SENECA INVESTMENT MANAGERS | **Multi-Asset Value Investing**

Thematic report – demographics

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Introduction

I am delighted to welcome you to the first of a series of Seneca IM research papers that will focus on some of the most important long-term structural trends. At Seneca, we think that the best way to make money for clients is to combine an understanding of the structural forces shaping our future with strong value-oriented analysis of companies and markets. We call this Multi-Asset Value Investing.

For our first report we focus on one of the world's key megatrends - demographics. Our investment themes specialist Tom Delic writes about a topic that is central to so much that influences our lives, either as individuals or as members of a global community. The report aims to present the key demographic trends within both the developed and developing worlds, and highlights some investments that we think will be beneficiaries of these trends in the near term and beyond.

David Thomas, Chief Executive

Executive summary

It seems obvious to suggest that without human population no other investment trends would exist but the statement highlights the importance demography has and will have on the world from an economic, political and social standpoint.

This report explores the subject of demographics in a broad sense. Understanding and appreciating the dynamics involved in the study of human population will allow us to contemplate what the future holds and how this will translate into investment opportunities here at Seneca.

We start with a description of why populations grow and introduce some of the key factors in demography to explain this. The report then focuses on two areas.

First we examine population statistics in the more developed areas of the world where population growth is slowing and discuss the opportunity for investors here. Key amongst these is the 'Silver Economy' and demand for products and services in healthcare, wealth management and lifestyle.

We do the same for the emerging regions who are still in a period of rapid populace expansion. A benefit of this period of growth can be termed as a demographic dividend. The opportunity here is a vast one, with a large emerging population becoming wealthier and aspirational. In addition, the progression from emerging to developed will require huge infrastructure investment.

A final note is made on migration. To maintain economic power and slow the effect of an ageing, shrinking population with rising dependency ratios, governments in developed nations will need to either promote immigration of skilled workers to their countries, or make policy changes that encourage fertility rates to increase. It could be a combination of both.

We hope the report will highlight the implication that population growth and demographics will have on the world around us and what this means for investors. The findings lead us into a large range of potential opportunities, which we will discuss in future reports. It is our job at Seneca to determine which of these offer the greatest risk/return profiles from a capital allocation perspective.

Tom Delic

Contents

"...we think that the best way to make money for our clients is to combine an understanding of the structural forces shaping our future with strong value-oriented analysis of companies and markets"

Demographic transition and population growth

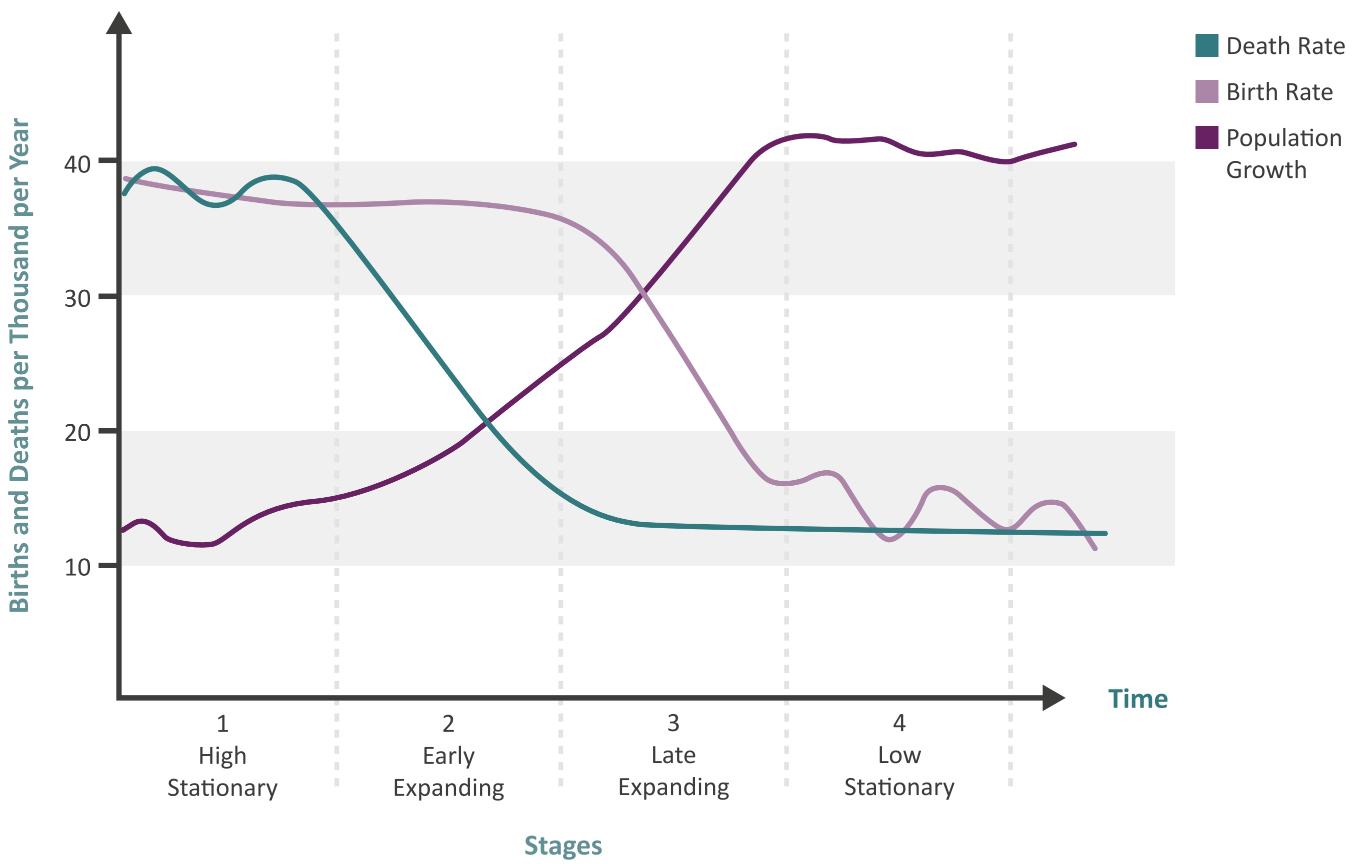
To explore population growth and its future trend, we can consider the Demographic Transition Model (DTM), a useful framework which describes the evolution of a country's population over time and the reasons behind this change. A country's population growth rate is principally based on two factors, the birth rate and death rate of its population. Let's start at the first stage of the DTM (see Figure 1), where birth and death rates are both high and roughly equal due to high infant mortality rates that in turn lead to high fertility rates. With poor health care and sanitation, few children survived and this posed a problem for agrarian societies, which required large families to work on land, hence high birth rates were needed to compensate for high infant mortality.

During the past 200 years, huge advances have been made and no country is considered to be in Stage 1[3]. Today, the world's nations reside in the three more advanced stages of population growth as shown in Figure 1. Our understanding of the transition across these stages will provides us with the basis to evaluate the demographics of today and what could lie ahead.

As countries move from an agricultural based society to an industrialised one, access to paediatric care, improvements in sanitation and food production technological advances cause a dramatic fall in death rates, particularly in infants where child survival rates increase markedly. Birth rates however stay elevated as expectations of infant mortality remain high and male dominated societies view large families as a sign of status and virility. Present examples of Stage 2 include Sub-Saharan Africa and parts of the Middle East.

As development continues, education and women's status in society improves. The opportunity for women to have a career outside of the family home, results in a delay to family planning

Figure 1 – Demographic Transition Model (DTM)[1]



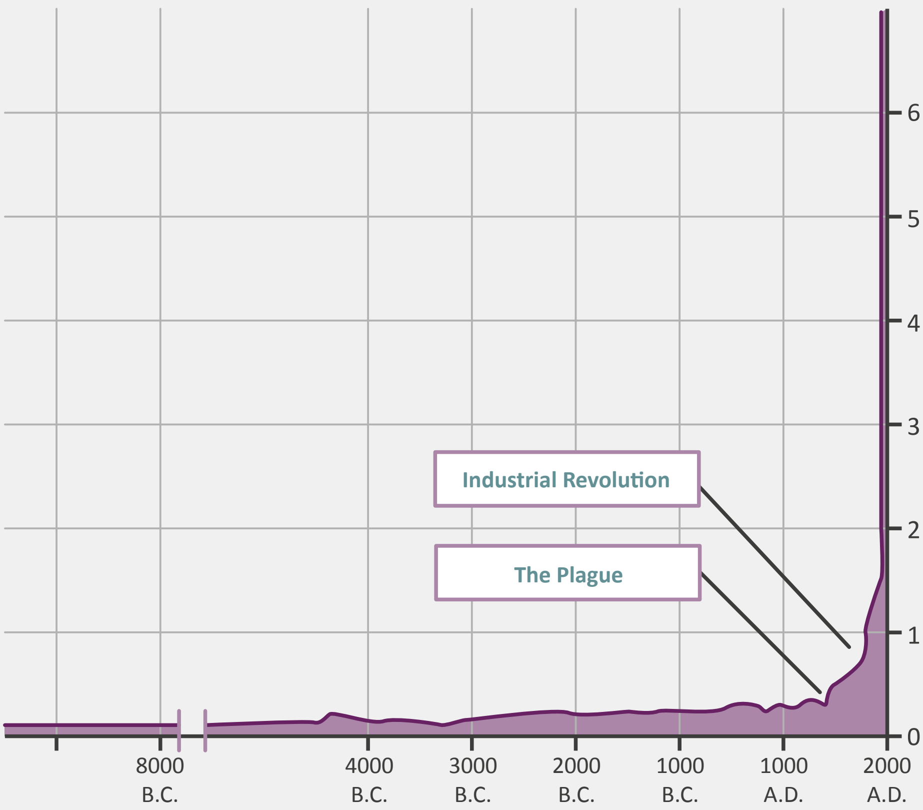
and shortens the window of time in which women can give birth. Education and use of contraception is also a large contributing factor and the overall outcome is a fall in fertility, causing population growth to slow its pace and countries transition into Stage 3.

"As development continues, education and women's status in society improves"

During Stage 3, birth rates continue to fall as countries continue to see economic developments, educational improvements and expanded job opportunities for women. Countries now enter into Stage 4 where birth rates roughly equal death rates causing population growth to rise slowly or remain stationary.

In modern times, an extension has been made to the DTM with the introduction of Stage 5. Country populations will rise if the birth rate remains above replacement level (considered to be 2.1 children per woman[77]). However as life in advanced economies makes the cost of having children higher and desirable career opportunities cause further delays to family planning, birth rates may fall below death rates resulting in a shrink in total population.

Figure 2 – History of World Population[2]



World population projections

Global population is very much dependent on fertility rates and one's projection of them into the future can cause wide variations in predictions of total and regional population figures. The United Nations' 2012 World Population Prospects Study provides the chart displayed in Figure 3, showing the projection of world population to the year 2100 under various fertility rate scenarios.

If the global birth rate is 0.5 children per woman higher or lower than the medium projection, the high and low scenarios in Figure 3 show a difference of around 2.6 billion people by the year 2050[6]. This highlights the significance of fertility rates around the world. If developing nations currently in the earlier stages of the DTM follow the same transitional path as developed nations in the later stages, global fertility rates are likely to decline but we will still see world population increase to 9.6 billion by 2050[7].

With the exception of events on a global scale such as nuclear war or a pandemic of infectious disease, substantial world population growth looks inevitable. Over the next several decades, the demographic transition of both developed and developing countries will have widespread implications on the structure of population. It is these topics we shall explore next.

