



Imbalanced population growth

By 2020, we will add another 750M people to the planet, most in places least able to accommodate them.

Over the next ten years, improvements in health, education and living standards will continue to drive population growth. Longer life expectancy will offset the trend towards having fewer children, which means that by 2020 there will be more of us and more of us will be older. Regional differences in growth rates will result in a larger proportion of people living in Asia. In addition, continued migration from rural areas means that a greater number of us will live in cities than ever before.

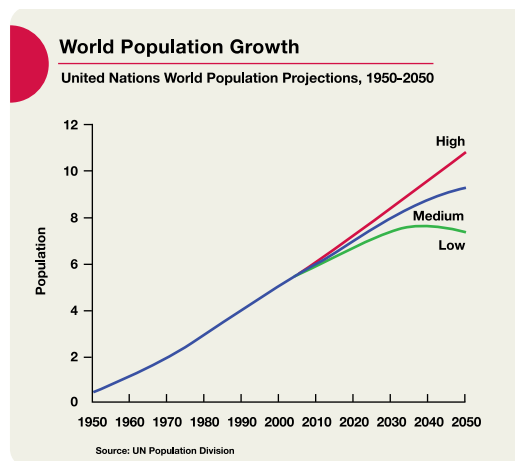
This suggests that, as long as there are no disasters on a huge scale – natural or man-made – over the next decade, demographic changes are much more certain than many other long-term predictions. The macro-trends are clear: the human population has grown massively over the past century or so. All things being equal, this growth trend looks set to continue.

It's easy to suggest that there are just too many of us around these days and that this has put unsustainable pressure on the resources available, but this is not strictly true. The questions that matter are not only around general growth but also around balance. Are people in the right places? Do we have the right skills? Can we reduce child mortality in emerging economies? Do we have enough people of working age to support economic growth? As the population ages, are there enough people to support the old? How can we close the gap between the 'haves' and 'have-nots'? These are all-important questions that

we need to address in order to understand the primary implications for the world in 2020.

To start with, let's take a closer look at the overall population numbers. We crossed the 1 billion mark in the mid-nineteenth century to reach 1.6 billion at the start of the twentieth century. We hit 2.3 billion at the end of the Second World War and from then on the global population has been increasing at around 75 million per annum. By 2008, we totalled 6.7 billion and now, in 2010, we are approaching 7 billion, with China accounting for over 1.3 billion and India for over 1.1 billion. This means that by 2020 there will be around 7.7 billion people living on Earth. Most likely we will be split between around 1.4 billion in each of China and India, 515 million in Europe and 335 million in the US. In the absence of major pandemics, global natural disasters or multi-regional wars, organisations such as the UN and OECD estimate that the world population will reach around 9 billion people in 2050 and peak at around 9.2 billion in 2075. Taken at this level, an extra 750 million of us in the next decade and an extra 2 billion in the next forty years inevitably means a more crowded world with ever more of us competing for the same resources.

On top of this, child mortality rates are declining and more of us are living longer. Today, our average life expectancy across the globe is 68 at birth. Of course this varies from region to region, with North Americans



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boasting 79 years as opposed to an average of 54 in Africa. But, wherever you are, expect to be here at least ten years longer than your parents. Looking forward, our children can expect to live on average to celebrate 97 years, and from 2030 onwards it will not be surprising if life expectancy reaches 106. What is clear is that if, as predicted, the proportion of the world population aged 65 years or older increases by a third and the average number of people who live for more than a century increases ninefold, the concept of 'old age' will have to be redefined. In many developed economies, 55 is already the new middle age and we can clearly see a future where what used to be the average age of retirement becomes the mid-point of the average adult life.

This has huge social and economic implications and is certainly bad news for those who, having worked for the traditional forty years, were looking forward to a long and happy retirement. Pension providers will have to re-evaluate their business model. In relatively recent times, people who retired at 65 did so, on average, only a few years short of their life expectancy. If the current threshold stays in place, our children can reasonably expect to live in 'retirement' for an additional 32 years. It's a pity that their pension funds are unlikely to be able to pay for this: most pensions have been designed to accommodate an upper quartile life expectancy where retirement age is 'death minus ten'. It looks like there is no alternative – we will all have to work longer than our parents.

