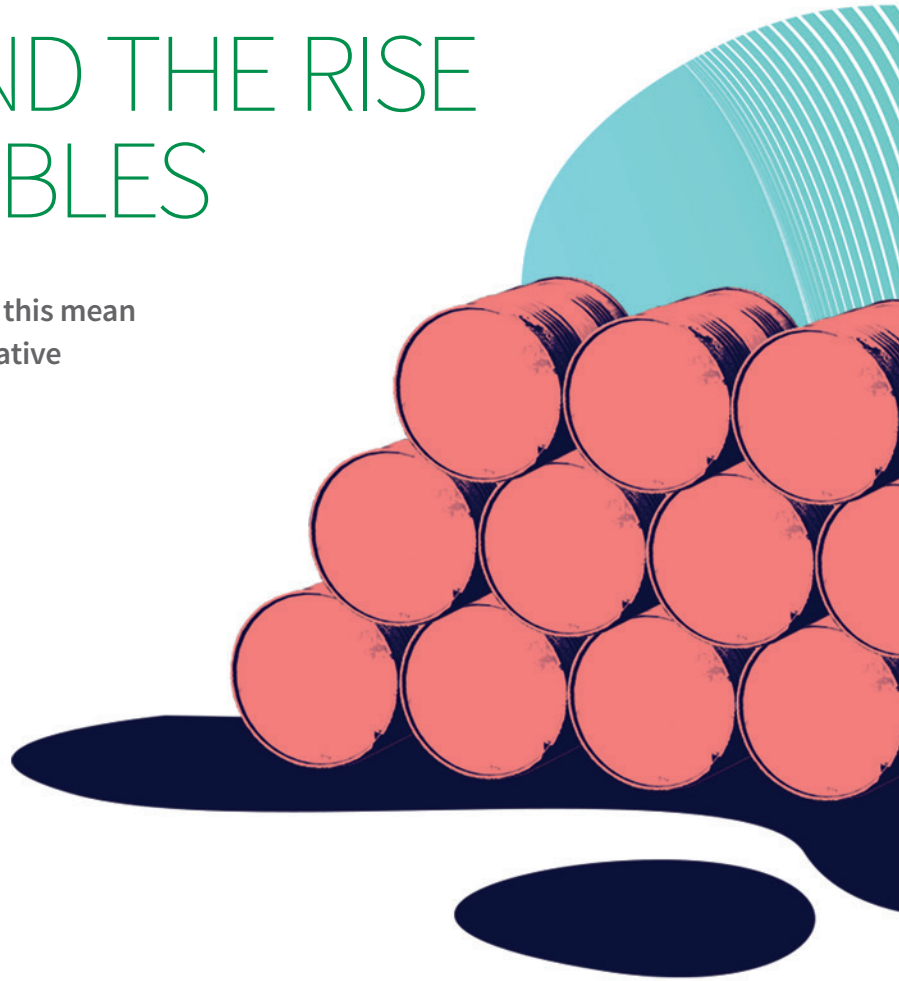
Fast forward to today, and electric cars are again threatening oil’s supremacy. A century after Ford and Edison’s failed experiment, Ford’s company is investing heavily in electric vehicles. Global sales growth in electric cars continues to outpace that of internal combustion engine (ICE) vehicles. The market share of electric cars relative to the total number of new passenger vehicles registered globally remains small, at about 2.4 per cent in 2018,² but may surge to as much as a quarter of total global sales by 2025, according to the Centre of Automotive Management.

These developments point to a wider trend. What’s happening in the auto industry is a microcosm of a global energy transition that could bring about global peak demand for fossil fuels as early as 2023.³ Industry giant BP estimates a later peak for oil demand,⁴ placing it between 2035 and 2040; others forecast it will fall somewhere in-between. What is clear is that oil’s dominance is waning, and electricity demand is on the rise. However, it is far from certain exactly what will replace oil to supply energy in the future, how this transition may evolve and over what time frame. There will be significant implications for economies and financial markets. The global environmental consequences are – to put it mildly – considerable.

The transition

The term ‘peak oil’ means something different now to what it did in the past, when it referred to perceived limitations in supply. Following the 1973 oil crisis, when the price of a barrel of crude oil nearly quadrupled within months, US President Jimmy Carter predicted world demand for oil would overtake supply by the 1980s. In fact, new technology to extract oil from shale deposits and tar sands has vastly extended the reserves that are technically and economically recoverable, especially in the last decade (see figure 1, p.48).

