

The World

Countries are increasingly judged not just by economic output but by the rate they are going grey. In the following pages, experts analyse the issues of specific states and regions, some with exploding populations and some shuffling quietly towards old age



JAPAN

And then there was one

By Richard Jackson

Population: 127.4m

65 years and over: 23.9%

Life expectancy at birth: 83.9 years

Population in 2050: 99.7m

Everybody knows that Japan is ground zero for global ageing. The youngest of the developed countries as recently as the mid-1970s, it is now the oldest – and its age wave will continue to roll in for decades to come.

By 2050, the proportion of Japanese who are 65 or older is on track to reach 39 per cent, up from 23 per cent in 2010 and only 9 per cent in 1980, when Japan Inc seemed poised to conquer the global economy.

Japan's total population, which is already contracting, will enter a precipitous decline, shrinking by over a half by the end of the century. Extending this dismal forecast even further into the future, the Japanese Government projects, half seriously, the date when there will be only one Japanese citizen left living.

It is easy to understand why many contemplate Japan's future and see nothing but fiscal crisis, economic stagnation, and geopolitical decline. Japan's massive age wave – the result of its chronically low fertility rate, world-record life expectancy, and aversion to migrants – poses a daunting challenge. Its flagging productivity performance, creeping deflation, and Greek-sized government debt all compound the dire demographic outlook.

Yet Japan enjoys a number of enviable advantages that may better position it to cope with its ageing population than many western countries – at least for a while.

To begin with, its welfare state is not especially generous. All told, government benefits account for just under 40 per cent of the total income of the average Japanese elder. In most European countries, 50, 60, or even 70 per cent of elderly income arrives in the form of a government cheque.

The relatively low dependence of the elderly on benefits, together with a cultural tradition that stresses consensus and shared sacrifice, makes it easier for Japan to rewrite the social contract than it is for most western countries. State pensions have been cut repeatedly since the 1980s

and are now indexed to the country's demographics, meaning that, even as the population ages, spending is projected to remain constant as a share of the economy. Yet despite the magnitude of the cuts – a 40 per cent reduction in relative benefit levels over the next 25 years – there has been no hint of the social turmoil that convulsed France in 2010 when former President Sarkozy proposed a modest two-year hike in the retirement age.

The long working lives of the Japanese constitute another comparative advantage. Fifty five per cent of Japanese men aged 60 to 74 are still employed, a larger share than in any other developed country except Iceland. In Germany, the equivalent share is 23 per cent, in Italy 17 per cent, and in France 11 per cent.

Then there is the extended family. In Japan, nearly half of old people live with their grown children. This custom not only allows relatively poor Japanese elders to live with their more affluent children, but allows poor young adults to live with their more affluent parents. Multigenerational living not only mitigates the burden of old-age dependency by providing an extra source of support for the old, but also by providing a source of 'trickle down' support for the young. While the rate of multigenerational living remains high in southern Europe, it is less than 15 per cent in most western countries. In the Netherlands it is less than 10 per cent and in Sweden it is less than 5 per cent.

All this gives some hope that Japan may ride out its gathering demographic storm for another decade or so. In the very long run, however, it is hard not to side with the pessimists. At 1.3 births per woman, there is simply no way for it to balance its demographic and economic books.

If Japan is to prosper in the long run – indeed if Japan is to survive – it must raise its fertility rate. Doing so will require the radical transformation of workplace and family cultures. In today's rich world, it is no longer true that more working women means fewer babies. In fact just the opposite is true. Those countries that facilitate a dual role for women get more of both crucial inputs – workers and babies. Those that do not, get fewer of both. It is no accident that Japan has both one of the very lowest fertility rates in the OECD and one of the very lowest female labour-force participation rates.

While Japan often clings to tradition and resists reform, when faced with great national challenges it has sometimes shown itself capable of sweeping transformation. This happened in the 19th century

during the Meiji Restoration that catapulted Japan into the ranks of industrial powers. It happened again after the Second World War when the nation rose from the ashes of defeat and reinvented itself as Japan Inc. The social and cultural transformation that Japan must now embrace may lack the drama, but the stakes are no less momentous.

CHINA

Cheap labour is becoming scarce

By Qiyu Tu

Population: 1.34bn

65 years and over: 9.1%

Life expectancy at birth: 74.8 years

Population in 2050: 1.30bn

Zhengzhou railway station is one of the main transport hubs in central China. For its chief operator, the third week after the Chinese New Year is the peak period as more than 100 million migrant workers return after the holiday to their workplaces, which are mainly in the coastal areas. It has been like this for the past 20 years.