On the other side of the coin, an overall increase in the working population could also result in increasing numbers of people finding themselves unable to find a job as the decade progresses, the global recession bites, and economies adapt to changing technologies, resource constraints and different methods of working. This has the potential to lead to a sense of frustration and exclusion amongst those who are unable to find work, which in turn will have significant political and social ramifications, particularly in the more vulnerable economies – probably in Europe and the West.

Overall, while the macro-trend around global population increase is clear, four factors shape the balance of the growth both in terms of scale and location. They each have influence and are shifting future projections. These four factors are:

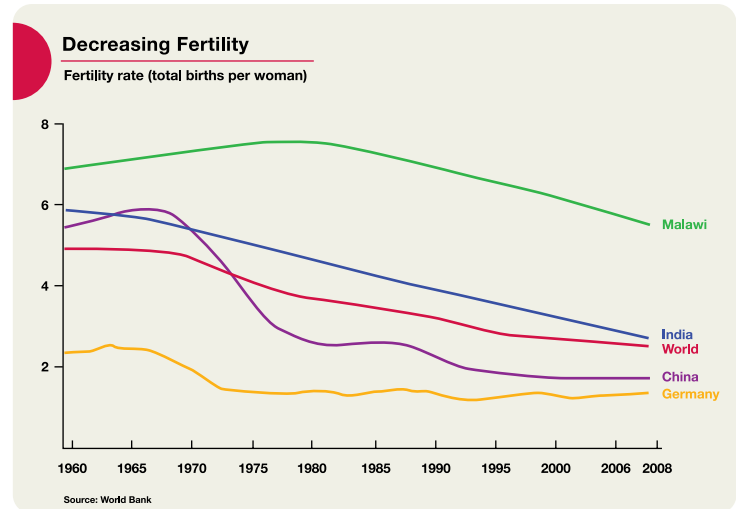
- changing fertility rates
- decreasing child mortality
- people living longer
- international and urban migration.

Fertility

We are currently experiencing an extraordinary fertility decline. The fertility rate represents the number of children an average woman is likely to have during her childbearing years (15–49). Taking typical averages into account, the natural replacement rate by which a population stays level is 2.1 children per woman. So, a rate of below 2.1 is the point at which population growth begins to slow or even fall. Globally we will reach that point by around 2020 for the first time. Small wonder, therefore, that fertility has become a primary focus for local political parties and national governments as well as transnational and global agencies.

It's worth remembering that a decline in fertility does not mean a decline in population, which can continue to rise while fertility goes down. For example, high fertility in an earlier generation can lead to an increased number of women of childbearing age all having fewer children but together increasing the overall number of children. This is why the UN and OECD see a peak population accruing around 30 years after we reach the natural replacement rate in 2020.

There are several reasons for the decline in overall fertility. There is, for example, clear evidence to suggest that as we get richer we want smaller families. This trend was first noticed in nineteenth-century industrialised Britain and is fairly well established. As poor countries now race to catch up and more of us are becoming richer, the global population looks set for a relatively speedy decline – so much so, in fact, that the transition in fertility rate from five children to two, which took place over 130 years in Britain (1800–1930), happened in just twenty years (1965–85) in South Korea. In



Bangladesh the fertility rate dropped from five to three in twenty years (1980–2000) and in Mauritius it took ten (1963–73). Some countries are experiencing an even more dramatic change. Take Iran, for example, where the national fertility rate dropped from 7.0 in 1984 to 1.9 in 2006 and in Tehran it has now dropped to a mere 1.5.

Such declines in fertility at one level have a lot to do with the movement of people from the countryside to the towns and cities: tilling the land is generally labour intensive and an extra pair of hands to help is welcome but it's a different matter altogether in the restricted space of the city where the cost of feeding and housing a larger family is often prohibitive. It's a simple matter of economics and living standards. Generally speaking, fertility starts to drop when the annual income per person is \$1,000–2,000 and falls until it reaches the replacement level at \$4,000–10,000. Poorer agricultural regions often have higher fertility rates so it's not surprising that although India's

average fertility rate in 2010 was 2.68, its poorest state, Bihar, had a fertility rate of 4.0 while it's richest, including Andhra Pradesh, Goa and Tamil Nadu, have rates of only 1.8.

