

European Demographics: Memento mori

This note is the latest in a series of regional demographic reports published across our research platform. It provides a top-down framework and chart book for upcoming sector reports on the potential impact of demographic change on industries and companies across Europe and UK.

Shrinking & ageing, so deal with it

European demographic trends demand innovation in government policy and adaptation in corporate and individual behaviour. The basic projection is for a static, ageing population with a gradually shrinking work force; with fertility rates unlikely to see any resurgence, to militate against worst case scenarios countries will need to raise employment participation rates & productivity, attract high quality migration, while controlling long term commitments on ageing-related expenditure. These are daunting policy goals and explain a pessimistic consensus.

Despite relatively unattractive demographic profiles, the UK and Eurozone have high levels of labour force education and have been successful in attracting **immigration**. This is a key policy for protecting economic growth, particularly in countries where populations are contracting (e.g. Germany) - the social and political fallout from such policies has to be handled. Without this, a **shrinking labour force** and rising old-age **dependency rates** are projected to gradually lower average potential **GDP** growth rates from a current 2.4% to 1.7% by 2020.

A higher percentage of elderly consumers would shift **aggregate expenditure** into healthcare, housing, food and basic utilities, away from more discretionary items. **Technology** will play a vital role for what will be the first tech-literate retiree generation. Greater **female participation** rates could also tilt consumption trends.

Government finances- bond markets and austerity part II

Projected increases in **age-related expenditure** could dwarf the costs of the global financial crisis according to IMF estimates, further straining already stressed public finances. Greece, for example, faces additional public spending of 7.5% GDP (2005 levels) out to 2025 versus an EU average of 3.5%. These estimates are struck under a *no-policy change* assumption which may be the correct starting point for models but is not a realistic policy option for Europe.

Equity appetite is ageing as well..... go global

In the UK and USA there looks to be a link between movements in stock markets and demographic variables (mid-young ratios). In the UK, pension funds have been allocating a greater share of assets to bonds away from equities (although not in the US), possibly reflecting age-related risk aversion amongst a raft of other institutional reasons. Whether this can address projected pension funding deficits is a moot point, but global investment opportunities offer some outlet for hope.

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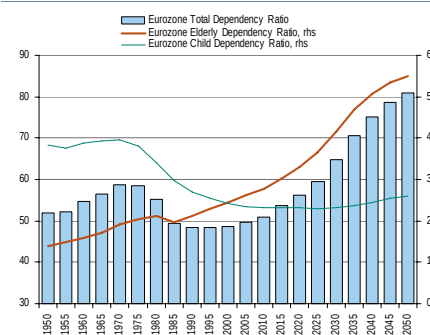
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For each of the major Eurozone countries we have plotted trends for population growth, birth rate, death rate, net migration rate, fertility rate, dependency ratios and sex ratios. We compare the Eurozone with UK, Scandinavia, Japan, US and the 'BRIC' countries, as well as including charts on mid-young ratios, prime savers to the rest of population ratios and labour force education profiles. It dovetails with recent notes on demographics from [Asia](#) and [Australia](#).

Chart 1: Eurozone Dependency Ratios



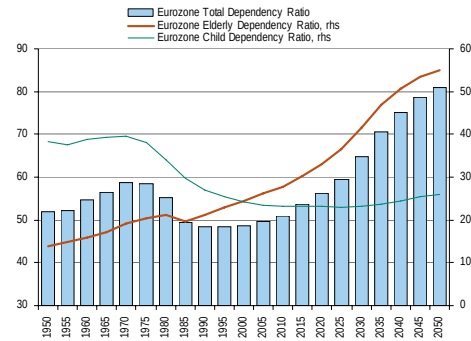
Source: UN Population Database, BofA Merrill Lynch Global Research

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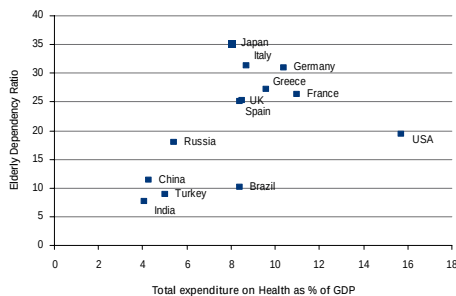
European Demographics Chartbook in brief

Chart 2: Eurozone Dependency Ratios



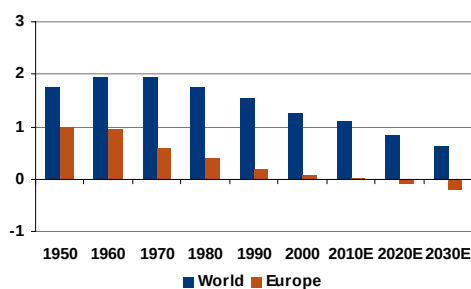
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 3: Elderly Dependency Ratio and Healthcare Expenditure



Source: Source: United Nations, WHO, BofA Merrill Lynch Global Research

Chart 4: World and Europe Population Growth Rate (%)



Source: UN Population Database, BofA Merrill Lynch Global Research

What the data shows:

1. On UN data, the **European population**, already falling as a share of global population, is projected to decline modestly in absolute terms from 2020. From having 4 of the 12 most populous countries in the world in 1950, Europe is set to have none in the top-25 by 2050. According to Eurostat projections, the total population of the Eurozone is projected to grow modestly from a current level of 495m to a peak of 520m by 2035 and then show a steady decline to 505m by 2060.
2. The EU **working-age population** is projected to decline sharply over the next 50-years, falling by 15%. Potential GDP growth, as a function of available labour supply and productivity improvements, will be negatively impacted with projections for potential average long term GDP growth falling from 2.4% in 2007-20 to 1.7% in 2021-30 and 1.3% 2041-60. Within this trend per capita GDP levels are unlikely to fall and a smaller population could see lower levels of **structural unemployment**.
3. Not even very high levels of **immigration** will be enough to reverse this decline, but it can slow the rate of fall. Although the Eurozone is a net immigration area, with relatively good labour force education, its demographic profile is unattractive compared with the UK and US and especially with Brazil, India and Turkey.
4. Europe's population is **ageing**. Within the EU, Germany, Greece, Italy, Portugal and Spain are the least attractive demographically with rapidly rising old-age dependency ratios. From a current ratio of four to one, by 2035-2040 it is projected that these countries will have fewer than two people of working age to support an elder. Even this is 10-15 years later than Japan.
5. Judged purely by the progression of **mid to young ratios** and the ratio of **prime savers** to the rest of the population the Eurozone and UK look to be unattractive on a long term basis, compared to most emerging market countries and the US.
6. **Government finances** are projected to endure the biggest strains: amongst developed countries, public age-related spending is set to rise more in the Euro area than in the UK or US. By 2025, across the EU, an additional 3.5% of GDP (2005 levels) is expected to be spent on health care, long-term care and pensions as a result of aging. For the UK, this figure is 2.8% and 2.9% in the US. The EU figure masks a wide variation between member states, for example in Germany the figure is 2.5% but is 7.5% for Greece.
7. Despite having one of the worst demographic profiles, **Germany** faces relatively low additional age-related public spending requirements. By 2025 it has a lower requirement than the US and by 2050 it is only modestly larger (7.5% vs. 7%) despite the demographic profile of the US being much more attractive. This looks to reflect the relative cost and efficiency of **age-related spending** between the two countries.

8. **Health care spending** is set to be the largest component of additional Euro area public spending requirements. A lot of policy activity thus far has focused on changes to retirement ages and this makes the pension issue relatively solvable. However, relatively less has been done to regulate access to and the long term cost-effective, provision of healthcare.

From which we conclude that:

- a. Stock markets in the UK and US appear to reflect and to an extent anticipate demographic variables. Although only one factor of many in determining future movements in markets, demographic variables suggest they will act as a negative headwind to future performance. However, given that investors are not restricted to own country investing European investors can *participate* in the **demographic dividend still available in Emerging Markets and to an extent the US** where the upcoming generation Y age cohort is significant.
- b. Pension Funds in the UK (and Japan) are allocating a greater proportion of assets to bonds and away from equities. This may be a signalling of greater risk aversion, but it may simply reflect the poor track record of equities over the past decade, as well as regulatory change. Funds flow data suggests no imminent reversal in trends. However, with corporate **pension funding gaps** having once again ballooned ([European Equity Strategy, 07 September 2010](#)) and given long term projected state deficits, whether investing in EU long term bonds is really going to rectify this problem is perhaps debatable.
- c. The long term projections for Europe are challenging but we should not be too fatalistic in our conclusions. Most EU countries are comparatively wealthy by global standards, have well developed **educational** systems, high **technology** expenditure per capita and therefore **high quality workforces**. There are further steps that can be taken to raise **participation rates** (amongst women, and younger and older workers) to bolster available labour forces, as long as jobs can be found for them.
- d. Governments (and individuals) have the wherewithal to avoid projected worst case scenarios by action to curtail escalating funding deficits and overburdened health and pension systems. We are already seeing effective steps being taken on pensions but long term reform of **health care** supply and demand remain pending. The **financial crisis** is arguably helping this effort by forcing debate (and action) on long term public funding priorities.
- e. There is a big opportunity for those countries/ governments/ businesses who '**get ageing right**' in terms of anticipating changing consumption and resource demands of ageing populations. This is a potentially huge market and European economies being both wealthy and early into the process have an opportunity to make a virtue out of necessity.

Sources

A number of sources were used, including publications and reports by the United Nations, World Bank, European Union, IMF, WHO, CIA World Factbook and Towers Watson. [Where appropriate a population weighted average has been used to calculate figures for the Eurozone.]

Terminology

For readers who are not familiar with some of the terminologies mentioned above, please refer to the Appendix for a list of key definitions.

European population peaks at around 520m in 2035 about 5% from current levels.

The working age population starts to fall in 2010

Projections are for a doubling in over-65s within the EU to 151 million

Suggesting there will be only 2 active workers for every retired person by 2030

As a function of available workers plus productivity, long term projected potential GDP growth falls

All projections are made under no policy change, stylised assumptions

Those are the long term projections. However, over the next 20 years they would seem to describe our likely fate with reasonable accuracy.

The real debate is what the response can be.

The data

A short summary-up of the demographic projections within this report shows a stabilisation of **fertility rates** below the natural replacement rate of 2.1 being partly offset by a relentless rise in life expectancy and by positive net migration rates. The net effect, according to the European Union 2009 Ageing Report is for the expected EU population to be 505.7m by 2060 (slightly larger than in 2008) having peaked around 2035 at 520.1m. Perhaps more importantly the working-age population (aged 15-64) will start to decline from 2010 and over the next 50 years is projected to fall by 15% (even as it rises in 7 states of Belgium, Ireland, France, Cyprus, Luxembourg, Sweden and UK).

The elderly population (aged 65 and above) will show a sharp increase over the projected period with the number of elderly almost doubling to 151m by 2060 (from 85m in 2008).

As a result, the old-age dependency ratio (those aged 65+ versus those in the working age population) is projected to increase from 25.4% to 53.5% with the largest increase being seen over the next 20 years. In plain English, this means that from there currently being 4 working people for every person aged 65+ this will fall to just 2 to 1 in the projection period.

All of this results in the projected annual average potential GDP growth rate in the EU to decline sharply from 2.4% in the period 2007-2020, to 1.7% in the period 2021-2030 and to 1.3% in the period 2041-2060.

Again it is worth reiterating that these projections use stylized models and a no policy change backdrop ignoring potential efforts to retain retirees in the workforce or to promote greater rates of female participation or to raise productivity growth. In reality, all of the policy efforts mentioned above (and more) will need to happen to shift the projected outcome. This is a potential path not a pre-determined destiny.

Critiquing the data

Schumpeter, a few population cohorts ago in 1943, made the observation that "forecasts on future populations, from those of the seventeenth century on, were practically always wrong". Even Keynes in his Galton Lecture of 1937 came out in favour of pronatalist policies to counter expected shrinking population growth, just ahead of the start of the Baby Boomer explosion that was to set the positive tailwinds for UK and European economies over the following 50 years.

Unfortunately that was then and this is now; while different data sources may disagree on the severity or immediacy of the problem, based on the data in this report, it is difficult to dissent from the majority opinion that European population growth is slowly grinding to a halt, that it is ageing rapidly in some countries; and that governments are facing potentially crippling additional expenditure requirements on top of already stretched public budgets.

The latest demographic data is exhaustive and methodical; however, these are still very long term projections subject to considerable revision and change. While forecasters generally know a lot about the nature of pensions and age related liabilities, say, over the next 20 years (anyone set to claim over this time frame has already been born) forecasts beyond this time frame, as well as estimates on potential migration patterns are hugely challenging, even more so when broad regional data is being applied at the country level.

Trends in fertility rates and life expectancy seem to have a forecastable quality- migration and other variables are potentially more volatile

Leading to some revisions even over relatively short periods of time

We rate demographic data as higher quality than climate change data but the debates on these topics can sound quite similar in trying to “educate” a sceptical public on taking decisions now (and almost by definition, making sacrifices), for uncertain future gains, most probably accruing to other people.

There is nothing new or startling in the trends, they have been flagged for a long time. However the financial crisis and resulting public deficits have created a new sense of urgency in the debate on long term government (and individual) funding issues

A further point to stress is that although demographics are crucially important over the very long run it is far from being the only factor at work. Stock market returns for the last 10 years, for example, highlight how a ‘positive’ demographic backdrop did little to ensure positive market returns.

Revisionist future

We cannot lose sight of the fact that these are long term projections on small changes in very big numbers; as an illustration, consider the revisions to Eurostat demographic projections as of 2008 (updating those from 2006). It shows how even over a short time span, projections are subject to relatively significant revisions; so that the EU population in 2050 is now expected to be 37 million people higher than was forecast in 2006. The bulk of this increase is expected to be within the working age population bracket of 15-64 year olds.

The causes of this upgrade are split evenly between slightly higher expected fertility rates, further improvements in life expectancy and higher than expected migration flows (as seen into EU countries in recent years). On this final point, for example, net migration flows into the EU for 2010 are forecast to be 785,000 per annum higher than forecast in 2006. In total, net inward migration into the EU is expected to be some 12.6m higher than estimated in 2006.

The revisions put a slightly different gloss on projected old-age dependency ratios by 2050. The ratio still increases sharply, but at a slower pace than previously anticipated. The revisions also raise long term projected average potential GDP growth to 1.8% p.a., slightly higher than the 1.7% in the 2006 projection.

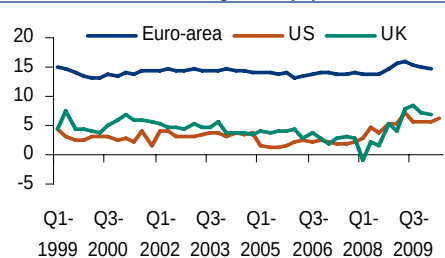
None of this is meant to rubbish the data but merely to illustrate the difficulty of projecting long-term differences between very large numbers (births, deaths and migration) and several complex variables (participation rates, productivity and competitiveness, amongst many others). The challenge for governments is that this creates potentially serious obstacles in trying to sell difficult policy choices to a sceptical public (as climate change proponents have recently found).

And so the data is good but not infallible and represents a best guess on a stylised future state which will not actually eventuate as people, governments and corporates will react and adapt to the extent that they can.

We are aging: panic now, panic later or no panic?

We are not in the camp of demographic determinists; being of sunny disposition we tend to believe that answers (however muddle through in nature) will be found to offset the worst effects of the demographic headwinds. However, demographics are akin to gravity: one can fight it and come to some working relationship with it but that does not mean that it goes away.

Chart 5: Personal savings rate (%)



Source: BofA Merrill Lynch Global Research

Economies also will have to deal with exogenous shocks such as a global financial crisis which will exert far greater short term influence and potentially delay or derail much of the medium term planning and feasibility of demographic-related policy efforts

However, projections on additional ageing-related expenditure on already stressed government budgets is a clear and present (not just future) danger

European trends are well-recognised that have been flagged for many years and have already started to prompt policy responses from European governments. The implications for public finances have generally taken centre stage in discussions, but at the individual level demography, for example, might also help to explain the very high savings rates seen amongst core European countries over the past several years as private individuals anticipate the likely need for greater self help rather than a state guaranteed retirement (there seems surprisingly little in the literature examining this trend).

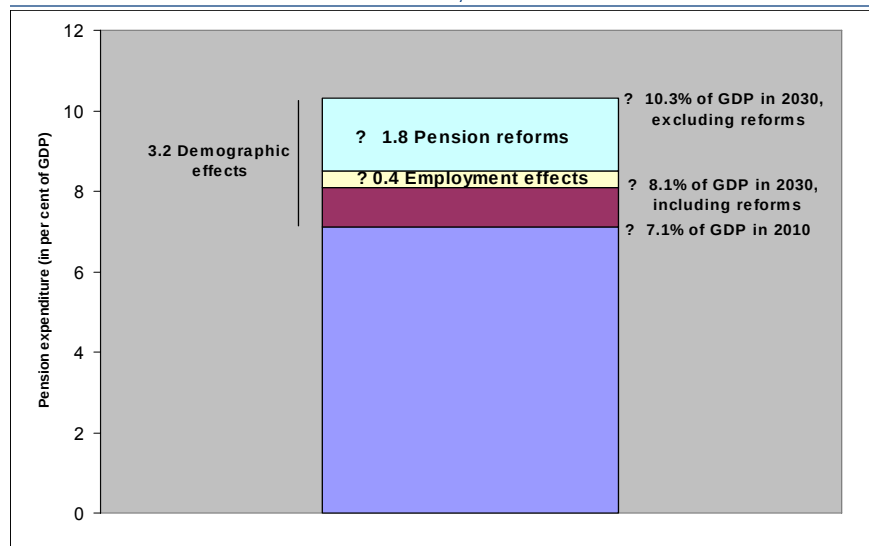
A brief summary of the potential repercussions of static and ageing populations is to consider the impact on governments, corporations and individuals.

Governments have perhaps the most direct and obvious challenges. With longer-term economic growth projected to be lower so will tax take at a time when age related expenditure will be increasingly rapidly. There are numerous papers with estimates of potential age related burdens but the IMF, for example, projects the total cost of age-related expenditure increases to be several times the total cost of the current financial crisis.

There have been no silver linings to the current financial crisis, however at the very least it is forcing governments (and electorates) to discuss long term public funding issues. Perhaps sub-consciously following Rahm Emmanuel's maxim of "never let a serious crisis go to waste" this is leading to more radical proposals on fundamental restructuring than could have been expected a few years ago- whether in Greece, Spain, UK or even France where raising the pension age is becoming an important political moment for President Sarkozy.

How countries manage longer term budgets and the resulting impact on sovereign and corporate credit ratings, debt servicing costs and tax burdens is probably the most important single challenge for ageing societies. The Greek funding crisis this year has given all European nations an insight into what happens when markets decide that government funding deficits are out of control- and provides the most compelling reason for why long term age-related expenditure projections cannot be ignored.

Chart 6: The Effect of Enacted Pension Reforms, 2010-30



Source: European Commission, OECD, US Congressional Budget Office and IMF

The policy choices remain the same:

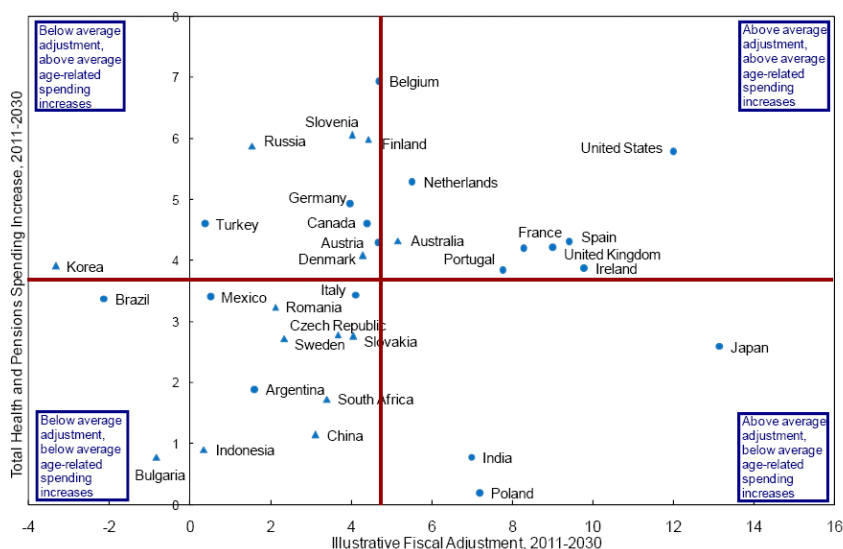
1. job creation
2. controlling access to entitlements

Governments tend to do a lot about the first but only talk a lot about the second

However welcome it is that longer term ageing-related funding has now been forced onto the political agenda, all this can do is start to make up for years of accumulated political inactivity. In fact, the policy requirements are exactly the same as ever: costs and income respectively. Governments have to control entitlements to ensure that long term promises can actually be delivered on, and secondly eliminate waste and inefficiency within economies thereby maximising the potential of existing resources and thereby creating the jobs that will both satisfy existing electorates (across the entire age spectrum) while also providing incentives for migrants to bolster potential workforces.

Of the two priorities boosting productive potential by eliminating waste and improving efficiencies is always an easier to sell to electorates (everyone believes the state can do better), but controlling entitlement spending is equally important if governments are to avoid bankrupting the future- here, however, few politicians are brave enough to get in the business of prioritisation and saying that one life is worth more than another one which seems to be at the heart of rationing access to long term healthcare.

Chart 7: Illustrative Fiscal Adjustment and Projected Age-Related Spending Increases in 2011–30 (In percent of GDP)

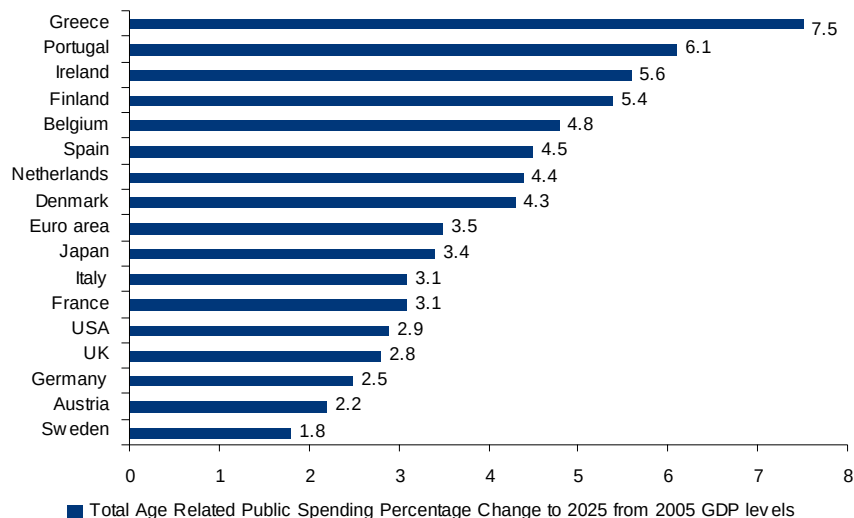


Source: IMF staff estimates.

Combining current deficit levels with projected age related spending changes leads to a familiar grouping of countries

Depending on current pension and healthcare benefits a reasonable demographic profile can imply large increases in age related spending commitments

Chart 8: Total Age Related Public Spending % Change to 2025 from 2005 GDP levels



Source: Cournède, B. (2007), "The Political Economy of Delaying Fiscal Consolidation", OECD Economics Department Working Papers, No. 548, OECD Publishing. BofA Merrill Lynch Global Research

An ageing population means an ageing workforce with impact of workplace design and organisation.....

As well as shifting patterns of consumption

For **corporations** the task is two-fold: controlling demographic impacts on both supply and demand. First, companies will be faced with having to compete for sufficient, qualified labour within a shrinking pool, presumably leading to higher rates of pay. Second, they have to anticipate the demand shifts likely in a slower economic growth scenario (at least for Europe) and a market place where the elderly will be a much larger share with different consumption habits (see later in the report) and also different requirements in things like workplace design (is an open-plan, noisy workplace something that would attract an older workforce?). Any business will confirm that it is much easier to sell into a growing market than a static or shrinking one so Europe overall looks set to be less attractive albeit with 500m potential (reasonably wealthy) consumers it cannot be ignored.

Finally, **individuals** have decisions to make on retirement investments and timing and planning for age-related commitments, as well as thinking about on going support of children and extended families. All of this will need to be accomplished against a backdrop, particularly for younger people, which will put growing strain on the notion of the collective versus the individual, the biggest symptom of which is an old-age dependency ratio doubling over the next 50 years.

Lower population suggests lower long term rates of growth and lower long term valuations

Impact on future levels of real interest rates is more debatable

A scarcity of savings should boost rates of return i.e. higher rates

But lower levels of required investment could cut demand for capital and dampen rates

Following the wealth loss in the financial crisis, do people need to take more risk to recoup returns before shutting down risk appetite into retirement?

Impact on asset markets

As a broad summary the twin effects of a shrinking working population and a rapidly ageing population impacting long term growth rates, means that long term rates of return could be lower, as could asset valuations, in reacting to less optimistic forward projections. However, specific conclusions beyond this become more difficult if we accept that the continuing development and growth of emerging markets and the relative stability of the US demographic situation will still present a range of: a) markets for European companies, b) investments for European investors which together will complicate specific European conclusions. Furthermore a topic such as 'will the level of real interest rates be higher or lower in an ageing society?' seems to promote more debate than agreement.

Older people and interest rates

The potential impact of demographics on interest rates has produced a lot of analysis with arguments for why both provision of and demand for capital could fall with an uncertain conclusion for long term interest rates.

A classic lifecycle model would suggest that as people grow old they save less. In terms of aggregated national savings, this could lead to a gradual fall and see interest rates moving higher (quite sharply in rapidly ageing economies such as Japan). Econometric studies suggest that 50 years old seems to be a cut off after which fewer investment risks (and consumption risks) are taken.

The problem is that findings from many disaggregated studies do not support the conclusions from the econometric models finding a range of outcomes amongst different age cohorts rather than the *get old, save less* conclusions of the lifecycle model. This research suggests risk aversion is not a function of a specific age *per se* but is seen relative to *expected* retirement age. So that if I think I am retiring next week, irrespective if I am 40, 50 or 80 years old I tend to be much more risk-averse than if I think I am not retiring for another 15 years. Clearly if countries are successful in raising retirement ages then we could see continued saving (and risk tolerance) for a longer period than models might project with less impact on interest rates as a result.

Furthermore, with employment growth slowing, theory would also suggest that demand for capital to invest in new capital stock would also be lower (quite apart from other long term projections on technology change and capital demands); a lower demand for capital should see interest rates fall as well.

Net, net even before trying to account for the impact of cross border capital flows perhaps the most we can say is that the demographic trends outlined in this report could reduce both demand for and supply of capital with an uncertain impact on real interest rates.

What happens post a wealth shock?

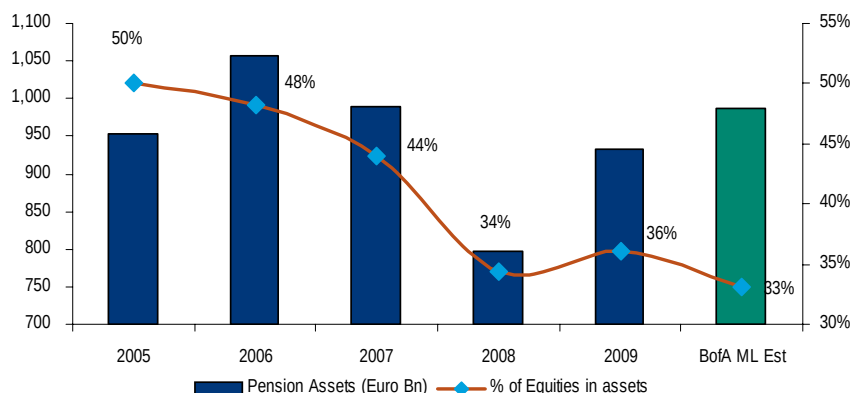
There is also the question of wealth destruction due to the financial crisis. With sudden, large funding gaps opening up for many pensioners (and pension funds) does this lead people to reset retirement expectations, whether in terms of age or expected wealth, or perhaps opt for a low risk secure return over the remaining expected life, or do they suddenly enter a burst of greater risk appetite in an effort to replenish the coffers before eventually cashing in and buying an annuity?

It seems logical to assume that risk appetite falls with ageing but it is not as definitive as first inspection might suggest. That said, a recent report we published on pensions ([European Equity Strategy, 07 September 2010](#)) finds that

Falling rates have resulted in another ballooning in pension fund deficits which is prompting further moves out of equities into bonds timing looks to be very debatable

overall equity weighting within European pension funds had fallen from around 50% in 2005 to 35% in the most recent accounts. This may reflect a shift towards greater liability/asset matching but most likely is also a result of the terrible volatility and performance of equities over the last 10 years. Even when equities recovered by 25% in 2009 their relative weight in pension fund assets only rose by 2% as presumably pension fund managers opted to de-risk.

Chart 9: Pension assets for FTSE Eurofirst 300 companies



Source: BAML European Equity Strategy, Company accounts, Datastream

Housing looks to be vulnerable as a generational hand down of assets encounters a smaller pool of buyers

Perhaps clearer negatives for housing

An alternative model for looking at ageing trends on asset prices is the overlapping generational model that argues for an asset sale/purchase relationship between successive age cohorts. Given that we are about to see the largest population cohort of recent decades- the baby boomers- reaching retirement age and trying to sell houses and other accumulated financial assets to much smaller cohorts- Generations X in and Y- prices will have to fall due to excess supply.

This would suggest a fairly sober outlook for all financial assets but perhaps for **housing markets** in particular. A recent BIS working paper on Ageing and Asset Markets concludes that Europe (and Japan) could face a reduction in real housing prices of more than 100bp per annum over the next 40 years, although this would still probably lead to positive overall real price appreciation. Following this through the diversification benefit for pension funds for example of owning property or other financial assets might also be called into question.

A shrinking workforce makes labour the scarce resource

Labour takes a greater pie slice

With the working population set to shrink, productivity improvements will take on increased importance as the principal driver of growth. A challenge for companies but a potential positive for consumption (?) is that a world of shrinking labour forces makes workers the scarce resource. This suggests negative implications on long term investment returns if margin shifts to workers rather than rewarding capital. If ROE trends start to reverse the consistent gains they have seen over the past 20 years then theory would suggest lower equity prices and valuation.

The principal component of growth going forward will be productivity improvements
And whatever can be done to raise participation rates

However, a rational substitution of labour by capital (capital deepening) could equally lead to improvements in productivity and more than justify increases in labour rewards. It is difficult to square this circle, even more so when we are realistically looking at labour and capital markets that are global rather than solely European in scope.

Technology stands as the biggest potential wildcard in the ageing debate. The next retirement generation will be more tech savvy than any before and this could have profound implications for care, consumption and even politics

Japan, perhaps by necessity, is investing towards highly tech-enabled retirement solutions

Elderly tend to be more sedentary despite a liking for cruises and package holidays. They eat less but more healthily.

They consume more utilities

They drive less and buy fewer cars although the efficient, cheap, good looking 2-seater could be a winning category

Entertainment solutions in a tech friendly world will likely take a bigger proportion of old age income

Productivity tools

One advantage Europe has (and needs to nurture) is a well educated, skilled labour force. In terms of stretching productivity further companies (and individuals) will need to invest in education as a competitive advantage, which means: partnering with schools and universities, on-the-job training, continuing career education, effective retention policies, as well as effective investment in technology and communication infrastructure. Raising participation rates- more elderly and more women

Within a defined population of working age, outside of attracting migrant workers governments and companies will need to raise participation rates. This can be partially accomplished with prolonging working careers of would be retirees as well as cutting youth unemployment rates, however raising female participation rates is perhaps the major target which can help defray declining overall employment numbers.

We are leaving more detailed sector discussions to our individual sector teams but some broad thoughts on sectors that will be influenced by these trends are fairly straightforward but one general point to make is that the post baby boomer generation – now leaving middle age- is the first technology savvy generation to approach retirement and **technology** remains a potentially huge factor and enabler across a range of age related activities such as communication, education, entertainment, friendship/ companionship, health monitoring/diagnosis, knowledge, social networking, politics, recreation. There is also the world of robotics with its applications for home help and mobility (the Japanese solution for ageing) plus everything else one can extract from the applied sci-fi manuals.

Changing consumption patterns

European data showing the shift in consumption patterns between age cohorts according to Eurostat is shown in the following chart (note that the data is from 2005). No great surprise that an ageing population becomes a more sedentary population despite the widely held belief that the elderly spend their retirement on cruise liners around the world.

This results in a greater proportion of spending on basic food and utilities together with greater health related outgoings. The relative losers on this are auto related expenditure, the eating out market and clothing/footwear.