This year the stationmaster received a surprise. He had prepared more than 100 extra trains to cope with the expected rise in passengers, as he did every year. However, this time only a tenth of the expected number of tickets were sold. The inland provinces claim that they themselves are short of labour and have none to meet the demand of coastal factories.

At the same time, Foxconn, the giant supplier of Apple products, having already tripled its employees' salary over the past six years, has announced new welfare package for its production line workers. But this seems still not enough to attract the young employees needed to man the company's assembly lines.

A sharp decrease in the supply of cheap labour is now a matter of fact in China. The national census shows that its working-age population reached a peak in 2010 at 70 per cent of the total population. Last year, for the first time, China's total working-age population decreased by 3 million. The peak moment of enjoying the Chinese demographic dividend – when the ratio of working-age people to dependents is highest – has passed. However, even if the current one-child policy remains in force, it will take at least another 10 to 15 years for China's demographic window of opportu-

nity to close, when the working-age population will account for less than 55 per cent of total. By then, China's labour supply position may not be so gloomy. Another window of opportunity is going to open.

It is well known that the Chinese are investing enormously in education. Between 2011-2015, China's annual public expenditure in education will account for four per cent of GDP, not including the millions of 'tiger mothers' who are planning to spend generously for out-of-school classes and overseas education. China's working-age population in 2000 had on average less than eight years of schooling. By 2015, those entering the job market will have an average of 13.3 years of schooling.

At the higher end of labour supply, in 2010 only eight per cent of China's working-age population had tertiary education. However, according to China's long-term strategy on education, a learning society is to be built by 2020. By then up to 20 per cent of the working-age population will have tertiary education, which is 140 million people, equivalent to the population of Britain and Germany combined. Scholars have already named this qualitative change in the education of the labour force a new demographic dividend. However, things may not be quite so simple.

Earlier this year, while blue-collar workers were experiencing rising demand for their services, college graduates were also looking for jobs. Each year 6 million to 7 million graduates enter the job market, but more than 30 per cent of them do not find jobs in the first year after leaving campus. China's Ministry of Education has set a 70 per cent graduate employment rate as one of the key indicators in evaluating universities' performance. So the story of the Chinese labour market is not so simple.

The labour problem in China is an issue, but not such an urgent one that people have to seriously discuss the possibility that the Chinese may get old before they get rich. The real difficulty is rather the mismatch in the younger generation between expectation and qualification.

Nowadays, the 1980s and 1990s generations have higher expectations for their career path as well as their salary. The low-paid blue-collar positions where their parents have worked over the past three decades are far less attractive to the second generation of migrant workers. But better paid jobs require higher qualifications and suitable training, which even current college graduates may not be able to meet.

What about the future? According to the long-term vision set up by the Communist Party, China will achieve its 'Great

'Each year up to 7m graduates enter the jobs market but 30pc don't find work in the first year'

Rejuvenation' and become a moderately developed country by 2049, the 100th anniversary of the founding of the People's Republic.

According to UN Population Division's prediction, China's population growth will finally stop at 1.39 billion at around 2030. By then the 'qualitative' demographic dividend will also have reached its limit. So here is the ultimate question. Can China fulfil its dream even when the two demographic windows of opportunity – quantitative and qualitative – have closed? As the old Chinese saying goes, you lose some, you win some. Maybe more windows will open – or maybe not.

SAUDI ARABIA

Cyber-savvy youth on the rise

By Caryle Murphy

Population: 26.5m
65 years and over: 3%
Life expectancy at birth: 74.3 years
Population in 2050: 58.24m

To know where a nation is headed, look at its youth. Saudi Arabia's population is heavily weighted with young people. Some 64 per cent of its 19.4 million citizens are below the age of 30. A deeper dive into the data shows that 13 to 17-year-olds now make 12 per cent of the population, the biggest 'youth bulge' ever seen in the kingdom.

Next year, the first members of this group will turn 18 and start marching into the country's fast-expanding universities or enter the job market, exacerbating youth unemployment, which for those under 30 stands at 27 per cent, rising to 39.3 per cent for the 20 to 24 age group.