Thomas Covert, assistant professor at University of Chicago’s Booth School of Business, studies investment behaviour in





the energy market. He says data from BP consistently shows most oil-producing nations find significantly more oil and gas than they consume in most years. Hydraulic fracturing technology helped launch the shale oil revolution in the US, which surpassed Russia and Saudi Arabia to become the world's largest petroleum producer – and a net oil exporter for the first time in 75 years – in 2018.⁵

“Energy forecasters have estimated there are more shale resources outside of the United States than within the United States, and probably by a large amount,” Covert says. “To the extent that investors believe what’s happened in the United States is even a little bit replicable elsewhere, there will likely be a lot more supply coming.”

The planet’s oil resources are likely to be anywhere between 2.8 and four times larger than the existing proven reserves of about 1.6 trillion barrels.⁷ But there is a problem. Burning fossil fuels is causing irreparable damage to the environment and threatens to wreak havoc across economies and societies if it continues at its current rate. As Dieter Helm, professor of energy policy at Oxford University, drily put it: “There is more than enough [oil] to fry the planet many times over.”⁸

These concerns are one of the principal drivers behind the current energy transition. Fossil fuels – oil, coal and natural gas – are not the only source of greenhouse gas emissions; others include agricultural land use⁹ (see figure 2, p.49); nevertheless, fossil

fuels are the major contributor to carbon dioxide (CO₂) pollution. This means reversing growth in global consumption of fossil fuels will be crucial in a multi-pronged effort to meet the goals of the Paris Agreement, which aims to limit the increase in global average temperatures to well below two degrees Celsius above pre-industrial levels. The stakes could not be higher.

“The last time the world was three degrees Celsius warmer was around three million years ago, and there were palm trees and crocodiles in northern Greenland,” says Rick Stathers, senior ESG analyst at Aviva Investors. “We know this by analysing fossil



PEAK OIL AND THE RISE OF RENEWABLES

continued

“*Investors will have a lot of exposure to fossil fuels just by being in liquid financial markets*”

records when the earth was three degrees warmer. That means the sub-tropics will become uninhabitable and hundreds of millions of people will need to migrate. From a scientific perspective, the transition from our current energy system to a more sustainable, low-carbon one needs to be much more rapid than it is now.”

While there is widespread recognition the energy transition needs to happen, history shows it is likely to be economically, culturally and geographically uneven. The replacement of wood by coal in the 19th century, and coal by oil in the 20th century, created new paradigms in the energy system. This process had three dimensions in each case: shifts in tangible elements such as technology, infrastructure and distribution chains; industry coalitions and investment patterns; and political and social regimes that influenced belief systems, social practices and regulations.¹⁰

The current transition is likely to follow a similar pattern. Governments are working

to cut their reliance on fossil fuels and introducing new regulations to curtail their use. Renewable alternatives are becoming more financially viable and technologically advanced. And companies and investors are adapting their business models and shifting their strategies.

Managing the transition: countries

Starting with the global policy response, a wealth of research shows the world is stuck between two main hazards in grappling with climate change. If countries move too quickly to limit carbon emissions, large swathes of the oil and gas sector will be severely affected. Barclays estimated as much as US\$30 trillion in revenues could be wiped off over a period of 25 years for companies in the fossil fuel industry if the world cut carbon emissions to their target level overnight.¹¹

On the other hand, there is the even greater risk of inaction. If carbon emissions

