

the future of the global economy to 2030

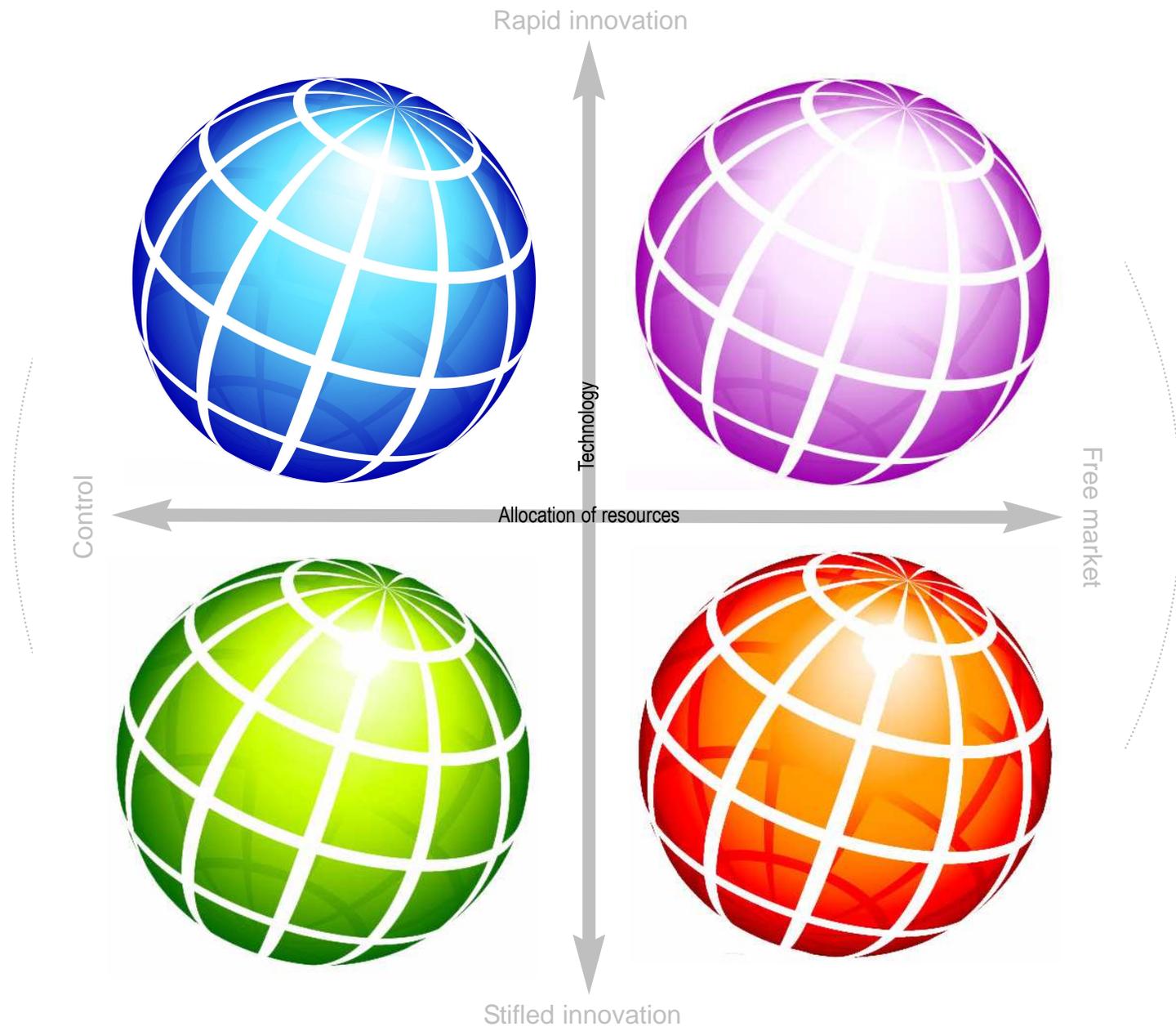
alasdair keith richard o'brien michael prest

outsights
insights from the outside



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about outsights

Outsights is a strategic consultancy helping organisations to anticipate, interpret and act upon important external developments in the outside world. We are one of the world's leading scenario planning practitioners with a strong track record in using scenarios to generate real change within organisations.

outsights on

The "Outsights On" series reports on our recent thinking, designed to stimulate debate on the drivers of change. Previous issues include:

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Tel: +44 (0)20 7226 2280
 Email: info@outsights.co.uk
www.outsights.co.uk

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the report

The global economy is at a juncture of great uncertainty and change. To explore a broader understanding of what the future of the global economy may hold, Outsights gathered experts from different disciplines - Government, the City, Business and NGOs - to consider what is shaping the future to 2030. This report builds on the output of the workshop with further research and scenario development by Outsights.

Outsights would like to thank the participants for taking part in the workshop, and notes that their involvement does not endorse any views expressed in this report, by themselves or their organisations. Special thanks also to Outsights Associate Michael Prest for editing and shaping the report.

the authors

Richard O'Brien, Partner, Outsights

Richard O'Brien is Outsights Co-Founding Partner. He has extensive experience in Futures work, leading and building scenarios covering a range of sectors including financial services, information, retail, development, Japan, Europe and the former Soviet Union. Richard is particularly experienced in finding and presenting critical external insights, and in helping clients to understand their significance in company performance.

An economist by training, Richard has 21 years experience in international banking, with Rothschilds and as chief economist and executive director of American Express Bank. He is widely published, including his best-selling book *Global Financial Integration: The End of Geography* and a former contributor and advisor to leading international bodies such as the World Bank and the Group of 30 (on regulation). He is frequently called upon to chair the jury for global competitions, including for *The Economist*, the BBC, Shell and Newsweek.