Fertility is also falling because more women are better educated and are therefore more likely to go out to work and demand contraception and less likely to want large families. The impact of female education on fertility is perhaps most evident in Iran where in 1976 only 10% of rural women aged between 20 and 24 were literate. That share is now 91%. As more women become literate, so their economic roles and societal views change, and the desire for fewer children increases. In addition, the widespread availability and use of contraception has also played a fundamental role in changing fertility trends. Family planning has helped many people reduce the number of children they have – and research even suggests that fertility in some countries would be even lower if family planning services were more widely available. The impact of female education and use of contraception in controlling population growth highlights why both issues are so high on the agendas of the likes of the UN and several major NGOs as well as many national governments.

Over the next ten years we can expect to see further declines in fertility to a point where nearly

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all major economies are below the replacement level of 2.1 children per woman. German fertility dipped below replacement in 1970 and is still low. In the likes of France, Korea and Russia, a host of incentive programmes are already under way to encourage families to grow. This is driving some change – take France, for example, where the fertility rate is now 1.98 children per woman after having been as low as 1.7 in the mid-1990s. The US seems to have been most successful in encouraging its population to grow – it is the only rich country that, having fallen below the replacement rate, has risen back above it.

In general, it is in many developing countries where the more stable fertility rates will continue to be found over the next decade, and so where the rates of population growth will be highest. Some countries, particularly those with little or no infrastructure because of war or low living standards, will continue to have high fertility rates – think of Malawi, Uganda, Angola, Chad, Mali and Sierra Leone, which are currently running at over 6.0. Associated population growth rates for these countries range from 2.5% to 3.3%. This means that around 250 million people will be added to the African population over the next decade – over twice the rates in Asia and South America. Compare this with projections for Europe, which are largely flat, and North America, where the population growth is expected to be around 8% over the decade. To put it another way, one-third of the net global population growth between today and 2020 will take place in Africa.

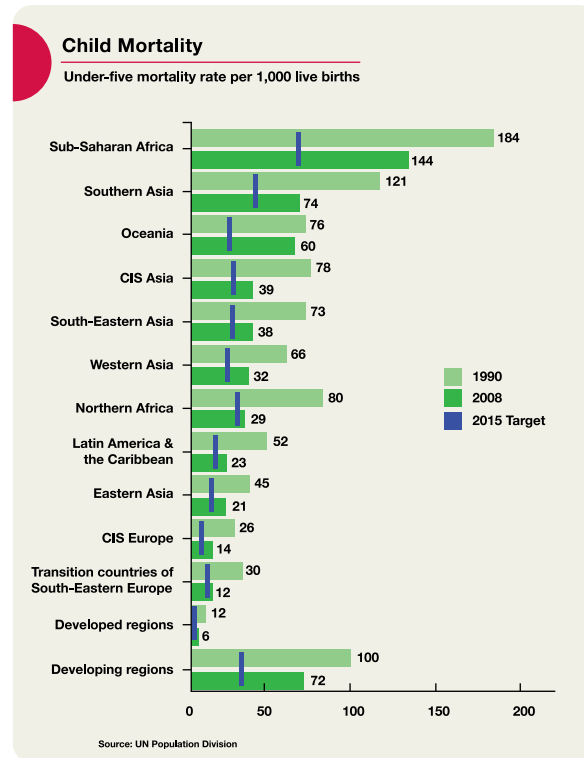
The main problem with all of this is that, because fertility rates decline as standards of living rise, it would seem clear that the majority of the world's population growth will occur in the nations least able to sustain it. Furthermore, as fertility falls it changes

the structure of the population by increasing the size of the workforce relative to the number of children and old people. More women can work and, because there are fewer dependants, they have more money to spend. That said, consider how quickly fertility rates in some high-population developing economies such as India and Indonesia are falling and how low they are going. This could lead to change that will shift the world's long-term population growth in a more sustainable direction.

Infant mortality

The flip side of the influence of fertility on population growth is that of infant mortality – which is essentially measured by the number of infant deaths per 1,000 births. With advances in public health and wider availability of medical support, some of the primary causes of infant mortality have been significantly controlled over recent years. During the past half century, average infant mortality has been cut from 116 to 47 and, based on the UN constant fertility scenario, is expected to fall to around 40 by 2020 and 30 by 2050. However, the story varies significantly from region to region.

In Western Europe, infant mortality is already down to four deaths per 1,000, but in Latin America and China it is currently at 22, and in many parts of Central Africa it is not expected to drop much below 100 over the next decade. Essentially this means that a child born in a developing country is over thirteen times more likely to die within the first five years of life than a child born in an industrialised country. Although reducing child mortality by two-thirds from 1990 to 2015 is one of the UN's Millennium Development Goals, it looks highly unlikely that it will be achieved.