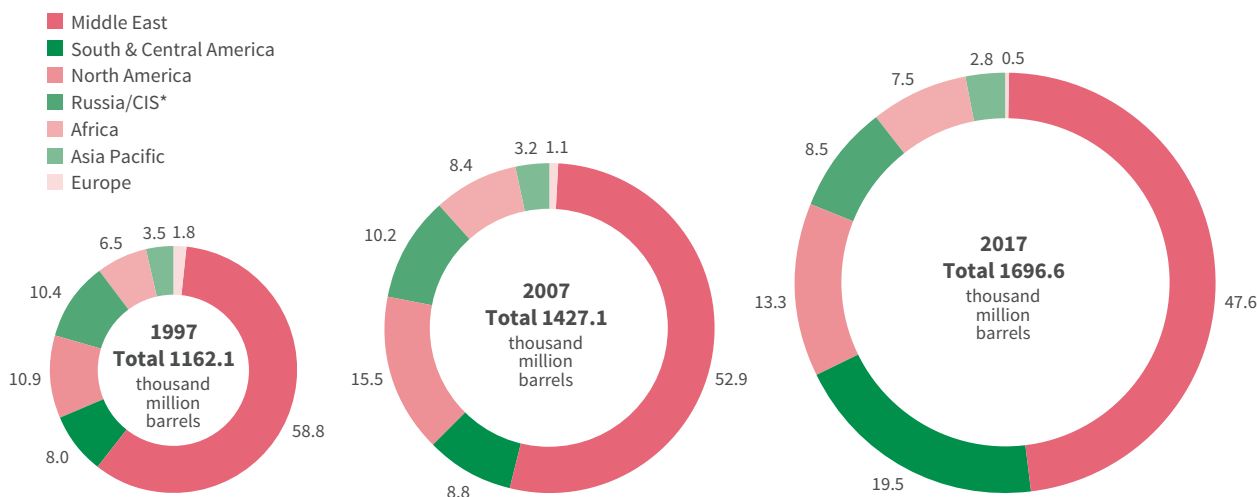
are not curtailed at all, it is probable global temperatures would rise six degrees by 2100. Research from the Economist Intelligence Unit, commissioned by Aviva Investors, shows the financial cost of physical damage caused by such a profound environmental shock would be in the order of US\$43 trillion, discounted to present-day value. That amounts to 30 per cent of the world’s entire stock of manageable assets.

“The point of the Paris Agreement was to steer the global economy between these two extremes by encouraging a smooth transition towards a low-carbon future,” explains Steve Waygood, chief responsible investment officer at Aviva Investors. “This is in the best interests of governments, markets and societies.”

Most countries around the world have reaffirmed their commitment to the Paris Agreement, but the results have been mixed. Economies that depend heavily on oil are examining how they can

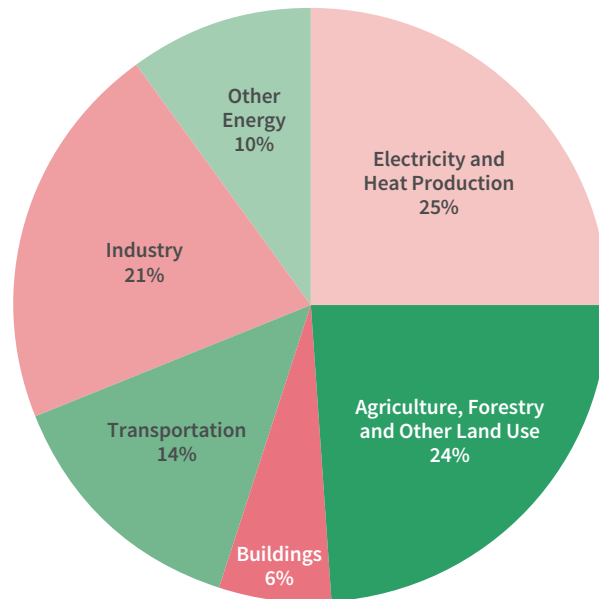
Figure 1: Proven oil reserves

Distribution of global proven oil reserves (%)



Source: BP, ‘BP Statistical Review of World Energy’, June 2018.⁶ *Commonwealth of Independent States (CIS) is formed from the former Soviet Union nations. Note: proven reserves are estimates of the quantity of all hydrocarbons that can be recovered from reservoirs in operation.

Figure 2: Global greenhouse gas emissions, by economic sector



Source: US Environmental Protection Agency, based on 2010 data from the United Nations' Intergovernmental Panel on Climate Change.

diversify. Saudi Arabia, under the King Salman Renewable Energy Initiative, is building its first solar energy project to supply 45,000 households with power in Al Jouf.¹² Such efforts, however, are likely to be negligible in reducing the nation's per capita carbon emissions, which have increased tenfold since 1950, according to the Carbon Dioxide Information Analysis Center.¹³

More importantly, China and the US – the top two polluters that together are responsible for 45 per cent of the world's greenhouse gas emissions – are at odds in their approaches to the Paris Agreement. The US is in the process of withdrawing from the accord under President Trump, while China has taken an unlikely lead as one of the most active countries in introducing new rules to reduce fossil fuel demand. According to the Global Carbon Project, China is responsible for more pollution than any other country worldwide, with about 30 per cent of CO₂ emissions in 2018.