Alasdair Keith, Consultant, Outsights

Alasdair leads Outsights political and economic research. His recent research includes *The Future of the International Environment*, *The Future of Intellectual Property*, and *The Future of Executive Pay* and is the author of the recent Outsights paper *Five Flows of Globalisation*. Alasdair has prior consulting and project management experience in the information services world, and research work at *The Guardian* newspaper. He has a BA (Hons) in Philosophy, Politics and Economics from Oxford University (Keble College), and was granted a scholarship for study at Dartmouth College, USA in 2002.

Michael Prest, Associate Editor, breakingviews.com and Outsights Associate

Michael Prest is an associate editor at breakingviews.com. In his earlier journalistic career Michael worked for the *Middle East Economic Digest* in London and spent almost a decade at the *Times of London* covering energy and resources, finance and economics. He also wrote leaders for *The Times*. Michael later worked in Washington DC for five years as a speechwriter to presidents of the World Bank.

introduction

The credit crunch, with its bursting asset bubbles, rising food prices and exorbitant energy costs, seriously question the sustainability of the world economy after two decades of growth and prosperity - dubbed variously as "**the great moderation**", the "**Goldilocks era**" or the **Long Boom**. Although there is a speculative, bubble element to soaring oil and food prices, long-term demand pressures are also important and possibly represent seismic shifts in the global economy.

There exists an opportunity now to look beyond the immediate crisis and ask if we are entering a new era.

Is the current trend of globalisation and openness shaped by technology and liberalisation going to alter its path? Is the economic slowdown going to continue worldwide? Or will the fast growing emerging economies shift the power to the East, away from Anglo-Saxon markets? What will be the constraints and enablers of future prosperity?

To help navigate these future uncertainties Outsights have developed a set of scenarios describing different potential futures. It is intended that the scenarios stimulate useful debate around these issues.

exploring future uncertainties through scenarios

Outsights gathered a diverse group of experts - economists, environmentalists, civil servants and social theorists - at a workshop to explore the Future of the Global Economy.

The aim was to build scenarios - alternative and plausible stories of how the future might unfold - for the global economy to 2030. Rather than creating a conventional economic forecast - the inherent weaknesses of which are the unforeseen disruptions in the model - the group focussed on the major uncertainties of today's world, especially the non-economic issues, to challenge current assumptions.

The analysis focussed on five key drivers of change and their attendant uncertainties, drawn from the Outsights 21 Drivers for the 21st Century™ research programme:

1. **Sustainability:** How will the earth accommodate the emerging economies? How will resources - energy, food, water and people - be allocated? Who will take responsibility for addressing climate change, and how?
2. **People:** As more people live in cities, especially in emerging economies, what will be the impact of rapid urbanisation? Many western countries face ageing societies and strained dependency ratios. How will this be managed? The global pool of labour will remain relatively unchanged but the distribution will shift. Will there be more migration to equilibrate and manage labour allocation?
3. **Technology:** Will technological innovations provide solutions to resource and climate challenges? To what extent will technologies further integrate markets?
4. **Political models and stability:** What faith will people have in the price mechanism to allocate resources? Will democracy be diluted to tackle future challenges? Are we correct in assuming that we can no longer have large scale wars?
5. **Economic outcomes:** What are the growth trajectories of the BRICs and other emerging economies? This will have an important impact on the distribution of income, allocation of resources, inflation and growth.

These five drivers play a critical part in developing the scenarios. Firstly, the most important and uncertain drivers form the scenario matrix, which presents the four different worlds that may unfold in 2030. Secondly, they make up the core dimensions of the scenario stories.