Figure 3 – UN Projected Population Growth[4]

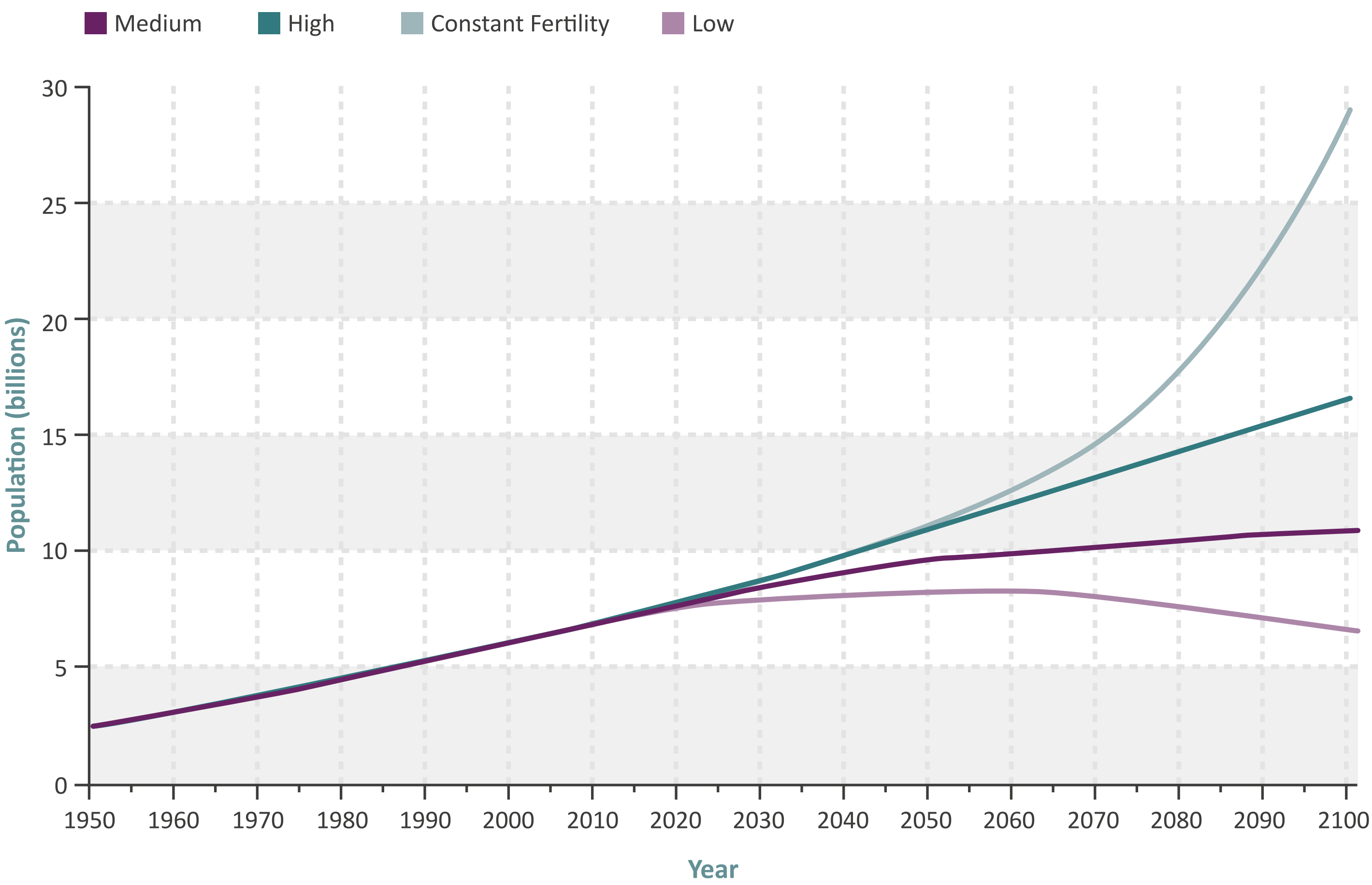


Figure 4 – Most Populous Countries 2014-2050[8]

2014

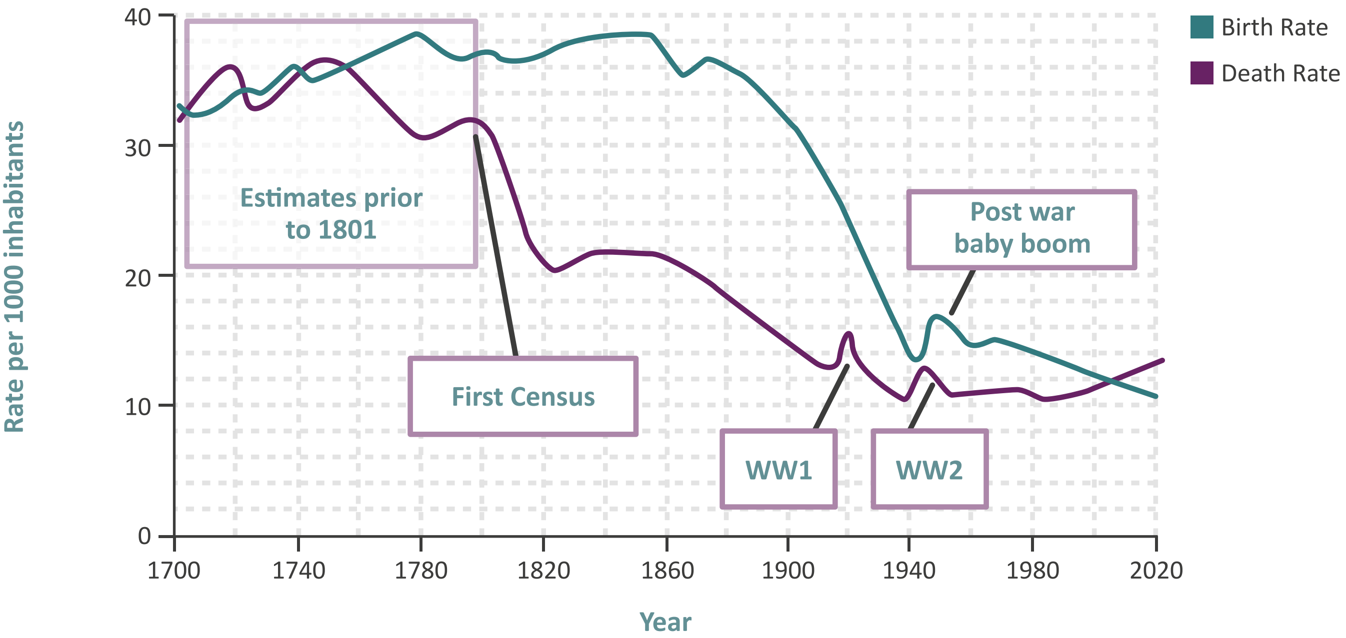
Country	Population (Millions)
China	1,364
India	1,296
United States	318
Indonesia	251
Brazil	203
Pakistan	194
Nigeria	177
Bangladesh	158
Russia	144
Japan	127

2050

Country	Population (Millions)
India	1,657
China	1,312
Nigeria	396
United States	395
Indonesia	365
Pakistan	348
Brazil	226
Bangladesh	202
Congo, Dem. Rep.	194
Ethiopia	165

Demographics in Action – UK Transition[5]

The below shows a real world example of the DTM in form of Great Britain. After a large increase in population growth, birth and death rates have become more equal with the expectation that the country will transition to Stage 5. However, the UK population is forecast to continue growing due to migration, highlighting a limitation of the DTM.



Silver economy

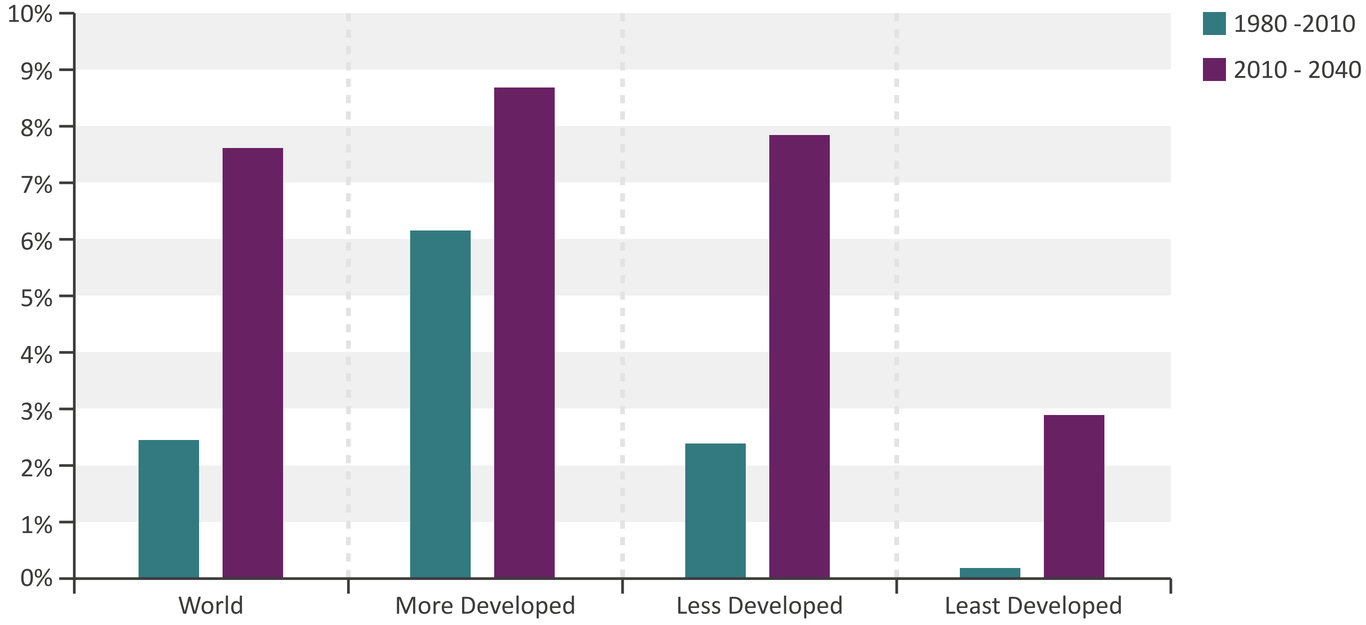
1

Populations in the developed and advanced emerging world

The proportion of the world's population that is aged 60 years or over is set to accelerate, driven mainly by a large surge in the level of elderly people living in less developed regions (see Figure 5). As the DTM describes, this is explained by fertility rates dropping in developing nations and increases in life expectancy continuing to improve for the whole of the world. As developing countries progress, the fertility rate has declined from 6.1 children per woman in 1950-55 to 2.7 children per woman in 2005-10 and this is projected to fall further over the next few decades[10]. This is the key factor in the ageing of populations. In combination with the global birth rate falling, improvements in life expectancy causes a larger share of the world population to consist of older adults. The reversal of China's one child policy, which has already been relaxed in recent years, signalled the concern nations are showing over an increasingly ageing population.

"…the fertility rate has declined from 6.1 children per woman in 1950-55 to 2.7 children per woman in 2005-10"

Figure 5 –Absolute Increase of Population Aged Over 60 Years[9]



Developing nations are witnessing the transition to an elderly population at a much quicker rate than developed nations have. For example, it is predicted Colombia will take only 20 years to experience the same change in population ageing as Sweden, which took 85 years[14]. This faster rate of growth indicates that by 2050, around 80% of the world's older population will live in less developed regions of the world[15].

In aggregate, as of 2013, the number of people over 60 years old stood at 841 million which is quadruple the number that lived in 1950[16]. This is set to continue to increase further and by 2050 is likely to have tripled to reach over 2 billion elderly people worldwide[17]. The United Nations' latest projections predict that the number of older people will be larger than the number of children by 2047[18].

"…it is predicted Colombia will take only 20 years to experience the same change in population ageing as Sweden, which took 85 years"

Figure 6 – Global Distribution of Population by Age Group[13]