Targeting peak CO₂ emissions by 2030, China announced a range of policies in its latest five-year plan for energy development. Kelly Sims Gallagher, professor of energy and environmental policy at Tufts University's Fletcher School, said China has taken a comprehensive approach with specific domestic energy and climate policies for every sector. An emissions-trading system was established in 2018 for the power sector, on top of existing subsidies for renewables. In transportation, China has fuel economy standards for light- and heavy-duty vehicles. Energy efficiency standards have been promulgated in nearly all sectors, and the overall economic reform strategy is focused on moving towards lighter, low-carbon operations within industries.

China's foreign policies, however, have not been as environmentally friendly. While China has cut the number of new coal-fired plants within its borders, it is

the biggest financier of fossil fuel-based power plants, specifically coal plants, in Central and South Asia, said Gallagher, a former US climate policymaker and co-author of *Titans of the Climate: Explaining Policy Process in the United States and China*. Financial backing under China's Belt and Road Initiative (BRI), Gallagher added, often comes with a requirement that Chinese equipment using inefficient coal technology be used. The infrastructure being built will have a significant impact on the future of global warming.

In meeting the goals of the Paris Agreement, all nations will have to work together to meet their own targets without potentially increasing carbon emissions elsewhere. Estimates from the Global Carbon Project predict global CO₂ emissions are likely to have risen by more than two per cent in 2018, after a 1.6 per cent rise in 2017.¹⁴ Substantial regulatory reforms at all levels are needed to discourage fossil fuel consumption, with current policy initiatives tending to combine a mixture of taxes, fees, carbon emission standards and subsidies to encourage energy conservation.

Profit: the mother of invention

Even if countries can manage to synchronise government policies, it will not be enough to facilitate the necessary transition away from fossil fuels, argues Samantha Gross, a fellow in the Cross-Brookings Initiative on Energy and Climate at the Brookings Institute.

"You need policy to kick start things, particularly policy that levels the playing field. After that point, you need economics. Think about the investment needed to change the global energy system. You're talking about trillions of dollars. That must come from the private sector. Ultimately, people need to be able to make money to solve these problems, and that's where technology comes in," Gross says.

Peak oil will bring both opportunities and risks for investors. Carbon Tracker Initiative, which researches the financial impact of climate change, estimates infrastructure assets in the fossil fuel industry are worth a total of about US\$25 trillion (see figure 3, overleaf). As Ian Berry, head of infrastructure equity at Aviva Investors, points out: "Investors will typically have a lot of exposure

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continued

to the fossil fuel industry just by being in liquid financial markets.”

Devising strategies to ensure investment portfolios are resilient during the transition away from oil will be challenging. The fossil fuel sector is capital intensive, with sunk costs in energy infrastructure creating a lot of inertia. Investors who transition too slowly into renewables could miss out on potential benefits. Invest too early, though, and losses could result as new technologies come with higher risk, especially as market conditions change.

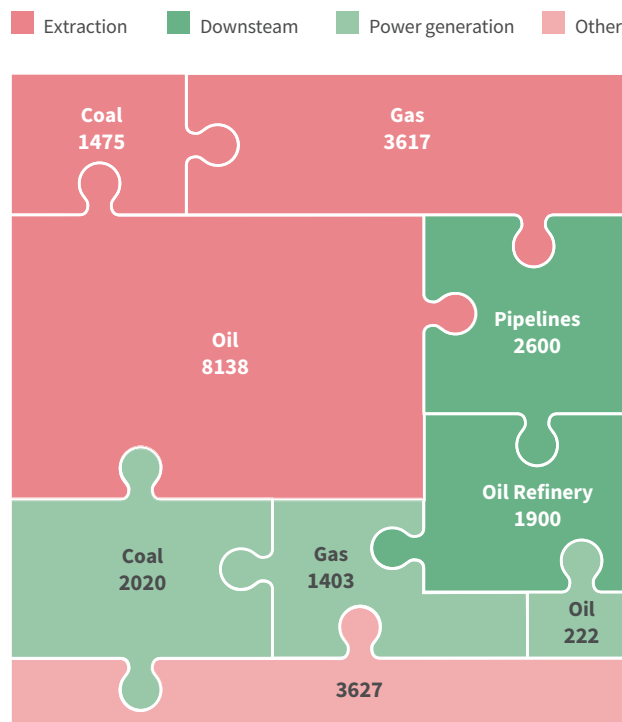
In a recent paper, Kingsmill Bond, new energy strategist at Carbon Tracker, detailed four phases of the energy market transition based on his analysis of previous power shifts: ‘Innovation’, in which the penetration rate for new technologies is up to about two per cent; ‘Peaking’, which refers to a market penetration between five and ten per cent for new technologies; ‘Rapid Change’, defined as a market share of between ten and 50 per cent for the new technologies; and ‘End Game’, where new technologies have more than a 50 per cent market share and replace previous incumbents as dominant players.