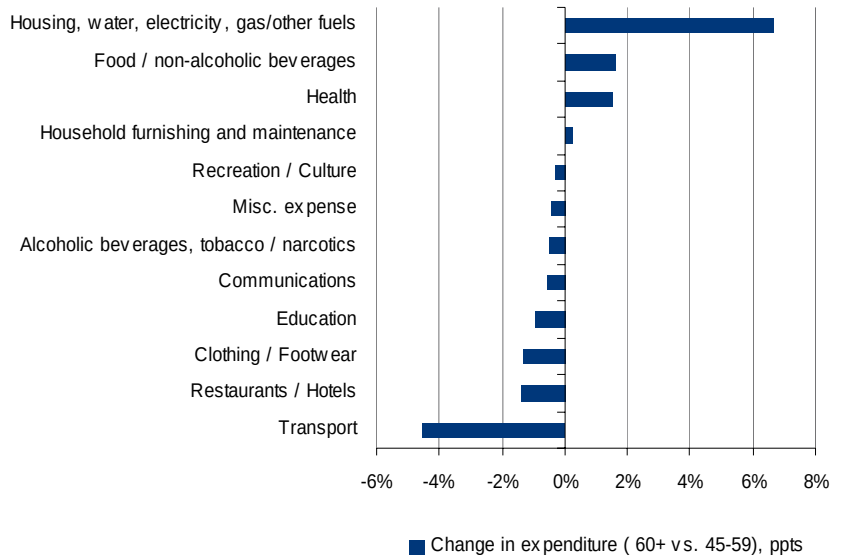
Old age (and technology) sets them free?

Given our comments above on technology, we would however raise the question of whether the past is the future in terms of these trends- for example; it is difficult to believe that communications, 5 years of smart phone development on from this data, is still a relative loser in spending patterns. Furthermore as generation X reaches retirement there has been a lot of literature on how a supposed freedom/protest/leisure generation is going to react

One thing that seems certain is that it poses a challenge for politicians; if they still struggle to mobilise the young to vote then the importance of the elderly will take on greater significance. One only has to look at the age-mix at a 'tea party' in the US, for example, to appreciate what an internet enabled network with a fair amount of time on their hands might achieve if they find common causes to rally around. Bottom line is that the ageing agenda will have to remain front and centre on political agendas.

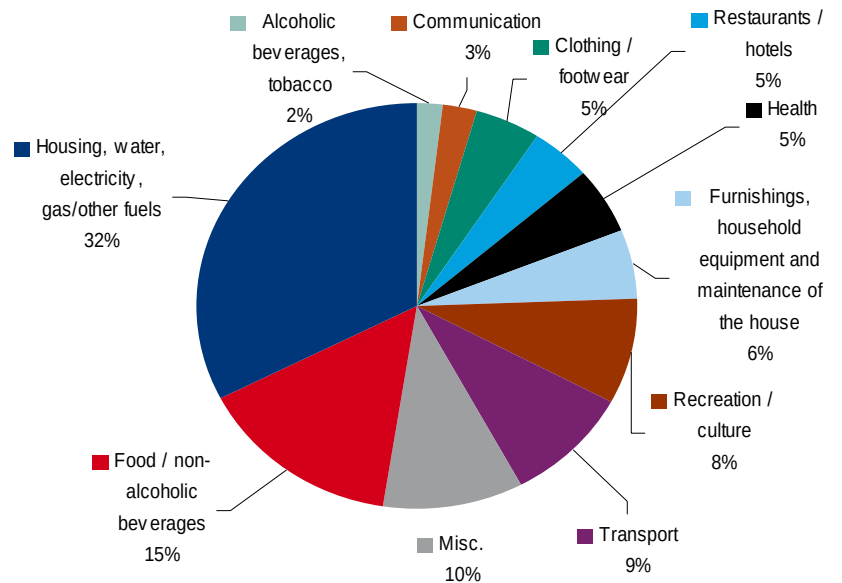
As people age expenditure patterns shift to basic needs and utilities away from discretionary spend

Chart 10: Change in expenditure for 60+ vs. 45-59 ages (% pts)



Source: Eurostat, based on 2005 data

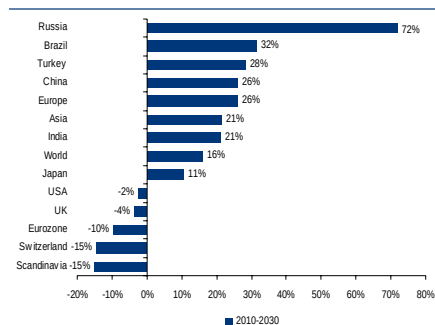
Chart 11: Expenditure flows for 60+



Source: Eurostat, based on 2005 data

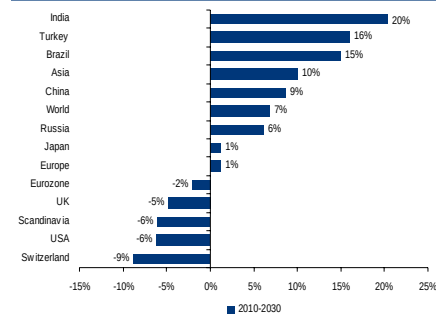
Country Analysis: Summary

Chart 12: Mid-Young ratio change 2010-2030E



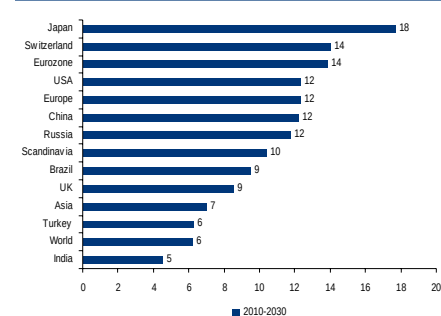
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 13: Prime savers to the rest of population ratio change 2010-2030E



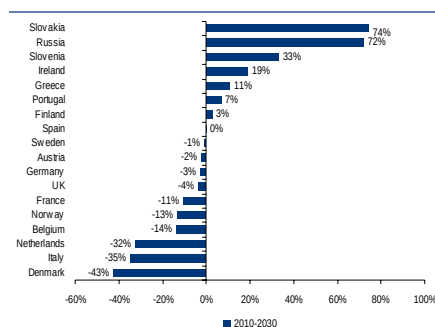
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 14: Elderly dependency ratio change 2010-2030E



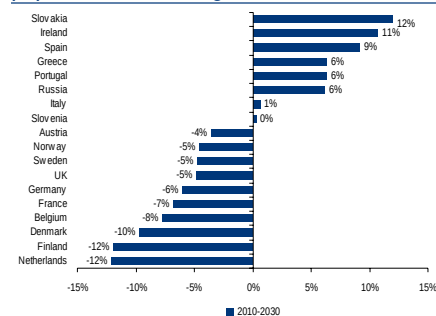
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 15: Mid-Young ratio change 2010-2030E



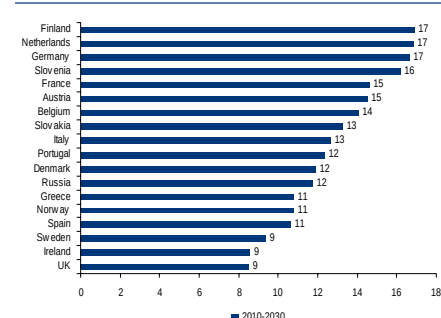
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 16: Prime savers to the rest of population ratio change 2010-2030E



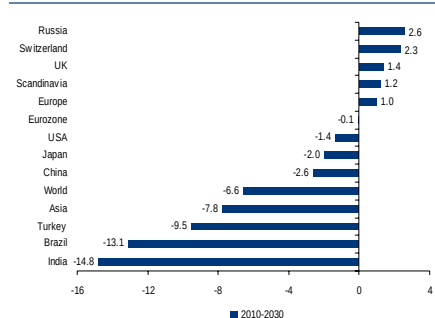
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 17: Elderly dependency ratio change 2010-2030E



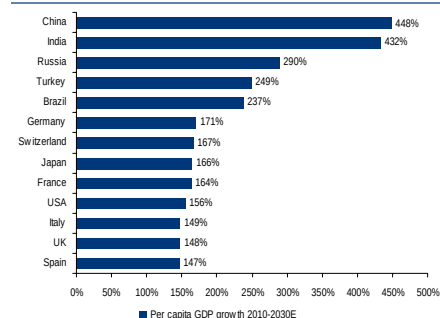
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 18: Child dependency ratio change 2010-2030E



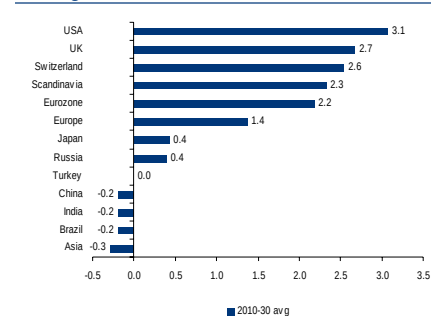
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 19: Per capita GDP (PPP) growth (%) 2010-2030E



Source: Datastream, EIU, BofA Merrill Lynch Global Research

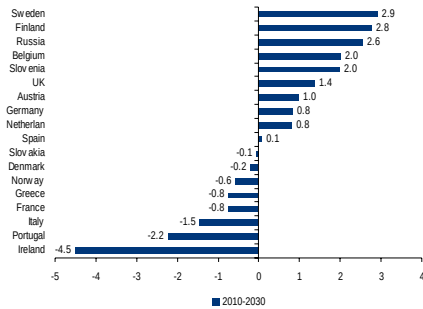
Chart 20: Net migration ratio 2010-2030E Average



Source: UN Population Database, BofA Merrill Lynch Global Research

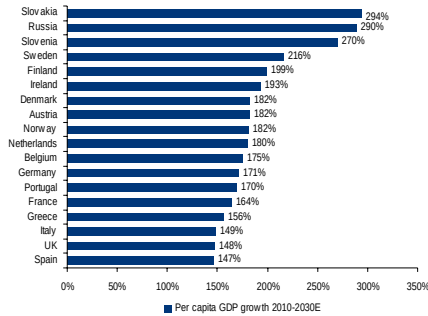
16 September 2010

Chart 21: Child dependency ratio change 2010-2030E



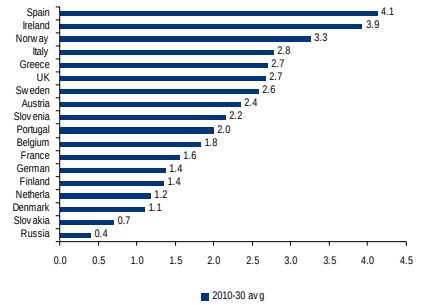
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 22: Per capita GDP (PPP) growth (%) 2010-2030E



Source: Datastream, EIU, BofA Merrill Lynch Global Research

Chart 23: Net migration ratio 2010-2030E Average



Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 24: Country Analysis: Comparing key trends

	Mid-Young ratio	Prime savers to the rest of population ratio	Elderly dependency ratio	Child dependency ratio	Per capita GDP (PPP) growth	Net migration rate	Labour force education	Key Takeaways
Brazil	√√	√√	X	√	√	X	X	The Eurozone is rich, attracts immigrants and has a well educated labour force. However it is unattractive demographically.
China	√	√	X		√√	X	N/A	
Eurozone	X	X	XX			√√	√	
India	√	√√	√	√	√√	X	N/A	
Japan	√		XX			√	√√	
Russia	√√	√	X	X	√	√	√√	The UK and USA don't face as strong demographic headwinds as the Eurozone, but neither is that attractive demographically when compared with Brazil, India and Turkey.
Scandinavia	XX	X	X	X		√√	√	
Switzerland	XX	XX	XX	X		√√	√	
Turkey	√	√√	√	√	√	X	X	
UK	X	X	X	X		√√	√	
USA	X	X	X			√√	√√	

Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 25: Pan European Country Analysis

	Mid-Young ratio	Prime savers to the rest of population ratio	Elderly dependency ratio	Child dependency ratio	Per capita GDP (PPP) growth	Net migration rate	Labour force education	Age-related public spending	Key Takeaways
Austria	X	X	XX	X		√		√	While Greece, Ireland and Portugal have some of the stronger demographic profiles in Europe for the next 20 years, they face the largest increases in total age related public spending as a percentage of GDP in the near future.
Belgium	X	X	XX	X		√		X	
Denmark	XX	XX	X			√	√	X	
Finland		XX	XX	X		√	√	XX	
France	X	X	XX	√		√	√		
Germany	X	X	XX	X		√	√		
Greece		√	X	√		√		XX	
Ireland	√	√	X	√√		√√	√	XX	
Italy	X		X	√		√			
Netherlands	XX	XX	XX	X		√	√	X	
Norway	X	X	X	√		√√	√		
Portugal		√	X	√		√	X	XX	
Slovakia	√√	√	X		√	√			
Slovenia	√		XX	X	√	√			Several countries, including France and Germany, face very large rises in their elderly dependency
Spain		√	X			√√	√	X	
Sweden	X	X	X	X		√	√	√	
UK	X	X	X	X		√	√		

Source: UN Population Database, BofA Merrill Lynch Global Research

Demographics and Market performance

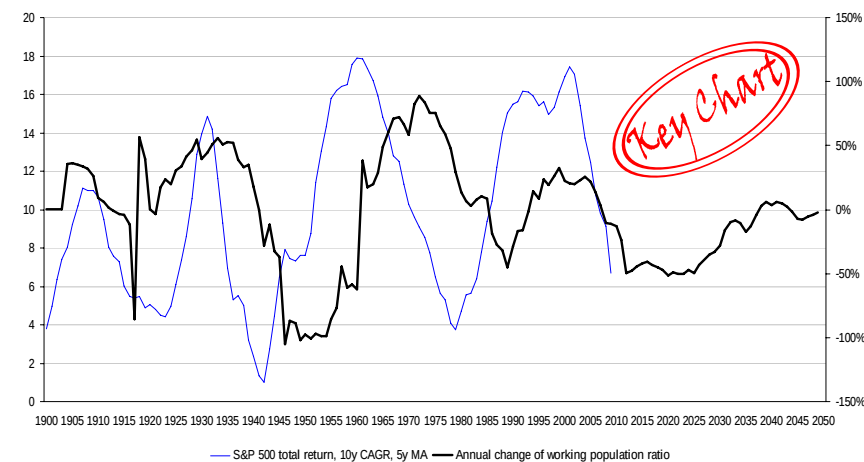
The following charts are taken from a report on Asian Demographics published by Sadiq Currimbhoy and present an interesting perspective on how markets appear to be responding and anticipating demographic changes.

Key Takeaways

This shows the long-term performance of the US equity index and the change in percentage of working population. It appears that the US equity index can rationally factor in the demographic changes.

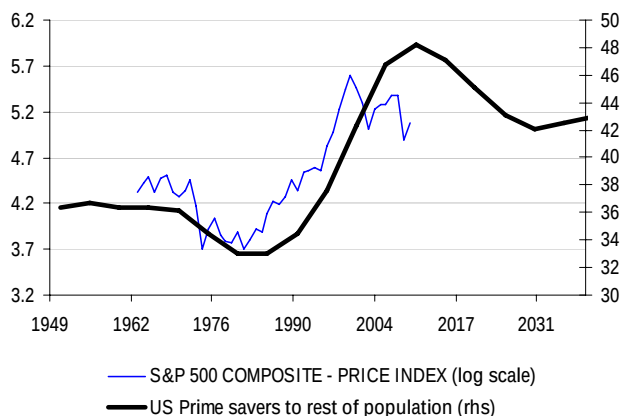
The prime savers defined by the cohort of aged between 40 and 64 preserve and utilize a majority of the wealth within a country. Hence, "prime savers to the rest of population" ratio is arguably one of the most important demographic factors in determining stock market values.

Chart 26: US Equities can rationally expect the demographic changes



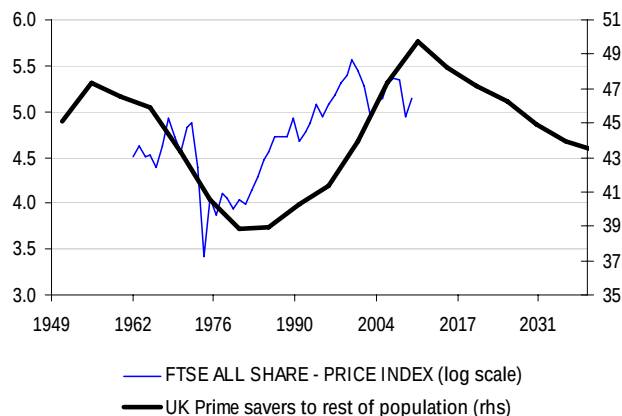
Source: US Census Bureau, Robert Shiller, BofA Merrill Lynch Global Research

Chart 27: Real S&P 500 Index and US Prime Savers to the Rest of Population Ratio



Source: Bloomberg, DataStream, UN Population Database, BofA Merrill Lynch Global Research

Chart 28: Real FTSE All Share Index and UK Prime Savers to the Rest of Population Ratio



Source: Bloomberg, DataStream, UN Population Database, BofA Merrill Lynch Global Research

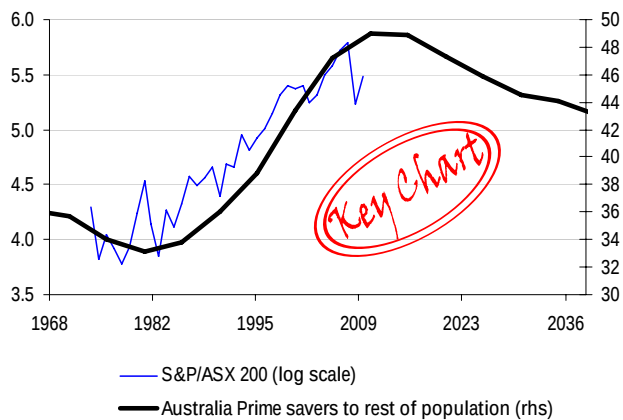
Key Takeaways

In advanced economies such as the US and the UK, the stock markets can rationally factor in the demographic trend, usually a few years ahead.

If this relationship continues to be self-fulfilling, there will be decades of bear markets in the US and the UK as the baby boomer benefit passes through markets.

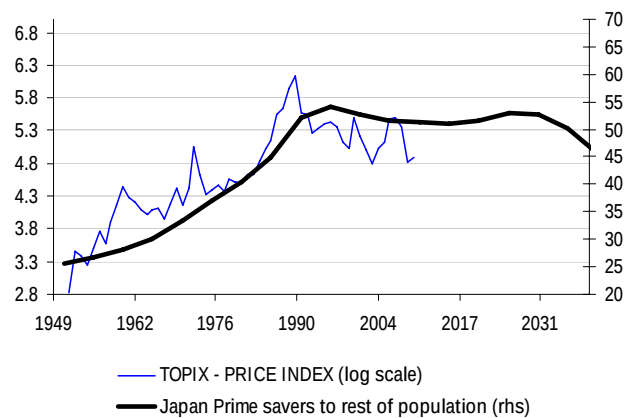
16 September 2010

Chart 29: Real ASX 200 Index and Australia Prime Savers to the Rest of Population Ratio



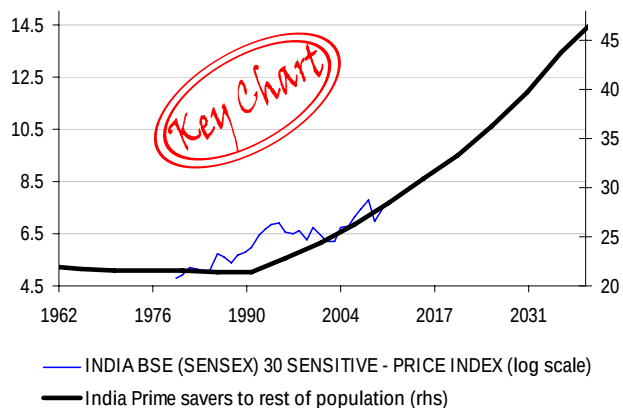
Source: Bloomberg, DataStream, UN Population Database, BofA Merrill Lynch Global Research

Chart 30: Real TOPIX and Japan Prime Savers to the Rest of Population Ratio



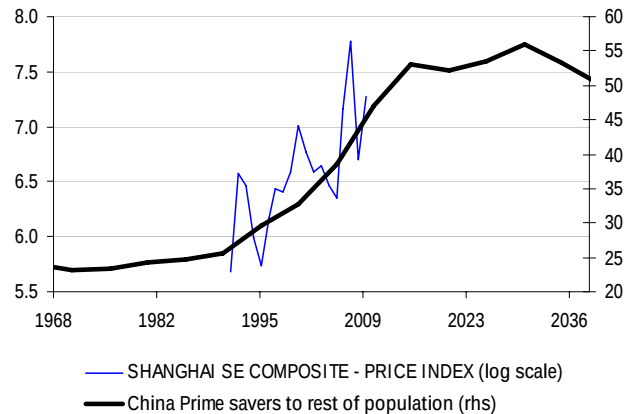
Source: Bloomberg, DataStream, UN Population Database, BofA Merrill Lynch Global Research

Chart 31: India Sensex Index and India Prime Savers to the Rest of Population Ratio



Source: Bloomberg, DataStream, UN Population Database, BofA Merrill Lynch Global Research

Chart 32: Real Shanghai Composite Index and China Prime Savers to the Rest of Population Ratio



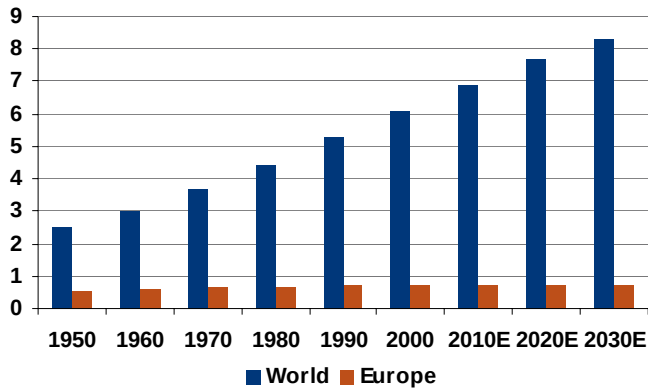
Source: Bloomberg, DataStream, UN Population Database, BofA Merrill Lynch Global Research

Key Takeaways

In most Asian economies, the relationship seems to be more concurrent. For example, demographics correctly “predicted” the distressed situation for the Japanese stock market since late 1980s/early 1990s. Generally the attractive population profiles in Emerging Markets present a stronger backdrop for equity performance with India a particular standout.

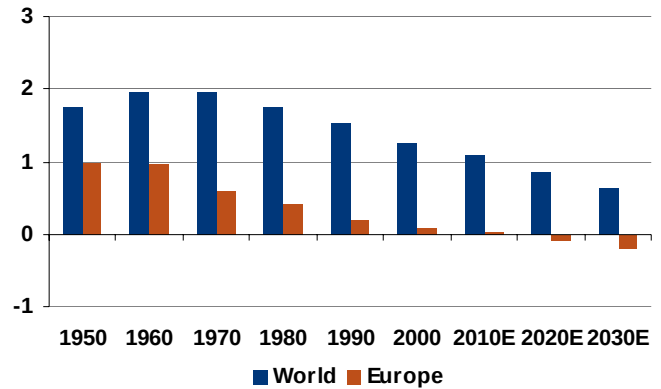
Population and Population Growth

Chart 33: World Population and Europe Population (in billions)



Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 34: World and Europe Population Growth Rate (%)



Source: UN Population Database, BofA Merrill Lynch Global Research

Key Takeaways

Among the top 30 most populous countries in the world, only 5 are from Europe.

In 1950 World population was 2.5 billion, by 2009 it had increased to 6.8 billion.

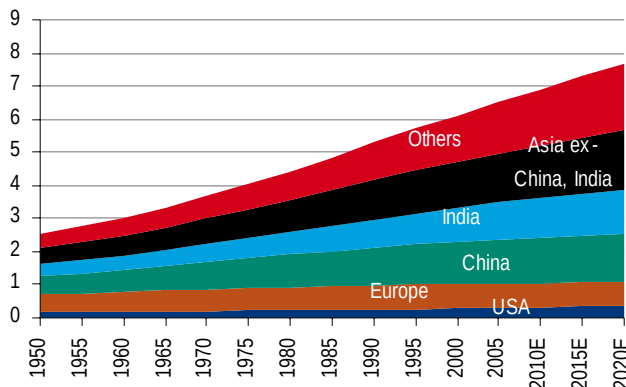
The rate of population growth in Europe started to decline in the 1950s, and is forecast to turn negative after 2010, contributing to a fall in share of world population – from 20% (0.5bn) in 1950 to 10% (0.7bn) in 2009.

Table 1: Most Populous Countries Around the Globe (European Countries + Russia/Turkey Shaded)

Rank	Country	Population	Rank	Country	Population	Rank	Country	Population
1	China	1,330,141,295	11	Mexico	112,468,855	21	France	64,057,792
2	India	1,173,108,018	12	Philippines	99,900,177	22	UK	61,284,806
3	USA	310,232,863	13	Vietnam	89,571,130	23	Italy	58,090,681
4	Indonesia	242,968,342	14	Ethiopia	88,013,491	24	Burma	53,414,374
5	Brazil	201,103,330	15	Germany	82,282,988	25	South Africa	49,109,107
6	Pakistan	177,276,594	16	Egypt	80,471,869	26	South Korea	48,636,068
7	Bangladesh	158,065,841	17	Turkey	77,804,122	27	Ukraine	45,415,596
8	Nigeria	152,217,341	18	Dem. Rep. Congo	70,916,439	28	Colombia	44,205,293
9	Russia	139,390,205	19	Iran	67,037,517	29	Sudan	41,980,182
10	Japan	126,804,433	20	Thailand	66,404,688	30	Tanzania	41,892,895

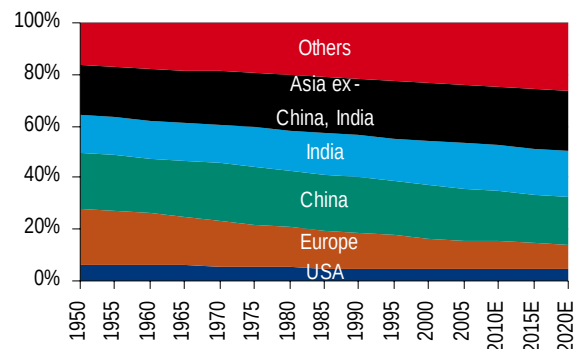
Source: CIA World Factbook, July 2010 Estimate. BofA Merrill Lynch Global Research

Chart 35: World Population Trend By Regions



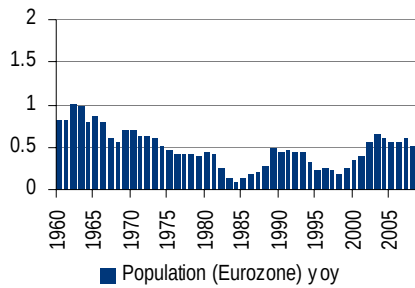
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 36: World Population Composition



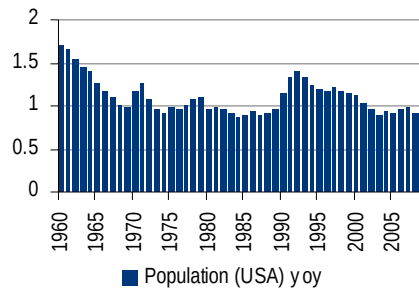
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 37: Eurozone Population Growth



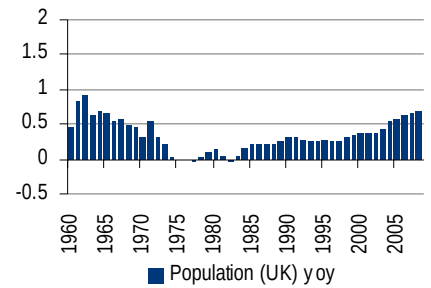
Source: World Bank, BofA Merrill Lynch Global Research

Chart 38: USA Population Growth



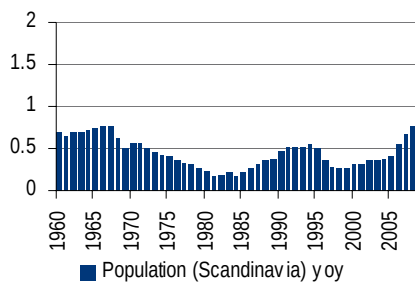
Source: World Bank, BofA Merrill Lynch Global Research

Chart 39: UK Population Growth



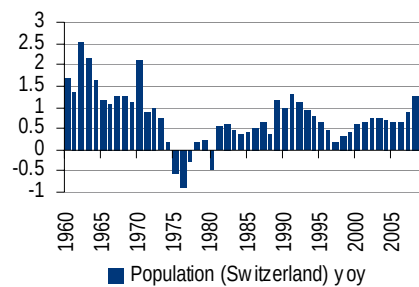
Source: World Bank, BofA Merrill Lynch Global Research

Chart 40: Scandinavia Population Growth



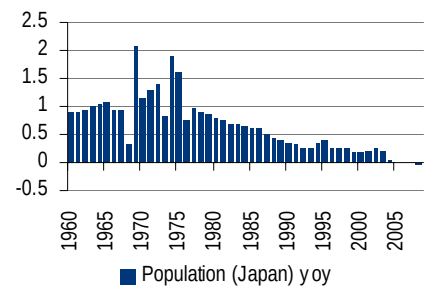
Source: World Bank, BofA Merrill Lynch Global Research

Chart 41: Switzerland Population Growth



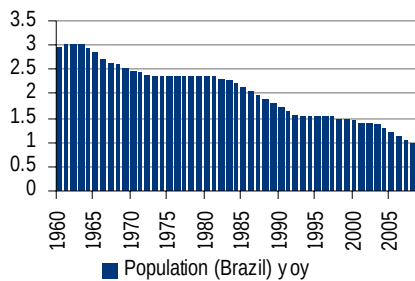
Source: World Bank, BofA Merrill Lynch Global Research

Chart 42: Japan Population Growth



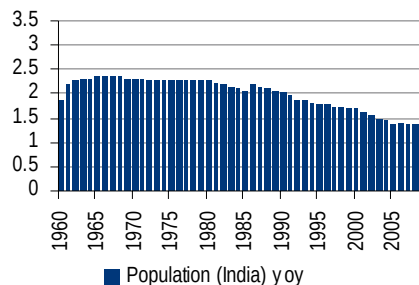
Source: World Bank, BofA Merrill Lynch Global Research

Chart 43: Brazil Population Growth



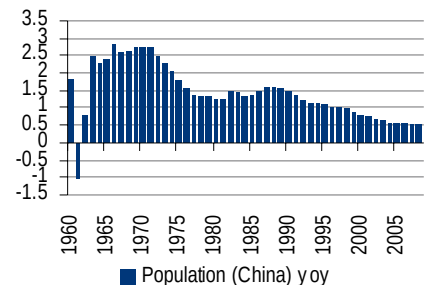
Source: World Bank, BofA Merrill Lynch Global Research

Chart 44: India Population Growth



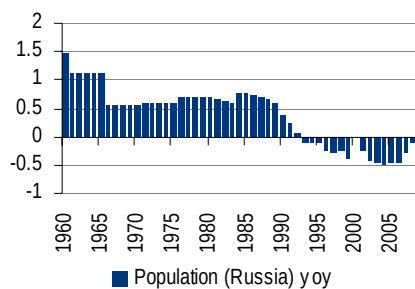
Source: World Bank, BofA Merrill Lynch Global Research

Chart 45: China Population Growth



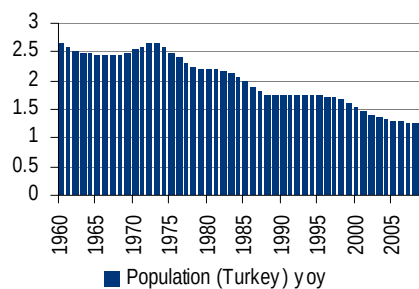
Source: World Bank, BofA Merrill Lynch Global Research

Chart 46: Russia Population Growth



Source: World Bank, BofA Merrill Lynch Global Research

Chart 47: Turkey Population Growth



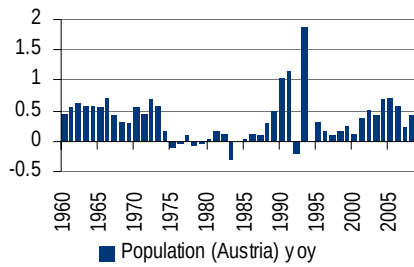
Source: World Bank, BofA Merrill Lynch Global Research

Key Takeaways

Population growth in the Eurozone has been considerably less than in the US. There has been a general decline since the 1960s, although a recent rise (as in the UK) has been due to immigration.