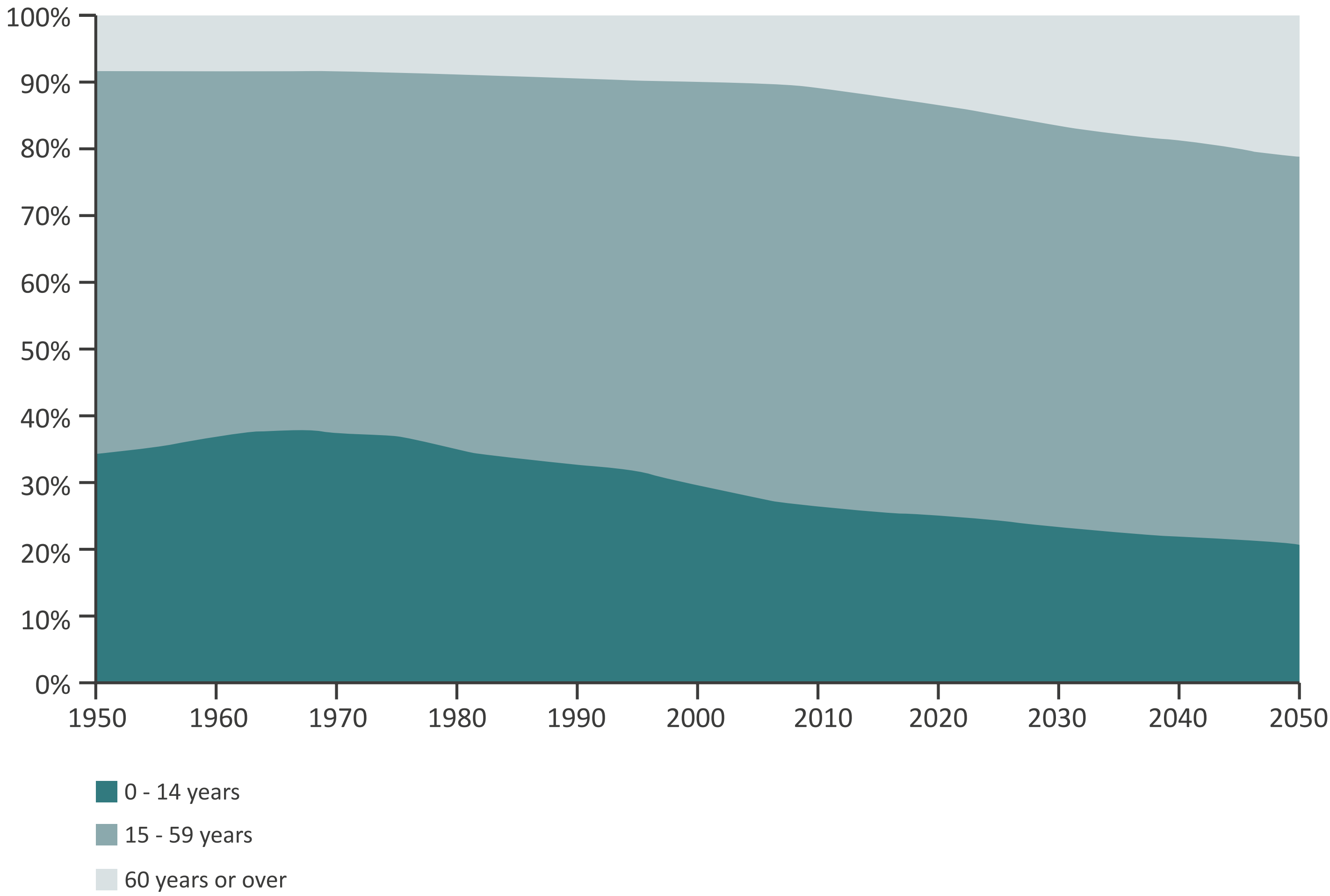


Figure 7 – Additional Years Life Expectancy[19] at age 60

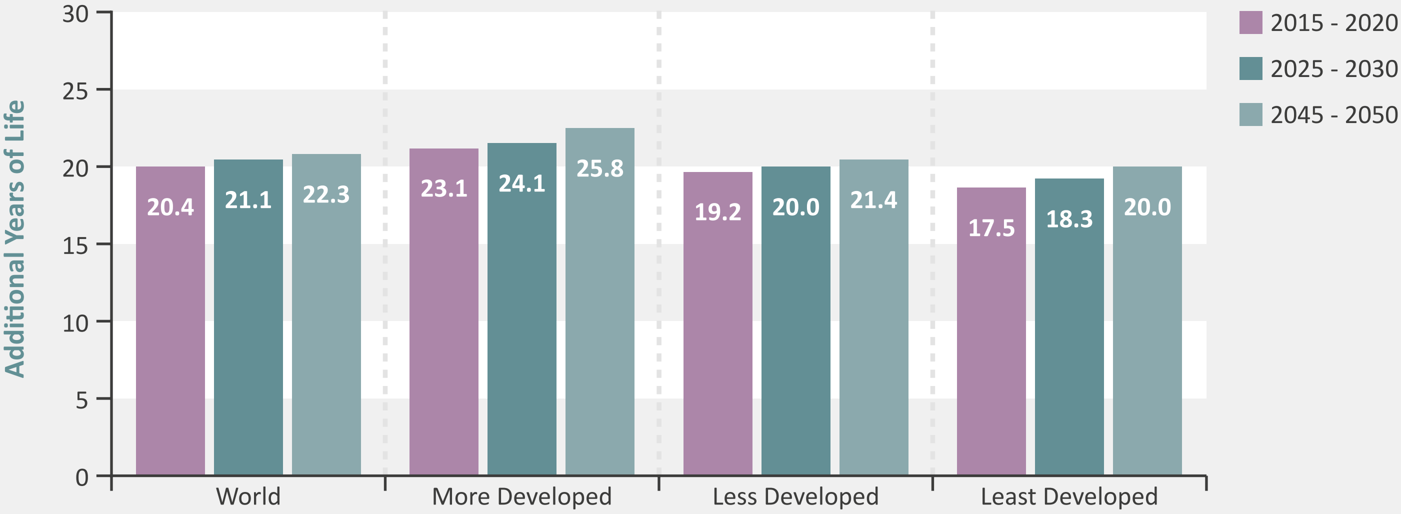
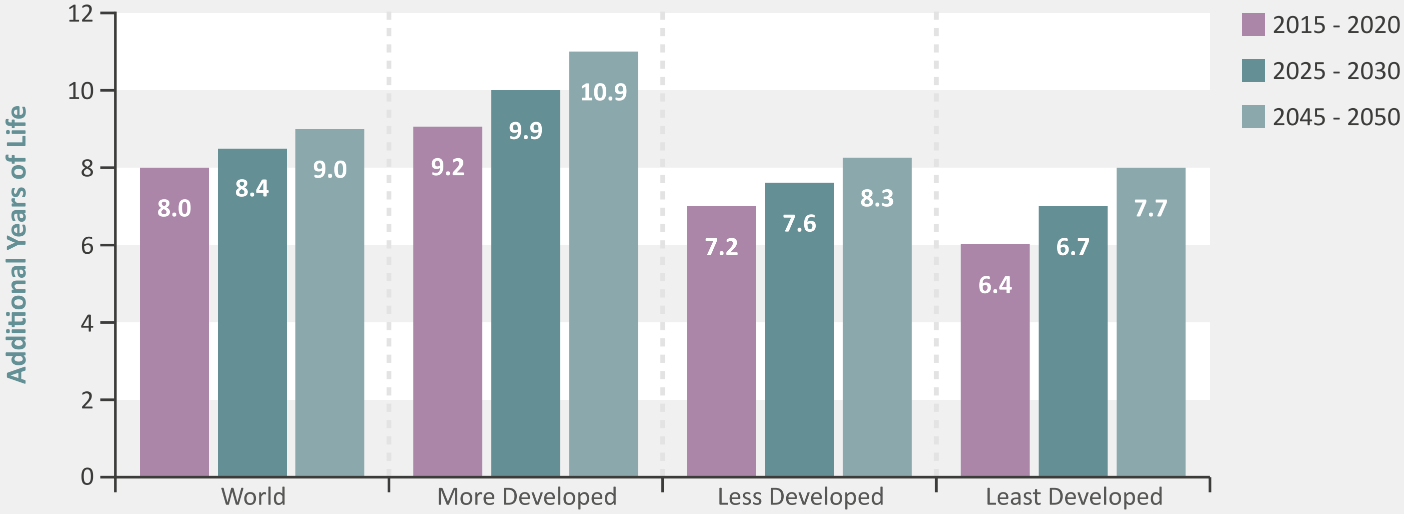
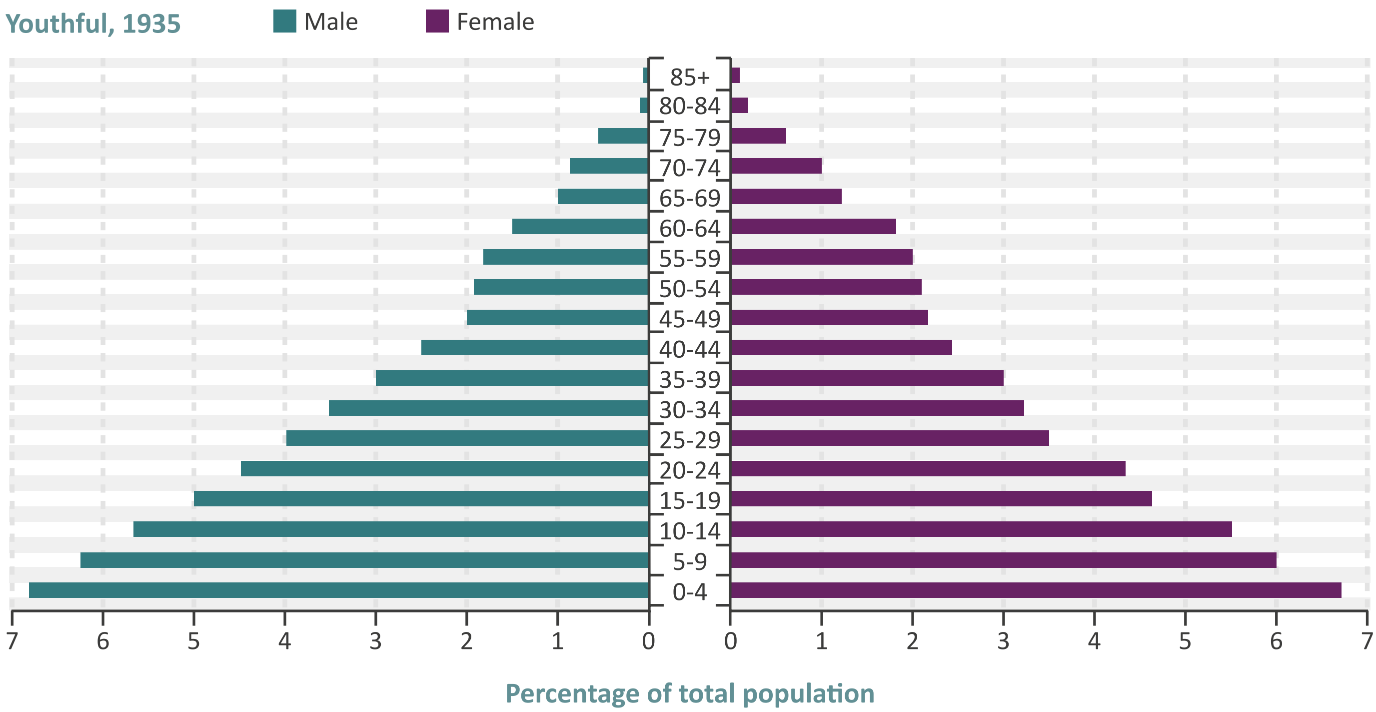


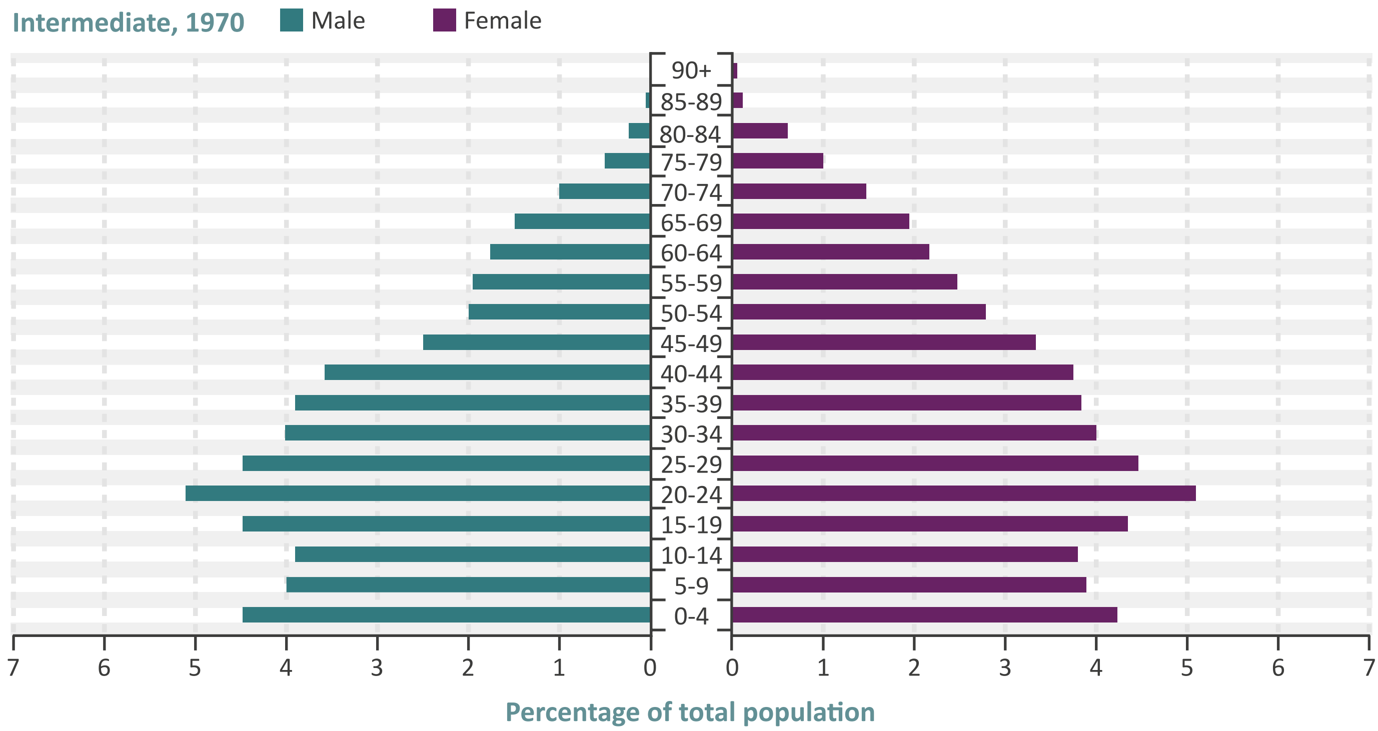
Figure 7 – Additional Years Life Expectancy[19] at age 80