the scenarios

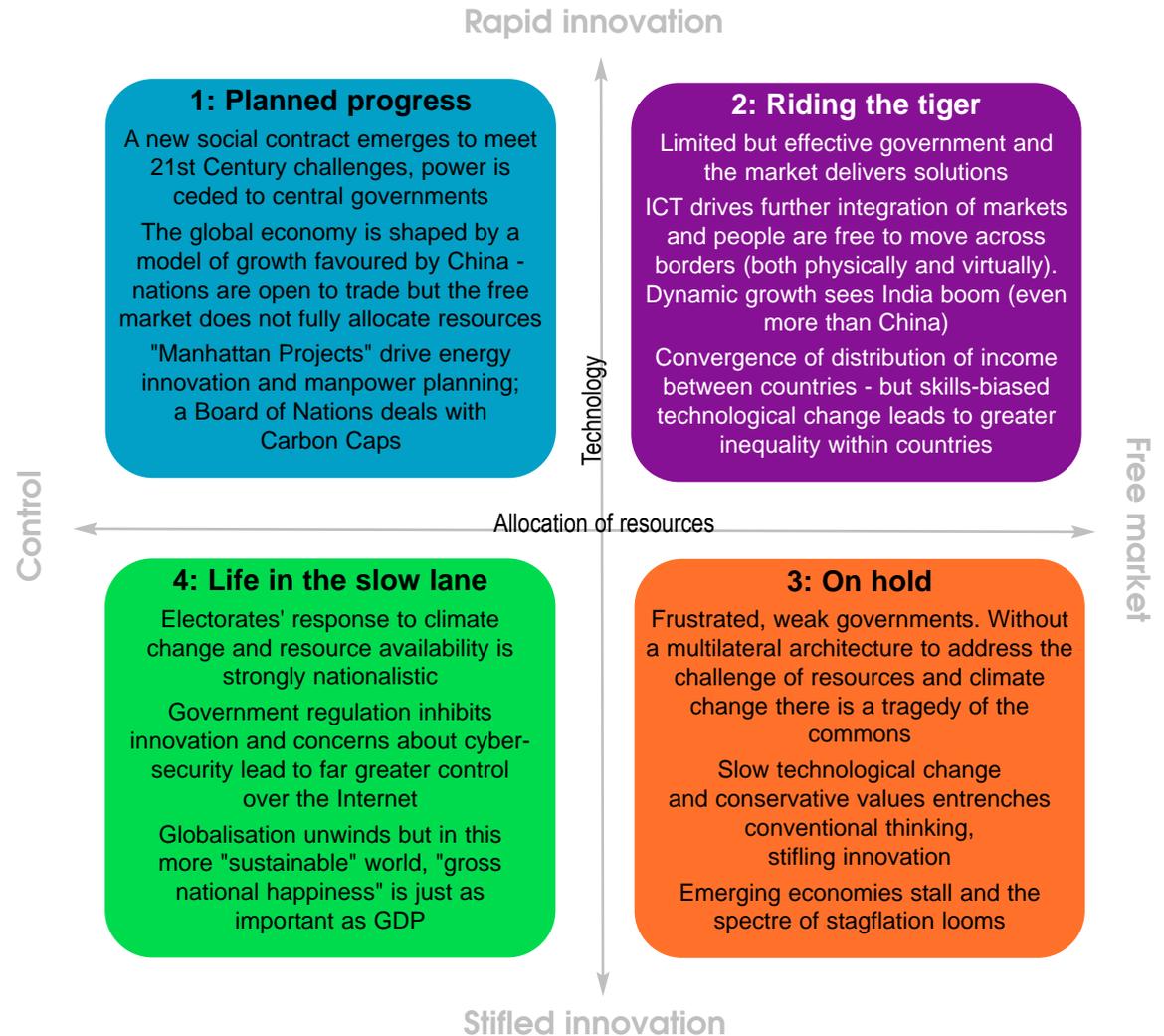
The four scenarios are structured around the interplay of technology and the model for the allocation of resources, as described in the matrix.

Each axis represents a spectrum of possible outcomes and the two axes together create four main future economic environments. The **vertical axis - technology** - captures the speed and extent of innovation driven by technology: will technology still be a major force for change, through fast innovation, connecting the world, creating new possibilities, or will it be stifled? The **horizontal axis - allocation of resources** - examines the future of the economic model of distribution. Will resources - natural, human, financial and knowledge - be allocated through market forces as in recent years, or will an alternative process of control over distribution and allocation develop?

It may be immediately observed that these axes relate very much to the technology and liberalisation trajectories that have shaped the past two decades. **Scenario 2 - Riding the tiger** - might be seen as the closest to a continuation of the current era.

Scenarios 1, 3 and 4 would be three significant departures from the recent trajectory, three alternative eras to the "great moderation".

Scenario 4 - Life in the slow lane - is the closest to a reversal of the recent era. **Scenario 1 - Planned progress** - and **Scenario 3 - On hold** - do not go so far as a reversal but nor do they return the world to fast growth. They represent a significant change from the current era, with growth in Scenario 1 rather better as a result of planned intervention as opposed to an all round failure to act in Scenario 3.



What follows is a summary of the scenarios and the implications for the five underlying themes of sustainability, people, technology, political models and stability, and the economic outcomes. A final section identifies the key messages that emerge from the scenarios.



sustainability

the challenges

Demands on energy, water and food are increasing. The dynamic growth of the emerging economies - in particular China and India - has led the International Energy Agency to caution that the world could face an energy supply "crunch" as early as 2015. It has been calculated that China would need to consume three times more energy than the US to support the same standard of living that the US enjoys today. The availability of water, in the right places, is declining rapidly. China has less water than Canada but 40 times as many people. Robert Zoellick, World Bank President, has suggested that sustained high food prices could push 100 million individuals worldwide below the poverty line.

This resource challenge interacts with fears about climate change and environmental degradation, issues which have come to prominence in recent years. It has been forecast that 1.8 million people will die prematurely in the world each year to 2020 from respiratory diseases, with China and India accounting for more than half of all such deaths. More extreme climate events could strain further the supply of food and water.

Given the apparent resource constraints, what will be the policy response to climate change and who will take responsibility? Will the virtual standoff between fast emerging economies and rich economies continue, the one arguing for the right to enjoy standards of living already enjoyed by the rich, the other seeking to protect those same standards? What will be the response by governments to such sustainability challenges?