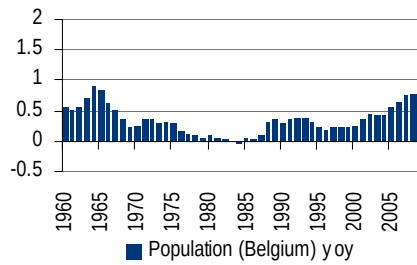
There has been negative population growth in Russia for 15 years and more recently in Japan.

Chart 48: Austria Population Growth



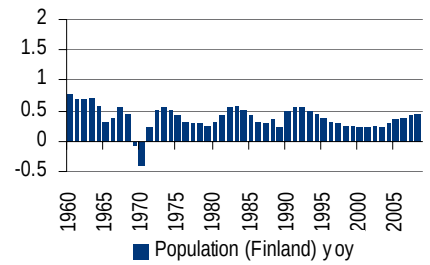
Source: World Bank, BofA Merrill Lynch Global Research

Chart 49: Belgium Population Growth



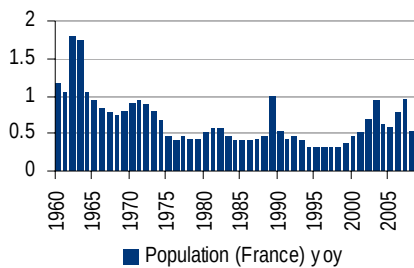
Source: World Bank, BofA Merrill Lynch Global Research

Chart 50: Finland Population Growth



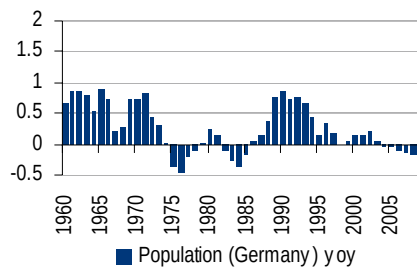
Source: World Bank, BofA Merrill Lynch Global Research

Chart 51: France Population Growth



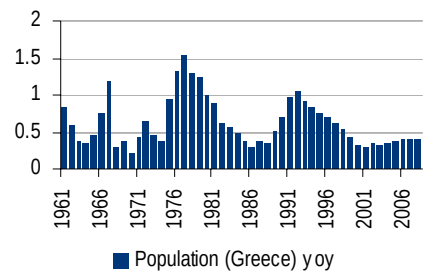
Source: World Bank, BofA Merrill Lynch Global Research

Chart 52: Germany Population Growth



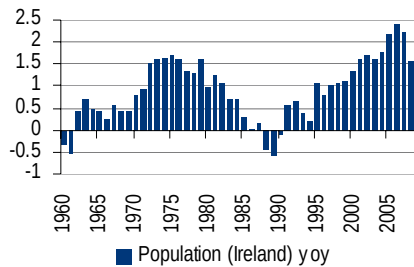
Source: World Bank, BofA Merrill Lynch Global Research

Chart 53: Greece Population Growth



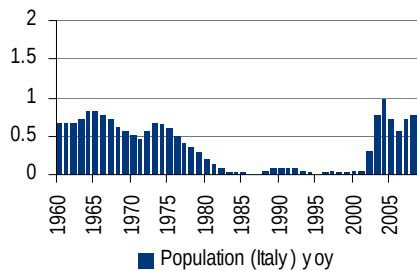
Source: World Bank, BofA Merrill Lynch Global Research

Chart 54: Ireland Population Growth



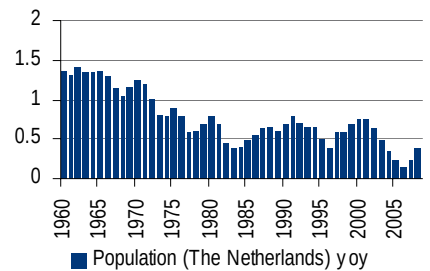
Source: World Bank, BofA Merrill Lynch Global Research

Chart 55: Italy Population Growth



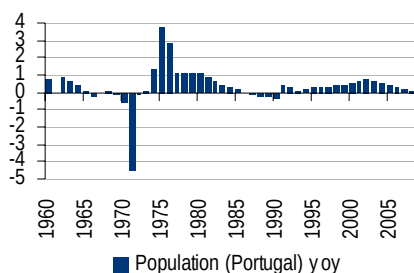
Source: World Bank, BofA Merrill Lynch Global Research

Chart 56: The Netherlands Population Growth



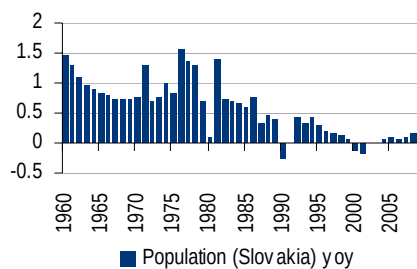
Source: World Bank, BofA Merrill Lynch Global Research

Chart 57: Portugal Population Growth



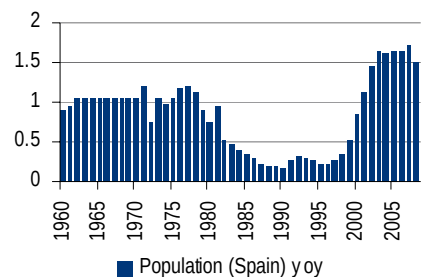
Source: World Bank, BofA Merrill Lynch Global Research

Chart 58: Slovakia Population Growth



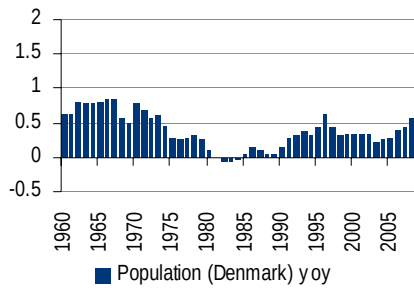
Source: World Bank, BofA Merrill Lynch Global Research

Chart 59: Spain Population Growth



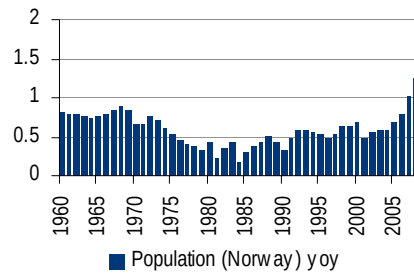
Source: World Bank, BofA Merrill Lynch Global Research

Chart 60: Denmark Population Growth



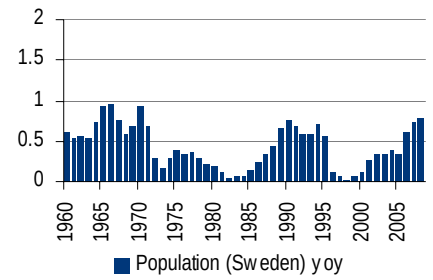
Source: World Bank, BofA Merrill Lynch Global Research

Chart 61: Norway Population Growth



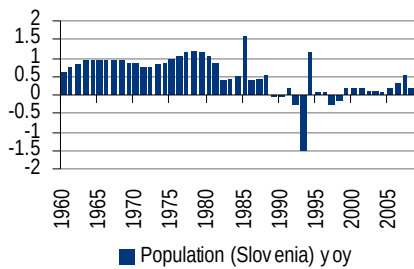
Source: World Bank, BofA Merrill Lynch Global Research

Chart 62: Sweden Population Growth



Source: World Bank, BofA Merrill Lynch Global Research

Chart 63: Slovenia Population Growth



Source: World Bank, BofA Merrill Lynch Global Research

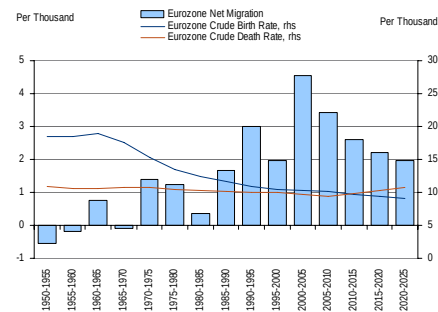
Key Takeaways

Population growth is heavily dependent on net migration in the Eurozone countries, contributing to the relatively recent rise in Italy's population growth rate.

Germany is the only major Eurozone country to have negative population growth.

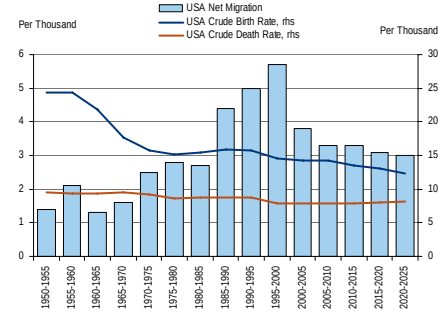
Birth Death and Migration

Chart 64: Eurozone



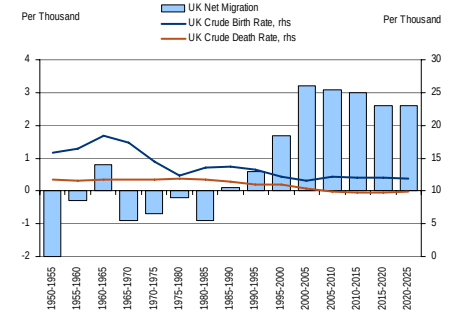
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 65: USA Birth, Death and Migration



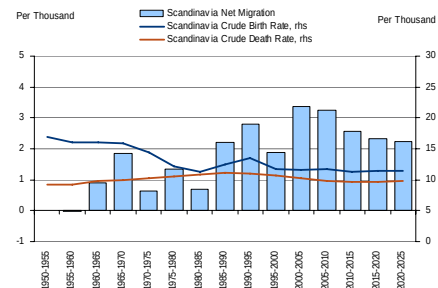
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 66: UK Birth, Death and Migration



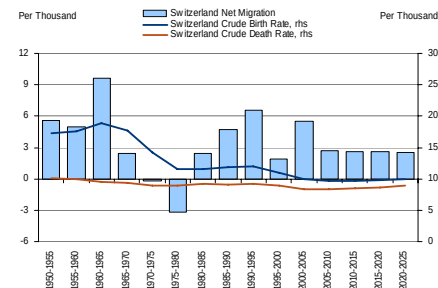
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 67: Scandinavia Birth, Death and Migration



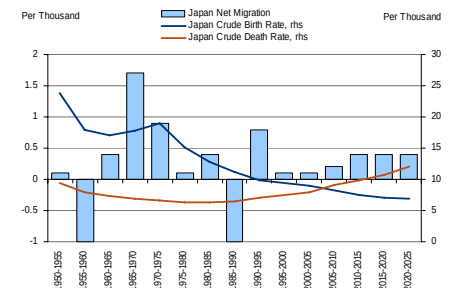
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 68: Switzerland Birth, Death and Migration



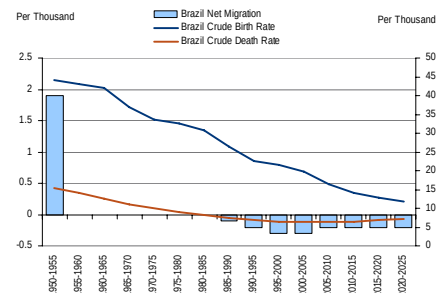
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 69: Japan Birth, Death and Migration



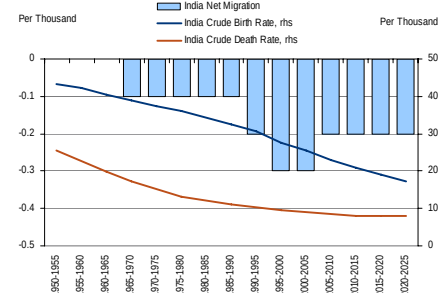
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 70: Brazil Birth, Death and Migration



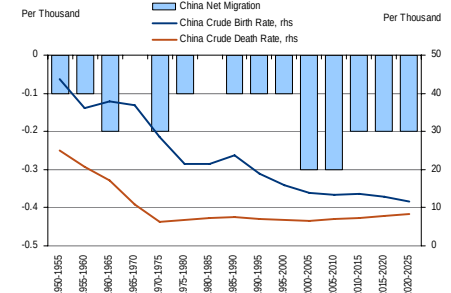
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 71: India Birth, Death and Migration



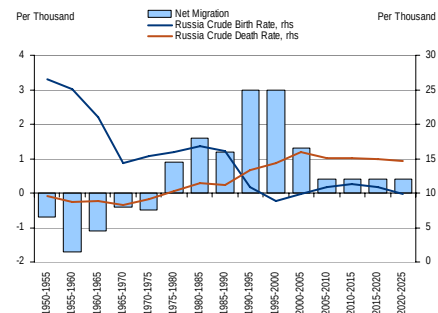
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 72: China Birth, Death and Migration



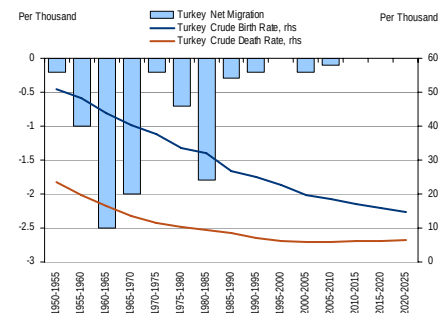
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 73: Russia Birth, Death and Migration



Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 74: Turkey Birth, Death and Migration



Source: UN Population Database, BofA Merrill Lynch Global Research

Key Takeaways

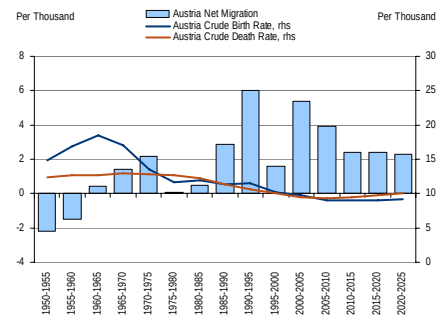
The US has the strongest profile – death rate above birth rate and high immigration levels. Recently UK has a similar profile albeit at lower levels.

Eurozone does quite well at attracting immigrants but the death rate is forecast to rise above the birth rate in the next 5 years.

Russia has had a higher death than birth rate for twenty years.

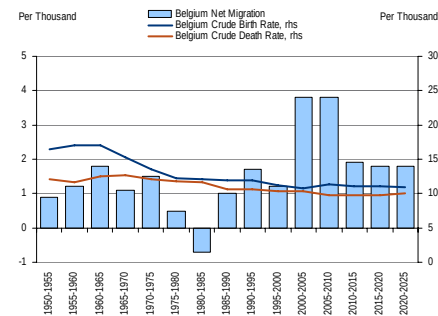
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Chart 75: Austria



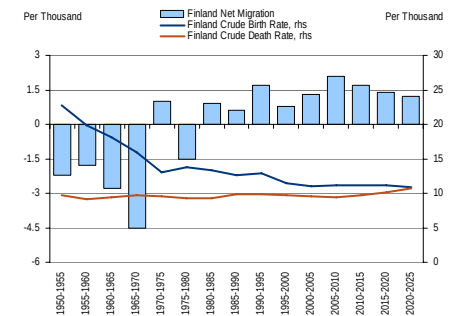
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 76: Belgium



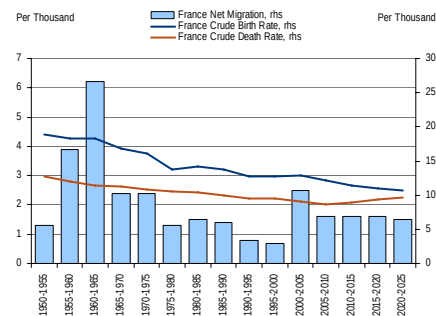
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 77: Finland



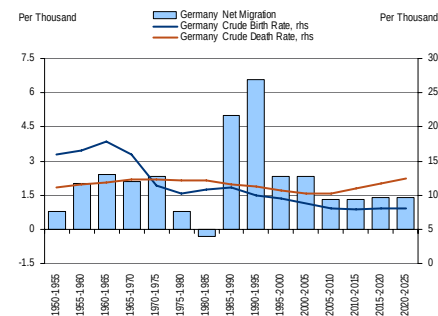
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 78: France



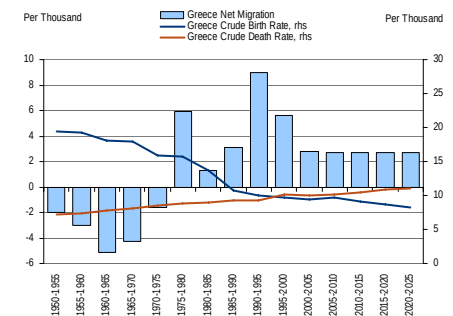
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 79: Germany



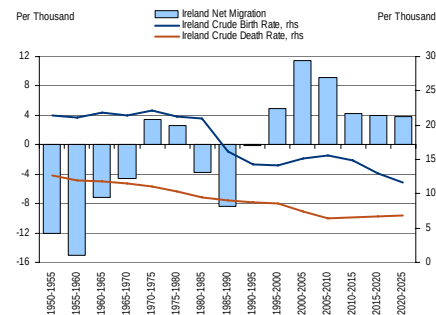
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 80: Greece



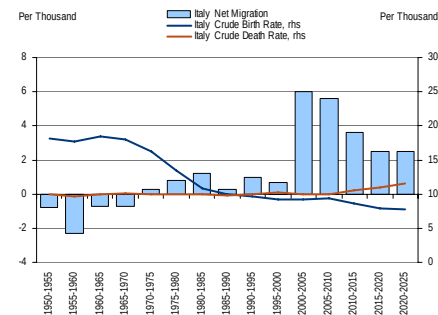
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 81: Ireland



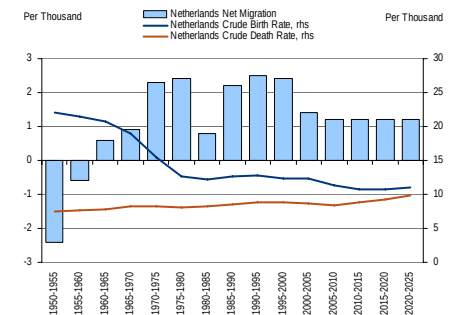
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 82: Italy



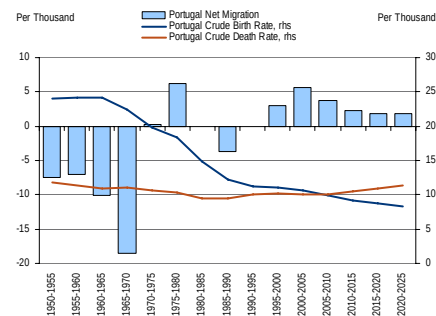
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 83: The Netherlands



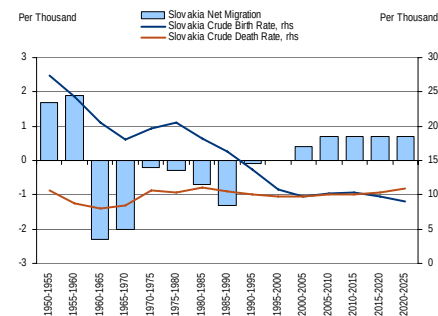
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 84: Portugal



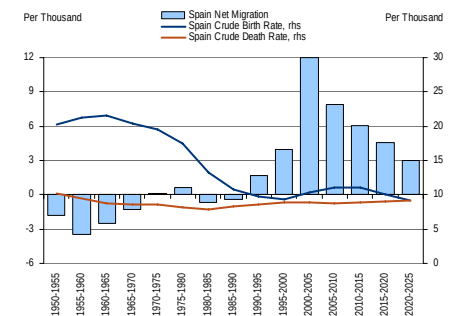
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 85: Slovakia



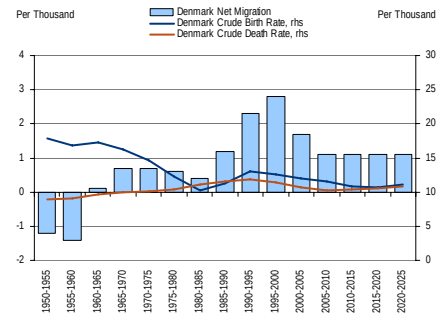
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 86: Spain



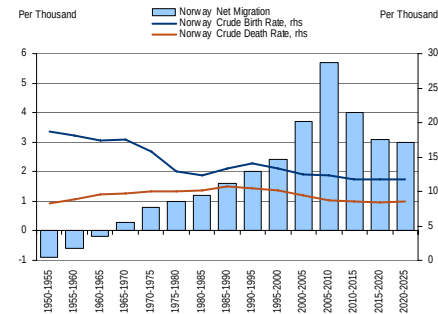
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 87: Denmark



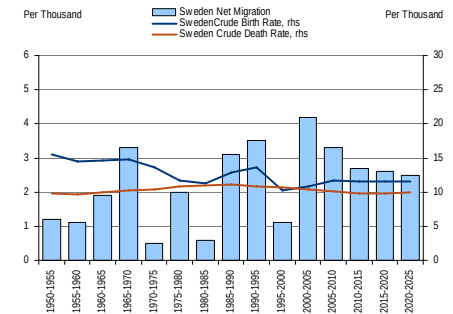
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 88: Norway



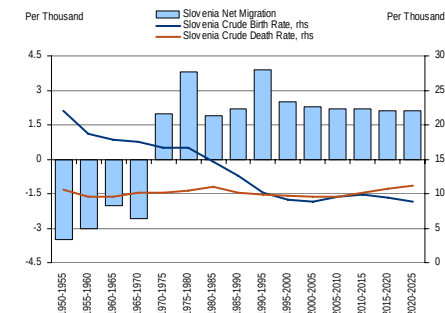
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 89: Sweden



Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 90: Slovenia



Source: UN Population Database, BofA Merrill Lynch Global Research

Key Takeaways

In Germany, the death rate has been higher than the birth rate since the 1970s. Immigration is no longer large enough to compensate for this difference.

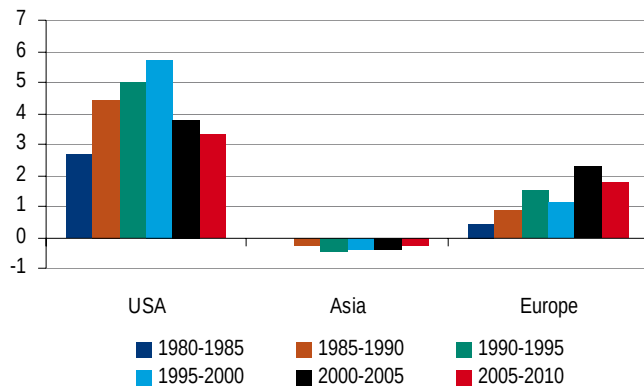
The majority of Eurozone countries have birth and death rates close to each other, with death rates being greater or forecast to be greater in 8 out of the 13 countries sometime in the next 15 years.

Norway has the best picture for Scandinavia.

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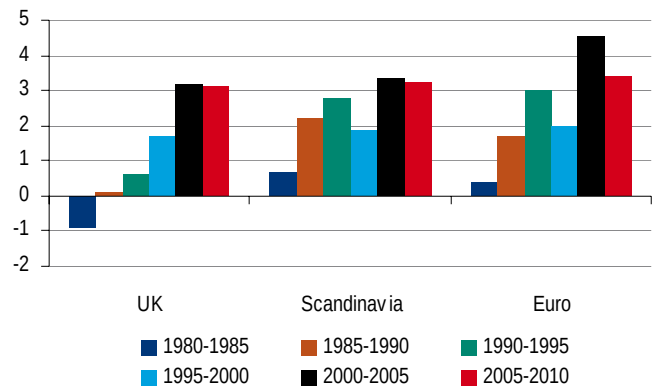
International Migration

Chart 91: Net Migration, per thousands



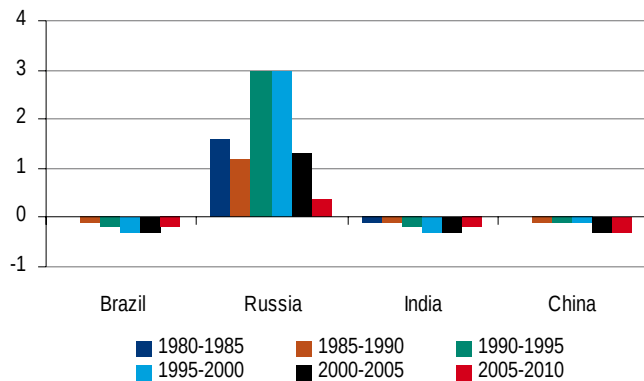
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 92: Net Migration, per thousands



Source: UN population Database, BofA Merrill Lynch Global Research

Chart 93: Net Migration, per thousands



Source: UN Population Database, BofA Merrill Lynch Global Research

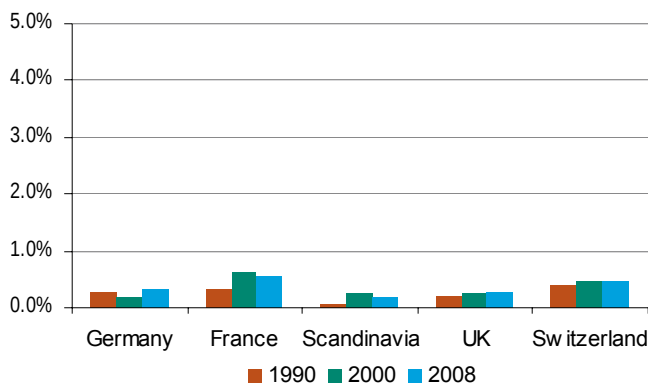
Key Takeaways

The USA has had the most success in attracting Immigrants.

Since 2000 the UK, Eurozone and Scandinavia have seen higher rates of positive net migration.

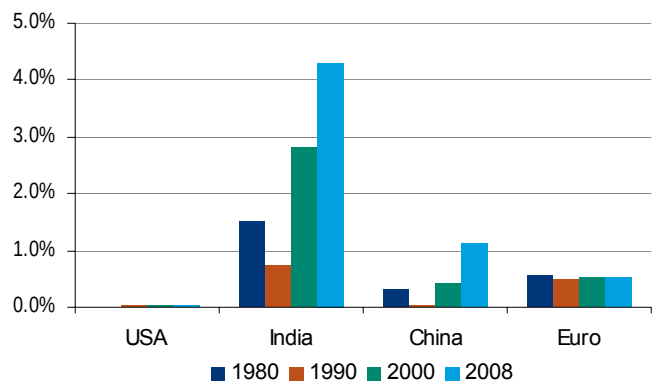
While workers' remittances and compensation as a percentage of GDP is quite a significant component of India's economy, it is a small component of the UK and Eurozone economies and negligible in the US.

Chart 94: Workers' Remittances and Compensation as % of GDP



Source: World Development Indicators, BofA Merrill Lynch Global Research

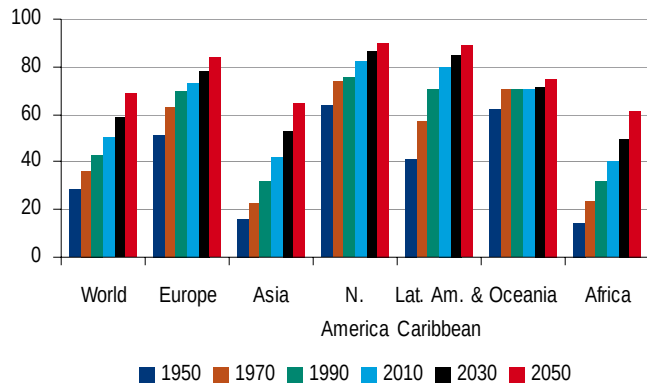
Chart 95: Workers' Remittances and Compensation as % of GDP



Source: World Development Indicators, BofA Merrill Lynch Global Research

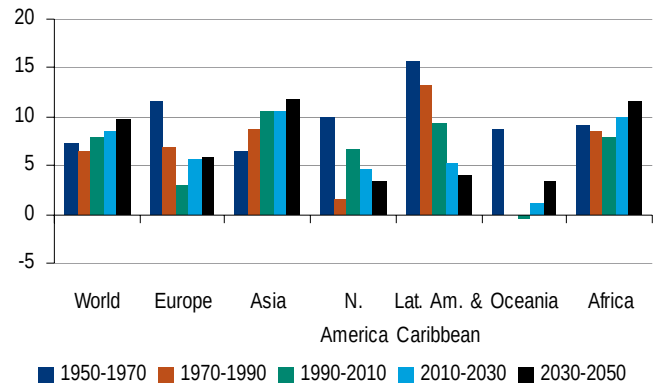
Rural-Urban Migration

Chart 96: Urban population as % of total



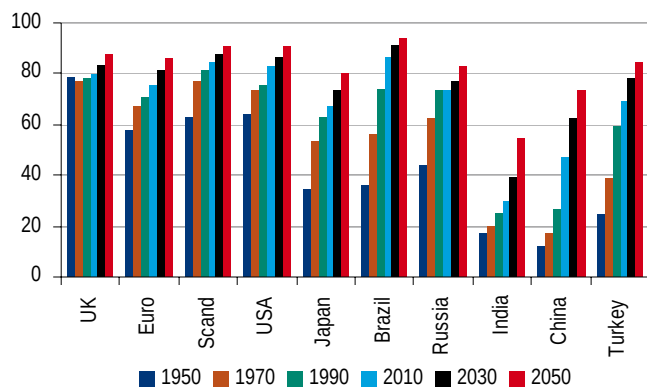
Source: United Nations, World Urbanization Prospects, the 2009 Revision, BofA Merrill Lynch Global Research

Chart 97: Change in Urban population %



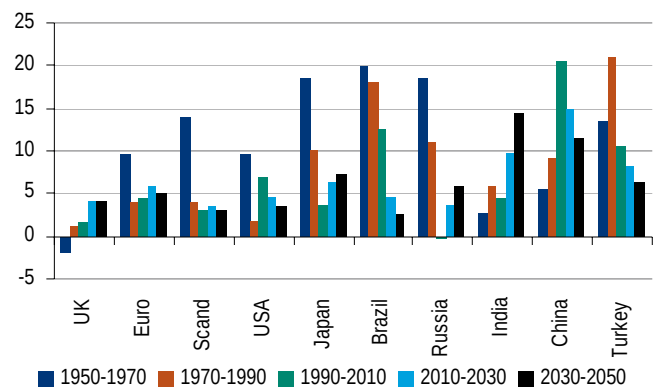
Source: United Nations, World Urbanization Prospects, the 2009 Revision, BofA Merrill Lynch Global Research

Chart 98: Urban population as % of total



Source: United Nations, World Urbanization Prospects, the 2009 Revision, BofA Merrill Lynch Global Research

Chart 99: Change in Urban population %



Source: United Nations, World Urbanization Prospects, the 2009 Revision, BofA Merrill Lynch Global Research

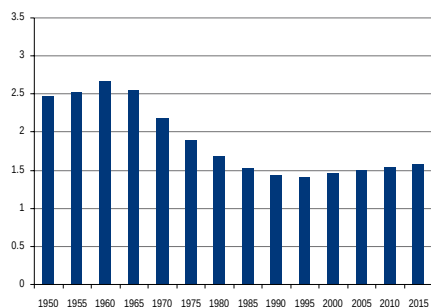
Key Takeaways

A high proportion of the population already live in urban areas in the Eurozone, UK and Scandinavia (75%, 80% and 84% respectively). These are expected to increase at a slow and steady rate over the next 40 years (3-5% every 20 years).

This is in contrast to India and China where the change is expected to be at least double (upwards of 10% every 20 years).