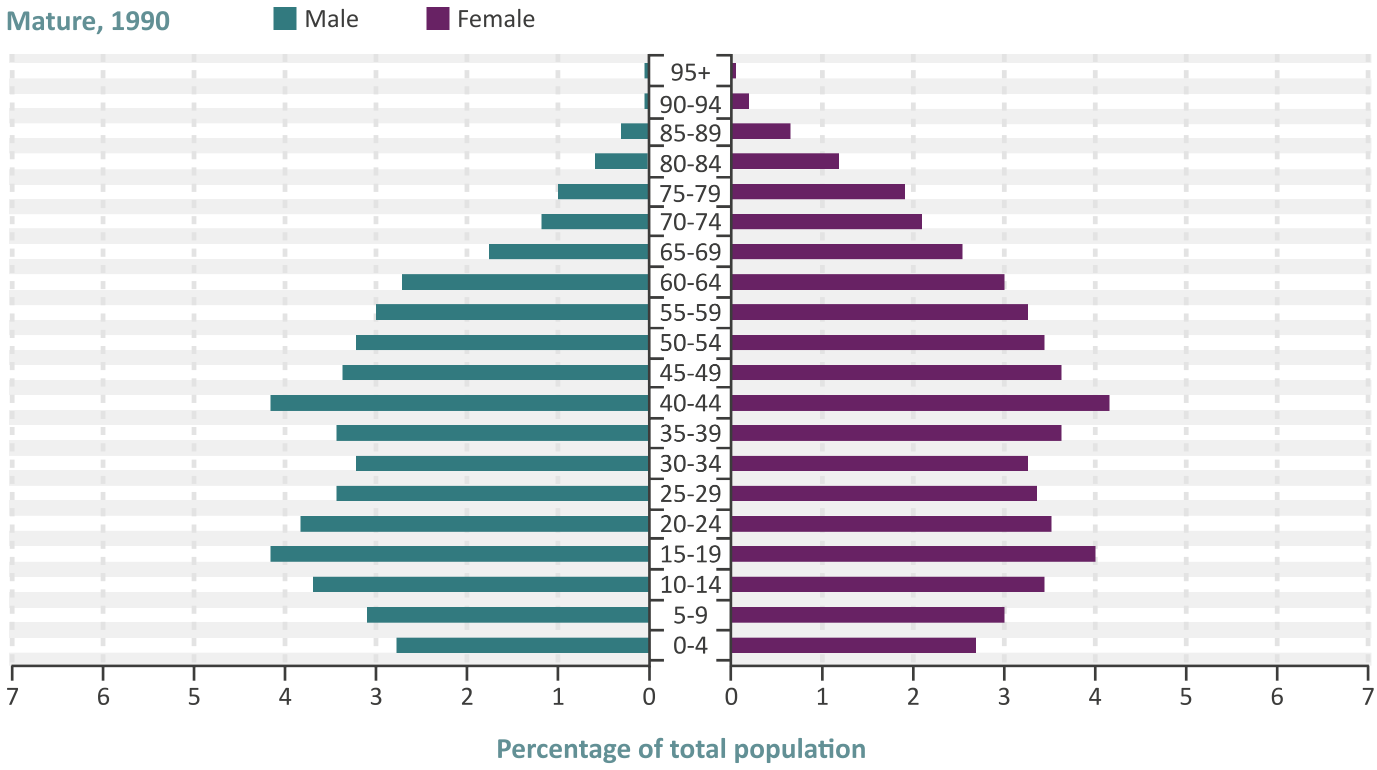


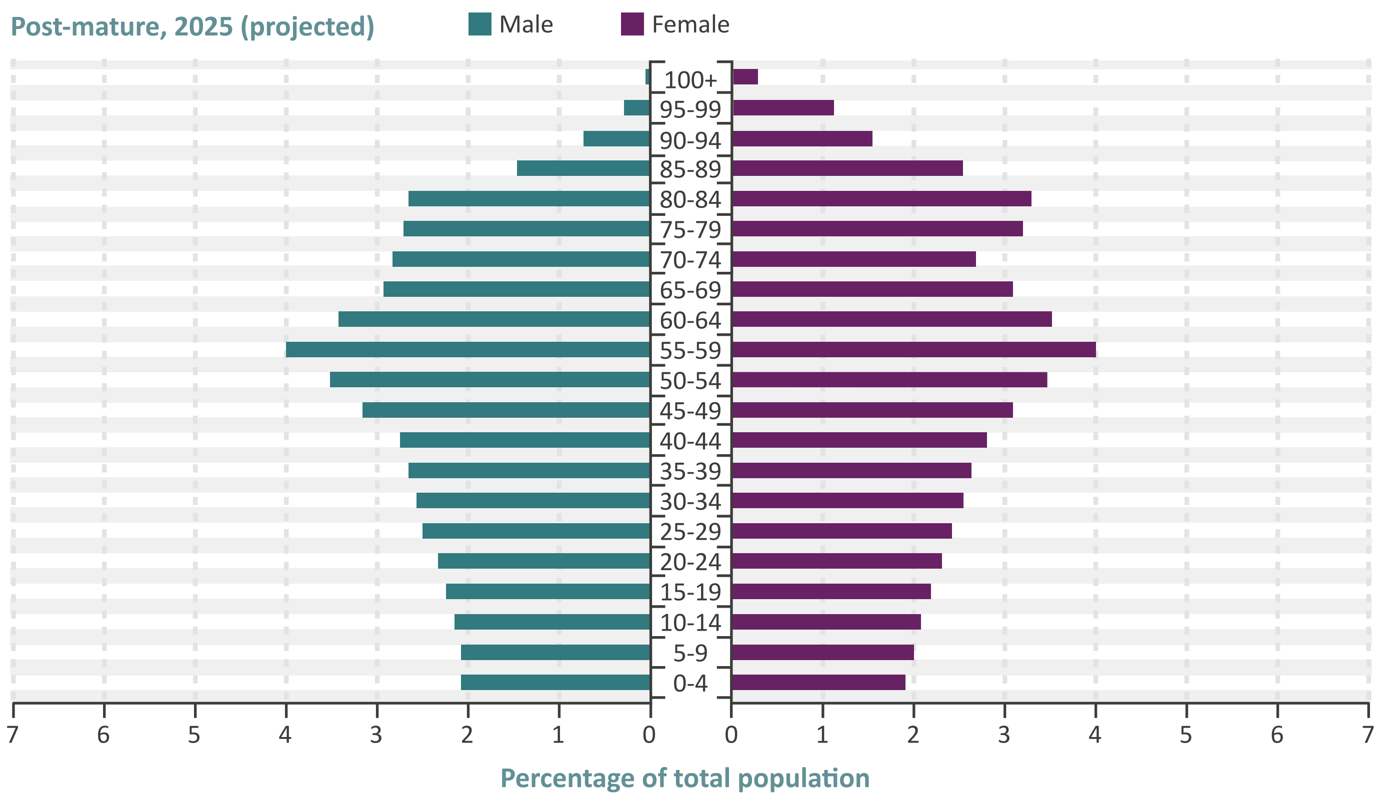
Demographics in Action – Japan Population Pyramids[11]

Japan is one of the most advanced nations in the world and this is illustrated by analysing its distribution in age ranges over the past century. The first pyramid shows the nation with a large infant and young adult population in 1935. As birth rates fell and the nation prospered economically, the country transitioned to one with a larger proportion of older adults. The 2025 projection forecasts how this trend is set to continue with the median age expected to reach 52 by 2030[12]. The global change in demographic structure is altering typical population pyramids to more barrel like structures.






Mature, 1990
Male
Female
95+
90-94
85-89
80-84
75-79
70-74
65-69
60-64
55-59
50-54
45-49
40-44
35-39
30-34
25-29
20-24
15-19
10-14
5-9
0-4
7 6 5 4 3 2 1 0
0 1 2 3 4 5 6 7
Percentage of total population


Post-mature, 2025 (projected)
Male
Female
100+
95-99
90-94
85-89
80-84
75-79
70-74
65-69
60-64
55-59
50-54
45-49
40-44
35-39
30-34
25-29
20-24
15-19
10-14
5-9
0-4
7 6 5 4 3 2 1 0
0 1 2 3 4 5 6 7
Percentage of total population

Investment opportunity – the silver economy

Healthcare

An ageing population presents a wide range of opportunities for industries looking to benefit from this demographic change. One of the more obvious areas is the medical industry. With developing nations becoming older and wealthier, causing a change in lifestyle and diet, the onset of non-chronic diseases such as diabetes and heart disease is likely to place a large economic burden on their economies. Developed nations are becoming more adept at tackling these lifestyle related health problems, however degenerative diseases such as dementia and arthritis are becoming more of an issue as life expectancy increases. Around 80% of older adults have one chronic condition and 50% have two or more[20].

"...80% of older adults have one chronic condition and 50% have two or more."

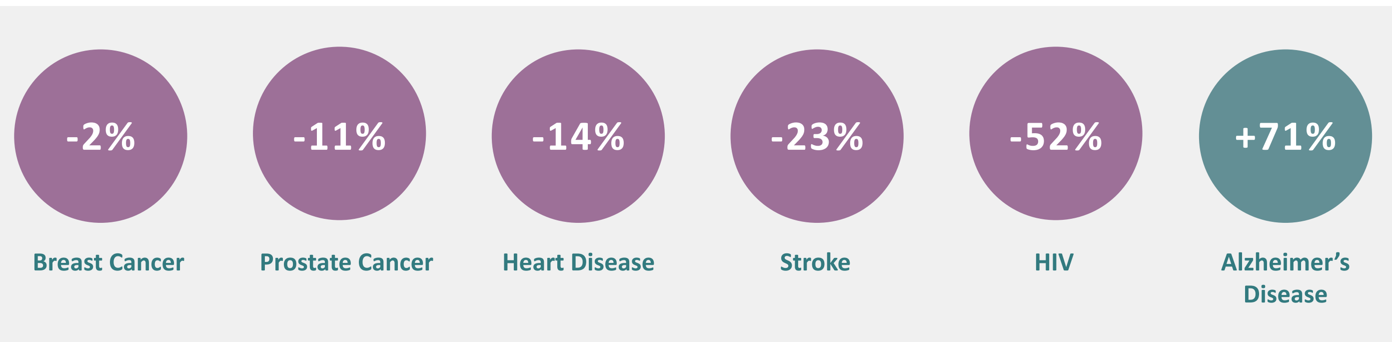
Cardiovascular disease is the number one cause of death globally, with the elderly experiencing the highest prevalence rate[21]. The causes of cardiovascular disease are numerous including immutable factors such as age and lifestyle factors like hypertension, smoking and obesity. The number of people to have cardiovascular disease is forecast to reach 23 million by 2030[22] which will probably lead to an increasing demand on pharmaceutical companies who develop the drugs used in controlling the causes associated with the condition. Treatment by medication is vital to controlling healthcare costs which are set to increase from $396bn in 2012 to $918bn by 2030 in the US alone[23].

Cancer is the second leading cause of death in people over 65 years old, accounting for 25% of all deaths in this age group[24]. The growth of an older global population is predicted to increase the annual number of new cases from 12 million in 2012 to 22 million in the next two decades[25]. For pharmaceutical companies, cancer treatment is the second largest market[26] with chemotherapy and hormone therapy drugs needed to treat conditions.

While developed nations are beginning to tackle deaths caused as a result of lifestyle habits (see Figure 8), less success has been made in Alzheimer's disease which is the most common cause of dementia in the world[29]. Studies suggest the disease may be the third highest cause of death in the US when taking into account under-diagnosis by doctors[30]. The disease is the most expensive condition in the US with costs expected to grow from $214bn as of 2014 to $1.2tn by 2050[31]. The search for an effective measure in preventing and treating the condition has not yet been found and it is considered to be the most lucrative of breakthroughs for the pharmaceutical industry.

"...currently 2.9 million joint replacement surgeries take place annually. "

Figure 8 - Change in number of US deaths between 2000 and 2010 - showing the percentage of cause of death[28]