Saudi Arabia is an ultra-conservative country following strict Wahhabi rules of moral and social behaviour. Yet, during three years in the kingdom as a reporter, I found that twentysomething Saudis showed distinctive characteristics.

This group is being shaped by forces beyond the government's control, ranking as No 1 among Arab youth in the use of Twitter and in daily face-time on the internet. This window on the world gives its members new perspectives and makes them more inclined than their parents ever were to re-examine what they are being taught, even when it comes to religion.

They demand more personal autonomy in choosing what they study at university, what career they pursue, what they do in their spare time and whom they marry. Young women want these things with even more fervour than the men and are increasingly assertive about their right to work, study, and engage in public life.

Politically, they all love King Abdullah bin Abdulaziz. There is no appetite, therefore, to overthrow the House of Saud, but they do resent the monopolizing tendencies of the royals in the kingdom's business, political and social life. They are also anxious about the transition when the monarchy passes to the next generation.

Among politically aware young people – not a majority but a group whose ranks are increasing – there is resentment over a lack of political rights. But even these youths want change to be gradual.

In sum, Saudi youth are more evolutionary than revolutionary. And yet government can't be complacent.

Political awareness among Saudi youth is likely to grow because of crises and instability in the region. Both secular and Islamist-inclined young Saudis are not immune to the gusts from these conflicts. Young Shiites in the Eastern Province, whom I found alienated from their Sunni peers and the government, will be particularly influenced by regional events.

Sending thousands of students abroad to study will also create challenges for such a conformist society. The King Abdullah Scholarship programme now has 145,000 students studying abroad, half in the US. When they return, they will want well-paid jobs and be keen to implement new ideas in business, technology and even politics.

Finally, as their younger siblings, who make up the 'youth bulge', move into their 20s in coming years, pressure on government for jobs, more affordable housing and political expression will intensify.

The Saudi monarchy has some breathing space. Already, it is opening up jobs for its people by obliging companies to hire fewer expatriates. It is also opening doors for women, allowing them to work in retail and to participate in politics, albeit in a limited way – King Abdullah recently appointed 30 women to the Shura, his



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national advisory council. But at the same time, education reform is moving too slowly and, there has been no sign from the royal family that it sees any need to share power or become more accountable.

In Saudi Arabia, age equals authority. But this gerontocracy is not sustainable in the long run. The growing numbers of Saudi youth will demand change in years to come, and along the way, acquire new cultural and political authority.

RUSSIA

From red to grey

By Timothy Heleniak

Population: 142.9m
65 years and over: 13%
Life expectancy at birth: 66.5 years
Population in 2050: 114.12m

Among many other demographic problems, Russia is confronting a rapidly ageing population. Since the break-up of the Soviet Union in 1991, Russia has fallen from having the 6th largest population in the world to 9th. By 2050, it will fall to 15th place. Population size is only one of a number of attributes that contribute to a country's status, but it is an important one.

This decline has been driven by several factors. Russian women are having fewer babies, with the birthrate declining from the replacement level of 2.1 children per woman in 1989, to a low of 1.2 in 1999, before increasing again to 1.6.

Life expectancy for men fell from an already low level of 64.9 years in 1987 to 57.5 in 1994. The female life expectancy advantage in Russia is the largest in the world with women outliving men by 12 years, largely due to the high male death rate from cardiovascular diseases and external causes such as murder, suicide, accidents and poisonings. The excess of deaths over births is partly compensated for by an influx of migrants from other parts of the former Soviet Union.

All this has resulted in the Russian population falling from a peak of 148.6 million in 1993 to 142.9 million.

Recent attention has focused on Russia's re-emergence as a global political force, fuelled by resource-driven economic growth. But simultaneous population decline and ageing will become a serious drag on economic growth, with the State budget burdened by increased costs for pen-

sions and health care for the elderly. By 2040, Russia's median age will be 44.9, placing it among the oldest countries in the former Soviet Union and close to the oldest in the world.

The Russian leadership is aware of the seriousness of these problems and has put forward measures to deal with them.

These include pro-natal policies to increase the birth rate, anti-smoking, anti-alcohol and other measures to decrease mortality and increase the length of healthy life years, and efforts at better-managed migration.

The Year of the Family was declared in 2008 and a public relations campaign was mounted to encourage larger families. A package of pro-natalist policies was introduced, designed to halt or reverse the steep decline in Russia's birthrate. The package included more generous benefits for a second child, together with longer maternity leave.