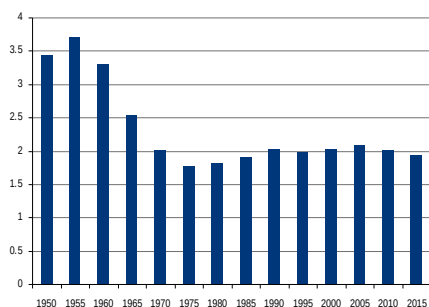
Fertility Rate

Chart 100: Eurozone Fertility Rate



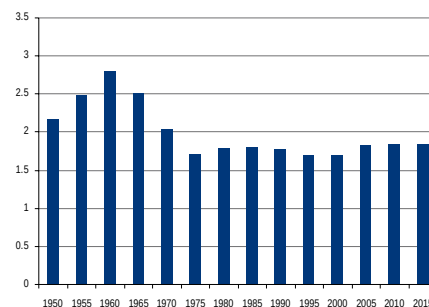
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 101: USA Fertility Rate



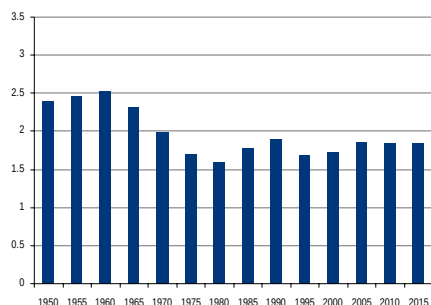
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 102: UK Fertility Rate



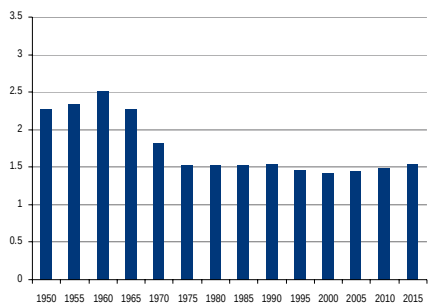
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 103: Scandinavia Fertility Rate



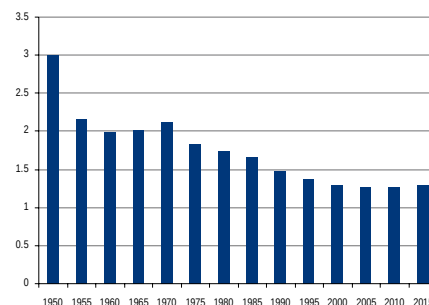
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 104: Switzerland Fertility Rate



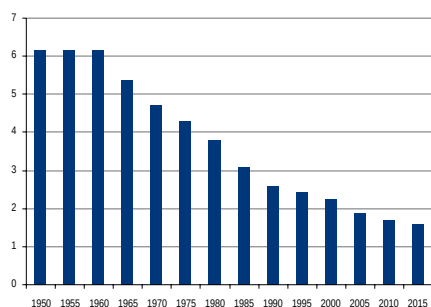
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 105: Japan Fertility Rate



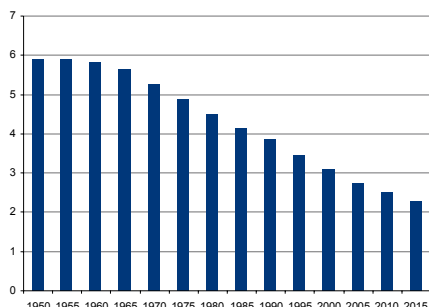
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 106: Brazil Fertility Rate



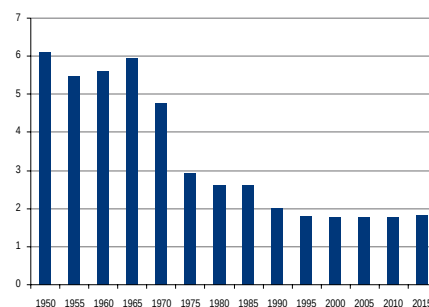
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 107: India Fertility Rate



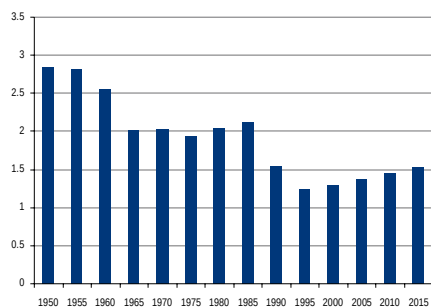
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 108: China Fertility Rate



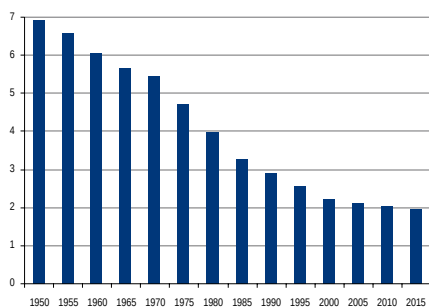
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 109: Russia Fertility Rate



Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 110: Turkey Fertility Rate



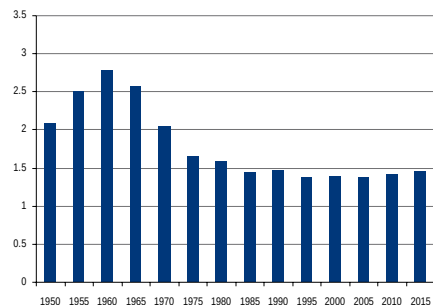
Source: UN Population Database, BofA Merrill Lynch Global Research

Key Takeaways

Fertility rates in the Eurozone, UK, Scandinavia, USA and Switzerland have remained reasonably constant for the past 25 years halting the general decline of the previous 20 years.

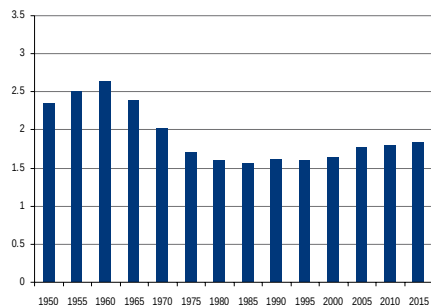
With the exception of the USA these have been close to below the replacement rate.

Chart 111: Austria Fertility Rate



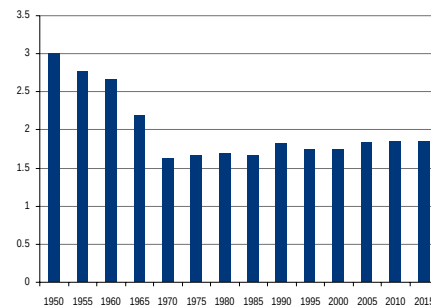
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 112: Belgium Fertility Rate



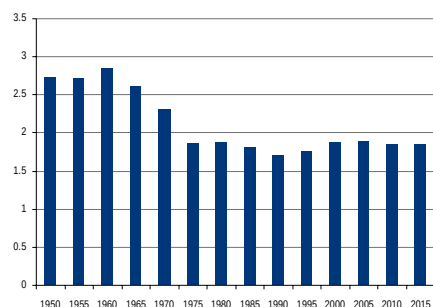
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 113: Finland Fertility Rate



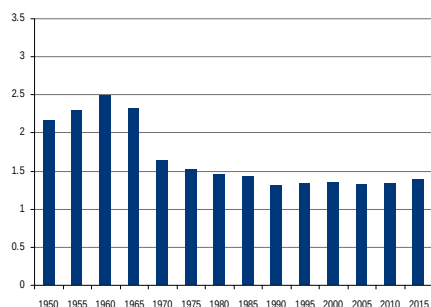
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 114: France Fertility Rate



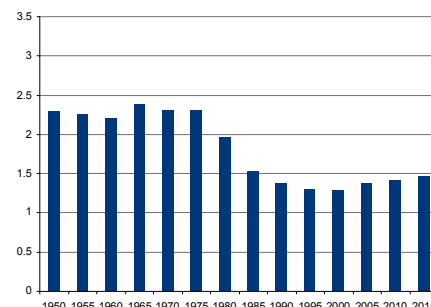
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 115: Germany Fertility Rate



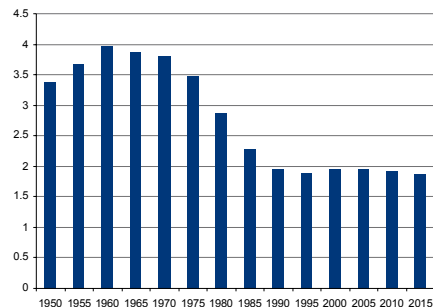
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 116: Greece Fertility Rate



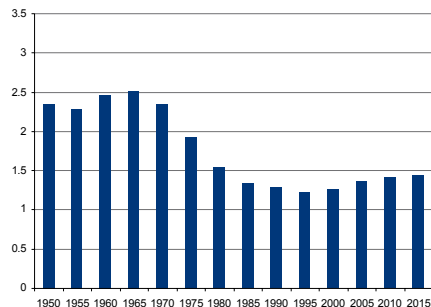
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 117: Ireland Fertility Rate



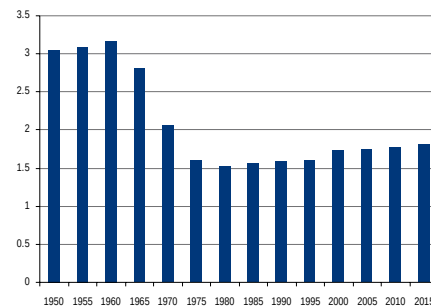
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 118: Italy Fertility Rate



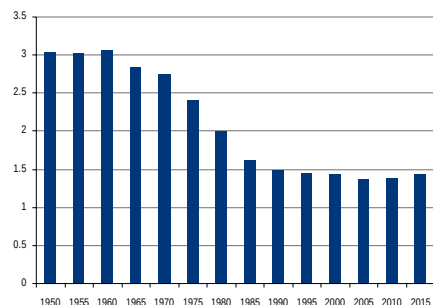
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 119: The Netherlands Fertility Rate



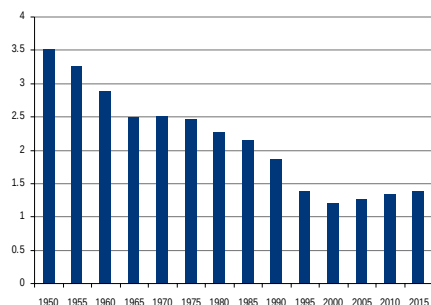
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 120: Portugal Fertility Rate



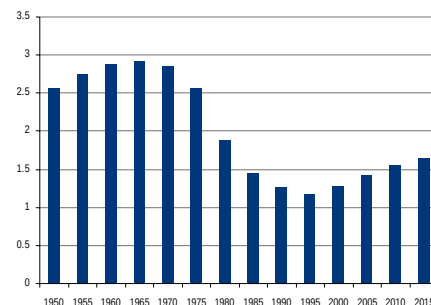
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 121: Slovakia Fertility Rate



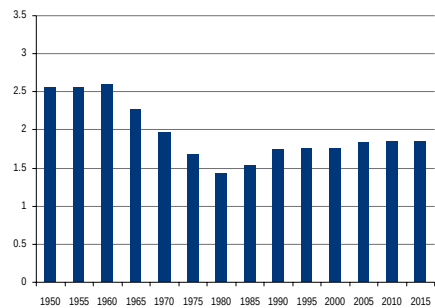
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 122: Spain Fertility Rate



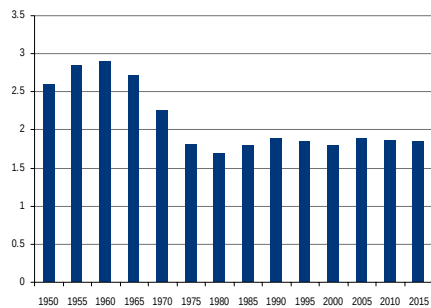
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 123: Denmark Fertility Rate



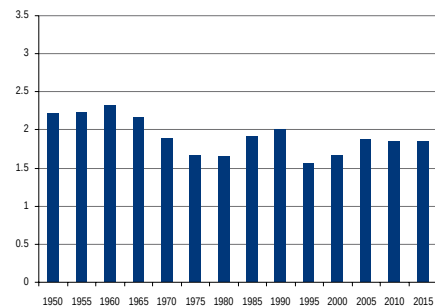
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 124: Norway Fertility Rate



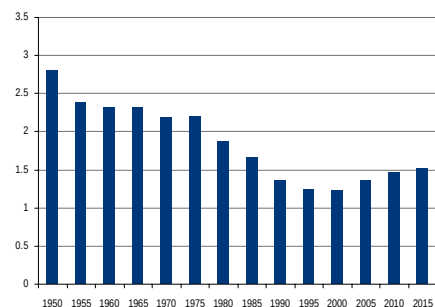
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 125: Sweden Fertility Rate



Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 126: Slovenia Fertility Rate



Source: UN Population Database, BofA Merrill Lynch Global Research

Key Takeaways

Austria, Germany, Greece, Italy and Portugal have had low fertility rates (less than 1.5) for the last 20-25 years.

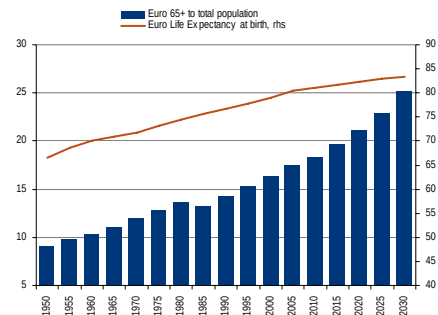
After having the lowest fertility rate of the Eurozone countries in 1995, Spain has seen a rising trend going above 1.5 in 2010.

Scandinavia and the UK have relatively high fertility rates for Europe (but still below the replacement rate).

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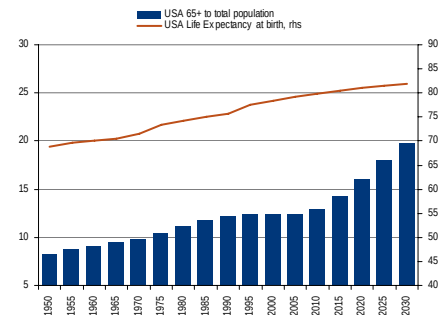
Population Aging

Chart 127: Population Aging in Eurozone



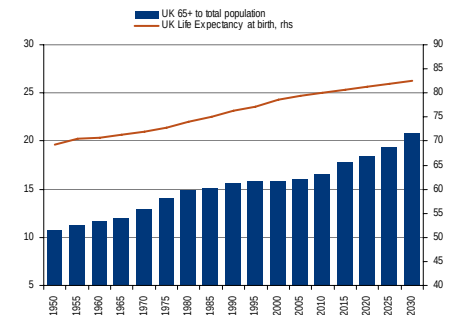
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 128: Population Aging in USA



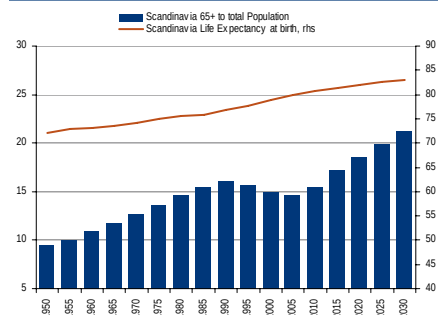
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 129: Population Aging in UK



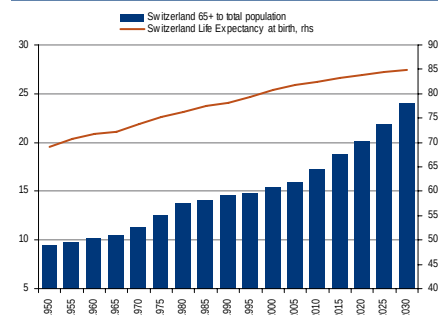
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 130: Population Aging in Scandinavia



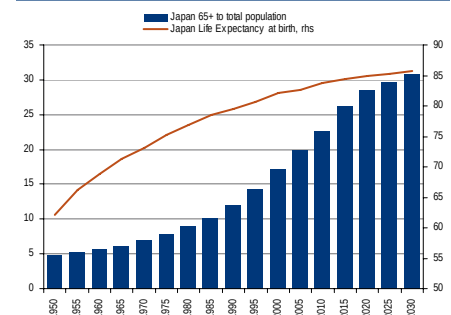
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 131: Population Aging in Switzerland



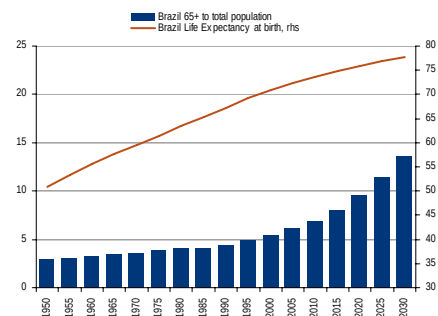
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 132: Population Aging in Japan



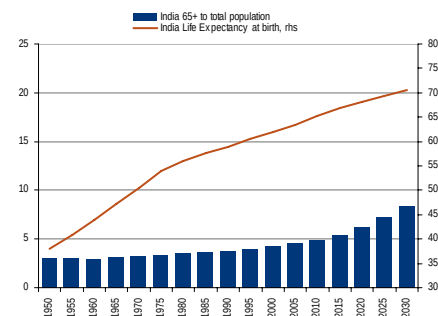
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 133: Population Aging in Brazil



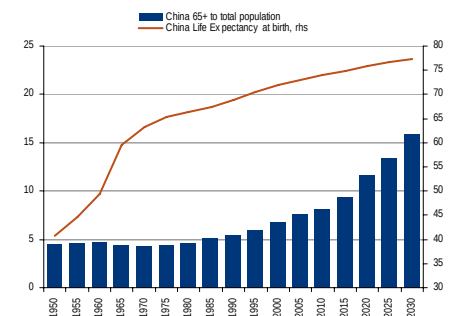
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 134: Population Aging in India



Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 135: Population Aging in China



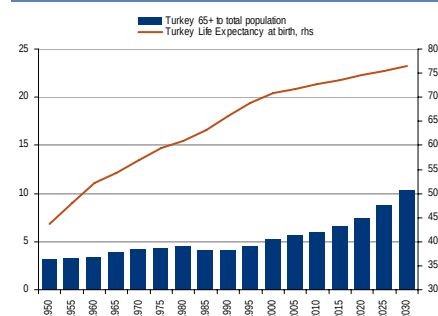
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 136: Population Aging in Russia



Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 137: Population Aging in Turkey



Source: UN Population Database, BofA Merrill Lynch Global Research

Key Takeaways

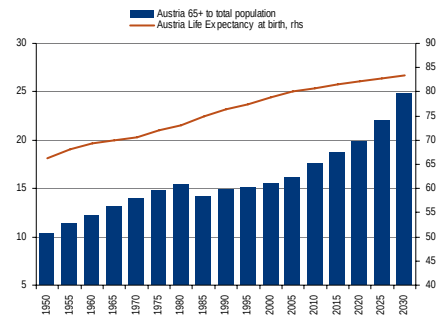
If we define a population as old when 20% are aged 65+, then in 2010 only Japan is old.

By 2030 this changes to include the Eurozone, Scandinavia, Switzerland and the UK, with the USA at 19.8%.

The proportion aged 65+ in Eurozone, Japan and USA will increase twice as much as the UK to 2030.

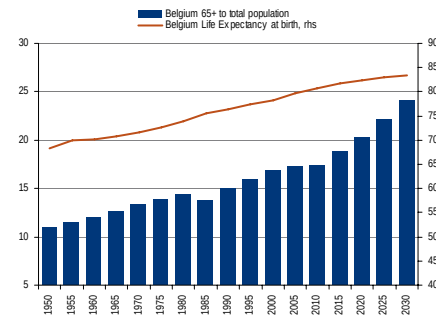
16 September 2010

Chart 138: Population Aging in Austria



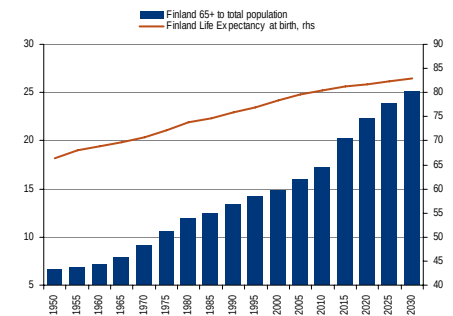
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 139: Population Aging in Belgium



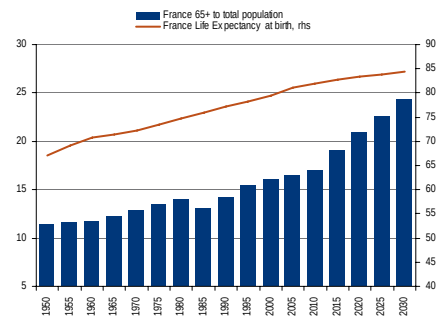
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 140: Population Aging in Finland



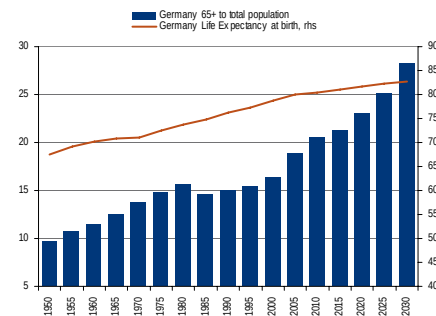
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 141: Population Aging in France



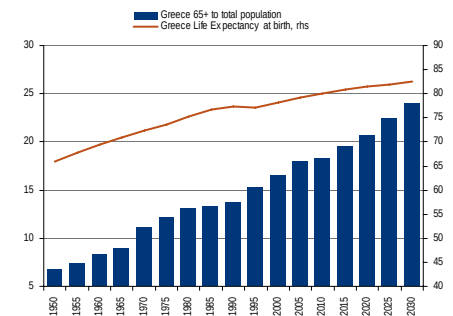
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 142: Population Aging in Germany



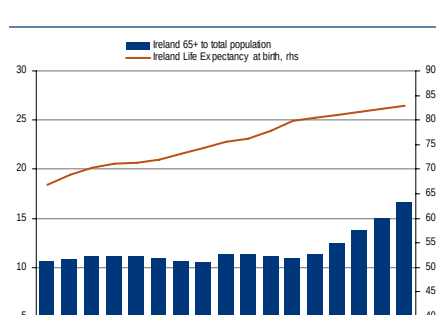
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 143: Population Aging in Greece



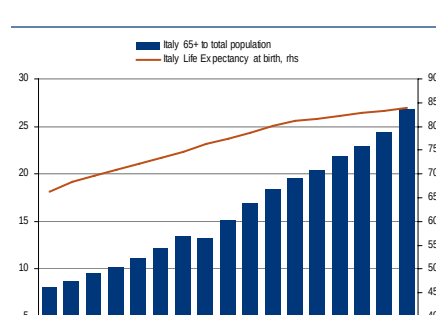
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 144: Population Aging in Ireland



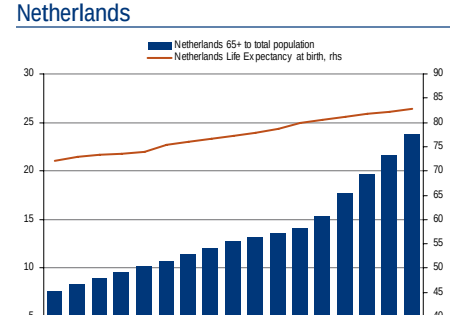
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 145: Population Aging in Italy



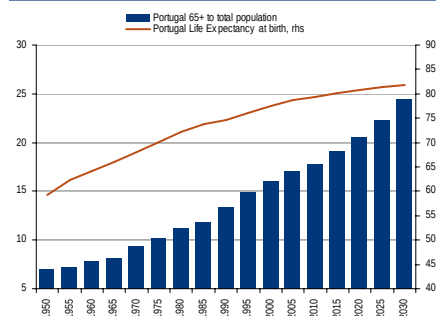
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 146: Population Aging in The Netherlands



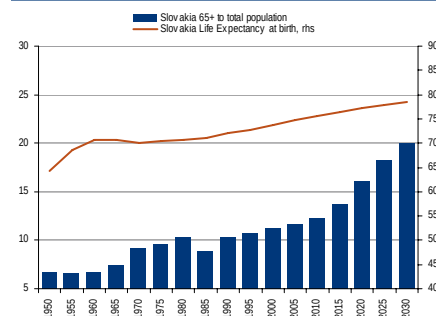
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 147: Population Aging in Portugal



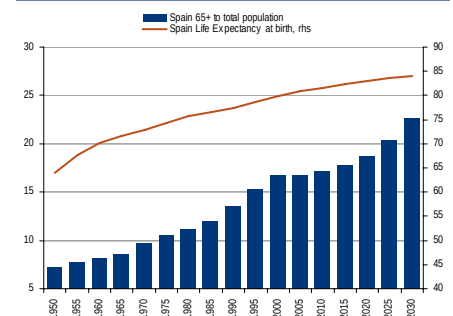
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 148: Population Aging in Slovakia



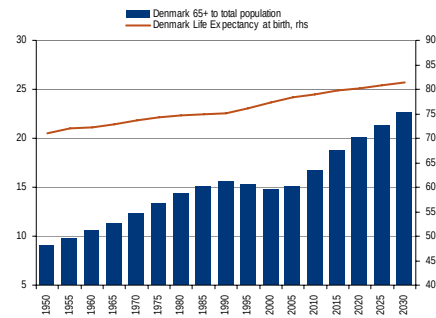
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 149: Population Aging in Spain



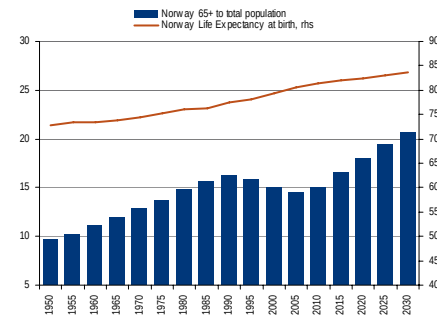
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 150: Population Aging in Denmark



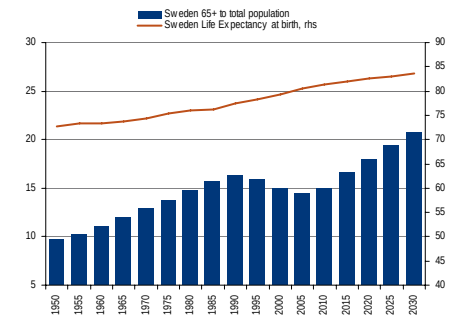
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 151: Population Aging in Norway



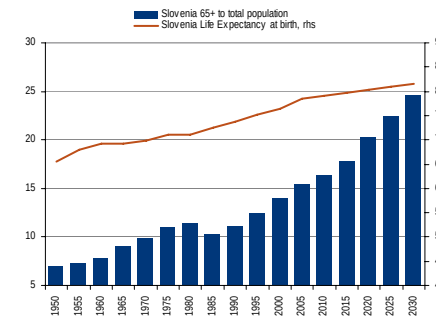
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 152: Population Aging in Sweden



Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 153: Population Aging in Slovenia



Source: UN Population Database, BofA Merrill Lynch Global Research

Key Takeaways

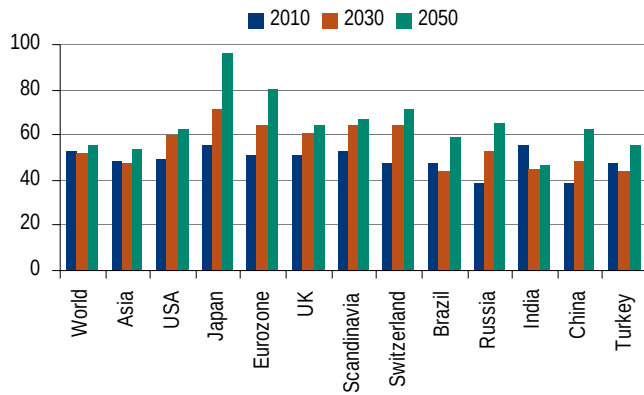
The Netherlands will age the most to 2030 but it is Germany and Italy who will have the highest proportion of 65+ in 2030 (28.2% and 26.8% respectively).

By 2025, it is only Slovakia and Ireland who will not be old (using our earlier definition of an old population).

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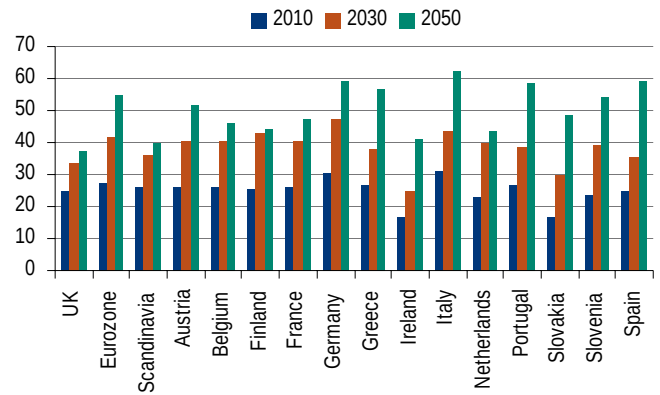
Dependency Ratios

Chart 154: Total Dependency Ratio



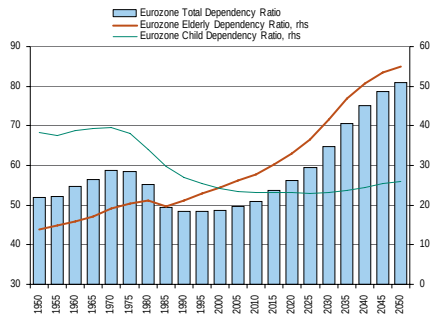
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 155: Europe Elderly Dependency Ratios



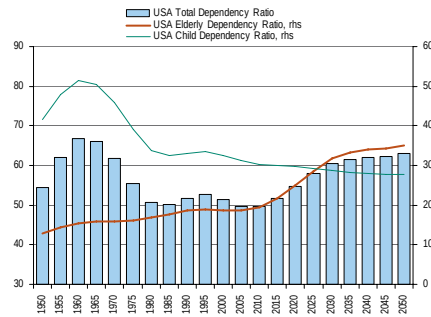
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 156: Eurozone Dependency Ratios



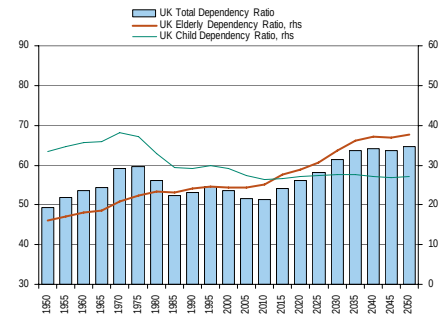
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 157: USA Dependency Ratios



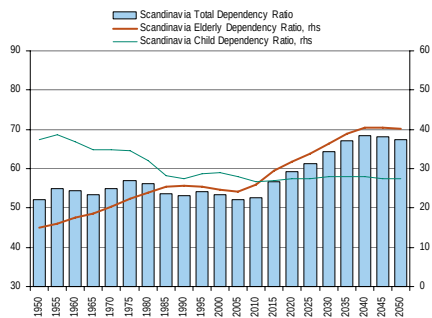
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 158: UK Dependency Ratios



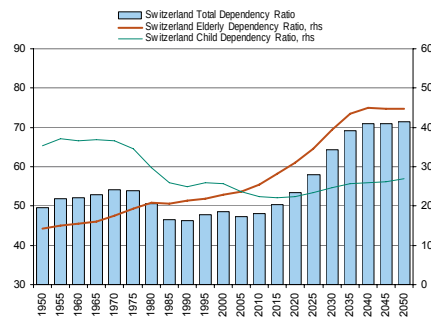
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 159: Scandinavia Dependency Ratios



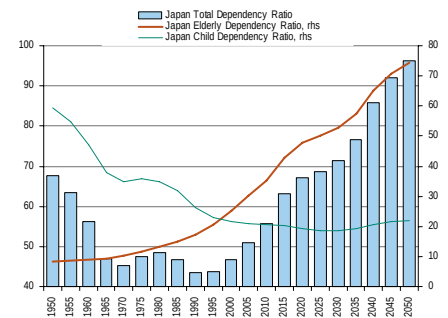
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 160: Switzerland Dependency Ratios



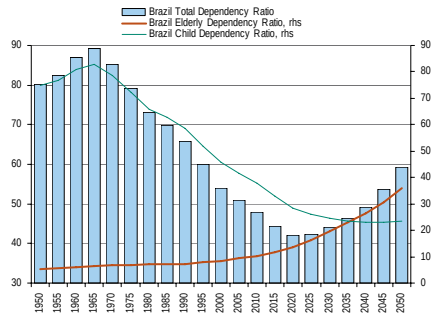
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 161: Japan Dependency Ratios



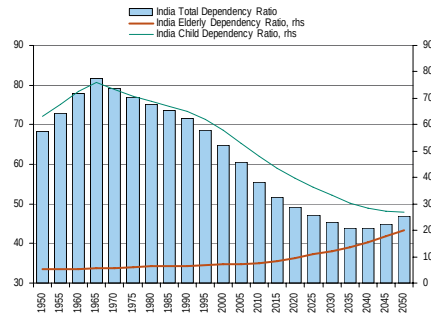
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 162: Brazil Dependency Ratios



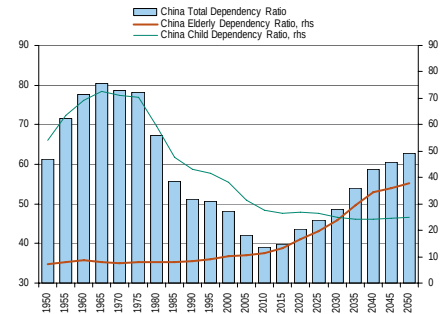
Source: UN Population Database BofA Merrill Lynch Global Research

Chart 163: India Dependency Ratios



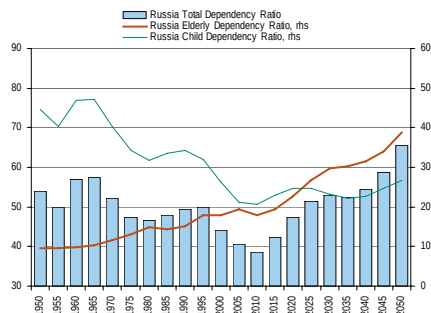
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 164: China Dependency Ratios



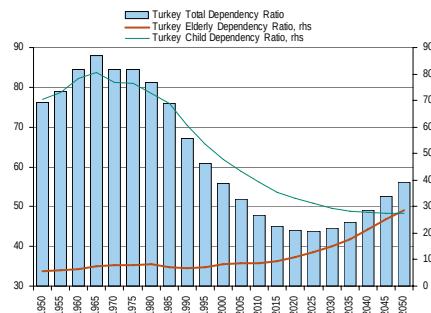
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 165: Russia Dependency Ratios



Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 166: Turkey Dependency Ratios



Source: UN Population Database, BofA Merrill Lynch Global Research

Key Takeaways

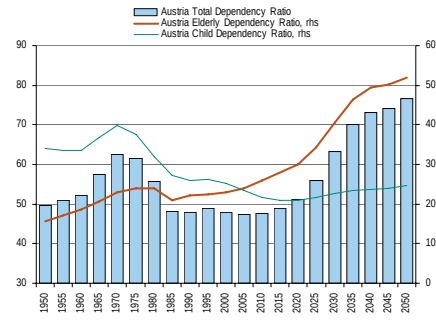
The rise in dependency ratios, in particular the elderly dependency ratio, is most pronounced in the Eurozone and Japan.