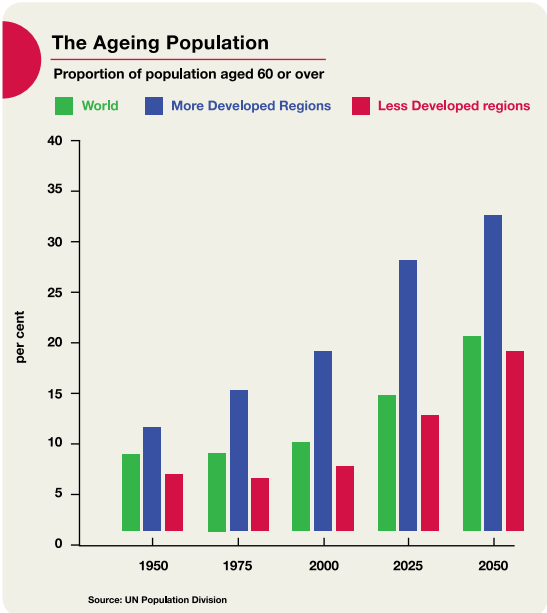
On a positive note, there is rising investment from global agencies and philanthropic ventures, like the Gates Foundation, which are working hard to reduce the incidence of the leading causes of childhood deaths, such as measles, malaria and diarrhoea, which are the scourge of the young and vulnerable. However, success is patchy: mortality rates are higher for children from rural and poor families and whose mothers lack a basic education.

By 2020, the overall impact of reducing infant mortality on the global population may not, in isolation, be significant but, combined with the possibility of decreasing fertility rates in the regions

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of continued high child mortality, such as found in Central Africa, some have argued that we could see a reduction in the rate of local population growth combined with a decrease in child mortality that will help improve the quality of life of millions.

Taken together, declining fertility and infant mortality rates have great potential to slow, if not immediately halt, population growth in some important regions. While getting the world as a whole to below the natural replenishment rate looks probable in the next decade or so, the big challenge is really in the areas where this is taking place slowly if at all. For all the obvious reasons relating to sustainability, food availability and economic growth, Africa is always high on the agenda of many organisations when the topic of imbalanced population growth is discussed, but other countries with high fertility rates, such as Pakistan, should not be ignored.



People living longer

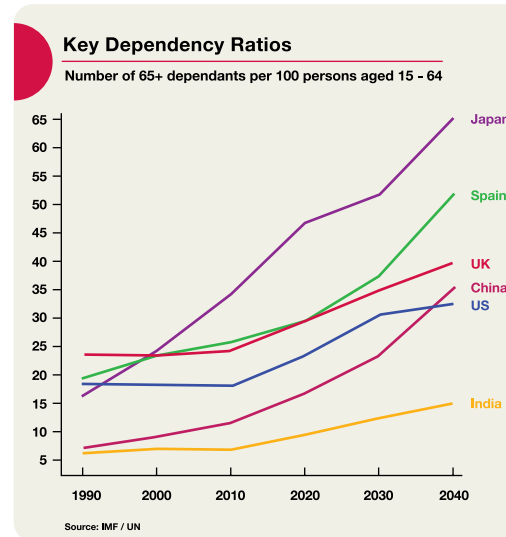
Of course, reductions in fertility and increases in the life expectancy of children are not going to solve the problem of there being too many people on the planet. It really is a question of balance. Extremes at the other end of the spectrum are already significant cause for concern.

In most major economies of the world, the population is getting older. The percentage of the population over 65 has been rising steadily in all OECD countries and today 7.7% of the world's population is over 65. By 2020, this figure will be 9.4%. At the moment, the developed world is at the forefront of this demographic revolution; by 2050, UN statistics suggest that pensioners in the 'rich

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world' will comprise one-third of the population and one-tenth will be over 80. But emerging economies are not far behind (take Mexico, for example: in 1980 the average Mexican was 17 years old; today, he is 28). Many governments now have to contemplate the prospect of slowing growth and low productivity, rising public spending – particularly on healthcare – and labour shortages.