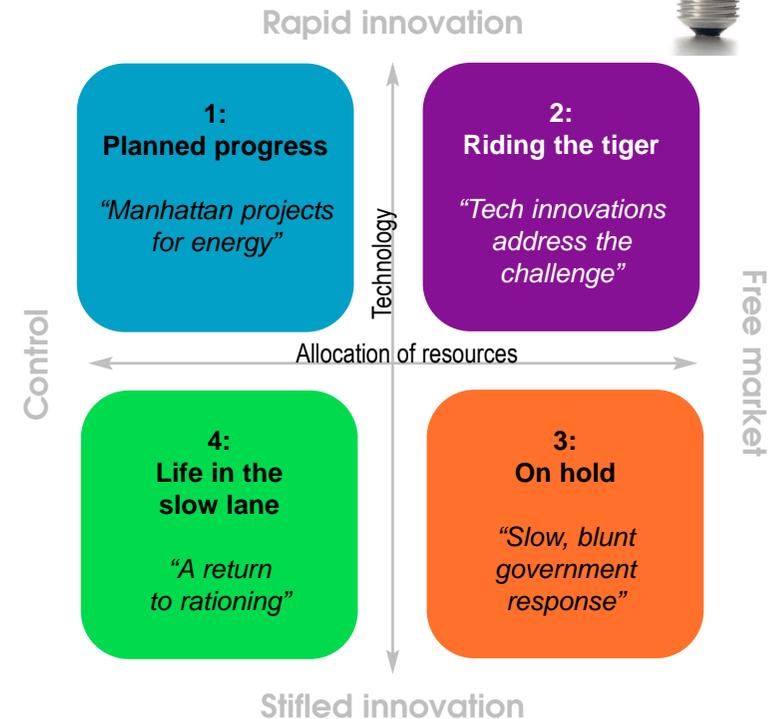
scenario responses

1: Planned progress. Electorates' response to climate change and resource availability is the initial trigger for **central control over the allocation of resources**. Resource availability is mainly addressed on the supply-side by governments investing in major programmes to improve energy efficiency and to introduce new technologies - "Manhattan Projects" for energy - and mandating the use of carbon sequestration technologies.

2: Riding the tiger. The market delivers solutions. As spending on energy and food rises there is an incentive to develop new clean technologies. **Innovation comes from "garages"**, leaving incumbents in the energy industry blindsided. The price of wind energy, solar power and marine energy fall and renewables become a competitive alternative. Desalination programmes increase the amount of drinking water available. Resource availability is addressed and there is a fall in commodity prices. People look back and wonder why all the fuss about rising energy and food prices.

3: On hold. There is a **slow, blunt policy response from governments** in addressing resource availability issues. Until 2015 there is no marked increase in average global temperatures, leading electorates to discount climate change as a pressing matter that needs addressing.

4: Life in the slow lane. The response to climate change and resource availability issues is strongly nationalistic. This leads to **rationing to overcome resource constraints**. State-controlled "multinationals" dominate resource extraction and distribution in resource-rich countries. Others are either beholden to the world's state energy companies or "colonise" resource-rich areas as in the "new scramble for Africa". China has plans to buy farm land in Africa. Gulf state investors are buying land in Pakistan.



people



the challenges

Three interlinked people stories will shape the future: **urbanisation, population, and mobility**. In 2007 half of the world lived in cities for the first time and by 2050 the proportion will be 75%. About 75% of the world's carbon emissions come from urban areas, and as people move to the city, consumption of meat and dairy increases hence the demand for more - and more expensive - food.

By 2030 there may be an additional 1.6 billion people on Earth. At the same time, the distribution will change: the great bulk of the population will be in countries which are outside the OECD now and OECD countries will have relatively old populations. **The age structure will lead to strained dependency ratios.** By 2040, Italy, Japan and Spain are expected to have one working adult supporting every person of pensionable age. The demographic balance between men and women could also have a significant impact. In China the number of unmarried young men ("bare branches") is predicted to be 30 million by 2020. Combined with urbanisation this could lead to instability if not enough jobs are created - the so-called "demographics of rage".

People mobility has remained relatively constrained compared with the other factors of production. **Will walls be erected to migration or will people flow more freely?** A nation will not necessarily open its doors just because it has an ageing society. Ageing Japan sits next to the world's largest pool of labour - in China - yet it controls immigration very tightly. Ageing European societies are torn between opening up to attract labour and fears of large inflows of people.

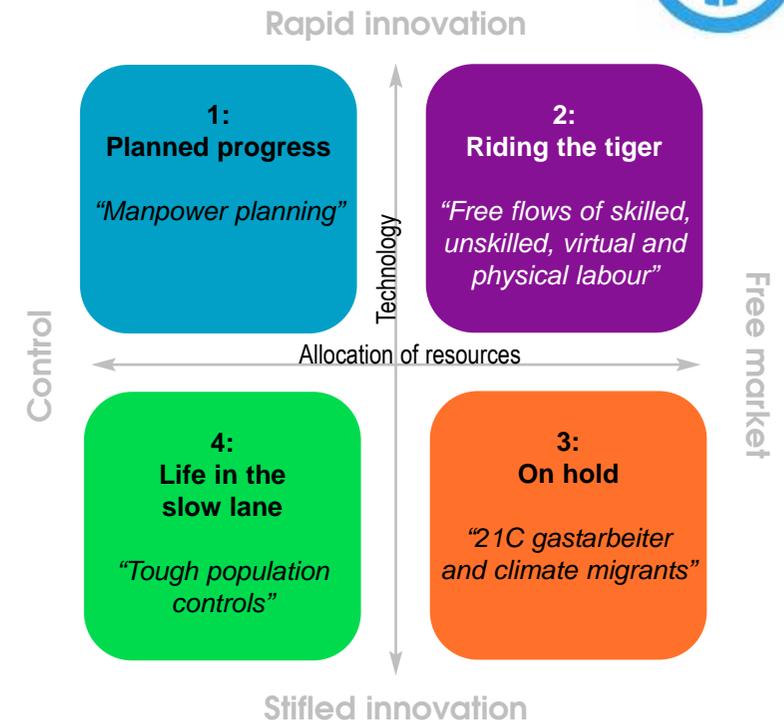
scenario responses

1: Planned progress. There is **central government control over the labour** market. Government Departments for Manpower Planning enforce very strict visa policies linked to skills - people flows are allowed to promote innovation and make up for skills shortages. There are fierce "wars" for talent. Education is geared to targeted training rather than general education. Technology leads to increased productivity, helping to mitigate the challenges of strained dependency ratios in countries with ageing societies.