After 2025, it is expected there will be fewer than two people in the working age to support an elder in Japan. The same is true for the Eurozone after 2040.

Only modest change is expected in the US and UK after 2030.

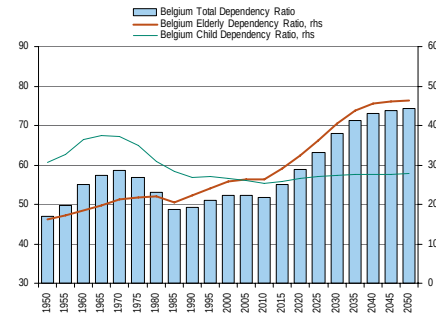
16 September 2010

Chart 167: Austria Dependency Ratios



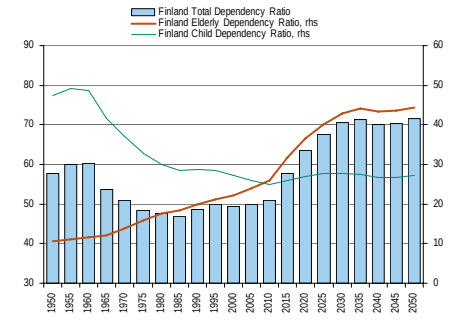
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 168: Belgium Dependency Ratios



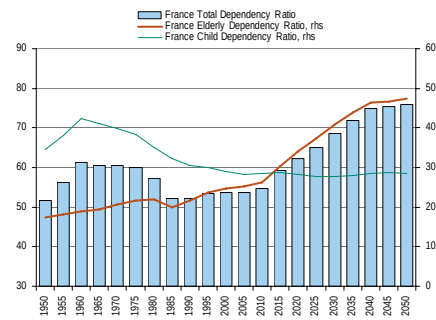
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 169: Finland Dependency Ratios



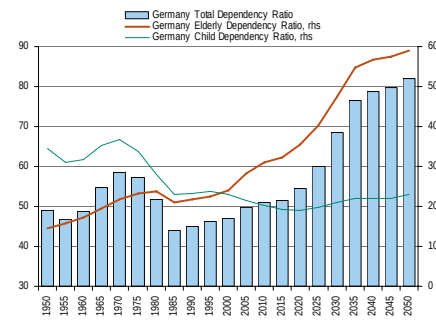
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 170: France Dependency Ratios



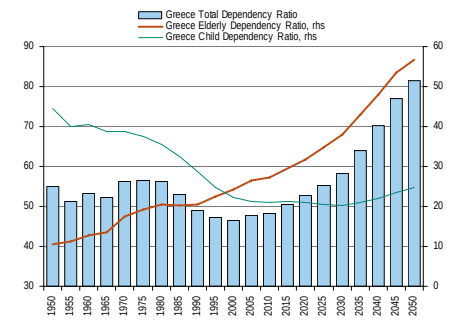
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 171: Germany Dependency Ratios



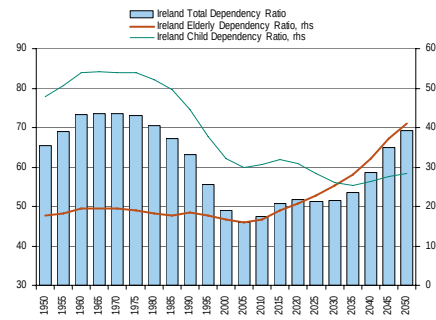
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 172: Greece Dependency Ratios



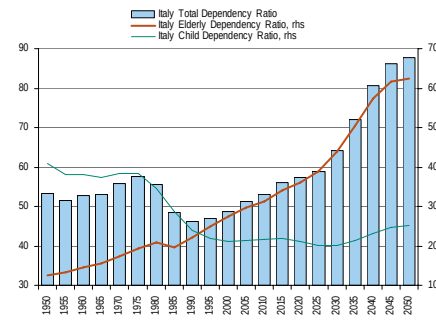
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 173: Ireland Dependency Ratios



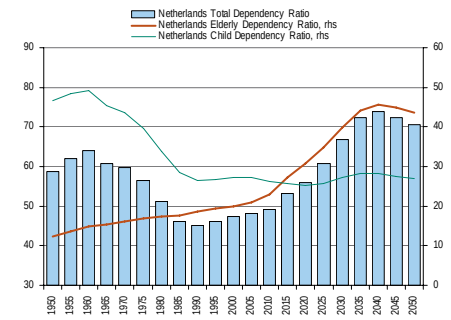
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 174: Italy Dependency Ratios



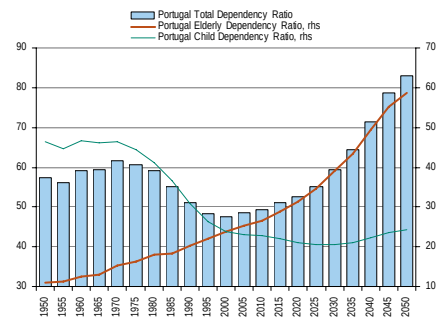
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 175: Netherlands Dependency Ratios



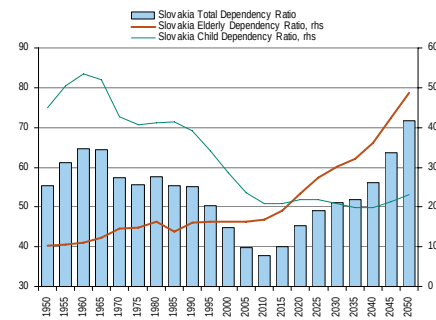
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 176: Portugal Dependency Ratios



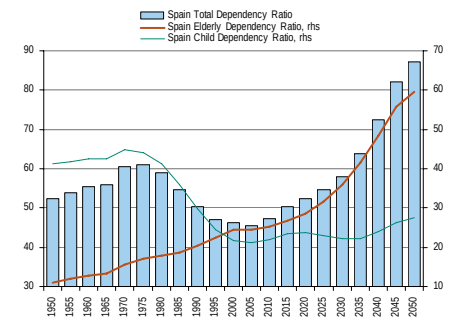
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 177: Slovakia Dependency Ratios



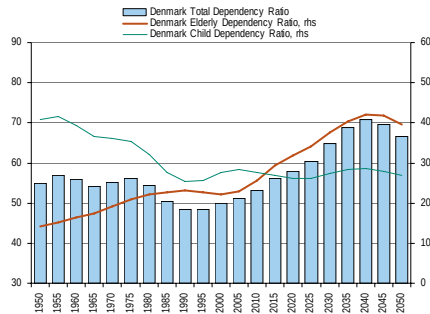
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 178: Spain Dependency Ratios



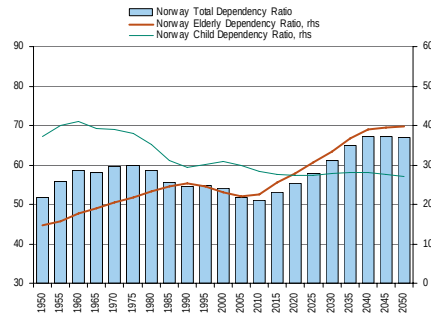
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 179: Denmark Dependency Ratios



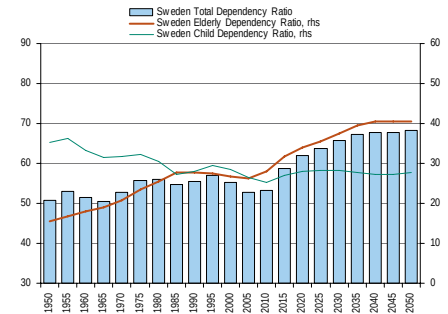
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 180: Norway Dependency Ratios



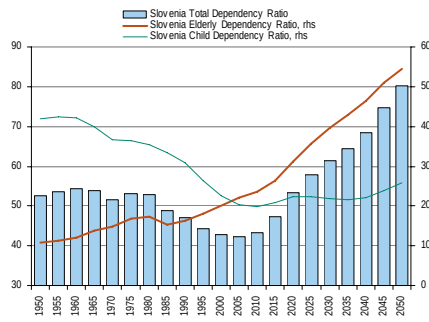
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 181: Sweden Dependency Ratios



Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 182: Slovenia Dependency Ratios



Source: UN Population Database, BofA Merrill Lynch Global Research

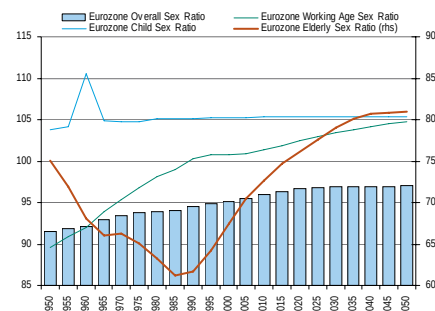
Key Takeaways

The expected rise in elderly dependency ratios is seen the most in Germany, Greece, Italy and Portugal, particularly after 2025. Around 2035-2040 these countries will see the number of working age to support an elder be below or very close to 2.0.

The situations in Germany, Italy and Portugal look to be the most challenging.

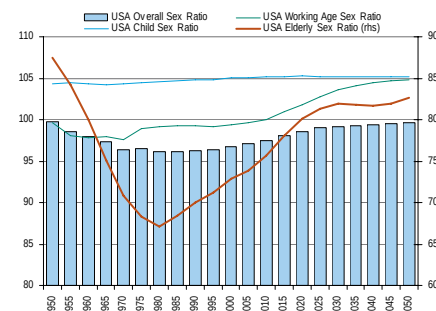
Sex Ratios

Chart 183: Sex Ratios for Eurozone



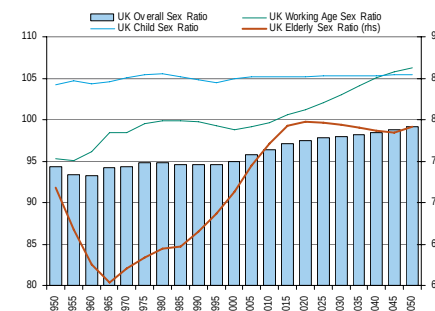
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 184: Sex Ratios for USA



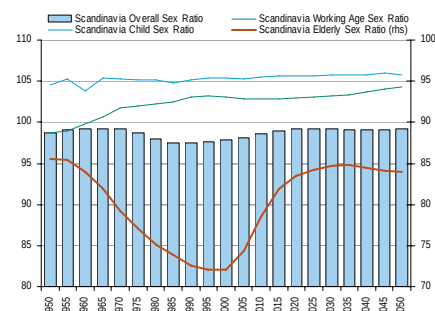
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 185: Sex Ratios for UK



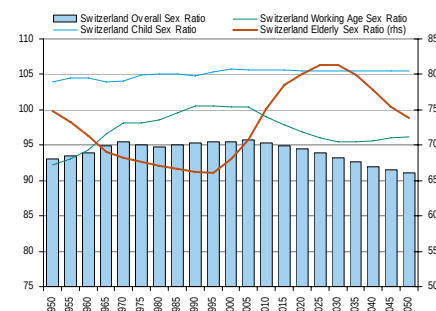
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 186: Sex Ratios for Scandinavia



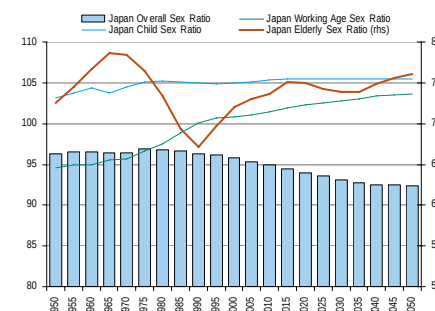
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 187: Sex Ratios for Switzerland



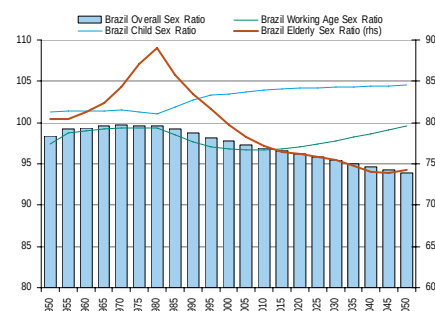
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 188: Sex Ratios for Japan



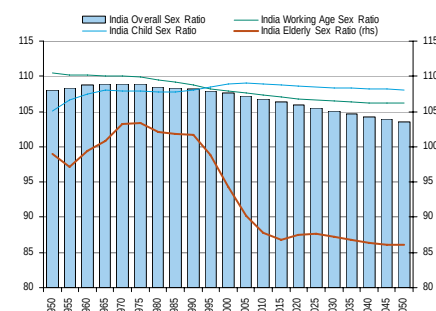
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 189: Sex Ratios for Brazil



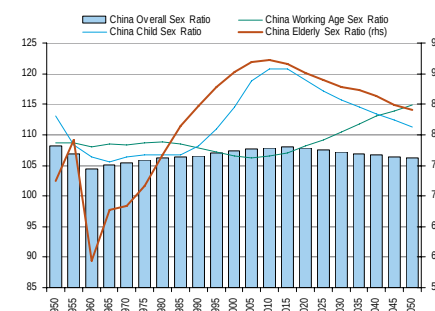
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 190: Sex Ratios for India



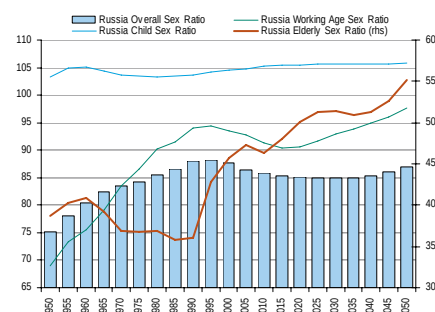
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 191: Sex Ratios for China



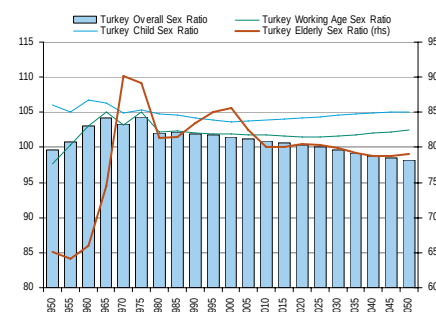
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 192: Sex Ratios for Russia



Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 193: Sex Ratios for Turkey



Source: UN Population Database, BofA Merrill Lynch Global Research

Key Takeaways

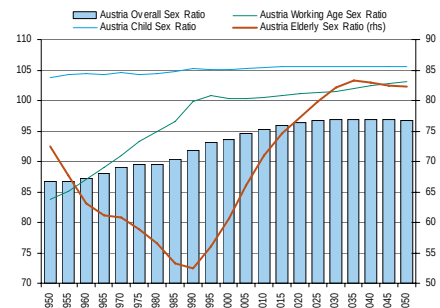
Male population exceeds female population among children and working age groups in most countries.

Elderly sex ratios are between 70 and 90 as female life expectancy is higher.

The exception is Russia where there are currently half as many elderly males as females.

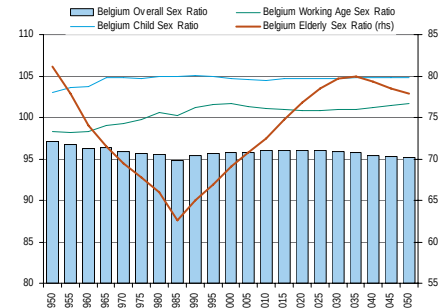
16 September 2010

Chart 194: Sex Ratios for Austria



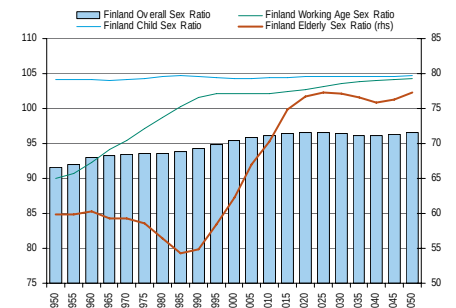
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 195: Sex Ratios for Belgium



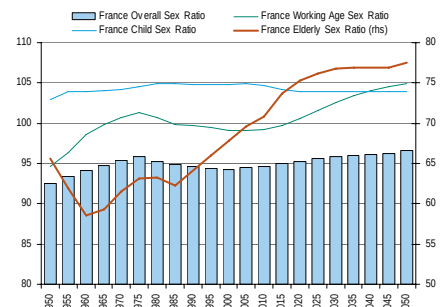
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 196: Sex Ratios for Finland



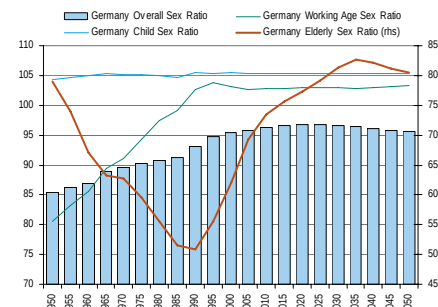
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 197: Sex Ratios for France



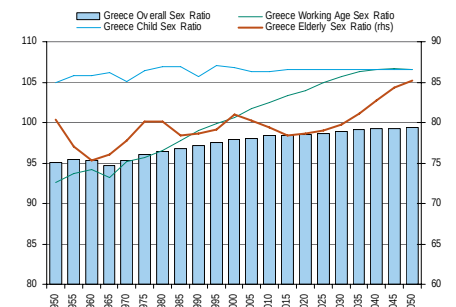
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 198: Sex Ratios for Germany



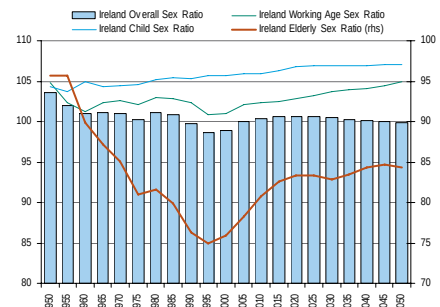
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 199: Sex Ratios for Greece



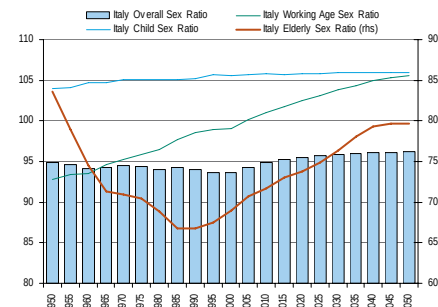
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 200: Sex Ratios for Ireland



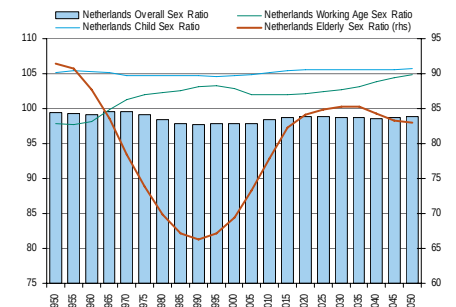
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 201: Sex Ratios for Italy



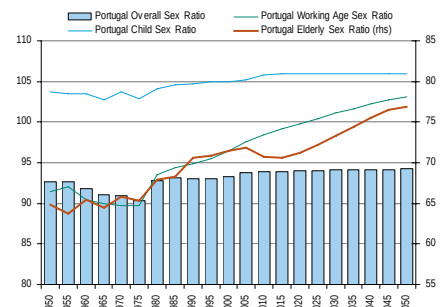
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 202: Sex Ratios for Netherlands



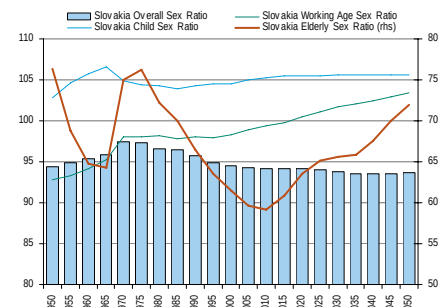
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 203: Sex Ratios for Portugal



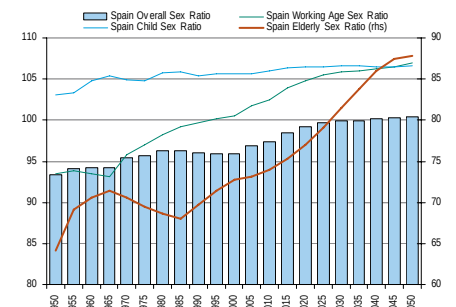
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 204: Sex Ratios for Slovakia



Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 205: Sex Ratios for Spain



Source: UN Population Database, BofA Merrill Lynch Global Research

16 September 2010

Chart 206: Sex Ratios for Denmark

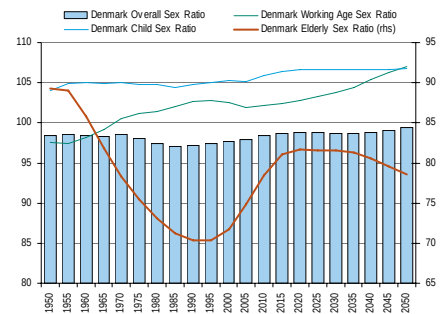


Chart 207: Sex Ratios for Norway

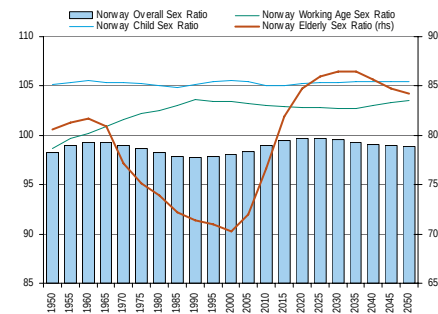


Chart 208: Sex Ratios for Sweden

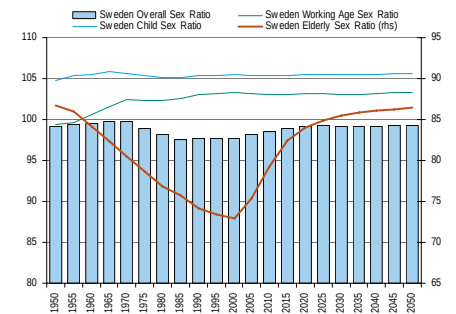
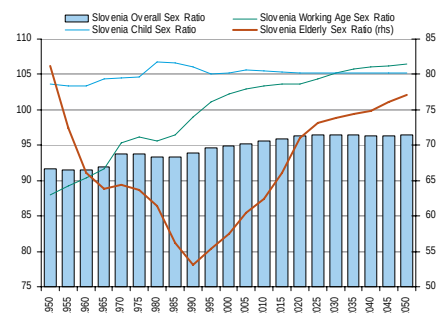


Chart 209: Sex Ratios for Slovenia



Old and Rich

Chart 210: GDP per capita (PPP) by Countries: 1980

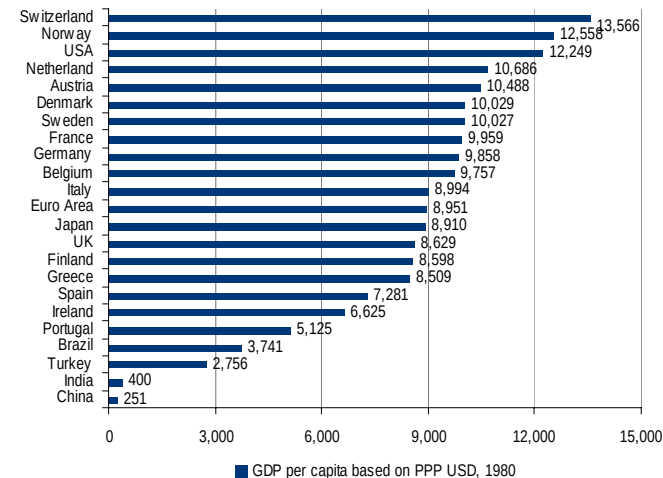
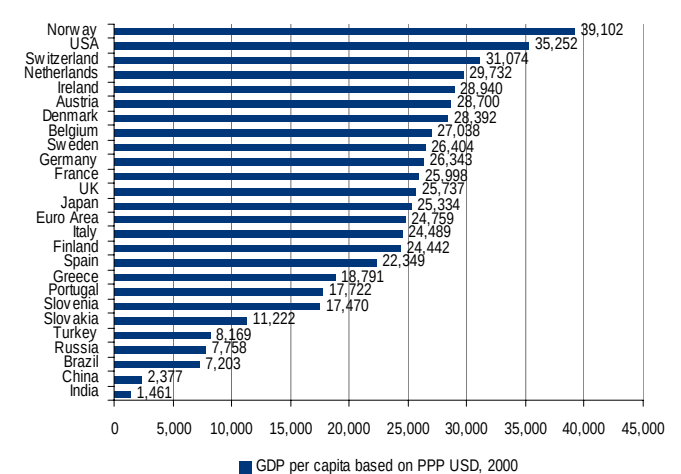
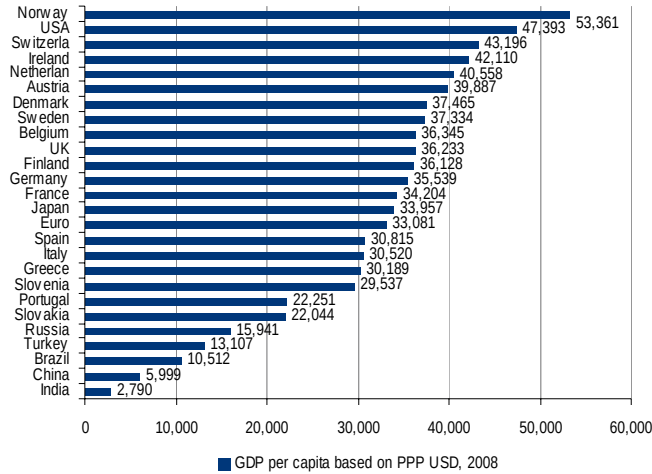


Chart 211: GDP per capita (PPP) by Countries: 2000



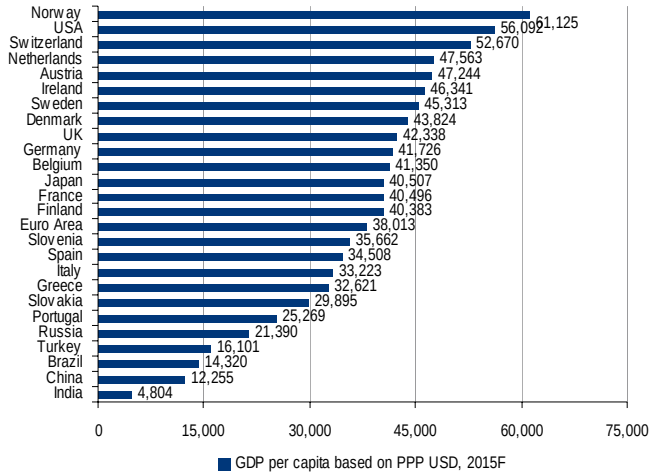
16 September 2010

Chart 212: GDP per capita (PPP) by Countries: 2008



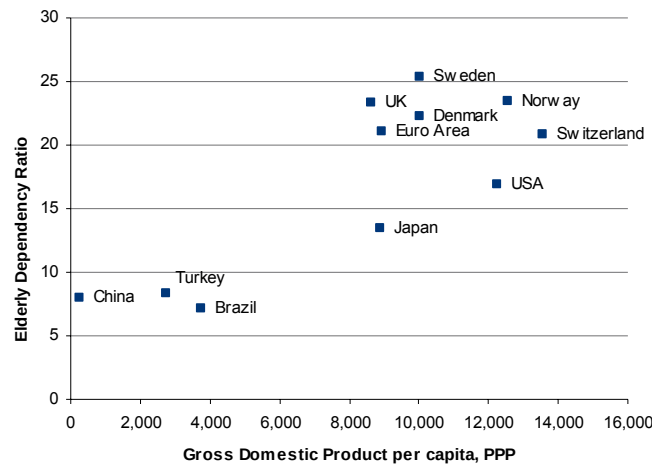
Source: IMF, BofA Merrill Lynch Global Research

Chart 213: GDP per capita (PPP) by Countries: 2015F



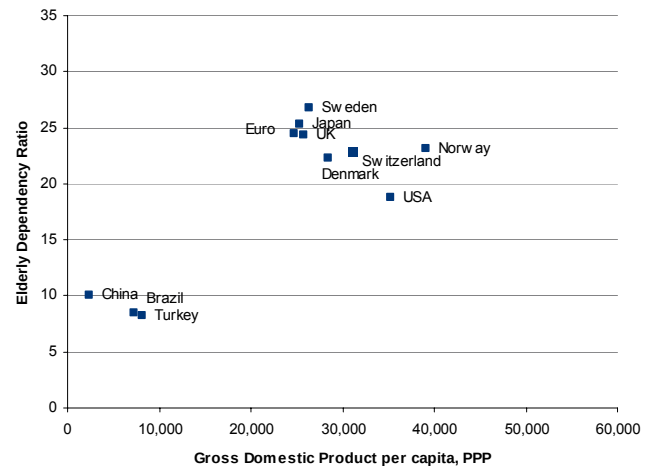
Source: IMF, BofA Merrill Lynch Global Research

Chart 214: Rich/Poor vs. Old/Young in 1980



Source: IMF, BofA Merrill Lynch Global Research

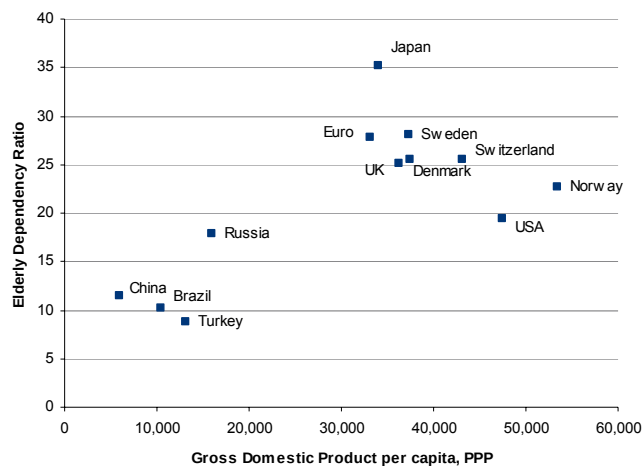
Chart 215: Rich/Poor vs. Old/Young in 2000



Source: IMF, BofA Merrill Lynch Global Research

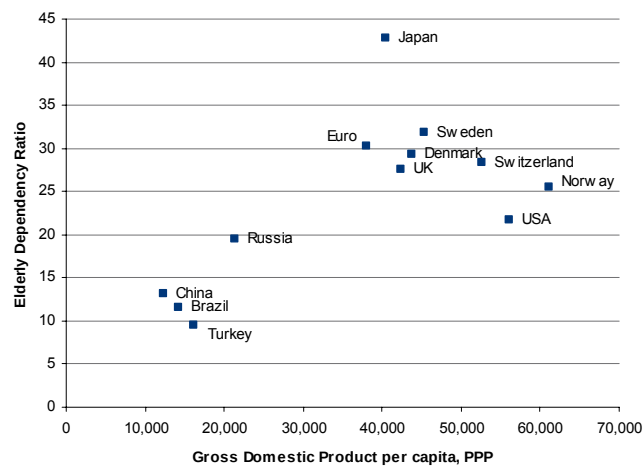
16 September 2010

Chart 216: Rich/Poor vs. Old/Young in 2008



Source: IMF, BofA Merrill Lynch Global Research

Chart 217: Rich/Poor vs. Old/Young in 2015F



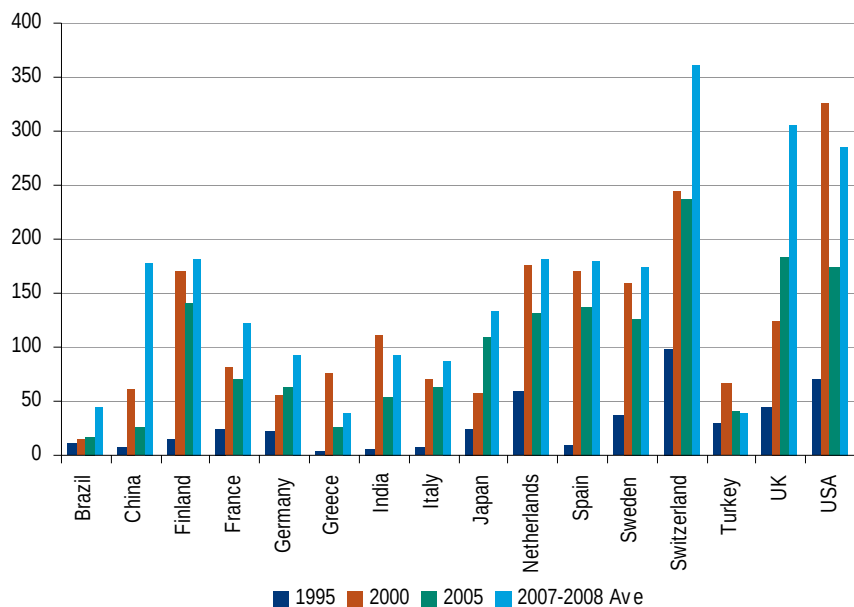
Source: IMF, BofA Merrill Lynch Global Research

Key Takeaways

European countries are among the wealthiest and oldest in the world.