From an economic perspective, this mass ageing is already producing significant pressure and, going forward, many see it as a time bomb for healthcare, pensions, taxation and wider social dynamics. The key measure for this is the dependency ratio – the portion of population which is inactive in relation to the total labour force. This is equal to the number of citizens aged below 15 or above 64 divided by the number of individuals aged 15 to 64, and so is expressed as a percentage. The higher the figure, the greater the economic burden on the state and hence the labour force. By 2020, the dependency ratio is expected to be above 50% in Finland, Italy and Japan. So, for every elderly inactive person there will be less than two people in the labour force – they are the people paying the taxes to support the elderly. By 2050, most of the world will have reached this point and, in the likes of Spain, Italy, Japan and Korea, where the dependency ratios will have passed the 90% mark, there will be nearly one pensioner for every worker. Whereas some economies, such as the Nordics, are used to high taxation in order to provide



high levels of social support, in most countries where low taxation has been a key political foundation in the past there will need to be significant changes in opinion in order to cope with higher dependency. Today's smaller families will find it harder to care for elderly relatives and public healthcare and pensions will have to adapt. This is bad news when many global economies are still having to cope with financial crises and existing debt.

Living longer is, of course, a cause for much celebration rather than despair; particularly as we are also living better. The active elderly are out and about and doing many of the things that governments would otherwise have to take care of: for instance, voluntary work and family duties such as looking after grandchildren. Such unpaid work is difficult to measure but it certainly makes a positive difference to government finances. In addition, people are staying healthier for longer so the 'compression of morbidity', the period of ill health

that precedes death, has got shorter – mainly because we are living more healthily and have access to better healthcare services. However, there is no getting away from the fact that, at some time or other, the elderly do need more looking after than young people, mainly because they tend to suffer from long-term, chronic conditions that are, unfortunately, expensive to treat (eg, diabetes, high blood pressure and heart conditions).

Most pensions currently operate on a pay-as-you-go principle, whereby today's workers pay for today's pensioners. They are based on the understanding that tomorrow's workers will do the same for them when their time comes. However, given the increasing number of pensioners dependent on a decreasing number of workers, the pension pot in many economies is beginning to look rather empty and the possibility of filling it challenging. Unpopular decisions will have to be made regarding the system – including raising the age of retirement and increasing the amount we contribute.

Many agree that getting people to work for a few more years would solve a lot of the problems associated with ageing populations. Given the impacts of the recent global financial crisis, many governments are already planning increases in the retirement age; an average of 70 by 2020 is considered highly likely by many in the EU. By carrying on working either full or part time, people will not only save government expenditure by not drawing a pension but they will also feed the public purse by continuing to pay taxes and social security contributions; so, from a government perspective, those extra years are doubly valuable. Those who today are in their early sixties and getting ready to become pensioners may, of course, not see things the same way.

Most of this international migration, however, is occurring within regions, albeit from one country to another.

Add an increasingly ageing (and arguably economically non-productive) population on top of the decreasing number of young people in many countries and it is easy to see why concern about the dependency ratio is such a major concern for many government agendas. Even without overall growth in numbers, the fundamental age imbalance of the population within countries such as Japan, Germany and Italy is already provoking political actions. Looking ahead to 2020, as this imbalance increases, the desire for companies to remain economically competitive is driving further changes in attitudes and priorities for population growth.

International migration

The impact of migrant workers on the labour force is beginning to be apparent to all. Despite the current global recession, many countries, especially those in Europe, are heading for a period of labour shortages. As far back as 2007, a study by the Institute for the German Economy in Cologne identified a shortage of about 70,000 engineers, which was 50% up on the previous year. The obvious place to look to fill such gaps is among well-qualified older people, and indeed the Institute found that companies had stepped up their recruitment of engineers over 50.

However, in the absence of sufficient local workers, immigrants have been filling the gaps in numerous countries. Immigration in the developed world is the highest it has ever been, and is making a useful difference. In many areas of still-fertile America, it currently accounts for about 40% of total population growth.

On the face of it, immigration seems like a good idea that benefits everyone. Many developing countries have lots of young people in need of jobs; many rich countries need workers to boost tax revenues and maintain economic growth. But, over the next few decades, labour forces in developed countries are set to shrink so much that inflows of immigrants would have to increase enormously to compensate – to at least twice their current size in Western Europe's most youthful countries, and three times in the older ones. This has cultural and political implications, with public opinion polls clearly showing that people in most rich countries already think that immigration is too high.