2: Riding the tiger. Borders are further eroded - improvements in ICT make virtual working a reality. People can work "overseas" from their office at home. The world flattens rather than being "spiky" and characterised by hubs. **Both skilled and unskilled labour flow freely.** There is a huge movement of "bare branches" away from China to a booming India. IVF and better ways of balancing work and family push up fertility rates and redress demographic imbalances in the West. "Personalised medicine" is a reality but with inequalities in health outcomes.

3: On hold. Unskilled and skilled labour move freely around the globe. Hubs remain important - a "spiky" world. The global working age population is stable and large migration flows redress imbalances in ageing societies. European governments develop short-term migration systems - **gastarbeiter** for the 21st Century. **Climate migrants** leave the new drought zones - southern US, Australia and Mediterranean countries - for Canada, Russia and Scandinavian countries.

4: Life in the slow lane. Human resources are rationed through **tough population controls** similar to China's one child policy. Populations tolerate this as controlling the number of children is perceived to be the only way to ensure an equitable distribution of finite resources. Pessimism about climate change lowers fertility rates. Population control causes tension in countries facing demographic challenges, as technology does not lead to the required productivity improvements and closed borders mean that migrants do not fill the labour shortfall. Agriculture moves towards subsistence farming and people adopt much simpler diets.



technology



the challenges

Advances in technologies such as nanotech, biotech and neuroscience could have profound impacts on the global economy. Raymond Kurzweil, the American futures thinker, has said that there will be more change in the next 50 years than the last 400. Others believe that such techno-optimism about solving future challenges is misplaced. Paul Krugman, the American economist, has observed: **"For the last 35 years, progress on energy technologies has consistently fallen below expectations."**

Our faith in technological solutions is in part based on our experiences with consumer technologies and in particular consumer electronics. The computer game Grand Theft Auto IV has seemed so sophisticated that it has drawn reviews from art critics. A game such as this will not change the world. But virtual worlds, partly based on computer game technology, may represent the next development in ICT and could further erode borders. With the Beijing Cyber Recreation District project, China is converting the 100 sq km site of a former nationalised steel mill to house virtual worlds able to support not millions, but billions of avatars. The District will be an online shopping mall which will try to disintermediate Western retail outlets and capture the value added of manufactured goods. There is no doubt that the pace of technological change will affect the long-run elasticity of resource supply. **Will technology be able to relieve perceived resource constraints?**

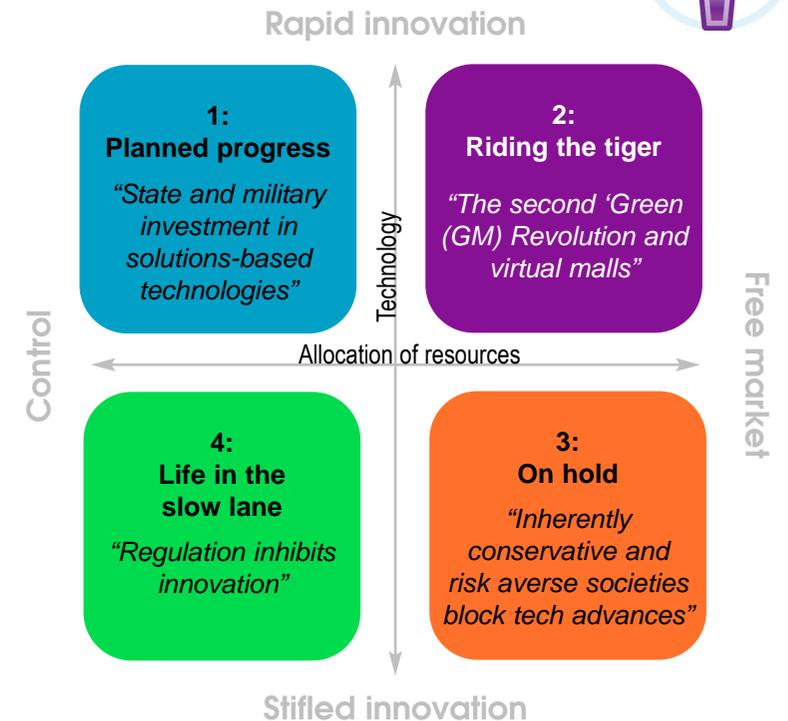
scenario responses

1: Planned progress. R&D is controlled by the state and the military with massive investment in solutions-based technologies and the picking and backing of winners. Investment in science is aimed at finding practical solutions rather than blue sky research and there is tight control over the development of what is regarded as "consumer trivia". Intellectual property is restricted, for example by technology transfer rules. Borders still matter in the physical world and inhibit markets from further integrating through ICT.

2: Riding the tiger. The free market fosters an entrepreneurial and innovative culture with step changes in technology offering solutions to the challenges of the day. **There is a second "Green Revolution" based on GM to overcome food shortages.** Developments in virtual worlds and the blurring of the distinction between the virtual world and the real world lead to further integration of markets. Consumers can purchase goods direct from the manufacturing country - people often pop down to the shops - which are a "virtual mall".

3: On hold. Slow technological growth entrenches conventional thinking e.g. the rise of conservative religion. Even if the technological solutions exist, they are not adopted because societies are risk averse. As economic growth stutters there is less money for R&D, which makes the unpropitious climate for innovation worse.

4: Life in the slow lane. Government regulation limits technologies to existing, simple ones. This gives today's incumbents a huge advantage. Concerns about cybersecurity lead to far greater control over the Internet and consequently it is no longer an innovative space.



political models and stability



the challenges

New economic and political models may come to the fore as societies grapple with future challenges. The credit crunch has already shaken confidence in free markets: in the US the Federal Reserve has intervened in the market and masterminded JP Morgan's emergency takeover of Bear Stearns; in the UK, the government has nationalised Northern Rock, the stricken mortgage bank. A liquidity freeze that was never supposed to occur has happened. How robust is people's belief in the price and market system? It is easy to be confident of support for the market when people's standards of living are rising.