In Bond’s view, the most important phase for investors is ‘Peaking’, when the old energy regime begins to plateau and then decline amid growing market share for new entrants. He believes the growth of wind and solar energy indicates we are at the cusp of this stage, during which disruption in the fossil fuel sector will cause “a major reallocation of capital, bankruptcy of companies that are unprepared, and sector restructuring”.¹⁵ In the two largest economies, the US and China, solar and wind account for about seven per cent and six per cent of electricity generation in 2017, respectively; the figures are much higher in some European economies (see figure 4).

Investors face three main risks during this phase: systemic, country and stock specific. Systemic risks may increase as the market share for fossil fuels begins to shrink. One

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Figure 3: Fossil fuel infrastructure value (US\$ billion)



Source: Carbon Tracker Initiative, 2018.

example is gas-fired power plants in Europe. The operational cost of some plants has made them far less profitable as energy prices decrease, yet their assets have become ‘stranded’ and difficult to sell. Bond estimates sectors directly impacted by the fossil fuel industry may account for up to a quarter of the stocks and corporate bonds tracked by global ratings agency Fitch.

“There is oversupply in the energy industry,” says Lei Wang, senior credit analyst at Aviva Investors. “The shale technology revolution caused natural gas prices to fall in North America, affecting global pricing. Then, as the technology transferred to oil, oil prices have dropped. The industry has not adjusted capacity by that much, so profitability will continue to be an issue.”

Oil majors such as ExxonMobil, Shell and Total are attempting a transition into renewables, although success is by no means certain.

“It’s a tough road,” Bond says. “One question is ability: do they have the necessary core skills that can be translated to renewables? Another is

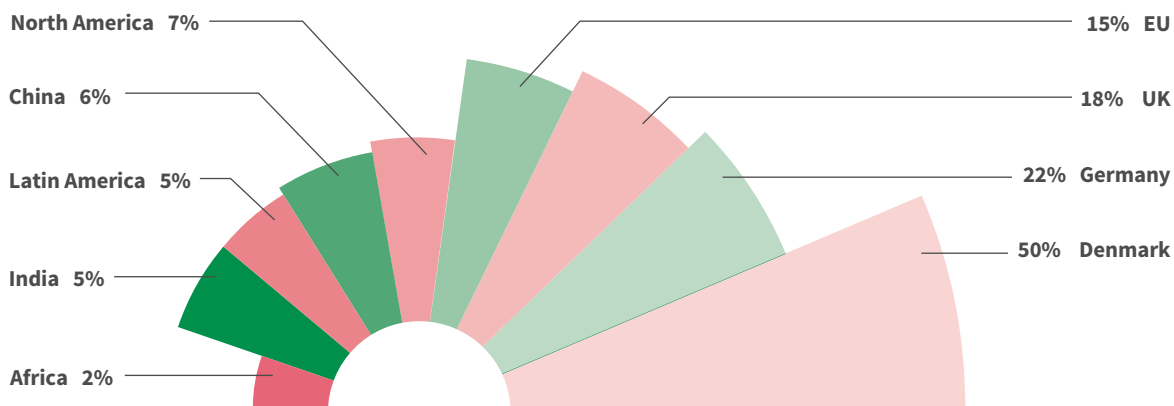
intellectual culture: incumbents are schooled to assume continuity. History suggests it is very difficult for them to radically restructure.”

Arguably, Big Oil’s established presence in the energy sector places it in a strong position to benefit from the rise in renewables, says Stephanie Niven, global equity portfolio manager at Aviva Investors. Some have already integrated it into their business strategies. Total, for example, entered the solar power business in 2011 with a controlling interest in SunPower, a manufacturer of high-efficiency photovoltaic cells. In 2014, it built one of the largest solar farms in the Mojave Desert near Los Angeles with a capacity of 700 megawatts (MW), followed three years later with the first solar power plant in Nanao, Japan.¹⁶ In its strongest move yet to cater to the expected higher demand for electricity at the expense of oil, Total bought a 74.3 per cent share of Paris-based utility company Direct Energy in April 2018.¹⁷

Others have taken it a step further. Denmark’s Dong Energy, which was originally short for Danish Oil and Natural

Figure 4: Renewable energy penetration

Share of solar and wind in electricity generation, 2017



Source: Carbon Tracker Initiative, 2018.