These policies had little effect: the fertility rate was already beginning to increase before they were implemented and has risen only slightly since.

Russian men are among the world's largest consumers of alcohol and tobacco. Mortality levels and patterns of death and disease in Russia are far out of line for a country at its level of development.

Raising the pension age has not received serious consideration in Russia as it has in other post-Soviet states.

There has been an increase in the percentage of 'foreign born' in Russia which now stands at 9 per cent of the population, due to continued immigration of non-native groups and a natural decrease of ethnic Russians.

The Kremlin's migration policy has undergone a number of reversals. Immediately after the break-up of the Soviet Union, the focus was on assistance to the 25 million ethnic Russians in the non-Russian states of the former USSR. When Russia realized that it was becoming overrun with foreign workers in the early 2000s, it sought to restrict migration. In more recent years as the demographic decline kicked in, the state has sought to encourage regulated migration. Like many other countries, Russia has had difficulty incorporating migrants of different ethnic and racial backgrounds on either a permanent or temporary basis.

Some of Russia's recent policies will have a limited demographic effect and recent trends are moving in a positive direction. But it appears that Russia will inevitably need to adjust to a smaller and older population.

INDIA

Where girls are in short supply

Gethin Chamberlain

Population: 1.22bn
65 years and over: 5.6%
Life expectancy at birth: 67.1 years
Population in 2050: 1.69bn

India should be booming. It has an enormous and youthful workforce and it is predicted to overtake China as the world's most populous nation by 2030.

There are about 240 million people between the ages of 15 and 24. The youth of the population should translate into a demographic dividend, calculated by the IMF's Asia Pacific Regional Economic Outlook for 2012 to be worth about two per cent on the annual rate of economic growth, provided it is coupled with the right economic policies.

Instead, the Indian economy has dipped, with growth slipping below the 8 per cent the country needs and running at between 6 and 7 per cent.

The population figures hide another problem; a quite startling gender imbalance. According to the 2011 census, India had a ratio of 914 girls to 1,000 boys in the 0 to 6 age range, the widest gap since independence in 1947. The gap has widened since 1991, when the figure for girls was 934, and this despite an expensive public campaign, Save the Girl Child. There were 37 million more men than women in India at the time of the last census.

That is not an accident. Indian families want boys. Girls are expensive luxuries. The dowry has been illegal since 1961, but many parents accept that they are going to have to pay it anyway to marry off their daughters.

It used to be that unwanted baby girls suffered unfortunate accidents shortly after birth; now many do not even make it out of the womb.

Sex selection is illegal, but clinics that will scan the unborn foetus are everywhere. Sometimes they resort to a little subterfuge to avoid inviting censure, handing the parents a blue sweet as they leave to indicate a boy, a pink sweet for a girl, but the result is the same.

Some eight million female foetuses are believed to have been aborted in India over the past decade.

Such a gender imbalance has a damaging

effect on society, says Claire Melamed, Head of the Growth, Poverty and Inequality Programme at the Overseas Development Institute. ‘There is an argument that it leads to more violence and conflict, both violence against women and more generally, as it produces a large number of unmarried young men who have less stake in society,’ she says. ‘Violence and instability are, on balance, bad for economic growth.’

The Indian government has, perhaps inevitably, sought to see the positives. The 2012-2013 economic survey, prepared by Raghuram Rajan, the chief economic adviser, and presented to parliament last month by P. Chidambaram, the Finance Minister, sees cause for optimism. ‘The future holds promise for India provided we can seize the demographic dividend as nearly half the additions to the Indian labour force over the period 2011-30 will be in the age group 30 to 49.’

The report made clear that changes were needed if the promise was to be fulfilled. The country has too many poor quality jobs and not enough high-productivity manufacturing and service sector jobs.

More good jobs would pull the Indian economy into a virtuous cycle of growth with meaningful job creation. This ‘would put purchasing power in more hands and increase demand into the bargain,’ argues Krishnamurthy Subramanian, assistant professor of finance at the Indian School of Business in Hyderabad. In that context, the gender imbalance may not be so important.

‘The first order issue is how we make industry more productive to create jobs. While gender inequality is an important issue in general, I don’t think it is as material a concern in this context. We need to create jobs for both men and women irrespective of their proportion.’

India does have the benefit of a booming middle class, a growing number of well-educated young people on good salaries, fuelling a consumer boom. That is the face India shows to visiting world leaders, but it is struggling to find a way for that money to trickle down through the economy.