But if they are not, people might look for alternative ways to allocate resources. On the political front, whilst the Chinese see their living standards rise they may be willing to accept a lack of democratic freedoms as a trade-off. But if the rapid growth of recent years stutters - as is very likely some time in the next 25 years - instability might grow.

National governments might find it increasingly difficult to respond to the policy challenges of an interconnected world e.g. the difficulties of regulating international finance. It can be argued that we do not have the right international framework to address challenges such as climate change. Against this backdrop of frustrated governments and inadequate international institutions there is the risk that domestic instability is externalised through aggressive behaviour against other states. **Should we assume that large scale war is now impossible?**

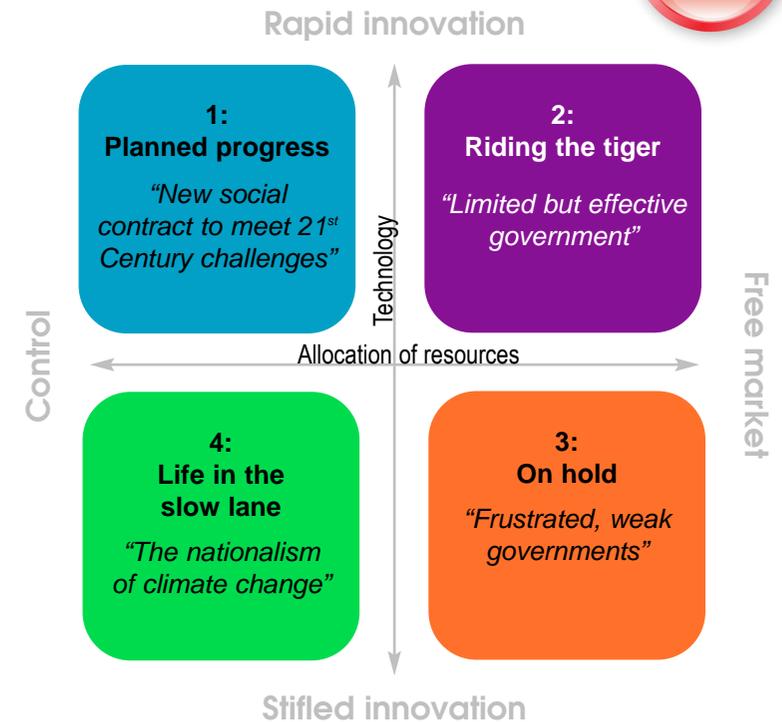
scenario responses

1: Planned progress. A new social contract emerges to meet the 21st Century challenges of energy, food, water and climate change, with people ceding power to central governments - akin to emergency powers under wartime. Intense fuel efficiency is mandatory - hybrid, electric, hydrogen and other technologies replace petrol and diesel. This model resembles China today: the Chinese government would find it much easier to mandate the use of energy efficient light bulbs overnight than would any democracy. A Board of Nations, with greater powers than the UN, agree on carbon caps which emerging economies do not perceive as growth inhibiting. Liberties are restricted for the public good.

2: Riding the tiger. There is **limited but effective government**. Suitable multilateral fora exist to govern global spaces - in the physical world addressing climate and resources, and in the virtual world governing the Internet. Whilst challenges are addressed with mixed success, relative stability is achieved because nations and people feel that their voices are being heard.

3: On hold. **Governments are weak and frustrated.** Lacking the necessary multilateral architecture to address the linked challenges of resources and climate change, this is a world in which the "tragedy of the global commons" really plays out. Failure to address these issues makes the world inherently unstable and there is a very significant risk of aggression between nation states. Disagreements and conflicts develop over access to resources.

4: Life in the slow lane. Nations respond to the challenges by turning inward and becoming more nationalistic, creating a **nationalism of climate change**. After the crisis of free markets there is strong anti-globalisation sentiment and governments introduce ad hoc controls over flows of goods, services, people and capital. These measures are accompanied by a wave of rhetoric claiming that they will protect citizens. Many industries are nationalised and the state keeps a close watch on mutuals, which have re-emerged - in the wake of increased distrust of private companies.



economic outcomes



the challenges

In contrast with the experience of the last generation, the macroeconomic fundamentals - growth, unemployment, and inflation - are surprisingly uncertain. The size of the BRIC economies is forecast to be larger than the G6 by 2040. But can we assume that China and others will continue to grow at 10% a year for ever?

Uncertainties such as sustainability, people and technology could take their toll of all countries and regions, regardless of their position now. Will globalisation - the integration of markets - march forward inexorably? What are the implications of the pace of integration (faster or slower) for trade patterns? Will convergence between economies (a reduction in disparities in living standards) occur, and if so, at what speed? One thing which could slow globalisation down would be the re-emergence of class struggles as people rebel against the redistribution of profits away from wages, fuelling protectionism.