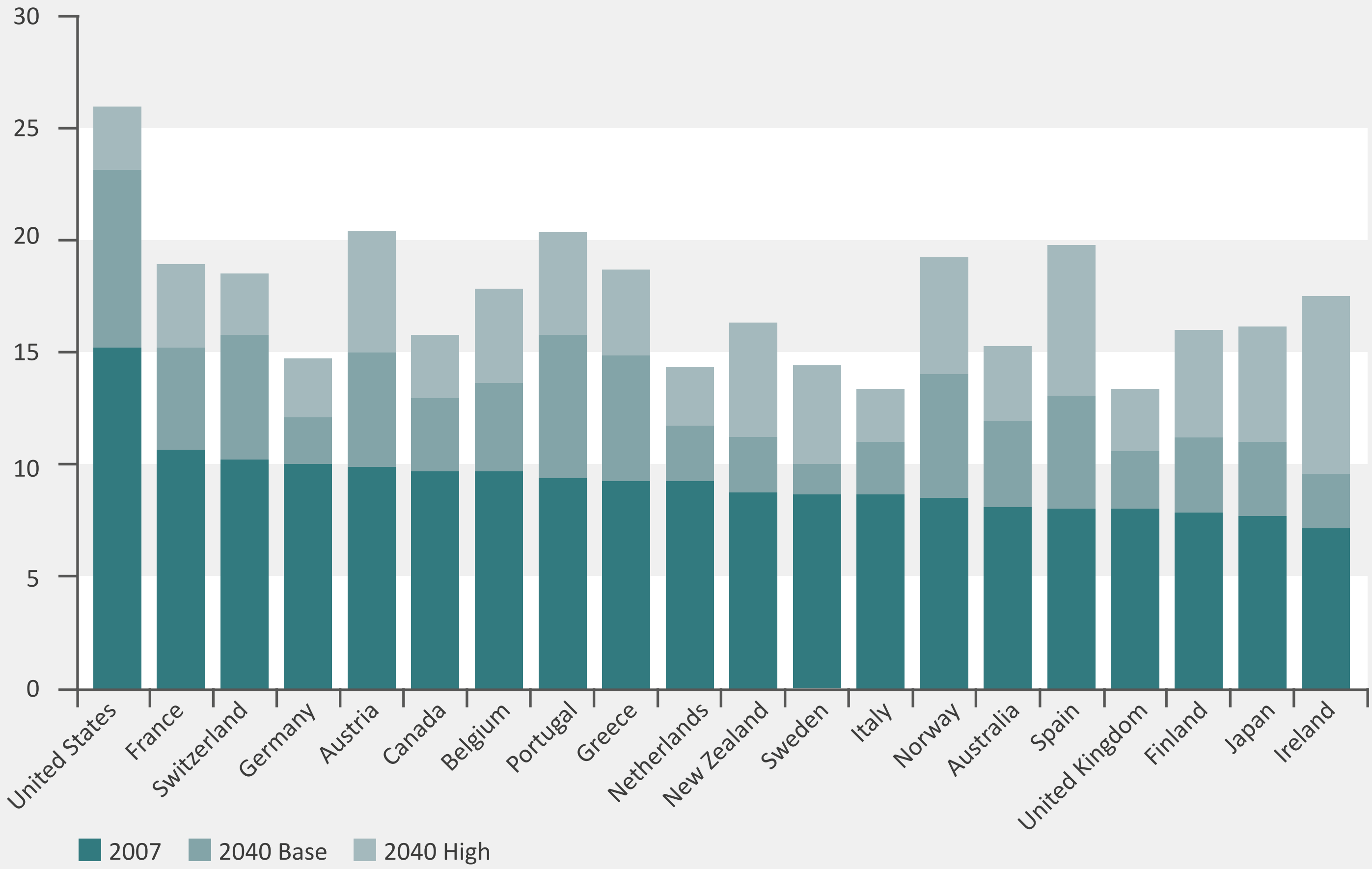


"...healthcare costs are set to increase from $396bn in 2012 to $918bn by 2030 in the US alone."

The diseases discussed are just some of the examples of how a larger population of older adults could increase the demand for products made by the medical industry. An unhealthy lifestyle can lead to other conditions such as type 2 diabetes which would increase the demand for treatments that control blood glucose levels.

There are also many conditions that are age-related such as osteoarthritis, a degenerative joint disease that 1 in 2 people will develop by the age of 85 years old[32]. The joint replacement market is a growing industry where currently 2.9 million joint replacement surgeries take place annually[33]. Other areas of growth include catering for an elderly population suffering from dental problems, hearing issues and vision deterioration. Markets for these remain underpenetrated, particularly in less developed regions that have not been able to afford to pay for treatments such as hearing aid implantation and dentist visits. This is set to change as older adults become wealthier and more health conscious.

Figure 9 - Projected Health Care Expenditure to GDP Ratio[27]



Wealth

Increased healthcare demands will cost individuals and governments money. The financial challenge facing governments as populations become older is unprecedented. A shrinking tax base due to a falling working-age population ratio creates a longevity risk for the entities holding liabilities on their balance sheet. A typical defined benefit pension fund is very sensitive to an underestimation of life expectancy. If people collectively live one more year than expected, defined pension liabilities would rise to a level that would cause underfunding to increase by 100%[34], a huge burden for corporations who would have to provide ever increasing contributions to their pension assets.

Companies have acted by shifting to defined contribution schemes, whereby the risk of longevity shifts to the individual who will need to ensure their life in retirement is financially secure. The insurance market will be vital in helping companies further de-risk their balance sheet. For example, insurance companies have already begun offering longevity risk instruments to corporations.

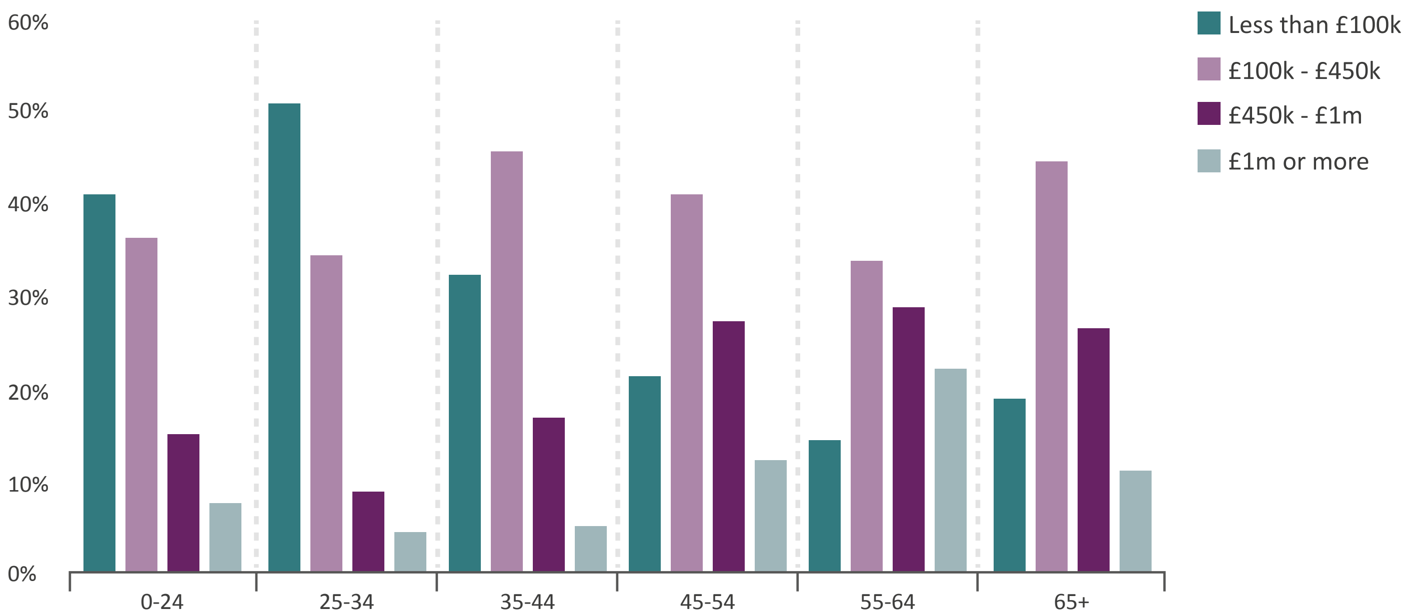
Ageing and longevity trends are likely to lead to an accumulation of wealth for individuals as they get older. Managing finances in the years up to and after retirement will likely create large growth opportunities for wealth management firms. In the US for example, only 40% of retirees currently use a financial advisor[36]. Households headed by adults in the 60+ age group account for over $6tn in investable assets[37]. Wealth accumulation in ageing populations is by no means confined to the developed economies, with emerging market wealth forecast to rise from €158tn to €437tn by 2030, 80% of global wealth accumulation in that period[38]. Wealth preservation is likely to provide a tailwind for asset managers, insurance firms and private banking institutions.

AJ Bell Ltd

AJ Bell is one of the largest online investment platforms in the UK with over £25 billion assets under administration. The firm launched the UK's first online SIPP and is well placed to benefit from an ageing UK population seeking to accumulate and grow their wealth.

"If people collectively live one more year than expected, defined pension liabilities would rise to a level that would cause underfunding to increase by 100%"

Figure 10 - UK household wealth distributed by age[35]



Lifestyle

Wealth accumulation into an adult's older years is going to benefit the consumer sector immensely, through a variety of industries. We have already touched on the fact that senior adults are the largest consumer of healthcare. This along with financial security, are the top two concerns for adults as they plan for older age. The third concern is their home[39].

"Emerging market wealth forecast to rise from €158tn to €437tn by 2030"

Baby boomers entering old age will likely want to enjoy a higher standard of living as they enter into their post-retirement years. Remaining healthier for longer on improved healthcare but still potentially requiring some day care could mean the demand for retirement residential homes will increase over the next few decades. This is positive for property companies specialising in this area but there may also be demand from the elderly for renovation of their current residencies, in an effort to avoid moving into a retirement home.

Besides expenditure to tackle serious health related issues, a larger number of ageing adults could increase money spent on markets selling age and disease prevention. While scientists continue to work on life extension methods, for thousands of years, humans have tried to slow down the ageing process in a multitude of ways. The cosmetics industry, which helps prevent the aesthetic effects of ageing may be a big beneficiary along with the more extreme but increasingly popular choice of cosmetic procedures such as toxin botulinum injections (Botox) and tissue fillers. The global anti-ageing market is forecast to reach $191bn by 2019[40].

The health supplement market is also set to expand with the global value predicted to hit $106bn by 2017[41]. Consumers aged 65 years and over account for 36% of health supplement sales in the US[42]. Besides lotions and potions, older generations are exercising more as they age. The American Academy of Anti-Ageing Medicine estimates the 50+ fitness and spa market to be worth approximately $400bn and forecasts growth of 15% per annum[43].

While the above may portray that the focus of an older population is solely on slowing down the inevitability of ageing, this could not be further from the truth. The evidence of this is in the travel and leisure sectors which are forecast to see increased growth as an older, wealthier population experience and enjoy some of the things that would not have been possible for their relatives just a few generations ago.

"...since 1970, the cruise industry has grown by 2,100%"

For example, since 1970, the cruise industry has grown by 2,100%[44] with people aged 55 or over comprising of 63% of total cruise passengers in 2012[45]. Older generations are also becoming more fashion conscious, as they take more share of the clothing retail market (see figure 11). Finally, we expect to see older generations embrace technology in its many forms. Wearable technology to detect chronic illnesses and artificial intelligence within the household, will free more time for leisure activities.

Figure 11 - Women's outerwear expenditure by age group[35]

Women 15 - 24	Women 25 - 44	Women 45 - 54	Women 55 +
1987 - 29%	1987 - 36%	1987 - 14%	1987 - 21%
1995 - 21%	1995 - 39%	1995 - 17%	1995 - 23%
2004 - 16%	2004 - 34%	2004 - 21%	2004 - 29%
2007 - 15%	2007 - 34%	2007 - 19%	2007 - 31%
2011 - 18%	2011 - 31%	2011 - 18%	2011 - 32%

Demographic dividend

2

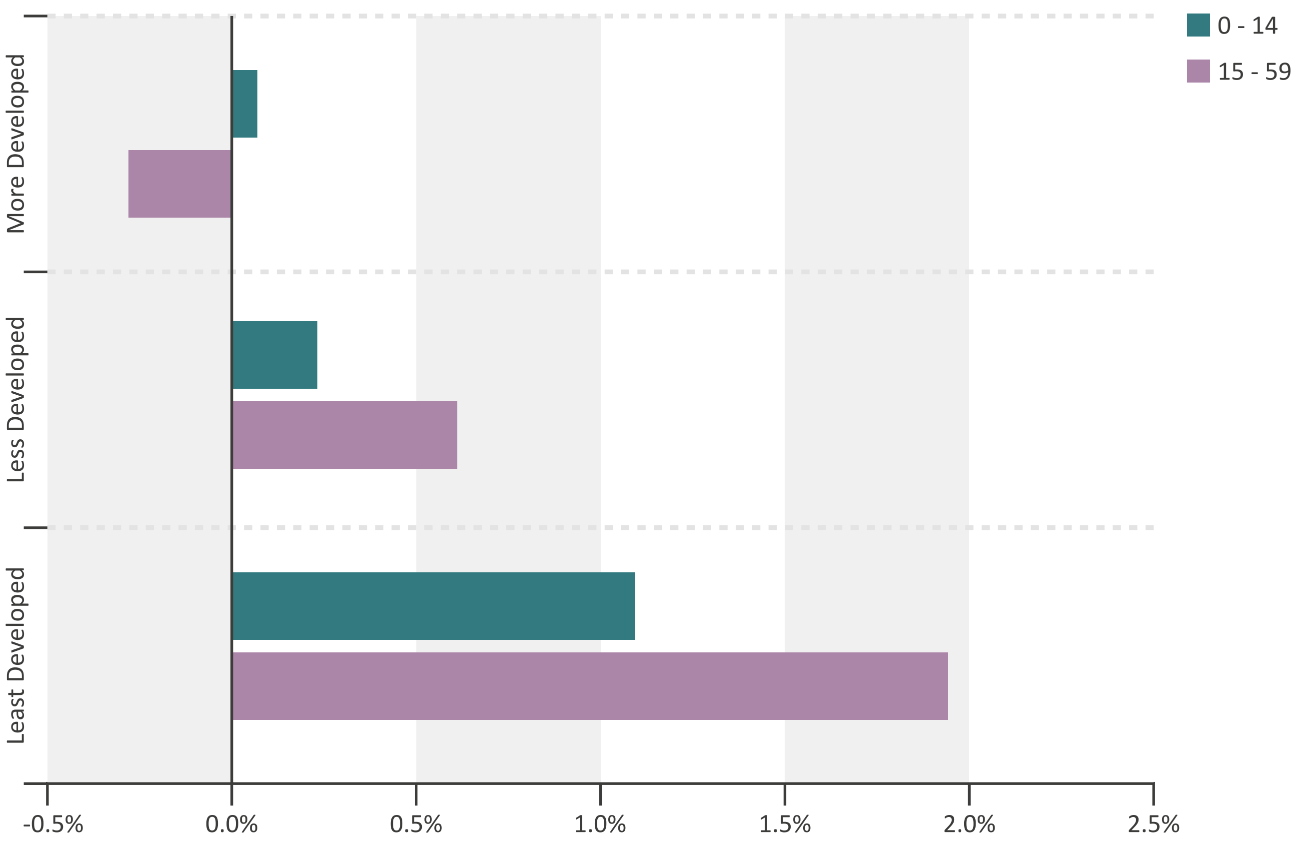
Populations in the developing world

While the most developed areas of the world have prospered economically, which has resulted in the transition to latter stage population demographics, there are still large parts of the world playing catch up. For countries where the fertility rate is beginning to decline, younger populations are still prevalent and the managing of this transition will define the economic prosperity of these countries. As highlighted earlier in the report, gender equality and contraception education is vital if the transition is to be a successful one.