Venture a few miles outside the cities and there is a huge rural underclass with little or no prospects. Claims that India now has 74 per cent literacy are undermined by reports that show many government schools do not even have classrooms, let alone teachers.

It is true that India does have a lot of young people, but it is also true that many are in the wrong places, the poorest states, and not educated to a level where they can secure quality employment.

Indians often joke about the national

‘India is struggling to find a way for the money to trickle down through the economy’

mentality that everything will work out fine, but unless the country tackles its gender imbalance and the challenges of a population of under-employed young men, there are no guarantees that the story this time will have a happy ending.

EUROPEAN UNION

Caught in the fertility trap

By Kenneth Howse

Population: 503.8m
65 years and over: 17.9%
Life expectancy at birth: 79.7
Population in 2060: 516.9m

In a handful of European countries fertility fell low enough during the Seventies and Eighties to cause concern.

At the time, most demographers thought that the drop in total fertility rate to around 1.5 children per woman, was a temporary phenomenon caused by people delaying marriage and childbearing. In other words, Europeans were not choosing to have fewer children; the explanation was to do with changes in the *timing* of fertility.

The data would eventually show that women were having more or less the same number of children, only at older ages. And this is precisely what happened in The Netherlands and Denmark. Total fertility increased, and although it did not return to the replacement level of about 2.1 children per woman, it was enough to dispel the threat of an imminent fertility shock. This is how matters stand in most western and northern European countries.

What happened in other parts of Europe was different, however. Low fertility persisted in Germany and Austria; and in southern and eastern Europe, where the decline had started somewhat later, fertility rates fell even lower, and they have stayed low.

National governments, as well as the European Union, have voiced concern about low fertility as a major demographic

challenge. If it stays at these low levels, the population quickly moves from growth to decline, which is already happening in Germany, despite immigration. Most commentators, and certainly all governments, would say that fertility at these levels is not just low; it is too low.

The question demographers asked at this point was how fertility levels could stay so very low. This is where the idea of a low fertility trap becomes important. It explains how choices about the timing of fertility can have an effect on personal fertility intentions.

Most Europeans still say that they want to have children, and moreover, that they plan to have more than one. The fertility that would result from them fulfilling their intentions is not far below replacement level fertility rate. If it does not reach this level, however, policymakers have the task of identifying and removing obstacles that prevent people from realizing their fertility intentions. A society that thinks it is in this position is not yet in a low fertility trap, however. What closes the trap is the possibility of a lasting shift in fertility intentions so that the untrammelled exercise of fertility choices fails to produce enough babies to replace the population.

How might this happen? The essential idea is that a combination of factors could cause total fertility to fall very low – say below 1.5 children per woman – and then stay there for an extended time. For various reasons there is a *continuing* postponement of childbearing. As a result total fertility continues to fall, completed family size begins to fall quite noticeably, and then attitudes, values and preferences start to reflect the new social reality. It becomes the norm to have fewer children.

This is what seems to be happening in Germany and Austria, where repeated surveys have shown that views on desired family size have changed. To increase fertility now, it is no longer enough to remove obstacles to childbearing and lower the costs. Attitudes and values have to be changed, and this is much harder.

In most of the other low fertility European countries, around the Mediterranean and in the east, the position looks different. If people in these countries could realize their fertility intentions, the number of children born would start to get closer to replacement levels. However, continuing postponement of childbearing means that they end up with fewer children than they want. Although it should be easier to reverse fertility decline in these countries than in Germany and Austria, eventually the trap will close here also.

IRAN

Birth control flip flops

Baqer Moin

Population: 78.8m
65 years and over: 5.1%
Life expectancy at birth: 70.3 years
Population in 2050: 94.41m

Iran's attitude to population control has see-sawed over the past fifty years as strategic and political imperatives have changed.

After the 1979 revolution, with the population standing at only 36 million, the new clerical leadership abandoned the Shah's family planning regime.

For Ayatollah Khomeini, population was a strategic asset at a time when Iran was suffering high casualties in its war with Iraq. He called for a 20 million volunteer army and a population of 200 million. Incentives were offered for families to produce more children.