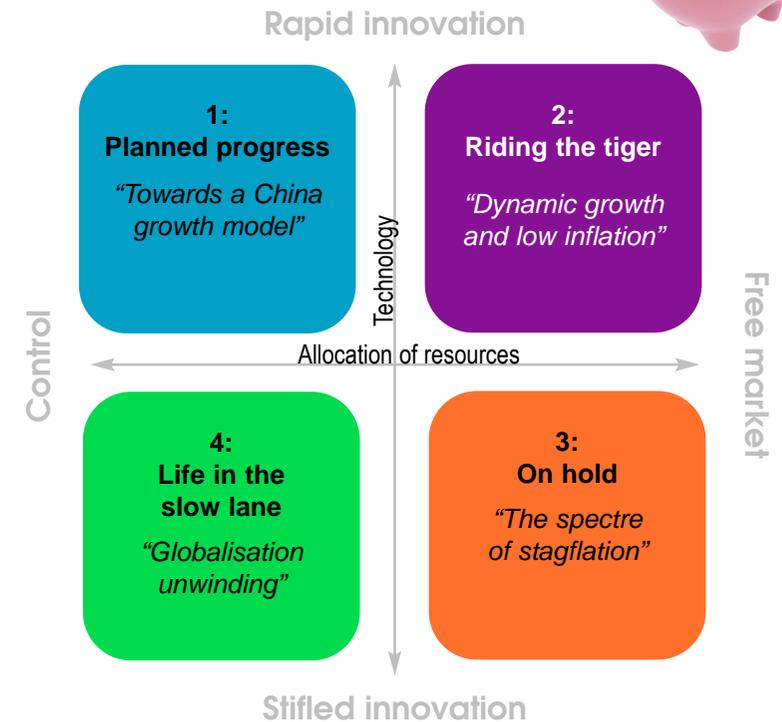
scenario responses

1: Planned progress. The global economy tends towards a Chinese growth model as China exceeds all expectations. Markets are integrated and still interconnected, but the free market does not fully allocate resources. There are price controls to curb inflation. Currencies are managed rather than floating. Steady growth and low inflation have their counterpart in rising inequalities within and between countries.

2: Riding the tiger. Markets integrate further as the virtual worlds erode physical borders. This allows manufacturers to disintermediate retail outlets, similar to what has already occurred in the music industry with digital technology disrupting existing industry structures. Consumers in the West buy goods directly from Asian manufacturers. Trade is even freer and incomes converge globally. India's population booms as China's ages, giving **India the edge in economic growth.** In general, incomes equalise between countries more than is being forecast today, but at a cost: skills-biased technological change leads to growing inequality within countries. **Overall in the global economy growth is dynamic and inflation low.**

3: On hold. The resource issue has not been solved and sustained high commodity prices limit growth and feed inflation. As transportation costs increase trade slows. Demographic and resource challenges throw emerging economies' growth off track. Even slowing emerging markets do not lead to a dramatic fall in prices. Inequalities in incomes cause strains between countries. Sluggish growth pervades and the spectre of stagflation looms large.

4: Life in the slow lane. Globalisation unwinds as protectionist sentiment envelops much of the world and tariffs are imposed to protect domestic industries. Trade plummets. Aggregate demand declines in this less commercial world. The working week is shorter and the financial sector smaller. This is a world of much slower growth but societies' priorities have changed. In this more "sustainable" world, measures of "gross national happiness" are just as important as GDP as the primary measure of a nation's performance.



what the scenarios tell us

The certainties which have underpinned conventional wisdom about the world economy for 30 years are no longer dependable. The model of world economic growth based on continued technological progress and liberalisation - the "great moderation" of the last 15 or so years - may slow to a halt or even reverse. The possible drivers of these changes include **the challenge of sustaining the model in the face of resource constraints**, as supplies may fail to keep pace with accelerating demand driven by economic and population growth; **the question of how far technology will be able to contribute to solutions** compared to the past; and that **faith in the wisdom of the market and the price mechanism** to allocate effectively resources may weaken, should constraints tighten and further market failures manifest themselves. We are at period of dynamic tension, where current crises may both reflect short term problems as well as some fundamental shifts.

departing from the past

The post-war global economy has witnessed two main economic eras, interspersed with an extremely uncertain transition during the 1970s and 80s. The post war relatively Government-controlled world of Bretton Woods from the 1940s to the 1970s - a world of foreign exchange controls, limited capital movements, relatively restricted trade and extensive state control of the means of production - helped deliver recovery from conflict and a sustained growth rate of five percent. The recent "great moderation" delivered low inflation, fast growth and rapid global integration, not least with the opening up of the former Communist bloc and the fast growing Asian economies.

The Bretton Woods era now seems a distant cousin of the recent era, with the floundering current multilateral trade round a vestige of that past model of global management. In 2030, will we be looking back on another different era altogether? The scenarios describe four possible paths to 2030: "Planned progress", "Riding the tiger", "On hold" and "Life in the slow lane".

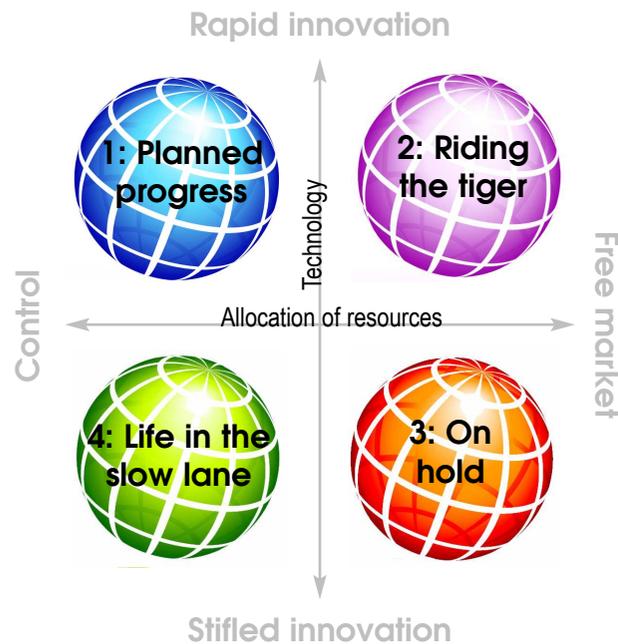
Only one of the four scenarios - **2: Riding the tiger** - is a linear continuation of the drivers behind the "great moderation". Looking back from 2030, this world vindicates the faith placed at the turn of the century in a liberal, technological philosophy. Most important, the optimism inherent in that philosophy is as strong as ever.