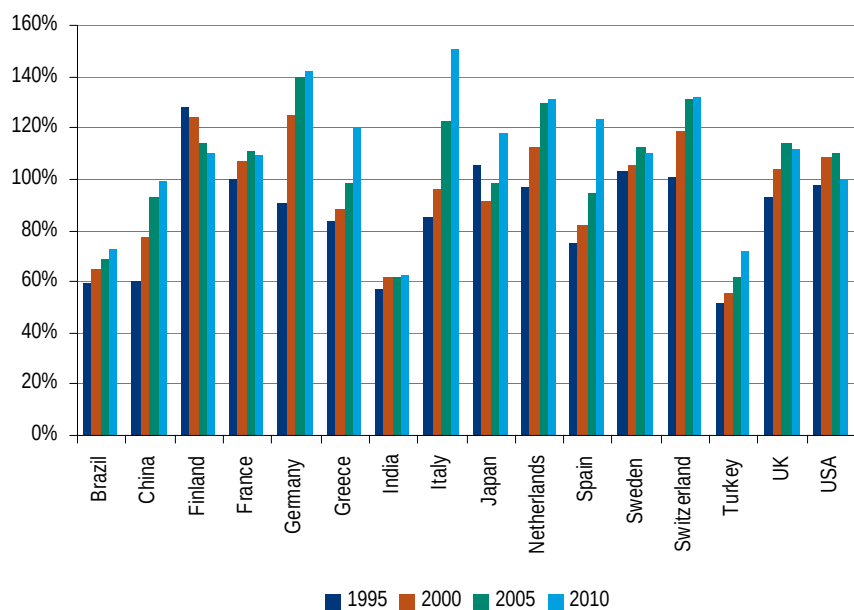
Demographics and Market Performance

Chart 218: Stocks Traded to GDP (%)



Source: World Bank Indicators, BofA Merrill Lynch Global Research

Chart 219: Mid-Young Ratios



Source: UN Population Database, BofA Merrill Lynch Global Research

Table 2: Prime Savers to the Rest of Population Ratio

	World	Asia	Europe	USA	UK	Japan	Switzerland	Eurozone	Scandinavia	Turkey	Brazil	Russia	India	China
1950	28%	25%	38%	36%	45%	26%	44%	41%	43%	23%	20%	30%	23%	29%
1955	27%	24%	39%	37%	47%	27%	44%	43%	45%	23%	20%	33%	22%	26%
1960	26%	23%	37%	36%	47%	28%	42%	40%	46%	21%	19%	32%	22%	24%
1965	25%	23%	38%	36%	46%	30%	39%	40%	46%	19%	19%	32%	22%	24%
1970	25%	22%	39%	36%	43%	33%	38%	39%	43%	21%	19%	37%	22%	23%
1975	25%	22%	39%	34%	41%	37%	38%	38%	40%	21%	20%	39%	22%	23%
1980	25%	23%	40%	33%	39%	40%	39%	39%	38%	21%	20%	42%	22%	24%
1985	25%	23%	41%	33%	39%	45%	42%	41%	39%	21%	20%	40%	21%	25%
1990	25%	23%	41%	35%	40%	52%	44%	42%	42%	22%	22%	41%	21%	26%
1995	27%	25%	43%	38%	41%	54%	45%	44%	43%	23%	24%	42%	23%	18%
2000	29%	28%	46%	42%	44%	53%	48%	46%	47%	25%	27%	47%	24%	33%
2005	31%	31%	49%	47%	47%	52%	53%	49%	50%	28%	31%	49%	26%	38%
2010	34%	35%	52%	48%	50%	51%	56%	53%	50%	32%	35%	52%	19%	47%
2015	36%	38%	53%	47%	48%	51%	55%	55%	49%	37%	39%	53%	31%	53%
2020	38%	40%	53%	45%	47%	51%	53%	55%	48%	42%	43%	53%	33%	52%
2025	39%	42%	54%	43%	46%	53%	51%	54%	46%	46%	47%	54%	36%	53%
2030	41%	45%	53%	42%	45%	53%	47%	51%	44%	48%	50%	58%	40%	56%
2035	42%	46%	51%	43%	44%	50%	45%	47%	44%	50%	52%	59%	44%	53%
2040	43%	47%	48%	43%	43%	46%	44%	44%	43%	51%	54%	55%	47%	50%
2045	43%	48%	46%	44%	43%	43%	43%	43%	43%	49%	56%	51%	50%	50%
2050	44%	48%	44%	44%	43%	41%	42%	42%	43%	48%	54%	46%	51%	49%

Source: UN Population Database, BofA Merrill Lynch Global Research

Table 3: Prime Savers to the Rest of Population Ratio European Countries

	Austria	Belgium	Finland	France	Germany	Greece	Ireland	Italy	Netherlands	Portugal	Slovakia	Slovenia	Spain	Denmark	Norway	Sweden
1950	50%	48%	35%	45%	50%	31%	34%	36%	34%	31%	36%	39%	34%	40%	41%	45%
1955	51%	49%	37%	45%	51%	33%	36%	39%	35%	32%	36%	39%	35%	42%	43%	47%
1960	46%	45%	37%	39%	46%	34%	37%	38%	35%	33%	32%	35%	35%	43%	45%	49%
1965	44%	43%	37%	39%	43%	36%	36%	41%	35%	35%	33%	35%	37%	43%	45%	48%
1970	41%	42%	39%	38%	40%	41%	35%	41%	35%	37%	36%	37%	38%	41%	42%	45%
1975	37%	41%	38%	37%	39%	42%	32%	41%	34%	37%	34%	38%	38%	38%	39%	42%
1980	37%	40%	38%	36%	42%	43%	29%	41%	34%	38%	33%	38%	38%	37%	36%	39%
1985	42%	41%	39%	37%	47%	43%	28%	44%	36%	38%	34%	40%	38%	40%	35%	41%
1990	41%	42%	45%	39%	47%	45%	31%	45%	40%	40%	34%	41%	39%	43%	37%	43%
1995	41%	44%	48%	41%	47%	44%	35%	45%	44%	42%	38%	45%	40%	46%	40%	44%
2000	46%	46%	52%	44%	51%	45%	39%	47%	48%	44%	43%	49%	42%	49%	43%	47%
2005	51%	49%	55%	47%	53%	47%	40%	49%	52%	47%	47%	53%	45%	52%	48%	49%
2010	55%	53%	55%	50%	58%	52%	42%	54%	56%	51%	50%	56%	50%	53%	50%	49%
2015	57%	52%	49%	49%	60%	56%	45%	57%	54%	55%	53%	58%	55%	51%	50%	47%
2020	57%	51%	46%	46%	59%	59%	50%	60%	51%	58%	56%	58%	61%	50%	49%	46%
2025	55%	48%	44%	45%	56%	60%	53%	59%	48%	59%	59%	58%	62%	46%	47%	45%
2030	51%	45%	43%	43%	52%	59%	53%	55%	44%	57%	62%	57%	59%	43%	46%	44%
2035	48%	43%	43%	41%	48%	54%	51%	49%	41%	53%	64%	54%	53%	42%	45%	45%
2040	46%	42%	44%	40%	47%	49%	47%	44%	41%	49%	60%	50%	46%	41%	44%	43%
2045	45%	41%	43%	40%	46%	45%	44%	41%	42%	46%	53%	45%	40%	42%	44%	42%
2050	43%	41%	42%	40%	44%	43%	43%	41%	42%	43%	48%	42%	38%	44%	44%	43%

Source: UN Population Database, BofA Merrill Lynch Global Research

Table 4: Mid-Young Ratio

	World	Asia	Europe	USA	UK	Japan	Switzerland	Eurozone	Scandinavia	Turkey	Brazil	Russia	India	China
1950	66%	62%	82%	76%	100%	61%	98%	90%	98%	61%	51%	67%	57%	68%
1955	66%	60%	84%	92%	111%	58%	94%	90%	112%	54%	53%	69%	58%	64%
1960	64%	59%	73%	102%	105%	59%	85%	78%	115%	48%	53%	62%	58%	64%
1965	65%	61%	77%	96%	99%	62%	76%	81%	99%	50%	53%	65%	60%	68%
1970	67%	62%	96%	80%	90%	66%	76%	93%	79%	61%	54%	105%	61%	65%
1975	61%	57%	86%	63%	80%	78%	80%	87%	71%	61%	50%	90%	56%	56%
1980	57%	54%	82%	56%	79%	97%	86%	85%	75%	55%	48%	79%	52%	54%
1985	55%	52%	77%	60%	75%	108%	87%	79%	87%	48%	47%	69%	51%	51%
1990	55%	51%	80%	77%	82%	117%	92%	79%	97%	48%	50%	74%	51%	49%
1995	62%	58%	95%	98%	93%	106%	101%	90%	99%	51%	59%	106%	57%	60%
2000	69%	66%	104%	109%	104%	91%	119%	104%	104%	55%	65%	112%	62%	77%
2005	73%	72%	106%	110%	114%	98%	131%	117%	117%	62%	68%	100%	62%	93%
2010	74%	76%	105%	100%	112%	118%	132%	128%	118%	72%	73%	82%	63%	99%
2015	77%	80%	111%	91%	102%	145%	118%	132%	107%	83%	80%	91%	65%	104%
2020	80%	83%	126%	91%	97%	151%	107%	130%	102%	91%	88%	133%	70%	104%
2025	85%	88%	134%	95%	102%	136%	110%	125%	101%	98%	96%	158%	77%	105%
2030	90%	97%	131%	98%	108%	129%	117%	118%	103%	100%	105%	154%	84%	125%
2035	92%	101%	119%	100%	108%	126%	120%	113%	111%	101%	112%	123%	92%	125%
2040	90%	98%	106%	101%	103%	131%	117%	111%	109%	105%	122%	92%	98%	108%
2045	92%	99%	105%	101%	97%	135%	107%	113%	101%	106%	132%	93%	103%	103%
2050	96%	103%	112%	104%	99%	131%	103%	116%	102%	106%	131%	113%	109%	108%

Source: UN Population Database, BofA Merrill Lynch Global Research

Table 5: Mid-Young Ratio European Countries

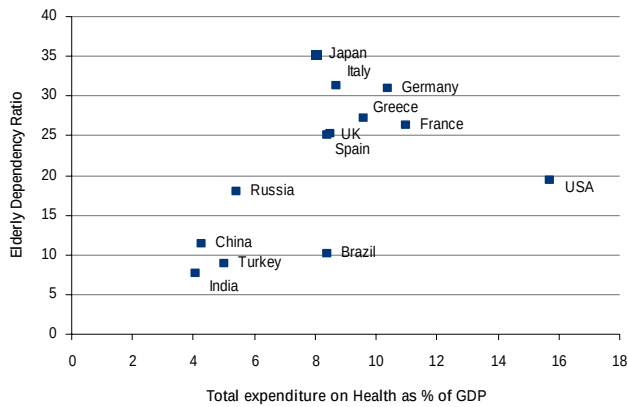
	Austria	Belgium	Denmark	Finland	France	Germany	Greece	Ireland	Italy	Netherlands	Norway	Portugal	Slovakia	Slovenia	Spain	Sweden
1950	107%	97%	96%	84%	94%	114%	70%	85%	76%	78%	91%	68%	81%	85%	70%	104%
1955	111%	99%	106%	90%	93%	107%	67%	103%	85%	84%	109%	69%	84%	75%	71%	118%
1960	88%	90%	104%	86%	79%	75%	65%	113%	78%	84%	123%	73%	69%	62%	76%	119%
1965	80%	97%	89%	81%	90%	70%	75%	99%	84%	83%	110%	79%	75%	70%	87%	100%
1970	91%	102%	75%	75%	93%	95%	104%	82%	98%	72%	84%	93%	87%	86%	94%	79%
1975	85%	86%	71%	65%	77%	94%	103%	68%	94%	65%	68%	84%	68%	83%	93%	74%
1980	80%	79%	77%	70%	74%	95%	99%	62%	95%	67%	65%	81%	62%	78%	82%	80%
1985	77%	81%	97%	103%	83%	77%	82%	80%	81%	82%	85%	79%	81%	83%	72%	104%
1990	77%	81%	97%	103%	83%	77%	82%	80%	81%	82%	85%	79%	81%	83%	72%	104%
1995	84%	101%	99%	128%	100%	91%	84%	85%	85%	97%	93%	83%	95%	102%	75%	103%
2000	110%	115%	103%	124%	107%	125%	88%	82%	96%	113%	103%	87%	92%	106%	82%	105%
2005	128%	123%	124%	114%	111%	140%	99%	80%	123%	130%	117%	98%	85%	106%	95%	112%
2010	130%	122%	133%	110%	109%	142%	120%	92%	151%	131%	118%	118%	85%	111%	123%	110%
2015	122%	115%	115%	100%	111%	129%	144%	116%	162%	118%	112%	138%	99%	126%	153%	101%
2020	113%	110%	99%	100%	107%	119%	153%	136%	155%	102%	102%	149%	135%	148%	171%	104%
2025	120%	110%	89%	113%	100%	126%	150%	132%	134%	94%	100%	140%	165%	159%	159%	109%
2030	128%	108%	90%	112%	99%	139%	131%	111%	116%	99%	104%	125%	160%	145%	124%	109%
2035	129%	106%	105%	110%	98%	139%	117%	96%	113%	108%	112%	118%	139%	121%	102%	113%
2040	122%	103%	114%	106%	100%	129%	116%	96%	119%	110%	114%	120%	120%	106%	96%	103%
2045	112%	100%	109%	100%	105%	121%	119%	108%	126%	108%	109%	126%	108%	105%	103%	94%
2050	108%	103%	103%	102%	109%	115%	124%	123%	131%	103%	105%	127%	115%	115%	117%	101%

Source: UN Population Database, BofA Merrill Lynch Global Research

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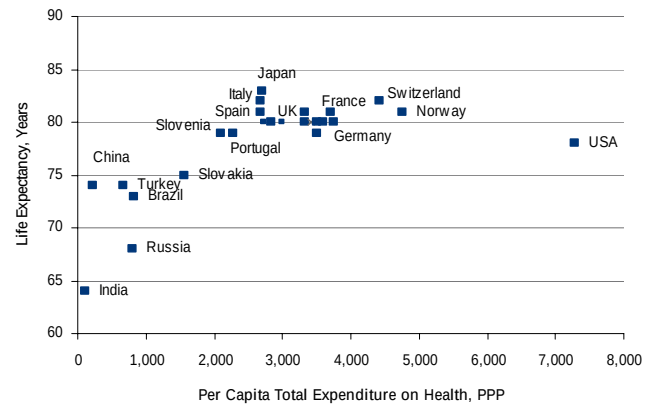
Healthcare

Chart 220: Elderly Dependency Ratio* and Healthcare Expenditure**



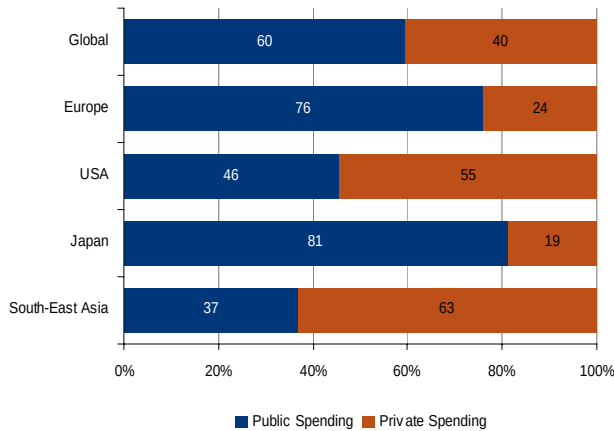
Source: United Nations, WHO, BofA Merrill Lynch Global Research
* 2010 estimates from UN population database, ** From World Health Statistics 2010

Chart 221: Life Expectancy* and Healthcare Expenditure**



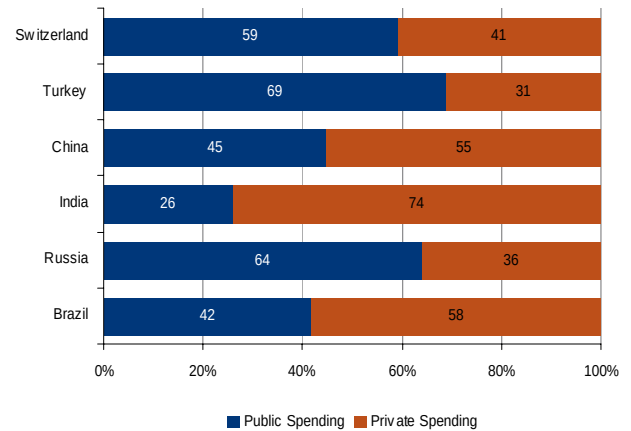
Source: United Nations, WHO, BofA Merrill Lynch Global Research
* 2010 estimates from UN population database, ** From World Health Statistics 2010

Chart 222: Public vs. Private Spending on Healthcare



Source: United Nations, WHO, BofA Merrill Lynch Global Research
* 2010 estimates from UN population database, ** From World Health Statistics 2010

Chart 223: Public vs. Private Spending on Healthcare



Source: United Nations, WHO, BofA Merrill Lynch Global Research
* 2010 estimates from UN population database, ** From World Health Statistics 2010

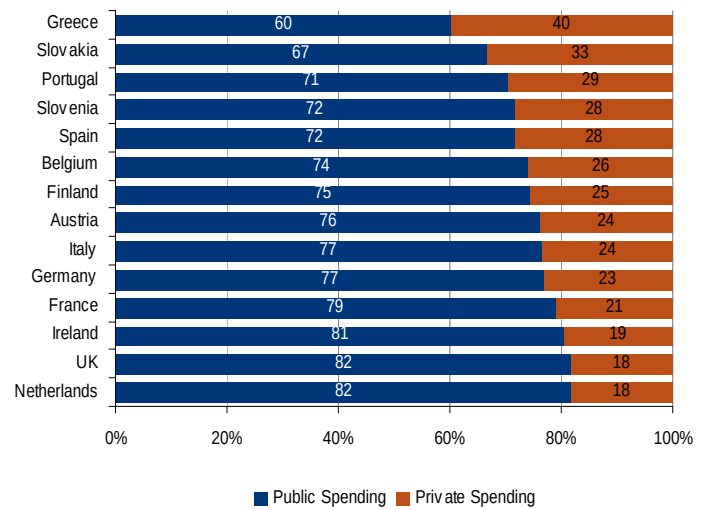
Key Takeaways

Health care expenditure in Japan and Italy is low with respect to the elderly dependency ratio, with the reverse being true in the USA.

The 'BRIC' countries lag behind in per capita spending, along with Slovakia.

A high proportion of health care expenditure in European countries and Japan comes from Public expenditure.

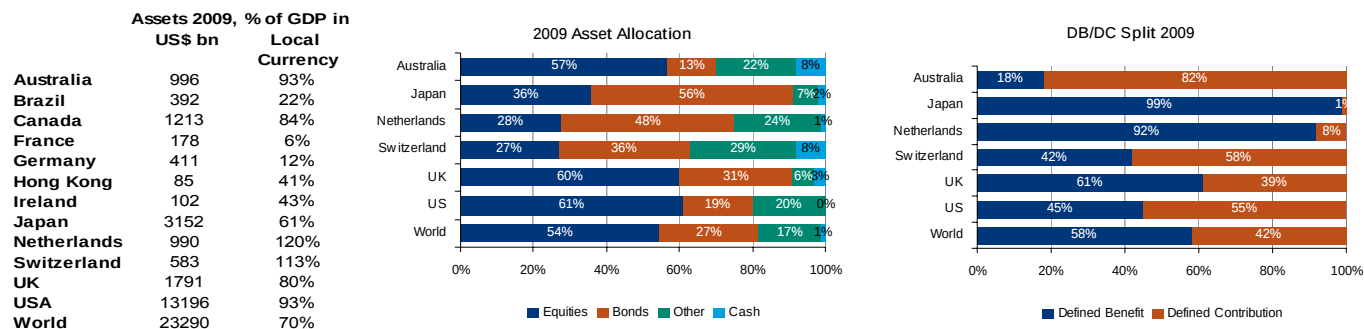
Chart 224: Public vs. Private Spending on Healthcare



Source: United Nations, WHO, BofA Merrill Lynch Global Research

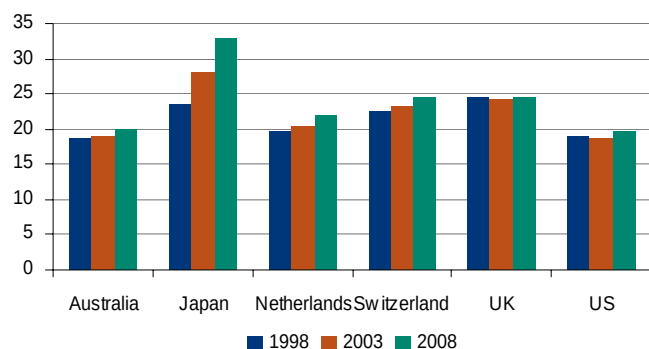
Pension Funds

Chart 225: Pension Assets in 2009



Source: Towers Watson

Chart 226: Elderly Dependency Ratio



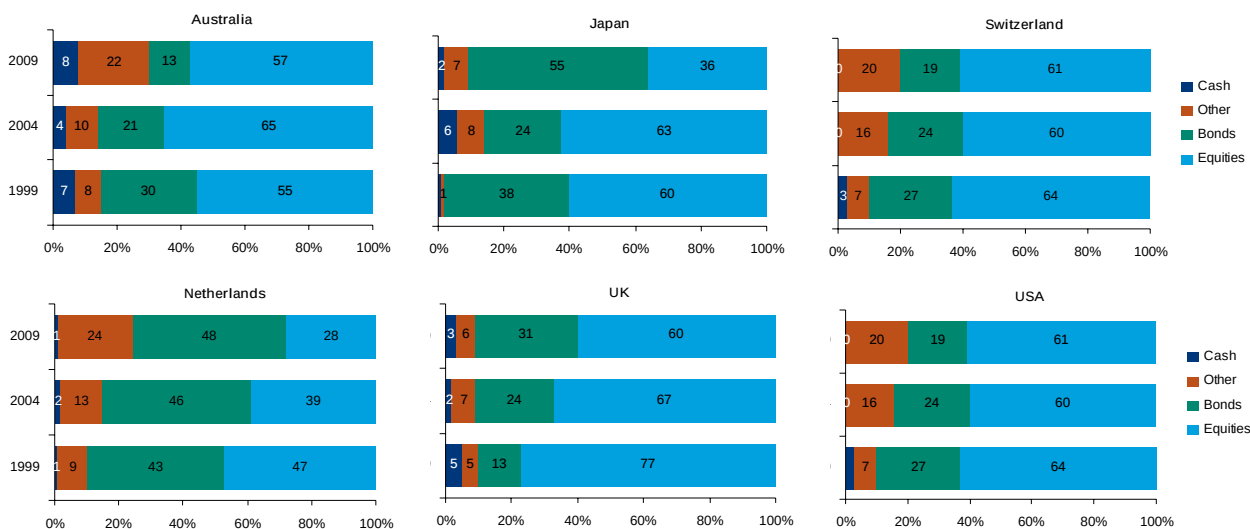
Source: World Bank

Key Takeaways

As Japan's population ages, Pension funds are allocating more assets to the bond market. The reverse is true in the USA.

As they age, all countries (with the exception of the USA) are reducing the proportion of assets that are composed of equities.

Chart 227: Pension Assets in 2009



Source: Towers Watson

Age-related Spending

Table 6: Additional public spending on pensions, healthcare, and long-term care due to aging populations

	from 2005 levels, in percentage points of GDP							
	Health care		Long-term care		Pensions		Total	
	2025	2050	2025	2050	2025	2050	2025	2050
Euro area	1.5	3.7	0.9	2.2	1.1	3	3.5	8.9
UK	1.4	3.6	0.6	1.9	0.7	1.7	2.8	7.2
USA	1.5	3.4	0.4	1.7	0.9	1.8	2.9	7
Japan	1.9	4.3	1.1	2.2	0.3	0.6	3.4	7.1
Austria	1.5	3.8	0.6	2	0.1	-1	2.2	4.8
Belgium	1.3	3.3	0.6	1.9	3	5.1	4.8	10.3
Finland	1.8	3.6	0.8	2.4	2.8	3.3	5.4	9.3
France	1.5	3.5	0.4	1.7	1.2	2.1	3.1	7.3
Germany	1.5	3.6	0.8	1.9	0.2	2	2.5	7.5
Greece	1.6	3.9	1.3	2.7	4.6	10.3	7.5	16.8
Ireland	1.6	4	1.5	3.8	2.5	6.5	5.6	14.4
Italy	1.6	3.8	1.3	2.9	0.2	0.4	3.1	7
Netherlands	1.7	3.8	0.7	2	2	3.8	4.4	9.6
Portugal	1.6	4.2	0.6	2	3.9	9.3	6.1	15.5
Spain	1.6	4.1	1.1	2.4	1.8	7	4.5	13.5
Denmark	1.5	3.5	0.4	1.5	2.5	3.2	4.3	8.2
Sweden	1.4	3.2	0.3	1.1	0.1	0.8	1.8	5.1

Source: Courmède, B. (2007), "The Political Economy of Delaying Fiscal Consolidation", *OECD Economics Department Working Papers*, No. 548, OECD Publishing.

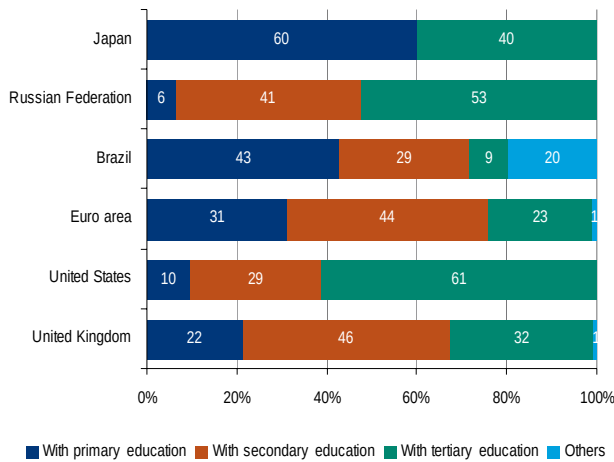
By 2025 the Euro area faces an increase in age-related spending of 3.5% GDP. This is higher than the UK (2.8%) and USA (2.9%). In 2050 the figures are 8.9%, 7.2% and 7% respectively.

Within the Euro area there is variation – in Germany the 2025 figure is a relatively modest 2.5% compared with 7.5% in Greece. In 2050 Greece, Ireland, Portugal and Spain stand out as countries with substantial increases (16.8%, 14.4%, 15.5% and 13.5%).

Within a category Pensions has the most variation ranging from -1% in Austria to 10.3% in Greece by 2050.

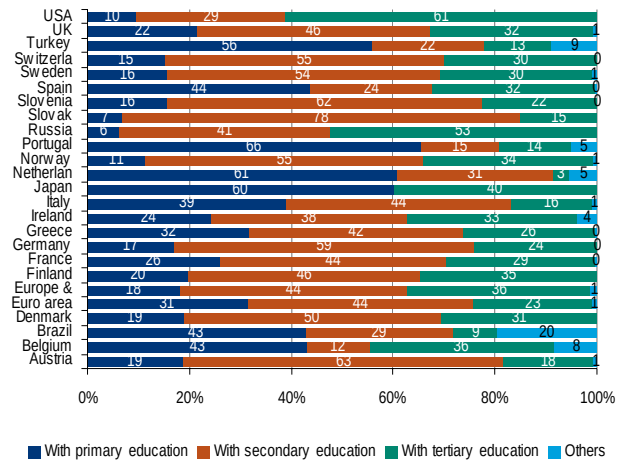
Education

Chart 228: Labour Force Education Profile



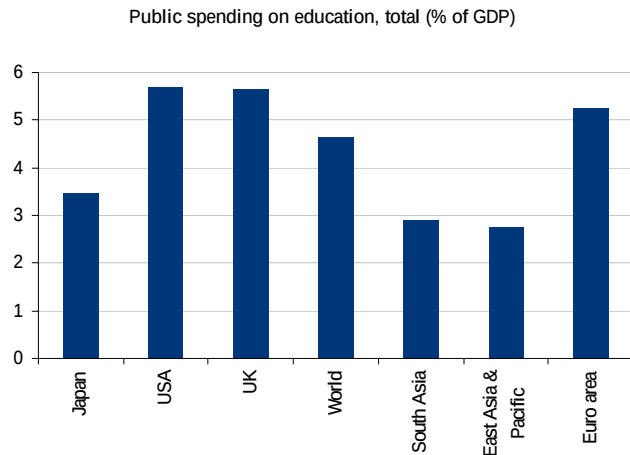
Source: World Bank, BofA Merrill Lynch Global Research

Chart 229: Labour Force Education Profile



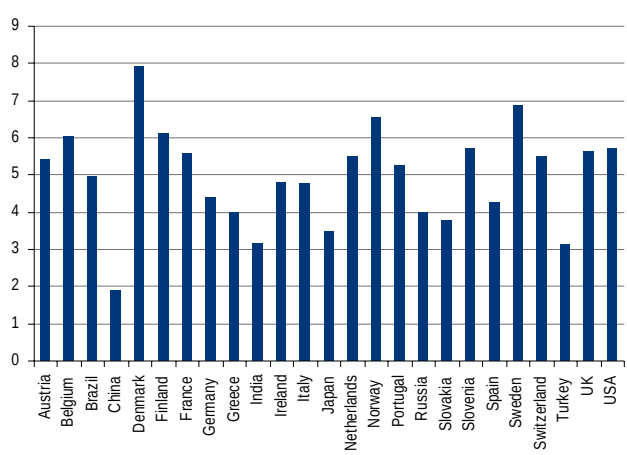
Source: World Bank, BofA Merrill Lynch Global Research

Chart 230: Public Spending on education as % of GDP



Source: World Bank

Chart 231: Public Spending on education as % of GDP



Source: World Bank, BofA Merrill Lynch Global Research

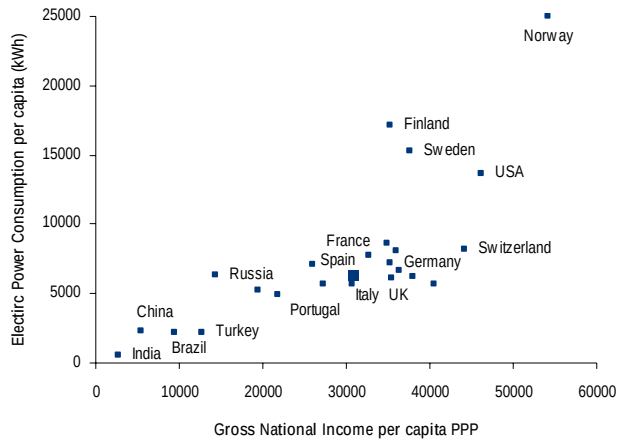
Key Takeaways

The USA has the most highly educated labour force among major economies.

Public spending on Education is high in the UK, USA and Scandinavian countries. Although higher than Japan, public spending on education in Germany, Greece and Spain lag behind the previously mentioned countries.