In less developed regions, people aged between 0-24 years old make up 46% of the population and in the very least developed it is even higher, accounting for 60%[48]. Working age populations are declining in the developed world, but this is not the case in the developing world. While the number of working age adults is at a peak of 2.6 billion, the number is forecast to rise to 3.7 billion by 2050[49]. Total population in the developing world is projected to rise from 5.0bn in 2013 to 6.4bn by 2050[51].

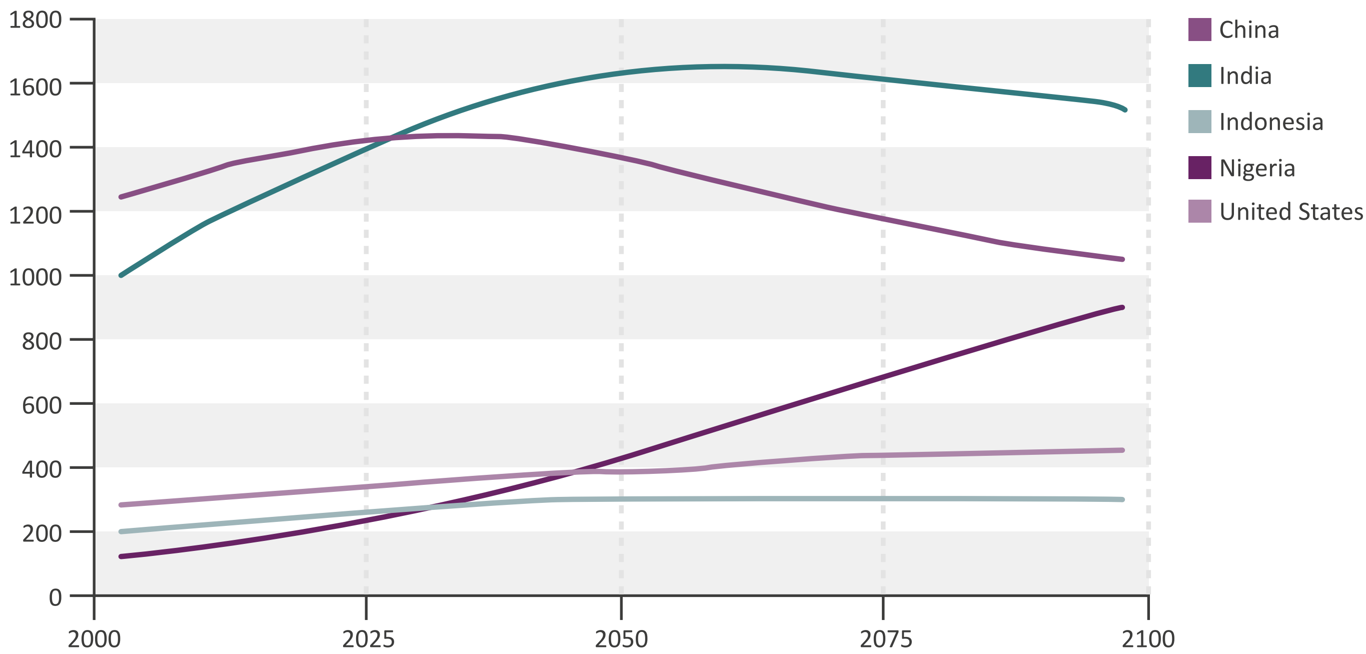
"In less developed regions, people aged between 0-24 years old make up 46% of the population"

Figure 12 – Annual Growth Rates in Age Groups to 2050[47]



We have seen the rise of Asian and South American populations in recent decades and this is set to continue into the first half of the 21st century. However, the biggest growth rates in population are forecast to occur in African nations. Between 1950 and 2050, Asia's population is expected to have grown by a multiple of 3.7 times[52]. Africa's century of growth is predicted to be even greater, growing by a factor of 5.2 from 2000 to 2100[53].

Figure 13 – Nigeria, an Emerging African Global Superpower?[50]



Africa is in the early, fragile stages of its demographic transition but the forecasted numbers are nothing short of startling. Tanzania, in Sub-Saharan Africa, currently has a population of 50 million[54]. This is forecast to increase to 276 million by 2100[55], just under the size of the United States today[56]. As discussed already, populations grow due to a high fertility rate and extended life expectancy. The average African fertility rate is around 4.9 children[57]. Africa's dependency ratio, which measures the number of people outside the ages of 15-64 years old against the rest of the population, is around 80% (80 dependents to every 100 people of working age)[58]. This is high and creates a large burden on societies to support the non-working population, the majority of which are children in the developing regions.

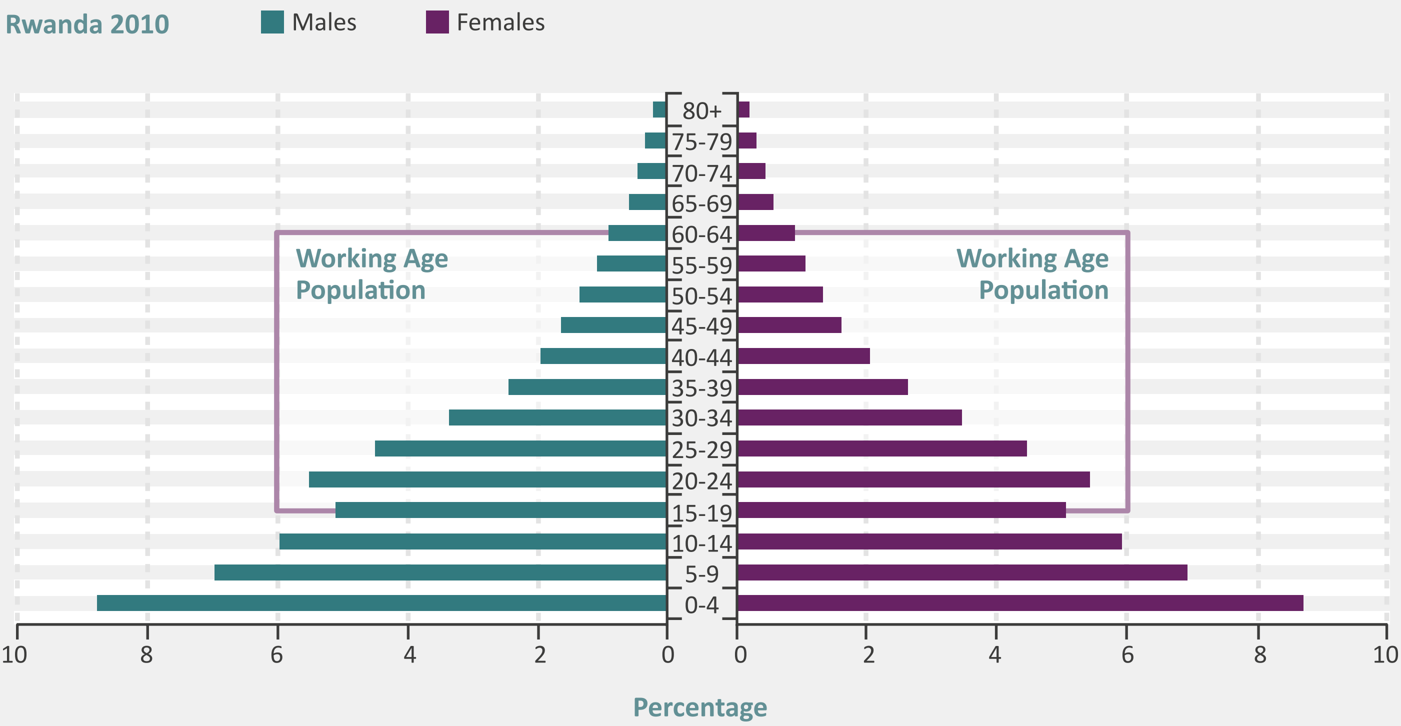
"Total population in the developing world is projected to rise from 5.0bn in 2013 to 6.4bn by 2050"

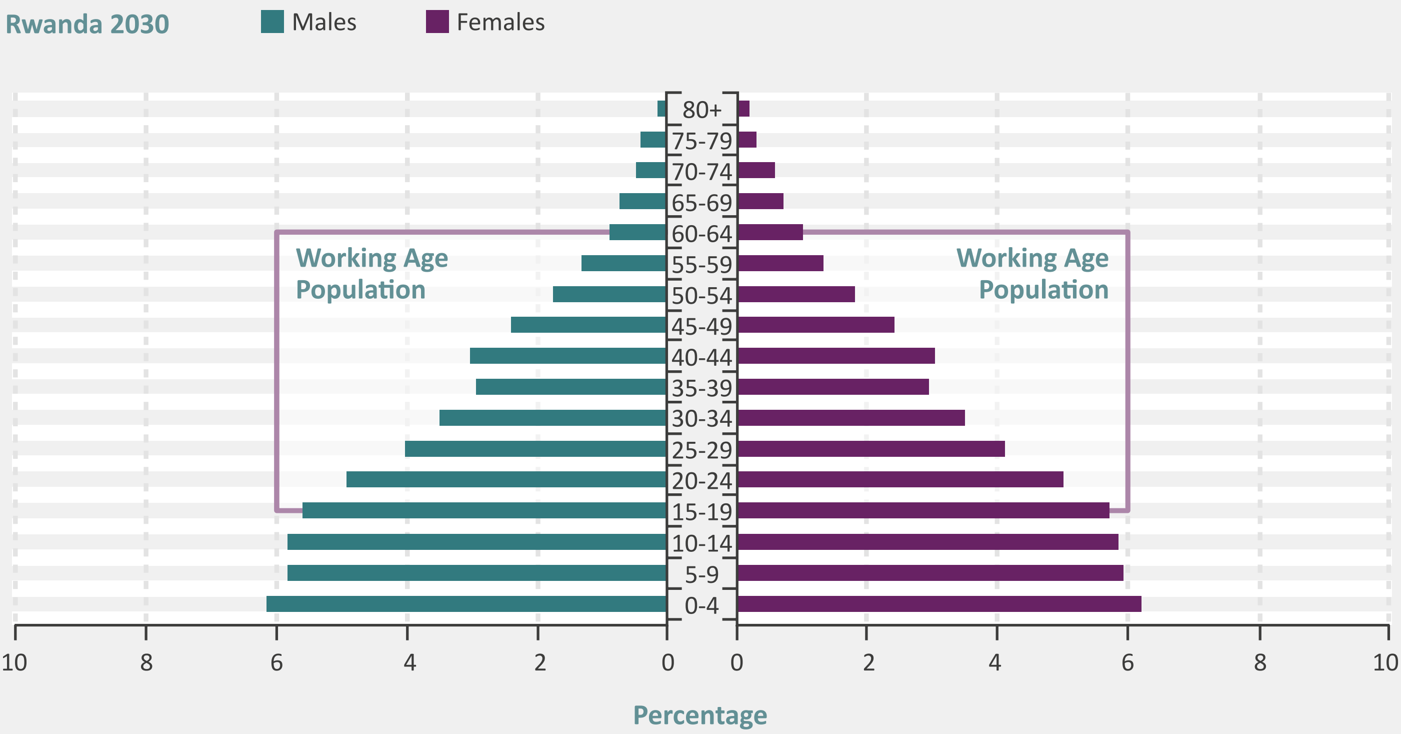
As the fertility rate continues to decline in these regions, the dependency ratio will fall as young dependents enter the workforce. This is where government organisation and resource management will be vital. Over the past 50 years we have seen the success stories of young working populations, such as South Korea and Thailand but also the difficulties witnessed during the Arab Spring.

Demographics in Action – Rwanda

Rwanda is still several decades away from experiencing its own demographic dividend. Investment in the health system has improved child survival rates and fertility rates have begun to fall. The 2010 pyramid resembles that of Japan's in 1935.

Over 40% of the population is still under the age of 15 and this is forecast to decline to around 35% by 2030[60]. Continued investment will be required to change Rwanda's demographics to one with a large working population.