The migration issue does cause a lot of agitation but the truth is not as alarming as some would suggest.

Today, there are over 213 million international migrants, which is equivalent to 3.1% of the world population. Of these, 15 million are classified by the UN as refugees, so just under 200 million can be seen as economic migrants. Each year, 2.7 million people are moving from the developing to the developed world: 1.3 million into European countries and 1.2 million into North American countries. Most of this international migration, however, is occurring within regions, albeit from one country to another. Within Europe, the free flow of economic migrants from East to West and back again has been a visible social and political issue for the past decade. In 2010, in Asia, net annual migration out of China was around 346,000, from India 200,000 and from the Philippines around 160,000.

Although a real and tangible challenge for many border authorities in the West and an emotional and political issue for many receiving countries – especially the US – taken as a whole, when compared with natural rising populations, international migration is not a major driver of population growth.

By 2015, 32 people an hour will be moving into Shanghai, 39 into Kinshasa and Jakarta, 42 into Mumbai and Karachi, 50 into Dhaka and 58 into Lagos.

Largest Cities in 2020

Rank	City/Urban area	Country	Population in 2020 (m)
1	Tokyo	Japan	37.28
2	Mumbai	India	25.97
3	Delhi	India	25.83
4	Dhaka	Bangladesh	22.04
5	Mexico City	Mexico	21.81
6	São Paulo	Brazil	21.57
7	Lagos	Nigeria	21.51
8	Jakarta	Indonesia	20.77
9	New York	USA	20.43
10	Karachi	Pakistan	18.94
11	Calcutta	India	18.54
12	Buenos Aires	Argentina	15.48
13	Cairo	Egypt	14.02
14	Metro Manila	Philippines	13.4
15	Los Angeles	USA	13.25
16	Rio de Janeiro	Brazil	13.23
17	Istanbul	Turkey	12.76
18	Shanghai	China	12.63
19	Moscow	Russia	11.73
20	Osaka, Kobe	Japan	11.53

Source: www.citymayors.com

Lagos. Compare that with 12 into New York, 6 into London and zero into Berlin and it is clear that again the places of major change are to be found in Africa and Asia. By 2020, there will be 27 cities with populations over 10 million – the so-called mega-cities. But there will also be 73 cities with more than 5 million people.

The primary driver of this increasingly urban world is evidently economic migration and this is a global phenomenon. Whether internal migration within India, China and Nigeria or intra-regional migration in Europe, people generally move in search of a better life. As long as they believe that this can be found in cities, they will seek to relocate. In many areas, such as Cairo, Mumbai and New York, this will continue to involve the relocation of the whole family but in others it will be just the workers. So, as has happened in the past decade in places like Nairobi and Mexico City, a good proportion of migrants will be only those seeking work and the family will, initially at least, be left behind.

Urban migration

What is globally more significant than cross-border migration is the continued shift from rural to urban environments: 2006 was notably the year when, on average, more of us lived in cities than in rural areas. Over the past decade, the shift of people into China's cities has been cited as the largest peacetime movement of population in history. By 2050, 75% of us will be living in cities.

The speed of urban change can be clearly measured by the number of people added to cities every hour. By 2015, 32 people an hour will be moving into Shanghai, 39 into Kinshasa and Jakarta, 42 into Mumbai and Karachi, 50 into Dhaka and 58 into

The imbalance

We can clearly see a world in 2020 where not only are there another 750 million people on the planet but also, more significantly, they have mostly been added into cities and developing economies. Globally, population growth is a definite certainty for the next ten years and probably for the next forty. Although the rate of growth is gradually decreasing as lower fertility rates have an impact, the extra 250 million Africans added over the decade will most likely be an economic burden in the short term. Such a geographic imbalance of population growth is clearly a strain on the impacted regions but it also affects us all.

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Given declining fertility rates globally and the increasing life expectancy of the growing older proportion of the population, the major imbalance that we will all experience is that of the demographic shift towards an ageing population and increasing dependency ratios. Without significant increases in

the number of children being born – which would only add to the growing population problem anyhow – most countries will find this economic imbalance between the retired and the workers a massive problem.

In addition, while net economic migration from Africa, Asia and Central America into Europe and North America will in some way help to adjust the country-to-country population growth differences, most international migration will be added to the cities, and so merely compound the problem created by internal urban migration.