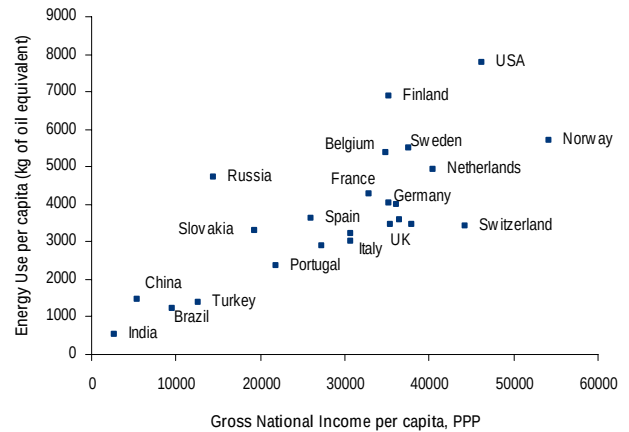
Income and Consumption

Chart 232: GNI per capita (PPP) and Electric power consumption (kWh per capita), 2007



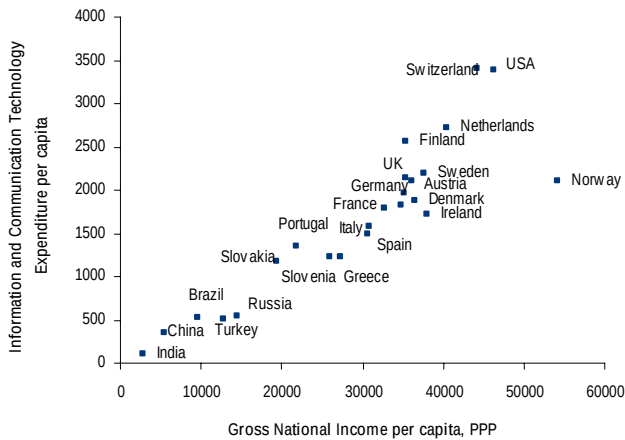
Source: World Bank, BofA Merrill Lynch Global Research

Chart 233: GNI per capita (PPP) and Energy Use per capita (kg of oil equivalent), 2007



Source: World Bank, BofA Merrill Lynch Global Research

Chart 234: GNI per capita (PPP) and Information and Communication Technology Expenditure (per capita), 2007



Source: World Bank, BofA Merrill Lynch Global Research

Key Takeaways

Compared with European countries the USA uses more energy per capita with respect to its GNI per capita.

The same is marginally true with spending on information and communication technologies, albeit this increases more uniformly with GNI per capita.

Population Pyramids

Key Takeaways

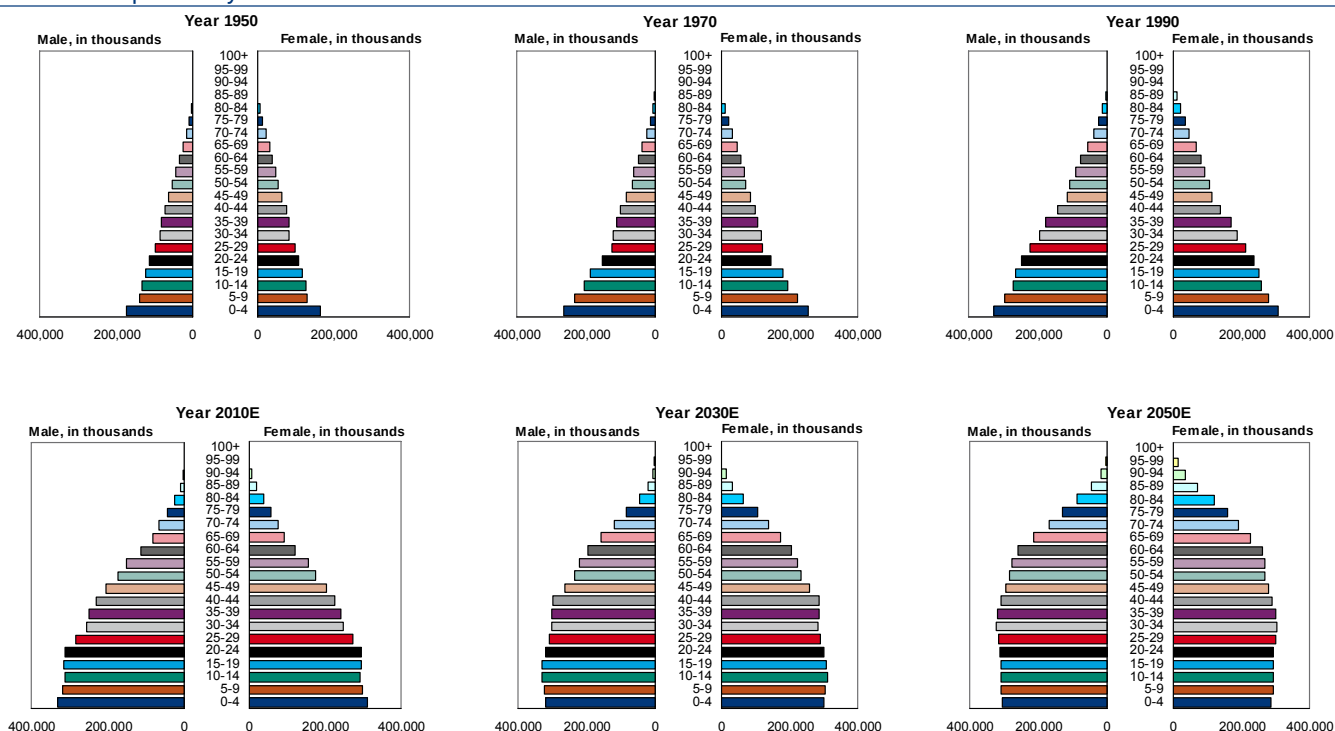
The population pyramids for the world show the demographic transition from a young and expanding population to aging population.

We can see Japan's rapid population expansion and subsequent dramatic fall in fertility leaving it with a very aged population structure.

By 2030, the Eurozone exhibits an aged population and by 2050 we can see the signs of a contracting population.

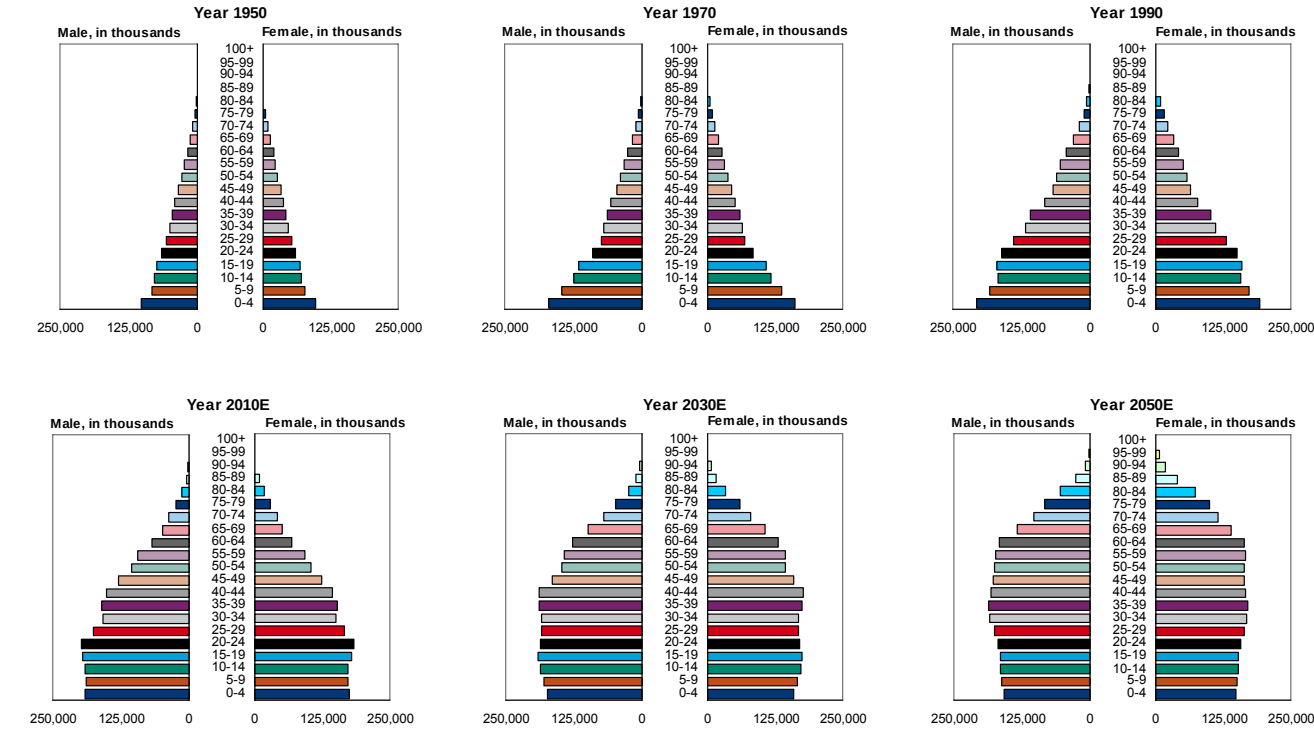
Within the Eurozone Germany, Greece, Italy, Portugal and Spain look the most 'top-heavy' implying they have the oldest populations. Again we can see signs of future declines in population.

Chart 235: World Population Pyramid



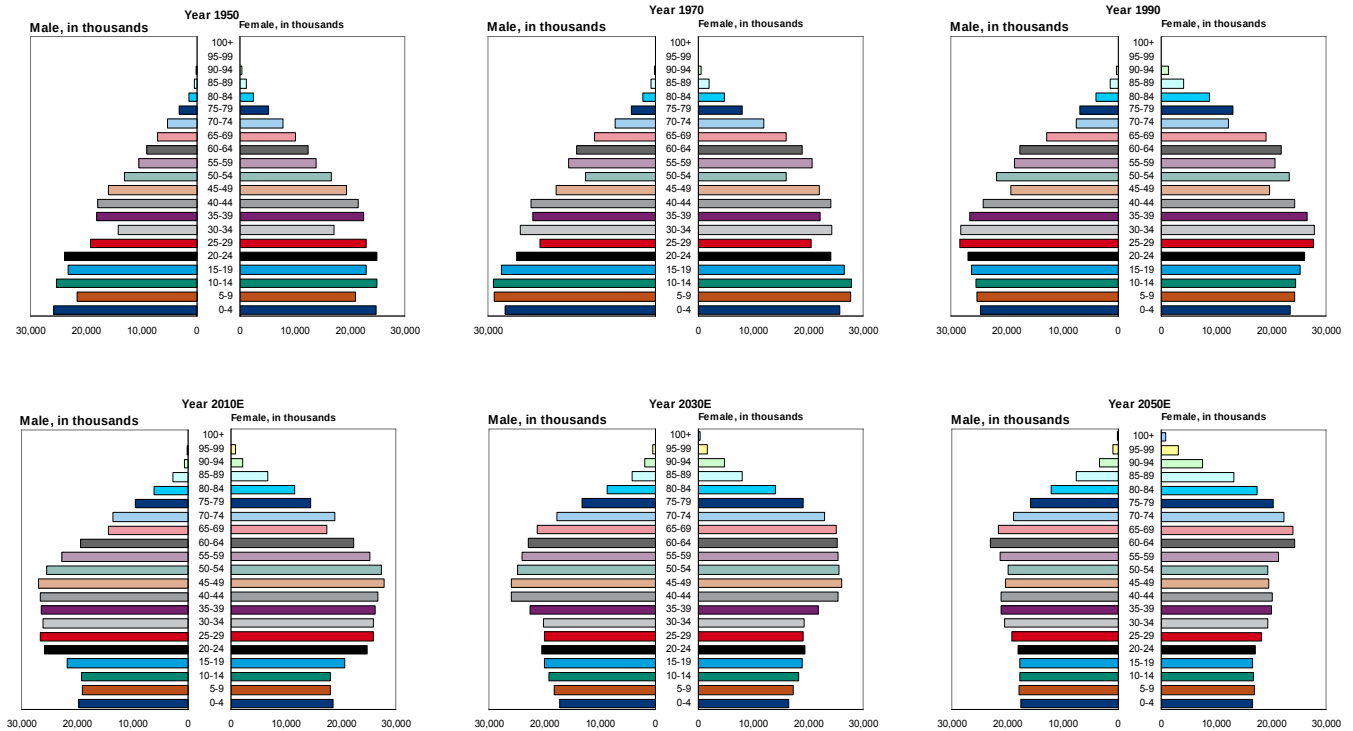
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 236: Asia Population Pyramid



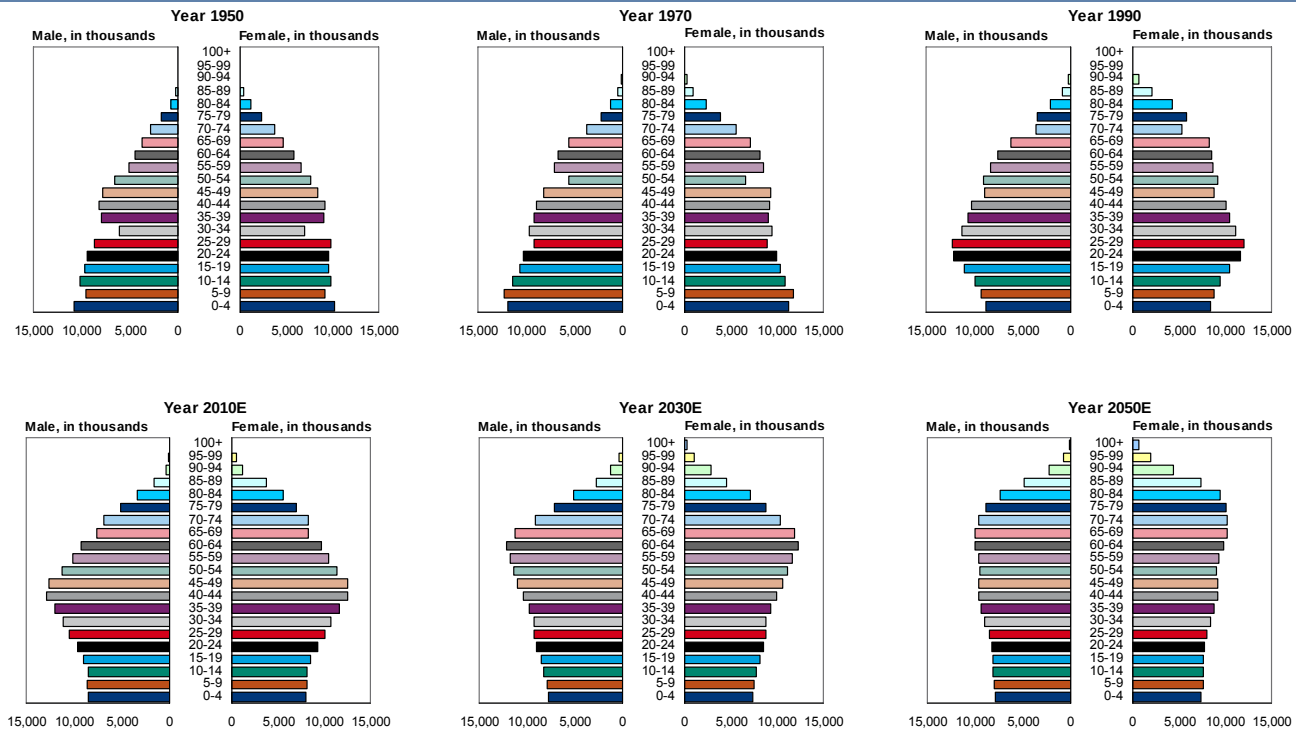
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 237: Europe Population Pyramid



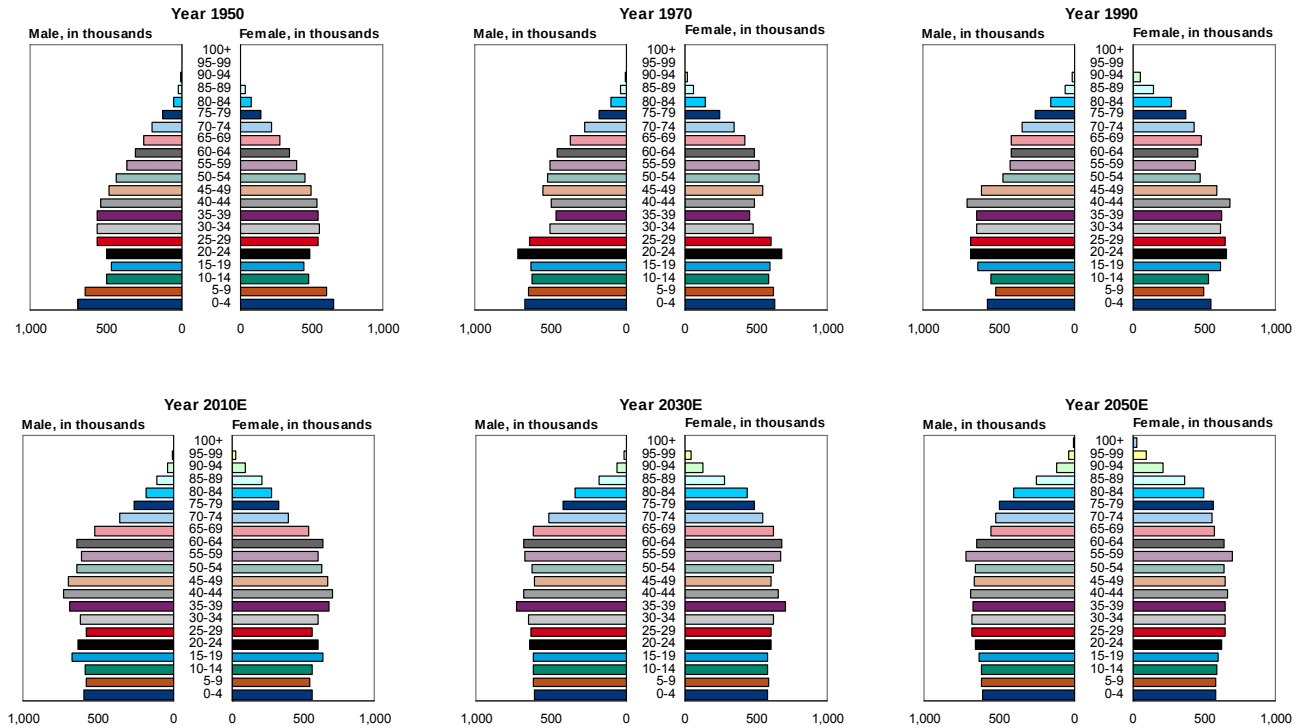
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 238: Eurozone Population Pyramid



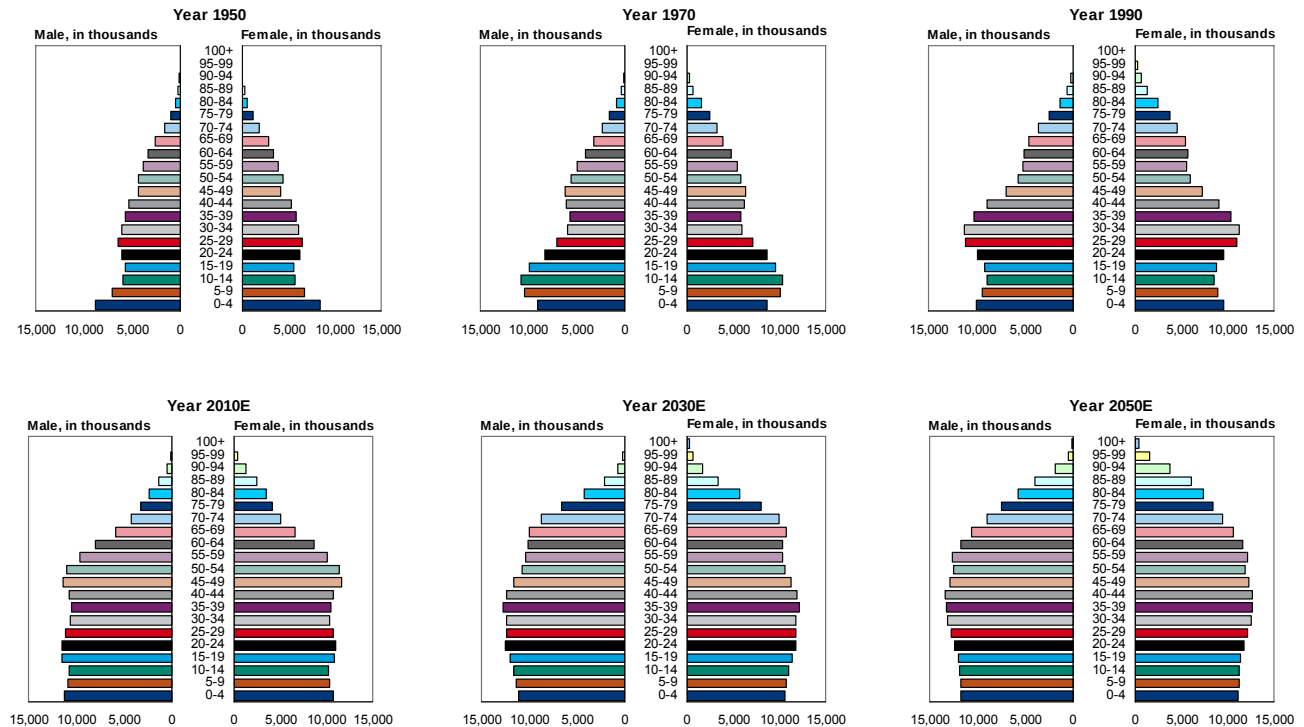
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 239: Scandinavia Population Pyramid



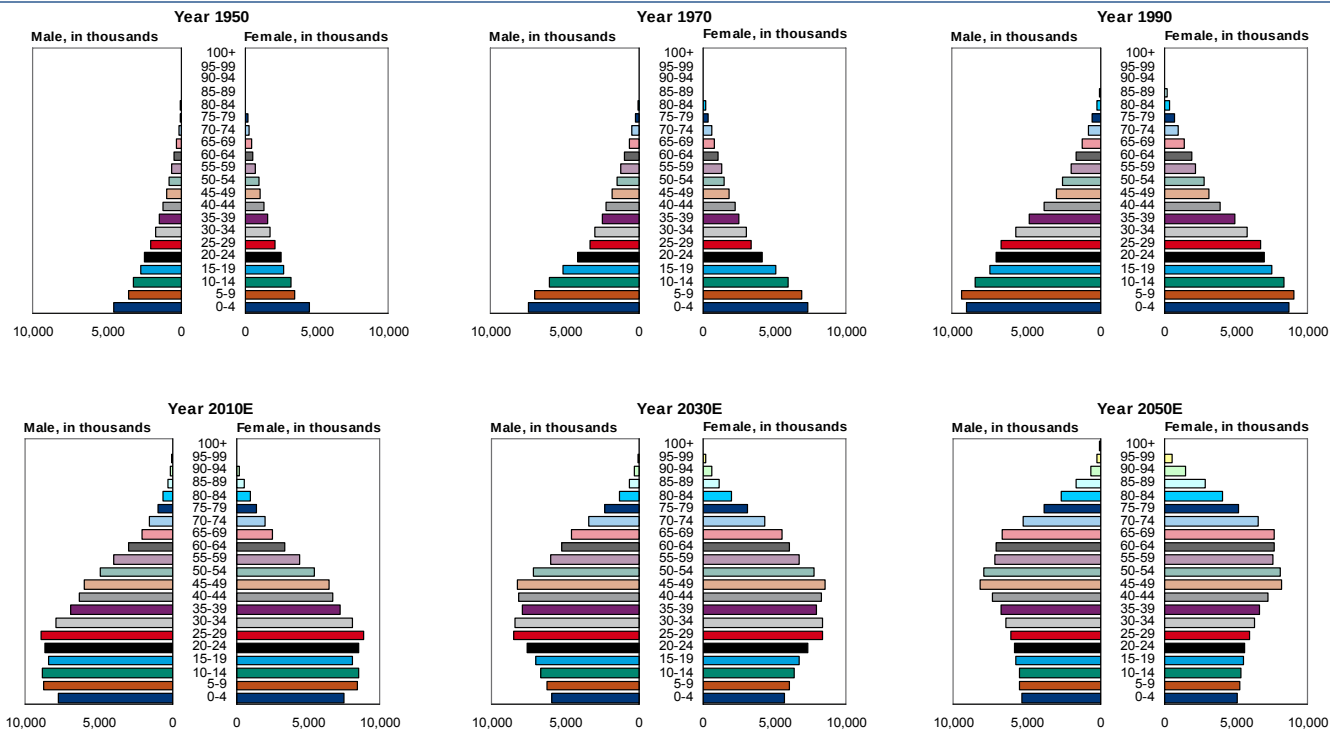
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 240: USA Population Pyramid



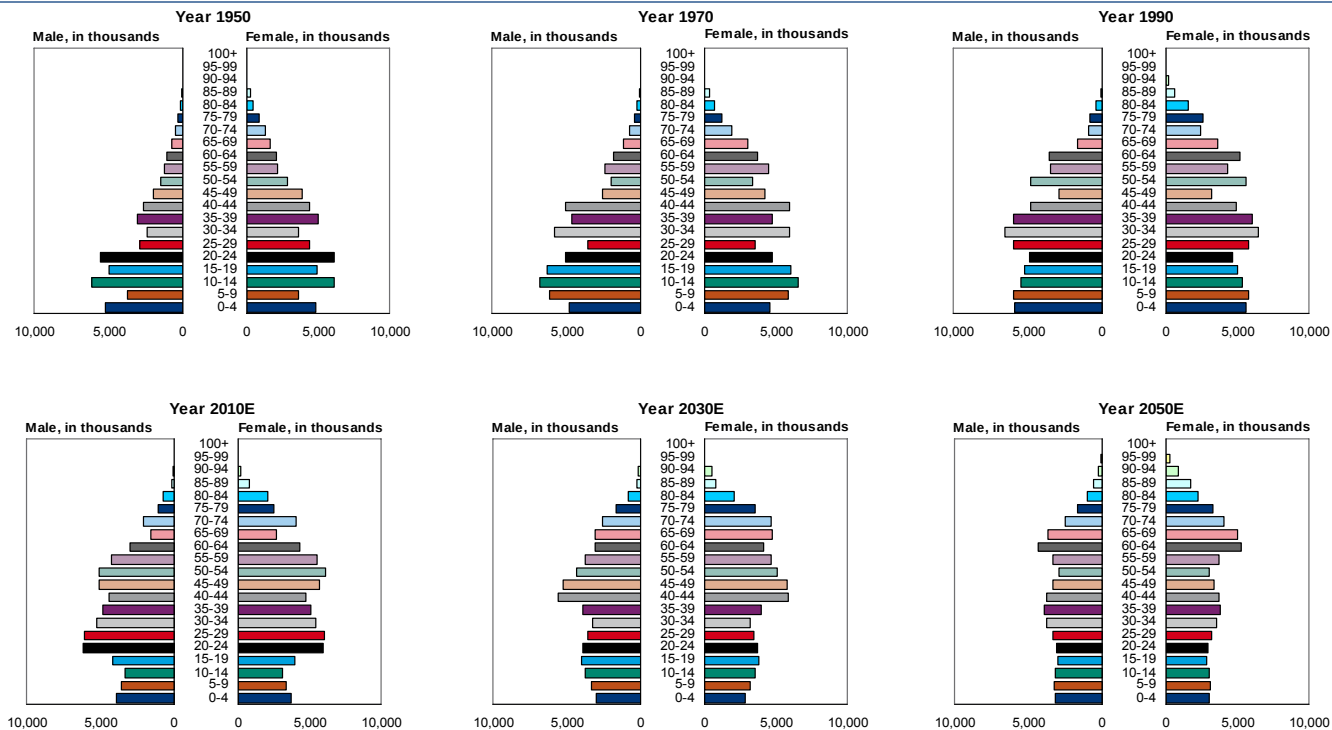
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 241: Brazil Population Pyramid