In 1988, with the war over, the Tehran government felt that the economy could not cope with a fast-rising population. Birth control was reintroduced, including the options of sterilization and vasectomy, and newlyweds and students received mandatory family planning classes. The virtues of two-child families were proclaimed on posters and preachers in mosques backed the policy. In 2000, the Health Minister received the UN population control award.

At the same time, women were given more opportunities for higher education and employment. Economic independence offered women the freedom to choose whom they married, where they lived and how many children they would have.

But for the conservatives, smaller families were seen as giving in to the western values of secularism and individualism.

In 2006, President Mahmoud Ahmadinejad called for an end to birth control, saying Iran needed its population to rise to 120 million people. A falling birth rate meant fewer conscripts for the armed forces, and in 2012 military service was extended from 18 to 21 months. A shortage of soldiers was seen as a national security matter. And so was any fall in the proportion of Persian speakers and Shia Muslims – considered the cornerstone of Iran's national identity – to the ethnic or linguistic groups, such as the Azeris, Kurds,

Turkmen, Baluch and Arabs. In October last year, Iran's supreme leader, Ayatollah Ali Khamenei, called for the birth-control programme to be scrapped.

He said officials, including himself, were to blame for giving Iran an ageing population and an unproductive society. 'May God and history forgive us,' he said.

Financial incentives and housing concessions have now been reinstated for large families. Pregnant state employees are offered nine months' paid leave. University courses on family planning have been dropped and the budgets of birth-control clinics cut. The aim is to more than double Iran's population from 77 million to 150 million.

At the same time reformist critics argue that it is not the quantity of population that is of strategic importance to Iran, but the need to enhance the quality of its citizens by equipping them with knowledge and technology to create wealth, have access to welfare and feel secure.

SINGAPORE

Little Tigers have fewer cubs

By Simon Long

Population: 5.3m
65 years and over: 7.8%
Life expectancy at birth: 84 years
Population in 2050: 5.56m

In Singapore public protest is almost as rare as snowfall. Yet one rainy Sunday afternoon in February 5,000 people gathered to vent their anger at a government White Paper, just approved by parliament, on Singapore's population.

To maintain economic growth, the paper argued, the population would have to increase from 5.3 million at present to 6 million by 2020 and to between 6.5 million and 6.9 million by 2030. And unless Singaporeans change their habits, much of this increase would come through immigration.

The paper added weight to a message Singapore's government has been trying to drum into its people for three decades: stay home and multiply.

Yet, unlike other government campaigns – to speak Mandarin, say, or give up chewing gum – this one has failed. Singaporeans have small families. In this they resemble the other Asian 'little Tigers' (Hong Kong, South Korea, Taiwan), and tiny Macau.

In one ranking of total fertility rates, these five places are at the bottom of the global league, with rates of 1.25 or below, compared with 1.4 in Japan, and the theoretical replacement rate of 2.1.

The consequences of this are stark. From 2020, the number of working-age Singaporeans will decline and by 2030 there will be only 2.1 Singaporeans of working age for every one over 64, compared with 5.9 in 2012.

Everywhere, as people get richer, live in cities and women are better educated, they have fewer children. The Tigers have seen sustained economic growth at rates surpassed only in China, where fertility has also plunged. Even so, the Tigers' declines in fertility rates have been astonishing.

In the developing world as a whole, the fertility rate fell by half in fifty years, from six in 1950 to three in 2000. In South Korea, it fell by two-thirds in only 20 years from six in the early 1960s to two. In Taiwan, it dropped from 6.5 in 1956 to 2.2 in 1983 and 1.7 in 1986.

In Singapore, the fertility rate, 1.74 in 1980, climbed a little later in that decade, after the government ditched its 'Stop at Two' family-planning policy in 1983 and Lee Kwan Yew, then prime minister, started promoting bigger families – with a distinctively Singaporean twist.

Lee, believing intelligence was inherited, wanted above all to encourage more graduate women to have children. The number of graduate men marrying fellow graduates grew sharply. The overall fertility rate did not.

In Singapore and elsewhere, last year saw something of a baby boom, as families tried to bless their offspring by bearing them in the Year of the Dragon, an auspicious one in which to be born, according to Chinese astrology. But the spike was less marked than in 1988 and 2000.

So in all the Tigers, governments are promoting the joys of child rearing. Taiwan's has mandated generous parental leave (though many women are afraid to take their full entitlement), subsidized kindergartens for poorer families and so on.

South Korea has a five-year plan to encourage breeding, and a fertility rate target of 1.7 for 2030.