Gas, divested its entire upstream oil and gas business in 2017 and changed its name to Orsted to focus on renewables, including offshore wind, solar and biomass, while halting all use of coal. Interestingly, Orsted announced in November 2018 an agreement to provide 500MW of wind and solar power to ExxonMobil for the latter's operations in the Permian Basin, the US' largest shale oil-producing region, in Texas and New Mexico.

"We're seeing more oil companies taking steps to diversify their business models," Niven said. "It's difficult to call a point in time when peak oil demand may occur, but it's definitely the direction of travel. It's important for oil and gas companies to be nimbler, less capital intensive, and able to consistently extract additional inefficiencies."

The rise of renewables

The transition away from oil will bring opportunities, as well as risks, for investors. Thanks to technological advances, customer demand and government policy incentives, greener alternatives are becoming more viable as investments.

In 2017, renewable energy accounted for two-thirds of global net electricity capacity growth, according to the International Energy Agency (IEA).¹⁸ The same organisation estimates renewable capacity will grow by 46 per cent between 2018 and 2023. Clean energy also encompasses hydropower,

nuclear, bioenergy and geothermal, but wind and solar are among the fastest growing.

"We've chosen to invest because the price of the energy produced from renewables can have limited or no exposure to the prevailing market price, typically driven by the cost of energy produced from fossil fuels. Renewables can be more stable and lower risk," says Berry, whose infrastructure equity portfolio is heavily invested in renewables. "Many renewables no longer need subsidies from governments. The one problem with that from an investment perspective is whether cash flows and valuations will remain as stable in the future."

Despite this caveat, the trends are positive: average costs for producing wind and solar energy have dropped to levels that are now competitive with fossil fuels, without sacrificing performance, according to Deloitte.¹⁹ In the past five years, average wind and solar costs in the US fell to about \$5 usage charge per kilowatt hour (c/kWh) and \$6 c/kWh, from \$11 c/kWh and \$17 c/kWh respectively.²⁰ This follows a global trend for the effective cost of energy to fall over the long term, due to increased efficiency, cost controls and competition.

Solar and wind farms cost less to maintain than they once did, adding to their growing advantage over fossil fuels, says Berry. "There are shades of grey, but simplistically it is much easier to maintain solar panels because you either do

nothing or you wash it. The cost to keep it going is maybe ten per cent of revenues. A gas turbine power station, on the other hand, may require 60 per cent of revenues to operate. This is not quite a fair comparison since part of it is buying the fuel. Nevertheless, operating costs as a percentage of revenue are still very high."

Unlike fossil fuels, solar and wind are free resources. Furthermore, when a solar panel or wind turbine generates electricity, it is immediately available to consumers.²¹ By comparison, fossil fuel plants need to burn coal, oil or natural gas to drive large turbines that produce electricity. According to the Oxford Institute for Energy Studies, about 60 per cent of the energy content of coal is lost in the process of converting it into electricity. Internal combustion vehicles fare even worse, with about 80 per cent of the energy lost. Therefore, each terawatt (TWh) of energy generated by renewables can displace 2.5TWh of coal and 5TWh of petrol.

Technological advances

The increased efficiency of renewable sources makes them well suited to powering technologies of the future. If solar and wind power can be used to fuel electric cars, for example, the efficiency improvements over oil are on a scale that simply cannot be ignored.

PEAK OIL AND THE RISE OF RENEWABLES *continued*

New vehicles are not the only technology to favour electricity. Robotics, artificial intelligence, quantum computers and cryptocurrencies all run on electricity. PwC economist Alex de Vries reckons the annual energy consumption for Bitcoin alone was comparable to that of Ireland in 2018,²² making energy efficiency particularly important.

The next step in the progress of renewables is likely to involve the development of high-tech batteries to store energy when the wind isn't blowing and the sun isn't shining – a modern variation of the challenge that faced Ford and Edison way back in the 1910s.