Yet there is nothing inevitable about continuing liberalisation or technological advance. Seen from 2030, the alternative scenarios are the result of sometimes disruptive breaks from a past which by then may look increasingly strange. This does not necessarily spell disaster or unalloyed pessimism. It simply means that the response to the challenges - such as resource allocation - may not pursue the liberal, technological manner familiar to us.

1: Planned progress, suggests that a model similar to China's today could predominate. Public opinion by 2030 is that market forces needed to be reined in. Society will have been quite successful at meeting the central challenges it faces. Living standards will be good and deprivation uncommon.

4: Life in the slow lane may be quite close to a future that some Greens envisage. A policy maker in 2030 analysing the recent past might well conclude that the price of much slower change and less choice had been a price worth paying for stability and greater certainty and averting the dangers which had seemed so threatening in the early years of the 21st Century.

Resource constraints will have proved decisive in the emergence of this latter scenario. Concerns about resource constraints are of course longstanding - although they have acquired fresh urgency, with oil surging way above US\$100 a barrel, soaring food prices, and largely unrelieved stresses on water supply. Technology has helped in the past - the Green Revolution, improved energy efficiency, productivity gains from better health and ICT, and good plumbing. But technology does not always deliver: in pharmaceuticals, the returns to investment are diminishing. Strip away cheap energy, moreover, and the economic growth of the last generation



looks less impressive. Technology is not a solution independent of society's preferences, witness concerns over genetic advances and the limitations placed on the exploitation of nuclear energy. The application of technology may fall short of what is required - and sometimes anticipated - to fulfil contemporary expectations.

3: On hold relates the story of a world in which liberalisation and technology have not only failed to help meet the challenges faced by societies but have actually exacerbated those challenges and weakened societies. An independent-minded observer - such individuals still exist in the world in 2030 - would have to conclude that the previous quarter century had seen the liberal technological philosophy totally confounded. The experience of government and market failure has shaped a society for which pessimism seems natural.

in the future are we all Malthusians?

The allocation of resources is prominent in all the scenarios, and echoes debates over the Earth's capacities to meet humankind's needs, from Malthus, to the Club of Rome's Limits to Growth, to today's sustainability movement. Supply and demand, access to and distribution of resources, is high on people's minds. Climate change and current high energy and food prices have raised consciousness of this challenge. The current financial crises in a number of economies have reminded us of the potential for market and policy failures. Whilst market failures are nothing new, the challenges of today and tomorrow could trigger a reaction against the faith in markets and revive belief in more interventionist solutions. The historical track record has shown that the extremes of doom versus uninterrupted advances have always been confounded in the end, although the distribution of economic success has been unequal. Hence sustainability "advocates" have increasingly sought to harness the power of markets to drive change. The future is most likely to be somewhere between the extremes, and possibly somewhere in the spaces described by the four scenarios.

These scenarios depict worlds in which today's model for growth is no longer taken for granted, and in some instances growth is no longer regarded as a solution and good in itself. In the Bretton Woods era, the Golden Age of growth in Western Europe in part came off the back of the very Keynesian and interventionist Marshall Aid plan from the US. Today, the rising BRICs' wholehearted adherence to the free market is by no means assured. As emerging economies become more dominant, so might their models start to dominate - at home and abroad. You do not have to be a Malthusian to recognise the challenge he once posed, but you might be legitimately regarded as such if you did not anticipate that solutions can be found and pursued - albeit through a different model from that of today.

participants

Outsights is very grateful for the ideas and input of all the participants in developing the main areas of uncertainty and the draft scenarios at the workshop held in London in early May 2008.

The full scenarios were then developed by Outsights based on the participants' insights and further Outsights research.

Participants' attendance does not imply endorsement of the content of the scenarios by themselves or their organisations.

Salman Ahmed	Goldman Sachs
Stephen Browne	International Trade Centre, Geneva
Simon Bryceson	Simon Bryceson Communications Consulting
Robert Ciemniak	Thomson Reuters
Peter Cornelius	AlpInvest Partners
Tapan Datta	Hewitt
Jeff Donahue	BHP Billiton
Patrick Foley	Lloyds TSB
Ifigenia Gioka	BHP Billiton
David Goodhart	Prospect Magazine
Tim Harford	Financial Times
Ian Harwood	Independent economist
Sarah Hewin	Standard Chartered Group
Cho Khong	Shell
Julie Hoey	Strategy Unit, Scottish Government
Jothi Jayadevan	Outsights
Alasdair Keith	Outsights
David Lascelles	Centre for the Study of Financial Innovation
Paul Mortimer-Lee	BNP-Paribas
Julie Mosmuller	Outsights
Richard O'Brien	Outsights
Michael Prest	breakingviews.com
Alun Rhydderch	Horizon Scanning Centre, Department for Innovation, Universities and Skills
James Watson	Department for Business, Enterprise and Regulatory Reform
Stephen Yeo	Centre for Economic Policy Research

endnotes

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Outsights Limited
209 Business Design Centre
52 Upper Street
London N1 0QH

Tel: 0044 (0)20 7226 2280

Fax: 0044 (0)20 7226 2330

info@outsights.co.uk
www.outsights.co.uk