Maternity pay has been changed from a fixed and low rate to 40 per cent of salary. Employers are now forced to allow mothers to work flexible hours, and the state will pay the school fees of second children.

Even in laissez-faire Hong Kong, in 2005, the chief executive Donald Tsang, declared that families should have three children. The fertility rate, 0.97 in 2005,

has barely budged since.

It is not just Asian countries that find it hard to boost birth rates once they are in decline but the problem may be especially acute for them for two reasons: first, in these places, it is fairly obvious that their part of the planet is crowded; second, in all of them, for different reasons, immigration as an alternative to indigenous-population growth is controversial. It is an area of policy where governments cannot win.

AFRICA

The growing continent

By John Cleland

Population: 874.8m

65 years and over: 3.2%

Life expectancy at birth: 54.2 years

Population in 2050: 2bn

Sub-Saharan Africa is the one remaining region where big families are the norm. Fertility is still high with five births per woman and rapid population growth is inevitable. Africa's population will more than double from 900 million today to 1.96 billion by mid-century, according to UN projections, and increase to 3.36 billion by the end of the century.

If forecasts are correct, Africa's share of world population will have grown from 7 per cent in 1950 to 21 per cent in 2050, and to 33 per cent by the year 3000. In contrast, Europe's share will fall from 22 per cent in 1950 to 8 per cent by 2050.

How seriously should we take these figures? The UN has been making projections since 1950 and its accuracy over several decades has been impressive. Barring a horrendous mortality crisis, far worse than the HIV pandemic, its forecast for Africa over the next 40 years

should prove to be close to the mark. Beyond that is mere speculation resting on assumptions about the reproduction of people yet to be born. The focus here will thus be on the next four decades.

Population growth is not the only factor when assessing the implications of demographic change. Age and spatial distribution need to be taken into account. Africa's labour force will increase by 144 million per decade, from 466 million in 2010 to 1,132 million by 2050. But with fertility rates expected to fall to three births per woman by 2050, the ratio of workers to children will increase, which should boost living standards.

Unlike industrialized countries, population ageing will be modest; the proportion of people aged 65 years or more will rise from 3 per cent to 5 per cent. Urban population will double in the next 20 years.

This transformation is both an opportunity and a threat. Cities are often the engine of economic growth and innovation, but in Africa urbanization is taking place without major industrialization and more than half of city dwellers live in slums, a situation unlikely to improve in the face of such a rapid population increase.

Whether these trends prove to be an economic blessing or a curse depends critically on job creation. Currently, only about 10 per cent of adults receive a regular wage. The majority are small-scale farmers or exist on the margins of the urban economy close to the subsistence level.

Africa has a poor record for creating jobs when compared to Asian countries because of low levels of domestic savings and foreign investment. But rising commodity prices and improved governance have seen foreign investment increase from \$9 billion in 2000 to \$62 billion in 2008, although much of this has gone into extractive industries which do not create jobs on the required scale. Agricultural

development is key to converting Africa's growing population into an economic asset.

Food production has not kept pace with population increase as yields per hectare have failed to improve and although two thirds of people work on the land many countries are dependent on cereal imports. What is needed is an African version of the Green Revolution, with an emphasis on improved varieties of staple crops, better water management and agro-processing. Climate change may become a threat to progress. Tropical agriculture is especially vulnerable to temperature rises and greater variability in rainfall would cause additional problems because 75 per cent of Africa's agriculture is rain-fed.

For cities, labour-intensive light manufacturing offers the best prospect. Growing concentrations of young adults willing to work for low wages should act as a magnet for foreign investors. Matching skills to the job market will be necessary. Many African countries have made solid progress in primary and secondary school enrolments but technical and vocational training has been neglected.

Sweeping generalizations about such a varied region are unwarranted and economic trajectories will undoubtedly diverge. For some countries, a Malthusian future, where continued rapid population growth outstrips production, is probable.

The Sahelian countries of Chad, Mali, Mauritania and Niger are of special concern. Their population is projected to treble from 46 million to 132 million by 2050, overwhelming their fragile eco-systems. Mass migration is the most obvious escape but this rarely occurs without civil unrest in receiving countries.

For countries that are better endowed in terms of climate and natural resources, the future is potentially much brighter, if job creation can meet the expectations of school leavers. If not, Africa will face its version of an Arab Spring rather than an East Asian Miracle.

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