"A fundamental problem with the energy market concerns the storage of power. If we can't find the technology at scale to allow for that in a cost-effective manner, renewables won't fulfil their potential," says Isaac Vaz, director of infrastructure equity at Aviva Investors.

Today's batteries have some major disadvantages. Chief among them is energy density, a measure of how much electrical energy can be safely stored per unit of space. Current lithium-ion batteries in electric vehicles, for example, average about 130 watt-hours per kilogram (Wh/kg), far from the 235Wh/kg needed for a drive range of about 500 kilometres in a single charge.²³

"To have an impact on the energy market and compete with other types of energy storage solutions, batteries need to have a longer storage duration," Vaz adds.

However, there are significant trade-offs between energy density improvements and flexibility, safety and costs, with the following challenges in current energy storage technology: loss of efficiency when charging or discharging power; susceptibility to temperature or weather conditions; and degradation patterns of batteries over time.

But a race to build a better battery involving hundreds of companies worldwide is well underway. "Battery technology has yet to keep pace with demand," Niven added. "We're beginning to see the likes of Tesla pushing the boundaries of battery technology. Utility companies are pushing it and mobile phone manufacturers are pushing it. We've got three industries coming together to solve the limitations of batteries."

There is evidence these investments are paying off. In its first quarterly update in 2018, Tesla said its Model 3 battery has "the highest energy density cells used in any electric vehicle".²⁴ The company did not give specific figures in Wh/kg terms, though industry estimates indicate the energy density measure to be around 200Wh/kg, nearly in reach of the industry's 235Wh/kg milestone.

Another key improvement is in costs. While still relatively high compared to other energy sources, battery costs have fallen by 75 per cent since 2010, according to HSBC.²⁵ By 2030, the batteries market is estimated to total about US\$250 billion, compared with US\$45 billion in 2017.

Given the financial and technological incentives, there are grounds for optimism that improved technology will enable a transition to cleaner energy sources. We have come a long way since Ford and Edison's wager, and Edison's bet on electricity looks to be increasingly prescient – even if he had to forgo bragging rights during his lifetime. While there are big obstacles in the transition to renewables from oil, the smart money is likely to follow a greener future ●

“*There are grounds for optimism that improved technology will enable a transition to cleaner energy*”

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CAN CENTRAL BANKS MAINTAIN THEIR INDEPENDENCE?



Stewart Robertson
Senior Economist

Central bank independence is widely regarded as a prerequisite for successful monetary policy. However, with economies having struggled over the past decade and inflation no longer seen as a problem, that view is being contested, writes Stewart Robertson, senior economist at Aviva Investors.

“Whereas central banks can raise rates without limit, monetary policy becomes far less effective as rates fall to zero”

In the 1980s, governments around the world handed central banks greater control over monetary policy as they searched for a cure for rampant inflation that had plagued their economies the previous decade. Politicians' failure to maintain monetary discipline was considered a major cause of inflation getting out of control.

For the next 30 years, the reputation of central banks in policymaking circles grew steadily around the world, as greater independence was widely followed by low and stable inflation and satisfactory growth and employment, a period that became known as The Great Moderation. Belief in their omnipotence peaked at the start of the financial crisis, when they were initially praised for preventing a depression of a similar magnitude to that seen in the 1930s.

However, it was not long before the criticism began; first of their failure to spot the crisis in advance and then of their role in bailing out banks at the expense of taxpayers. With their policies widely seen as having failed to ignite strong economic growth during the past decade, the criticism has continued to grow.

Kicking the can

For some critics, central banks' adoption of quantitative easing (QE) was a flawed response to the problems of recent years for two reasons. Firstly, because it is only an indirect method of pumping money into the economy and acts with a time lag. And secondly, due to its wealth-distorting consequences.

This has opened central banks up to the complaint they were not only pursuing a sub-optimal policy, but one that had huge societal consequences. With electorates increasingly questioning the integrity of public officials and professionals, their belief in the power of central banks appears to be crumbling.

Germany, the UK, Turkey, Russia, South Africa and Thailand are among an ever-expanding group of countries where politicians, facing voter disaffection, have attacked central banks in recent times. Last October, US President Donald Trump added his name to the list when he complained the Federal Reserve (Fed) was “crazy” to hike rates.¹

Even former central bankers, such as Otmar Issing (ex-European Central Bank) and Charles Goodhart (ex-Bank of England), have openly questioned whether institutions, faced with an ever-louder political assault, can retain their independence.^{2,3}

From inflation to deflation

Part of the explanation for the criticism being levelled at central banks is the main economic issue confronting them has changed. Whereas in the 1970s inflation was the primary enemy, today it is the opposite: deflation, or at least too little inflation, excessive debt and weak economic growth.