Investment opportunity – the demographic dividend

"...non-OECD countries consume between 50-70% of the macronutrients per capita than those in developed countries"

A country experiences a demographic dividend when there is a growing number of working age people relative to non-working age groups which ultimately results in less spending on dependents and a boost in economic productivity. We are seeing a spectrum of emerging countries across the world that are at different stages of this process. At one end we have some of the most developed emerging economies, like China and India, who are successfully managing their youth bulge populations into one with a large work force.

At the other end there is Sub-Saharan Africa where fertility rates have remained high[61] and large youth populations remain. Successful government policy could turn these nations into the next economic success stories but there is still much to do.

At Seneca, we believe there are a number of investment opportunities that exist in nations where they are reaping the demographic dividend today and where they hope to over the next few decades. Fundamentally we see two broad areas of opportunity. The first is where the demographic dividend is being reaped, families are smaller and households are becoming wealthier. How they spend their money presents a large array of potential investments. The second which is inter-related to the first and brings in the less developed regions is that of key expenditure required to ensure developing regions reach their full potential.

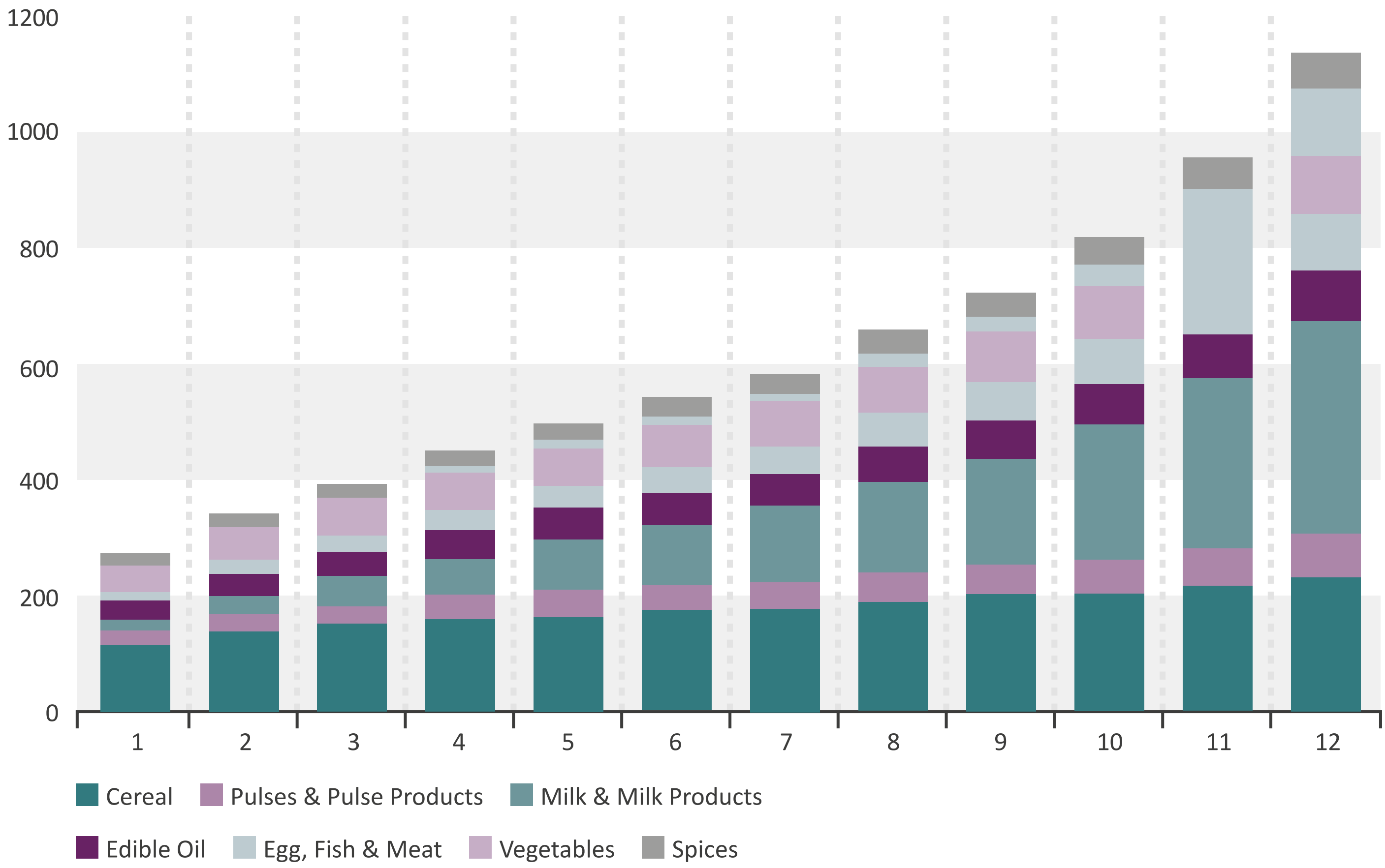
The emerging consumer

As emerging country populations continue to account for a larger part of total world population, the demand for food from these regions will become increasingly large. As these populations become wealthier, they will begin to spend more on food.

Currently, non-OECD countries consume between 50-70% of the macronutrients per capita than those in developed countries[62]. Growth in protein consumption is a well-documented change that occurs in eating habits as incomes rise. The market for meat based products is likely to see large growth in demand over the coming years, but also dairy products will be in high demand. For example in India, where meat consumption is less likely to take off due to cultural and religious reasons, the market for milk, cheese and yoghurt is in high demand in higher income groups (see figure 14).

Whilst improving the macronutrient profile of their diets is a healthy improvement, it is likely we will see increased consumption in the more unhealthy eating habits of the western world. The fast food industry has quickly entered into emerging markets to take advantage of changing food and drink consumption. However, market tastes vary considerably across regions. For example, McDonald's serves a potato and pea based burger in India[80] to cater for their large vegetarian population. Yum Brands, owner of the KFC and Pizza Hut brands, have only 2 restaurants per million people in the top 10 emerging market countries, as opposed to 57 per million in the United States[64].

Figure 14 – Food Consumption in India by Income Group[63]



DP Aircraft Ltd - A closed end vehicle which acquires, leases and sells aircraft. As the number of wealthy retirees in the developed world increases and we see a rise in disposable income across emerging nations, air passenger traffic should continue to increase across the world.

Increased household wealth will also give people in developing regions the opportunity to purchase their first car. Automakers have targeted the emerging regions as key markets to achieve growth in the future. Whilst China is now the largest car market in the world[78] and growth rates have been strong, populous countries such as India and Indonesia remain underpenetrated. The preference in the latter two is still two wheeled vehicles but this is likely to change as infrastructure improvements make car travel easier. As cars per capita numbers improve in developing regions, so will pollution levels. Many countries have highlighted their commitment to lowering carbon emissions. In consequence, auto part manufacturers using the latest green technology could also be an attractive area of opportunity within the auto industry.

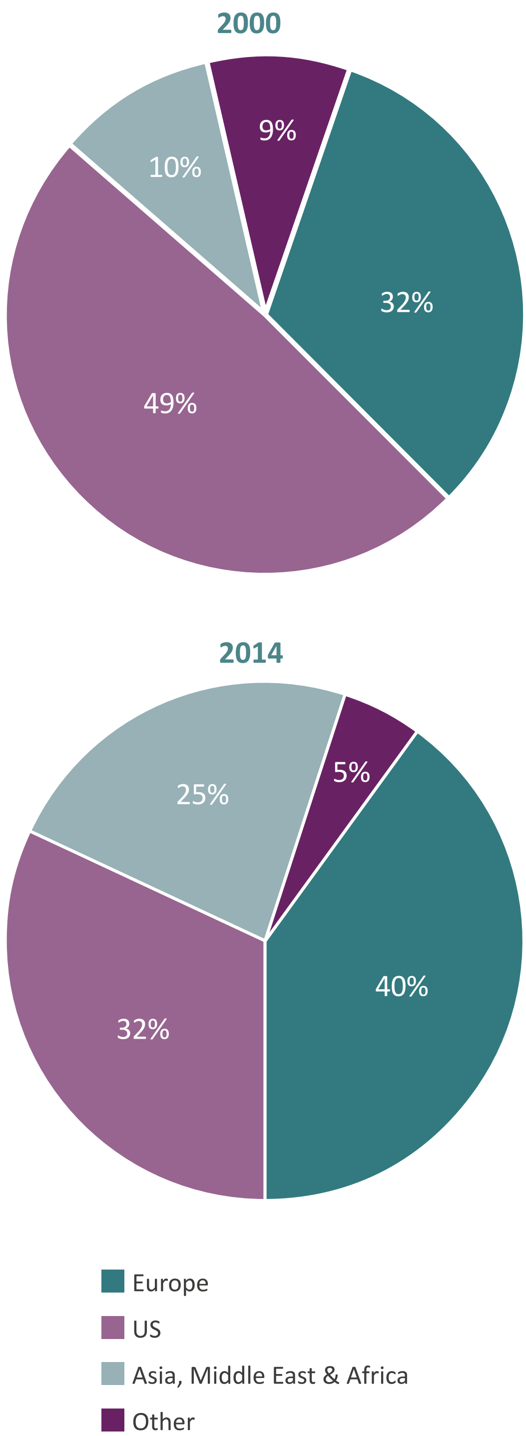
Besides buying cars, young affluent households in the developing regions are travelling more. One in ten tourists travelling abroad come from China, a statistic that is remarkable considering only 5% of the Chinese population own passports[66]. Hotels and luxury branded stores across the world have been making their product offerings more attractive to Chinese tourists. Employment of staff fluent in Mandarin and installation of payment terminals accommodating Chinese credit cards makes shopping easier for Chinese tourists. The Boston Consulting Group estimate that by 2030, 49% of global passenger traffic will be within the Asia Pacific region or between Asia and the rest of the world[67]. Opportunities for investors not only reside in the big multi-national travel and hospitality firms but also in the domestic firms which have the local knowledge to cater for the preferences of the people of a particular country, allowing them to take market share from international firms.

"One in ten tourists travelling abroad come from China"

Halley Asian Prosperity Fund

The Fund invests in under-researched small and mid-cap equities in the Asia Pacific region. A significant portion of the portfolio is invested in some of the fastest growing countries in Asia such as Vietnam where the demographic dividend continues to be reaped.

Figure 15 – McDonald's Revenue by Region[65]



Technology

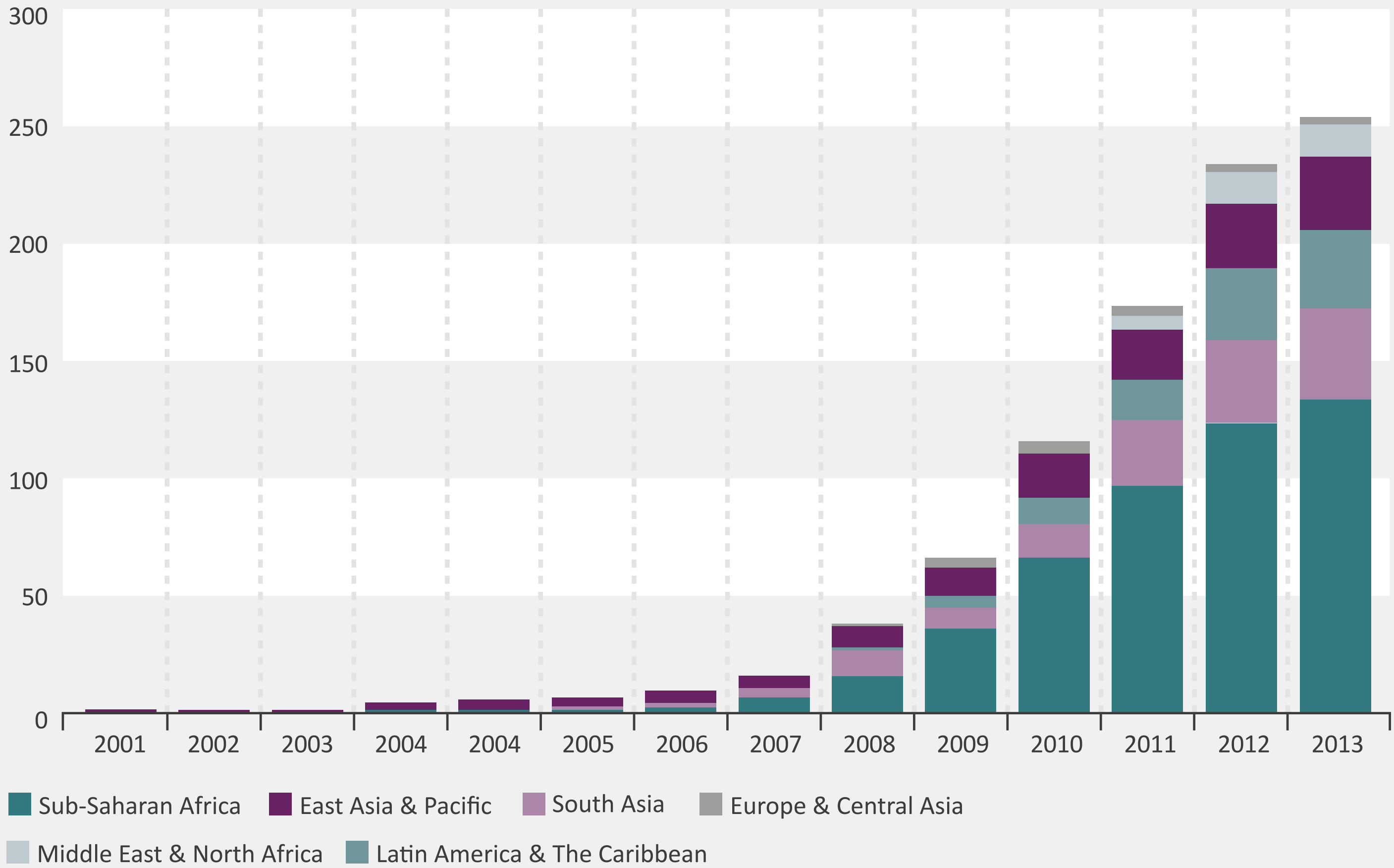
How increasingly affluent emerging populations make payments to purchase all of these products is another exciting area of development in these regions. Transferring your piggybank savings into your first bank account is part of growing up in the developed world. Things are different in the emerging markets however where bank account holders are in the minority.

In Africa, it is estimated only 25% of people have access to a bank account[68]. A much larger proportion have mobile phones and the future of banking is believed to lie here. For example in Kenya, mobile network operator Safaricom launched its M-Pesa service which provides mobile phone based money transactions without the use of a traditional bank[79]. It is not just finance where mobile phones are changing lives for people. Firms are providing weather forecasts and crop price data for Africa's large population of farmers so they can make more informed decisions when planting their produce and selling it through the supply chain.

"In Africa, it is estimated only 25% of people have access to a bank account"

Technology and information service firms that can use innovative methods to help improve people's everyday lives have huge amounts of untapped growth opportunities within these regions.

Figure 16 – Number of Live Mobile Money Services[69]



Infrastructure

The discussion so far highlights just a few of the growth markets available to firms. As middle class households increase in the developing world they will want to spend their disposable income to improve their everyday lives. Protein based snacks, holidays and electronic payments are taken for granted in the developed world but these things are becoming an exciting reality for many people in the developing regions. Investments in these areas are predicated on the assumption that these products can be readily accessed and used regularly. This brings in our second area of investment opportunity as part of the demographic dividend – resource and infrastructure.

Infrastructure development plays a vital role in the progression of a country, socially and economically. The investment required in the developing regions, where populations are growing in numbers and expectation of quality of life, is nothing short of immense. Infrastructure quality (see figure 17) and availability is poor for a large number of countries across the emerging markets. Management consultancy firm McKinsey, estimate around $57 trillion of infrastructure expenditure will be required to 2030, accounting for 3.5% of global GDP per annum[71].

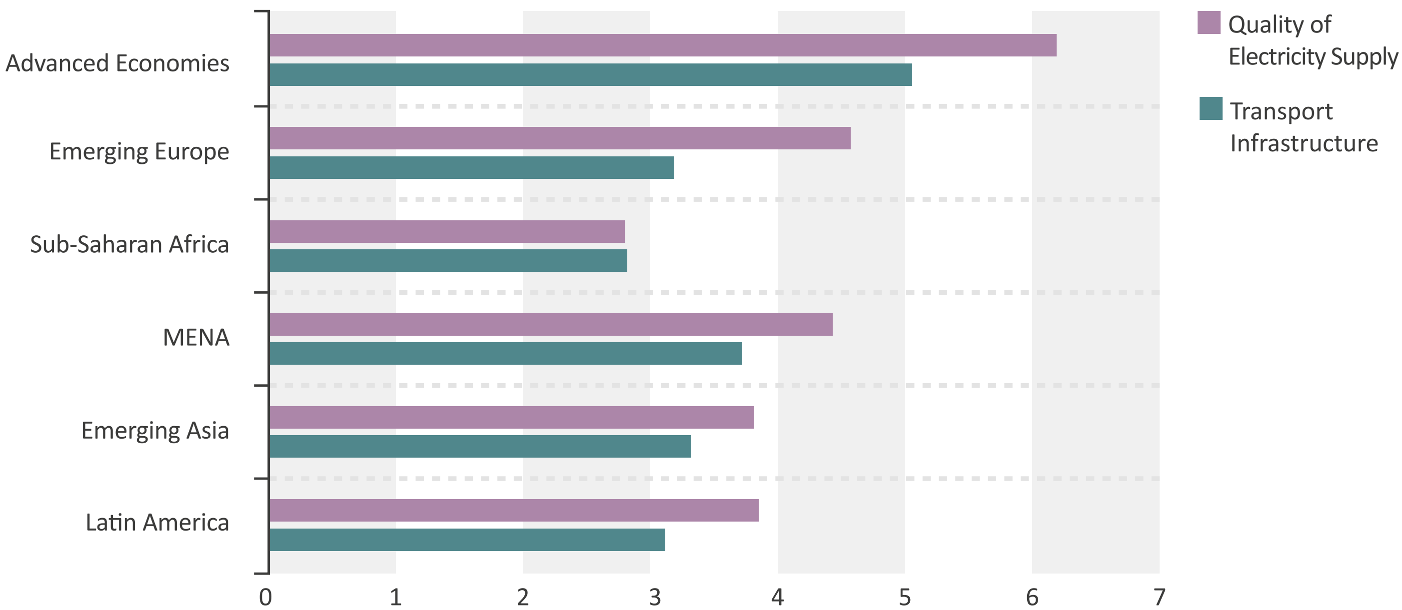
Approximately 70% of the population in developing regions has no access to electricity and 800 million are without access to safe water sources[72]. A significant funding gap remains in infrastructure by governments and it is thought institutional investors will provide the investment that is required over the coming decades. The World Bank estimates that less than 1% of OECD institutional assets under management is allocated to emerging market infrastructure currently[73].

“70% of the population in developing regions has no access to electricity”

The four main areas of investment are transport, power, water and telecommunications. The many subsections within these areas enable the efficient movement of people, capital, commodities, information etc. into and out of a country. Without the successful development of infrastructure to underpin developing regions, economic prosperity and the benefits that go with it will be limited for their populations. In consequence, we believe the opportunity set covers a vast array of attractive investment propositions.

The area is not without risk however. Infrastructure investment inevitable involves dealing with local government authorities, some of which have a chequered history of ethical practice. Lack of transparency and other sovereign concerns can put investors off. With careful due diligence however, investment opportunities that scare other investors away can often provide some of the greatest risk-return profiles.

Figure 17 – World Economic Forum Competitiveness Ratings[70]



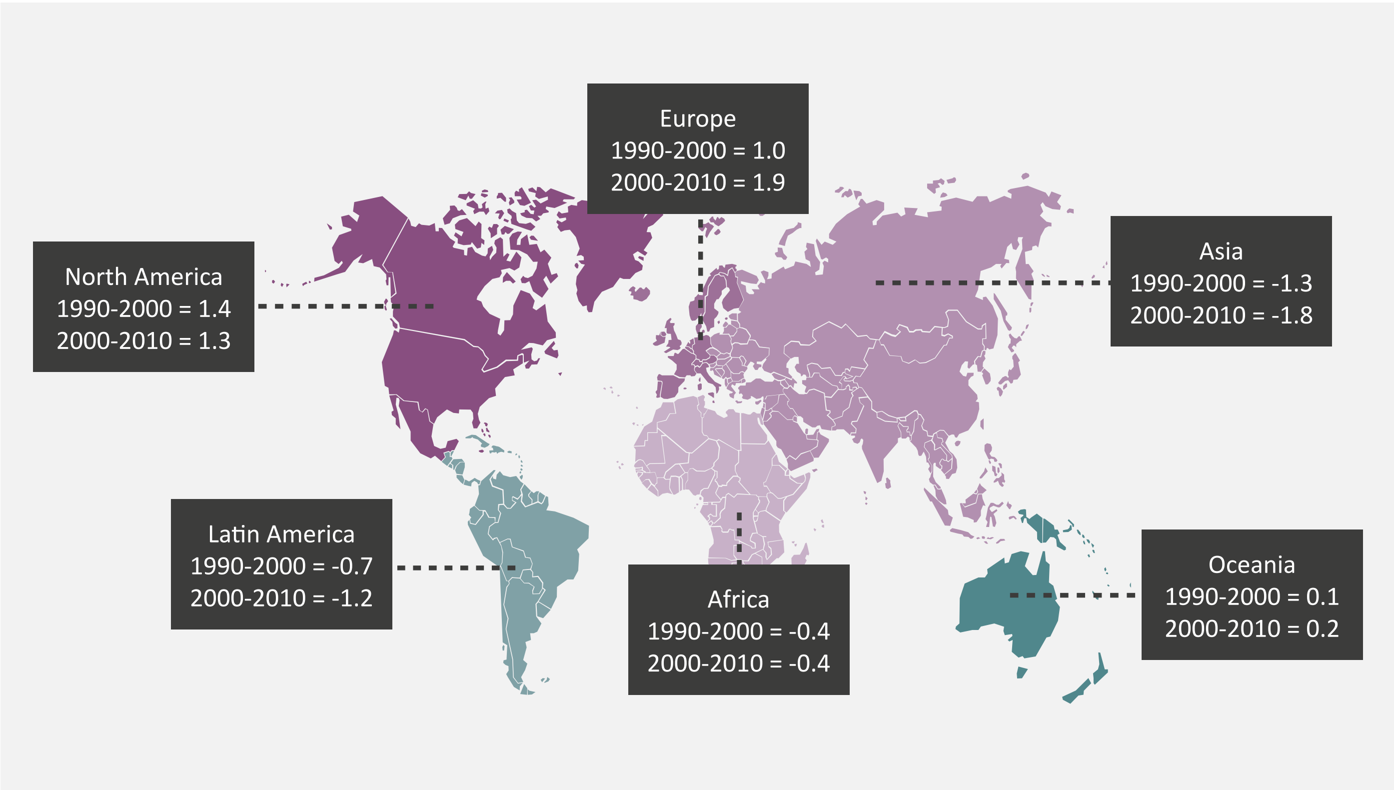
Migration

While the total global population size is only dictated by two factors, fertility and life expectancy, country populations have an important third factor which affects population size. In Japan and Germany for example, fertility rates now sit below the replacement rate[74] to maintain population size however their populations are continuing to grow. This is due to migration.

Positive net migration, where more people are immigrating than emigrating, is prevalent in the developed regions. It therefore follows that, because global net migration has to be zero, the source of immigration is the developing regions. Figure 18 shows this taking place over the last two full decades. During the first decade of this century, net migration had become the primary reason we are still seeing population growth in the developed regions. The United Nations forecasts that even at the half way point of this century, the population of developed regions will still be rising due to migration, despite the natural growth rate becoming negative[76].

Developed regions are at an interesting crossroads. To maintain economic power and slow the effect of an ageing, shrinking population with rising dependency ratios, a decision will be needed. Governments will need to either promote immigration of skilled workers to their countries, or make policy changes that encourage fertility rates to increase. It could be a combination of both.

Figure 18 – Annual Net Migration by Area[75]



Conclusion

3

Conclusion

"It is our job at Seneca to determine which of these offer the greatest risk/ return profiles from a capital allocation perspective"

We hope this report highlights the implications population growth and demographics will have on the world around us and what this means for investors. The findings lead us into a large range of potential opportunities, ones which we will discuss in future reports. The conclusion however, is that our analysis of demographics demonstrates the large positive impact it will have on a variety of different industries. Some of the data we have discussed will be the underpinning statistics that enable businesses to search for new opportunities.

There are a number of strains that the world also faces. A country with an ever increasing elderly population or one with an ambitious young population and inadequate infrastructure will pose a challenge for governments and other leading authorities. The prospect for the private sector to assist in the transition across various stages of country demographic profiles will provide a vast set of growth opportunities in a multitude of industries, some already established and some that are only in their embryonic stages.

It is our job at Seneca to determine which of these offer the greatest risk/return profiles from a capital allocation perspective.

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Seneca Investment Managers

Seneca Investment Managers is based in Liverpool with a national client base. Investors range from institutions such as pension funds and charities, through to financial advisers, discretionary private client managers and personal investors. The firm specialises in multi-asset value investing.

Where we believe Seneca differs from other providers of multi-asset investment products is in our 'value' based approach. This means the firm prides itself on the ability to identify and invest where there is both quality and unrealised value.

Simply put, we create funds that combine stocks and shares in companies (equities) with fixed interest investment vehicles (bonds or debts) and a wide range of specialist assets*. We believe our multi-asset value approach gives us the edge in delivering the right outcomes for our investors.

The firm has a team of six highly experienced investment professionals, seven other executive directors and staff, and four non-executive directors. Together we hold a substantial minority share in the business and have significant personal investments in the funds we manage.

Seneca Investment Managers has a heritage stretching back to 2002 when it established two multi-asset unit trusts – now open ended investment companies (OEICs) – where investors pool their money, closely followed by a multi-asset investment trust. In addition we manage segregated accounts for institutional investors. Seneca Investment Managers was acquired by Seneca Asset Managers Ltd in 2014.

* Property, private equity, specialist financial, infrastructure and commodities.

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