Independent central banks tend to be good at fighting inflation so long as they are credible. Workers, trade unions, retailers and other economic agents soon get to learn central bankers, unlike governments which are answerable to their electorates, are willing to pursue unpopular policies.

However, monetary policy has proved far less effective in fighting deflation. That is partly because of the problem of the so-called zero-lower bound. Whereas central banks can raise rates without limit, monetary policy becomes far less effective as rates fall to zero – particularly if it is not accompanied by expansive fiscal policy, as the experience of many countries over the past decade demonstrates.



CAN CENTRAL BANKS MAINTAIN THEIR INDEPENDENCE?

continued

QE, but not as we know it

Although the warnings from Issing and Goodhart may be overly alarmist, it nonetheless seems the tide could be turning towards greater political involvement in the activities of central banks. Calls for governments to step in seem likely to intensify during the next downturn.

With interest rates unlikely to be too far from recent record lows when that happens, it could be that central banks will initially resort to deploying fresh QE. That could mean the likes of the Fed and ECB take a leaf out of the Bank of Japan's (BOJ) book by purchasing equities for the first time. (The BOJ has an annual policy goal of purchasing ¥5.7 trillion [\$52 billion] of exchange-traded equity funds.)

However, given the criticism of QE, it is valid to wonder whether politicians will view it as having reached the limits of its usefulness and, equally importantly, its democratic legitimacy. One way of addressing these criticisms would be for central banks to co-ordinate policy more closely with the government of the day. An extreme example of this could be the creation of so-called helicopter money. Although economist Milton Friedman's original parable envisaged central banks dropping money to individuals from a helicopter as a means of avoiding a liquidity trap, economists have subsequently used the term to refer to a wide range of different policy ideas, including the permanent monetisation of budget deficits.

Perhaps more realistically, a solution could involve greater co-ordination between politicians and central bankers over fiscal and monetary policy. As with other types of 'unconventional' monetary policy measures introduced in recent years, it is not without its critics. In a

scathing article published in 2016, Issing warned a central bank that was "throwing out money for free, will hardly be able to regain control of the printing press".⁴ One only has to think of the experience of Weimar Germany, or more recently Venezuela and Zimbabwe, to see that, while inflation may have been yesterday's problem, it could conceivably become tomorrow's too.

Although there is a risk policymakers become addicted to issuing paper money, helicopter money has potential advantages over QE. Firstly, the effects would be more direct and faster acting since it bypasses financial middle-men. Secondly, and most importantly, governments would be able to ensure its benefits were distributed in a more equitable fashion, according to their electorates' wishes. That could either be in the form of increased spending, tax cuts, or a combination of the two.

More than credibility at stake

It is worth remembering the trend towards independence began with the appointment of Paul Volcker to head the Fed in 1979, which followed sharp contrasts in the inflation records of Germany and other leading industrial nations in the preceding years. Whereas in Germany, with the Bundesbank operating independently, annual inflation averaged five per cent in the 1970s, in the US, France and the UK – where central banks were not independent – it averaged 7.4, 9.1 and 13.1 per cent respectively.⁵

“

It seems improbable any major nation would remove a central bank's ability to set interest rates independently

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Under Volcker's stewardship, the Fed raised its key lending rate, which had averaged 11.2 per cent in 1979, to a peak of 20 per cent in June 1981.⁶ Although the policy drew sharp criticism from the Reagan administration as it plunged the economy into recession, Volcker stood firm and ultimately succeeded in choking off inflation.

Given that history, it seems improbable – for now – any major nation would remove a central bank's ability to set interest rates independently of government. To do so would not only set a dangerous precedent, it would risk undermining the hard-won credibility of the central bank. And, by unsettling financial markets, it could have the opposite effect to the one intended. In the present economic environment, such a move might not lead to a rapid return of inflation, but in the long run, higher inflation would almost certainly ensue.

As for other aspects of monetary policy, more government involvement might be a good thing in the next downturn. While not without risk, it is possible greater co-ordination of monetary and fiscal policy would be the most effective way to respond. If so, far from undermining the credibility of central banks, it could even restore the public's faith in them by shielding policymakers from some of the criticism they have been hit by in recent years ●

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