Source: Replace UN Population Database, BofA Merrill Lynch Global Research

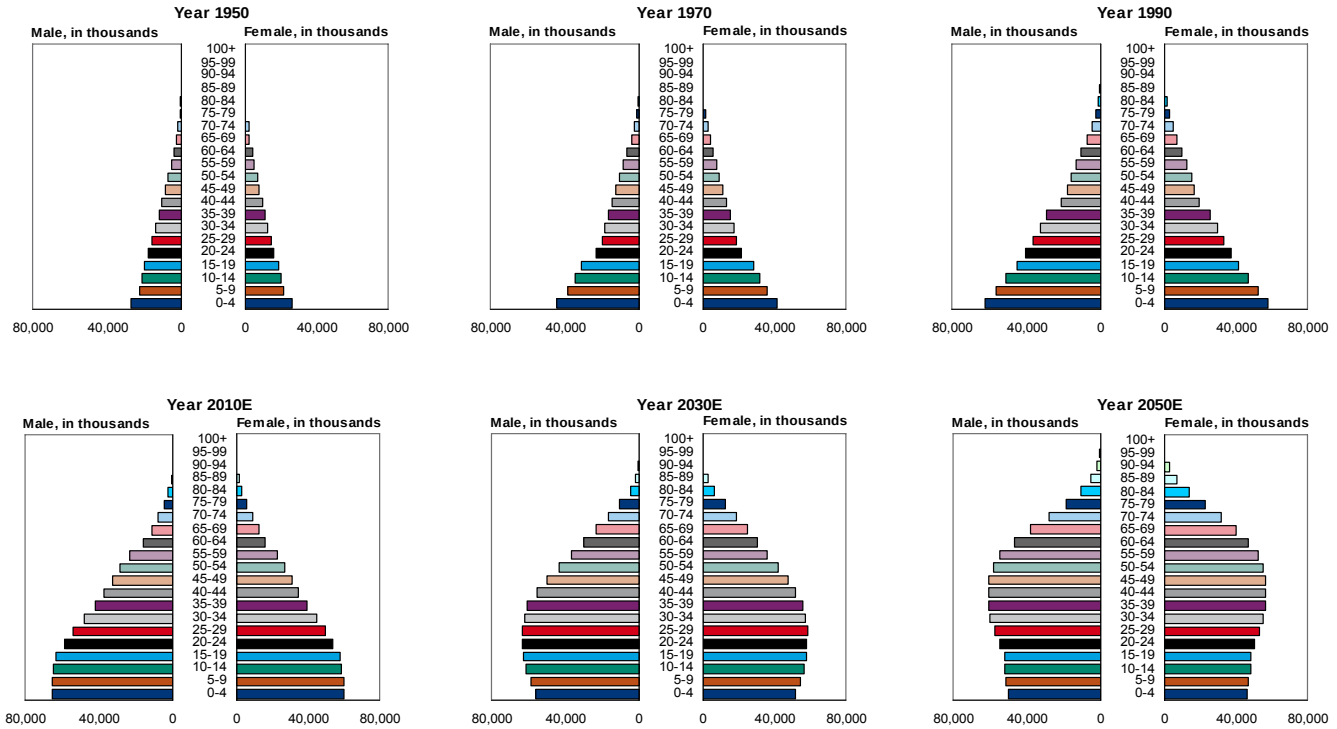
Chart 242: Russia Population Pyramid



Source: UN Population Database, BofA Merrill Lynch Global Research

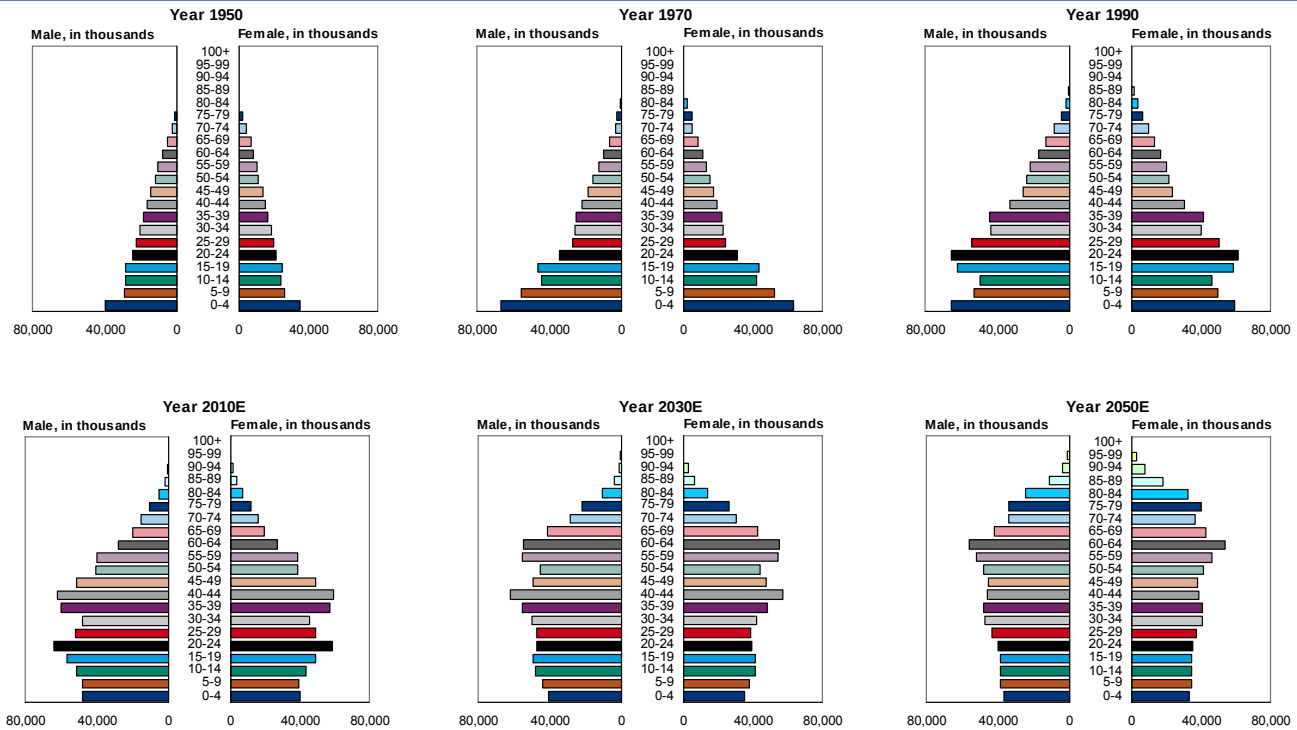
16 September 2010

Chart 243: India Population Pyramid



Source: UN Population Database, BofA Merrill Lynch Global Research

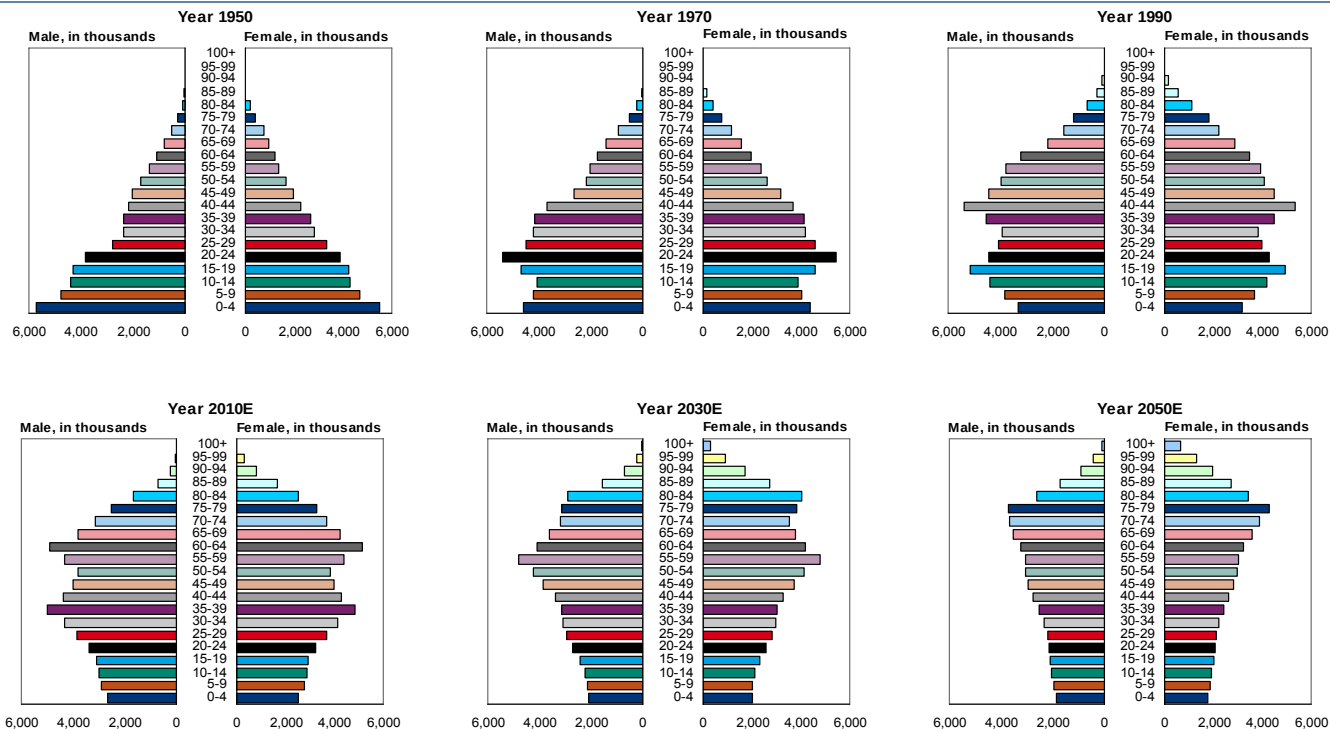
Chart 244: China Population Pyramid



Source: UN Population Database, BofA Merrill Lynch Global Research

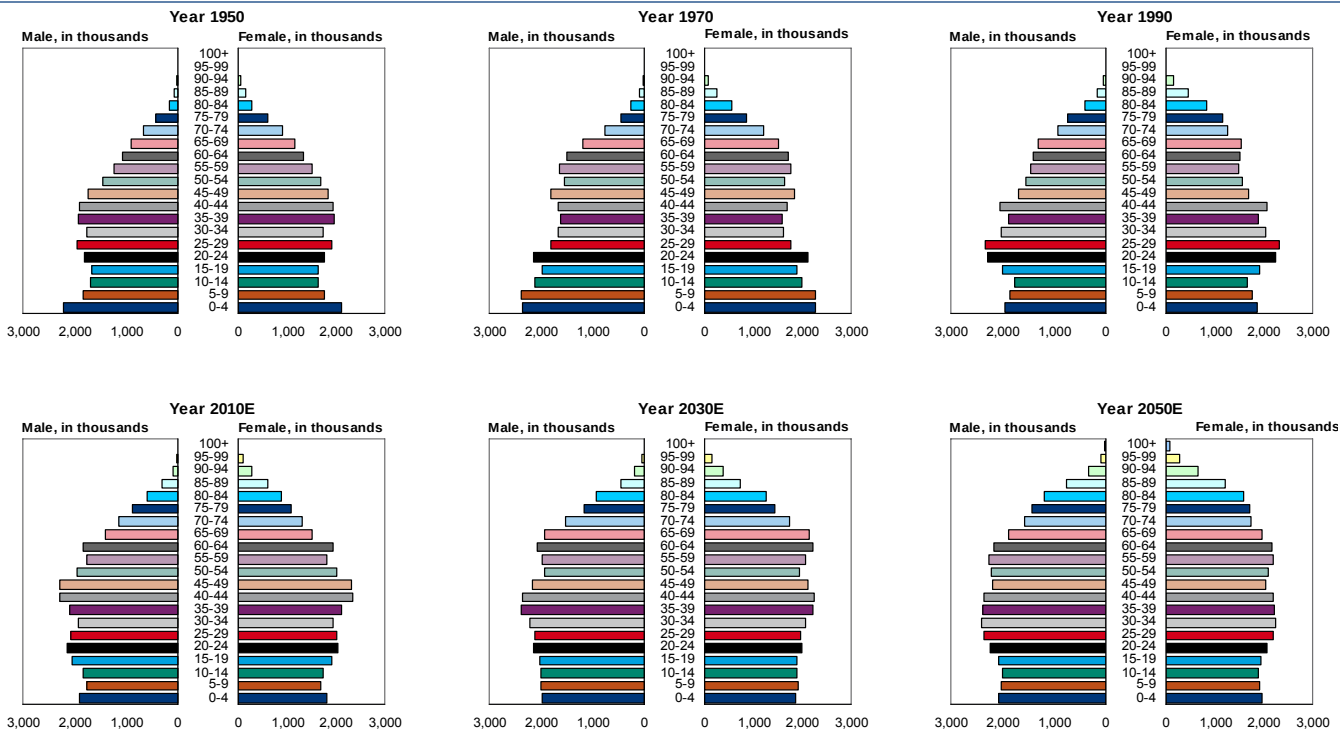
16 September 2010

Chart 245: Japan Population Pyramid



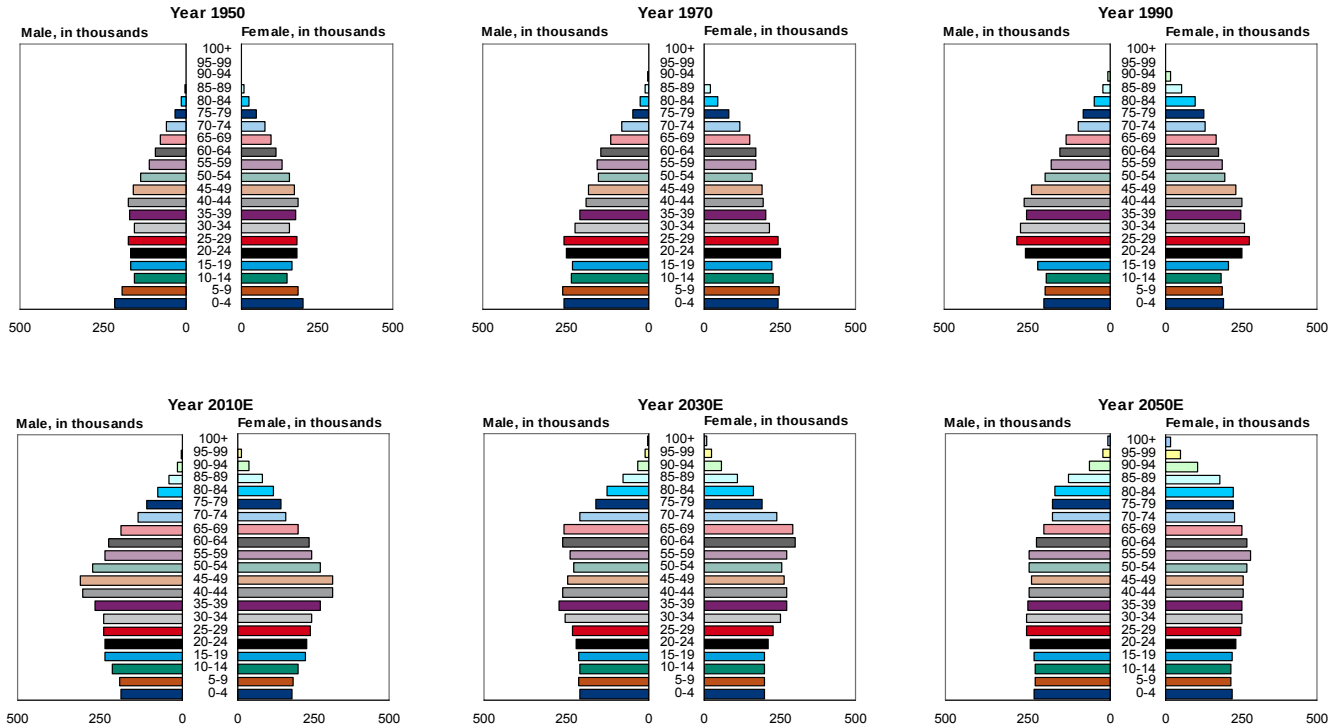
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 246: UK Population Pyramid



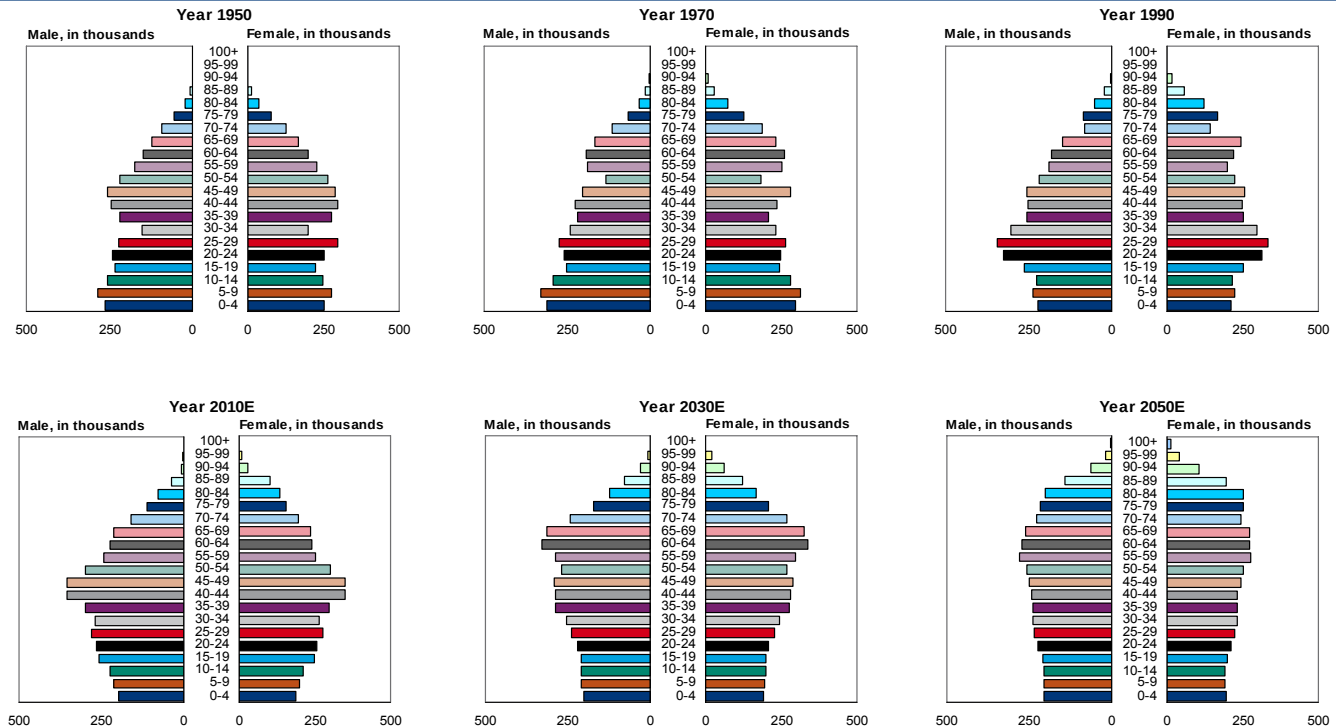
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 247: Switzerland Population Pyramid



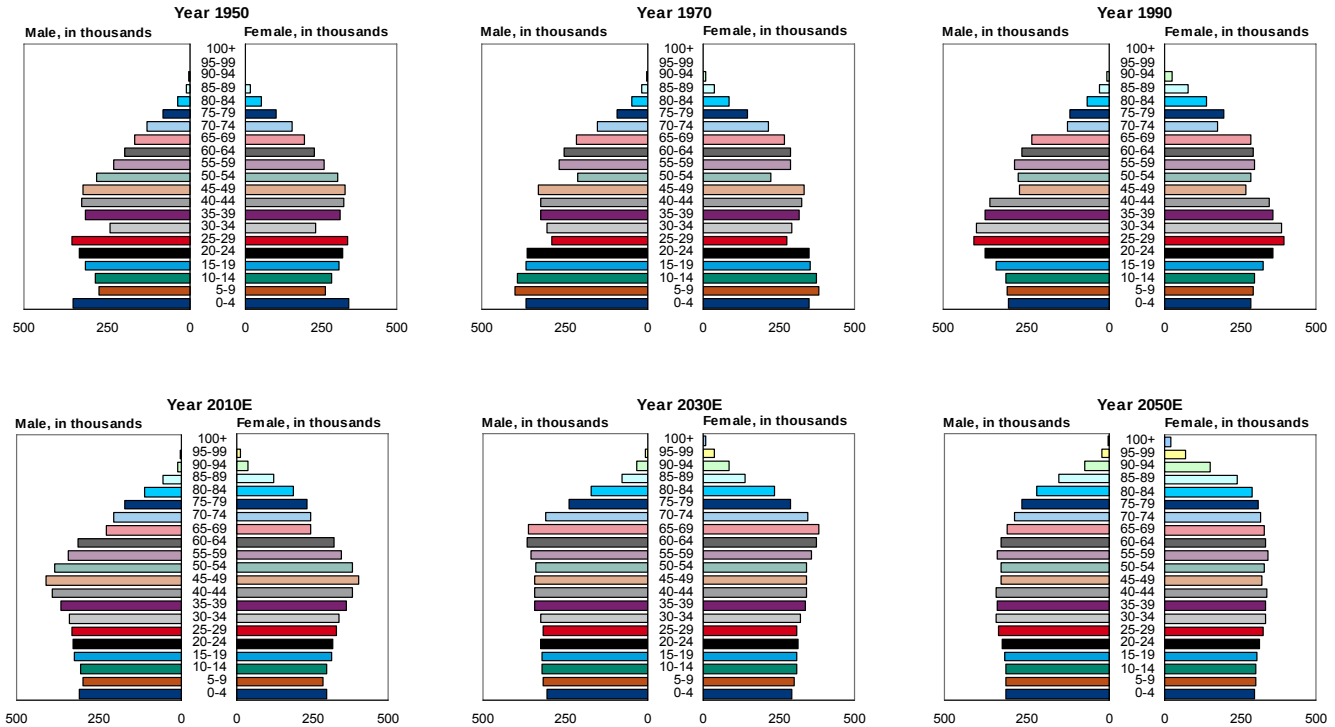
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 248: Austria Population Pyramid



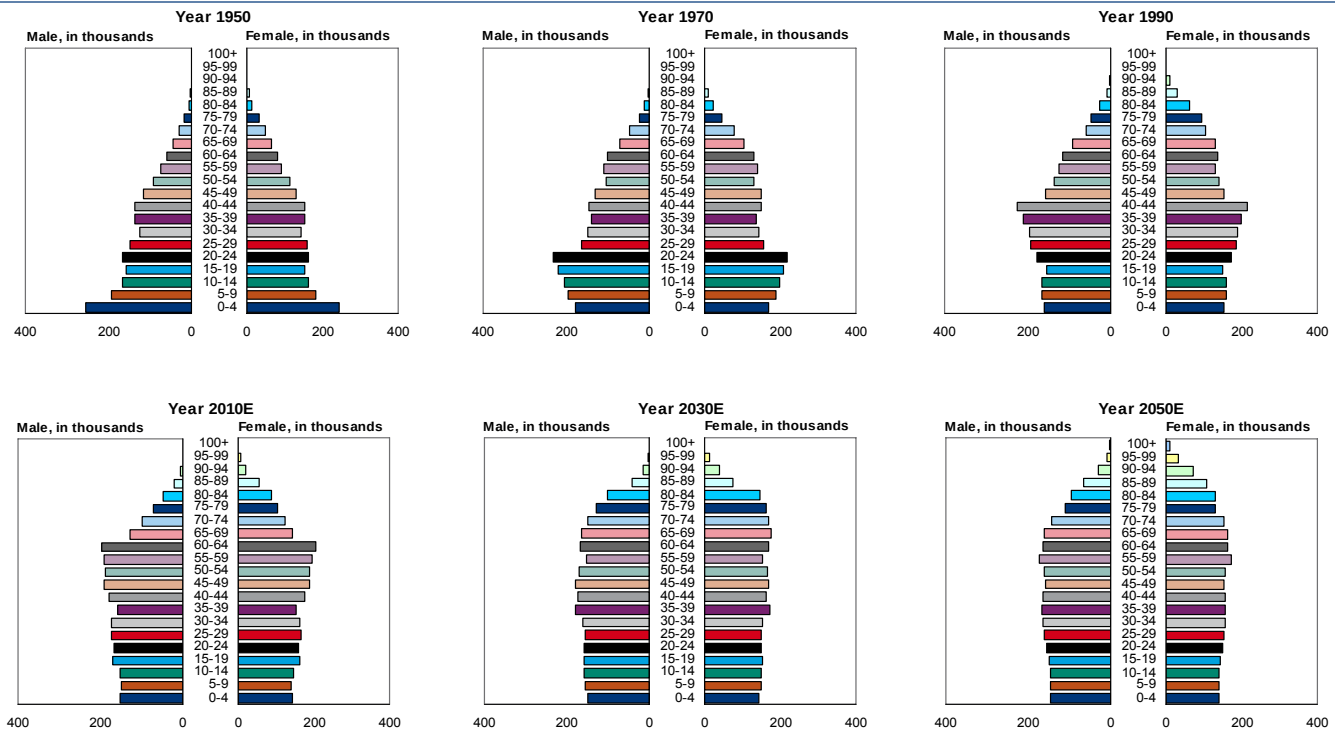
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 249: Belgium Population Pyramid



Source: UN Population Database, BofA Merrill Lynch Global Research

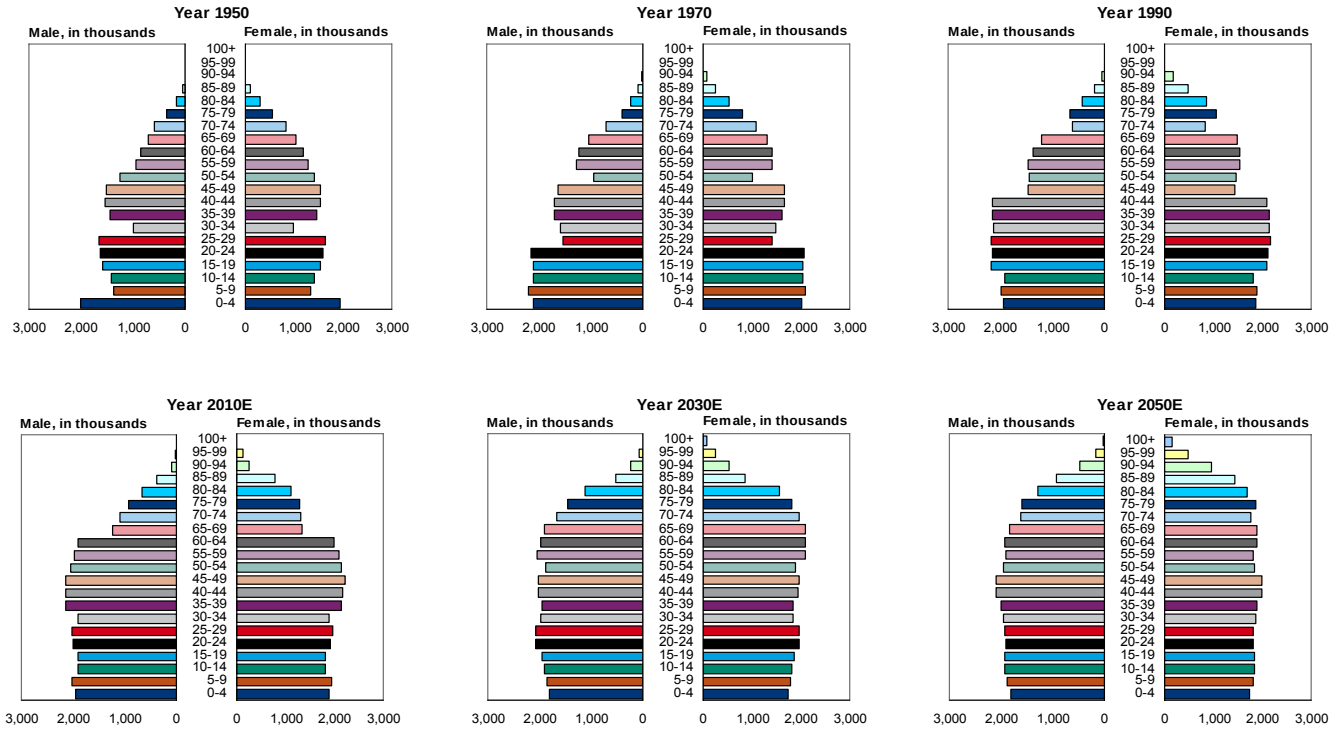
Chart 250: Finland Population Pyramid



Source: UN Population Database, BofA Merrill Lynch Global Research

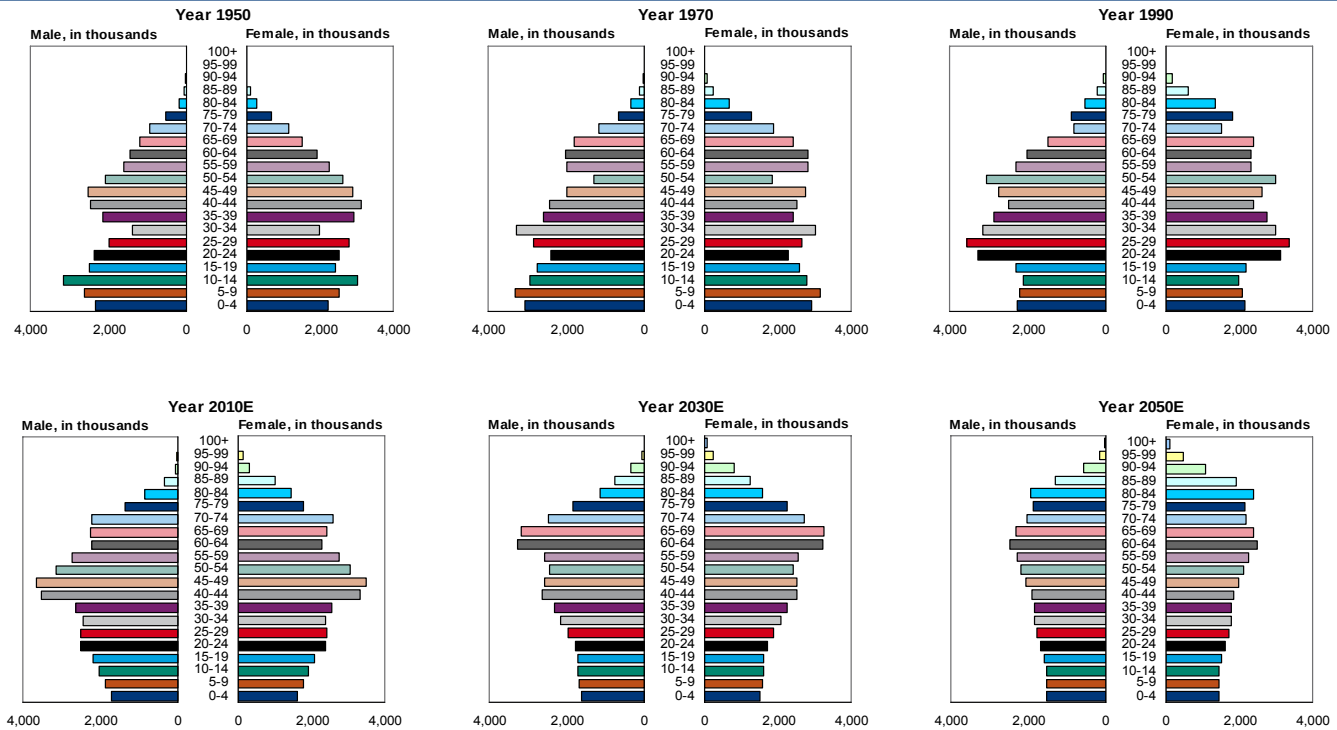
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Chart 251: France Population Pyramid



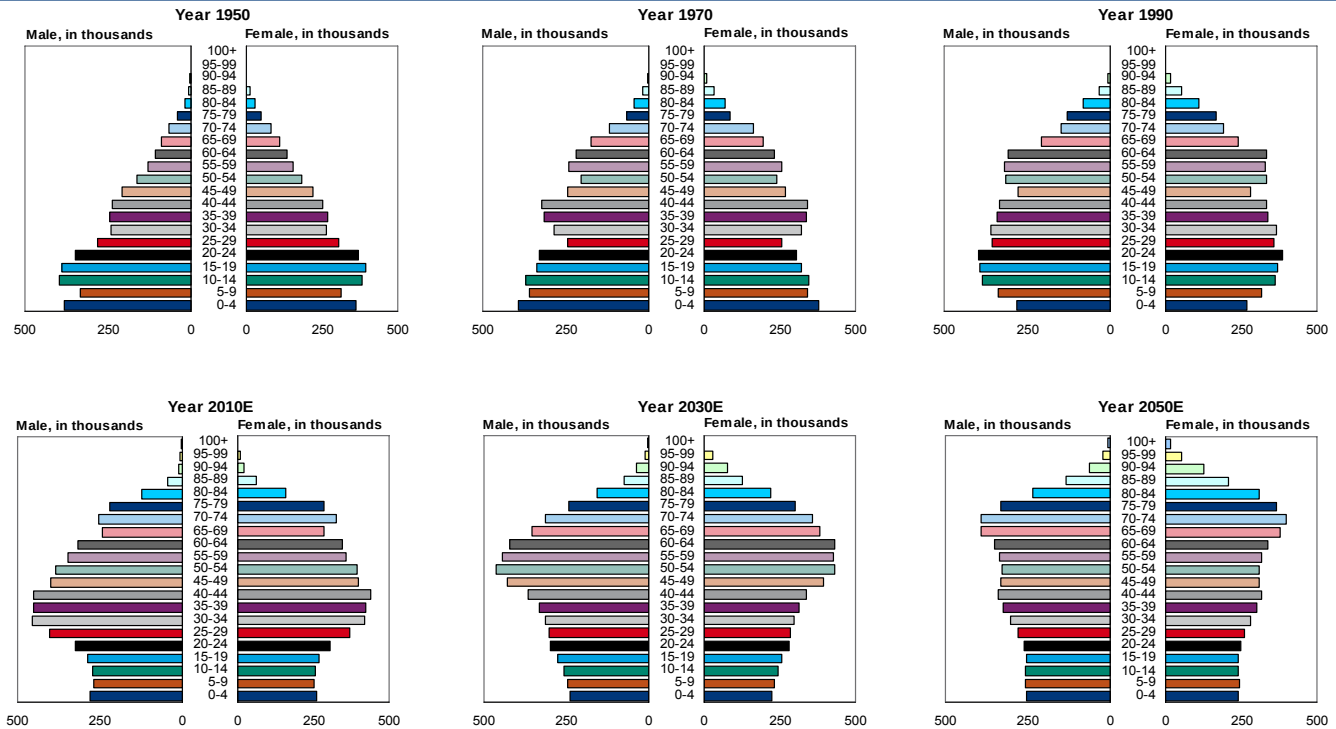
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 252: Germany Population Pyramid



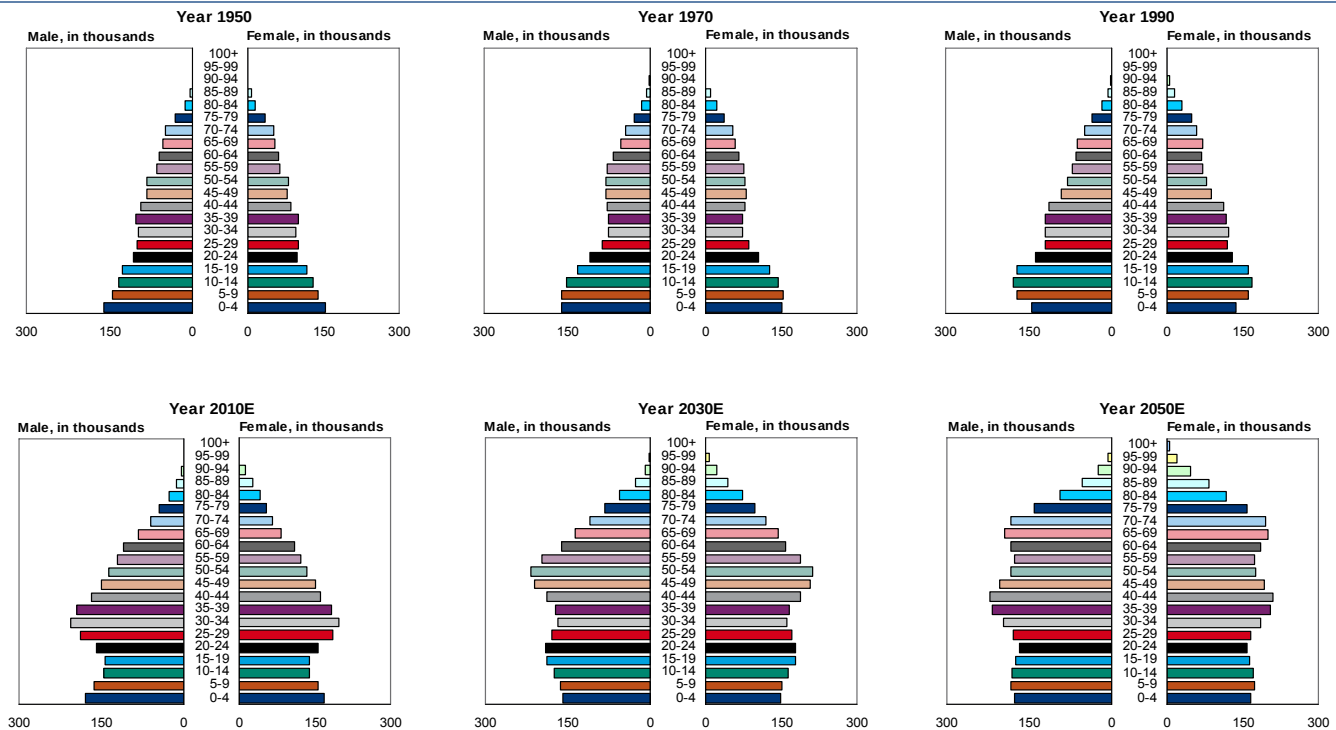
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 253: Greece Population Pyramid



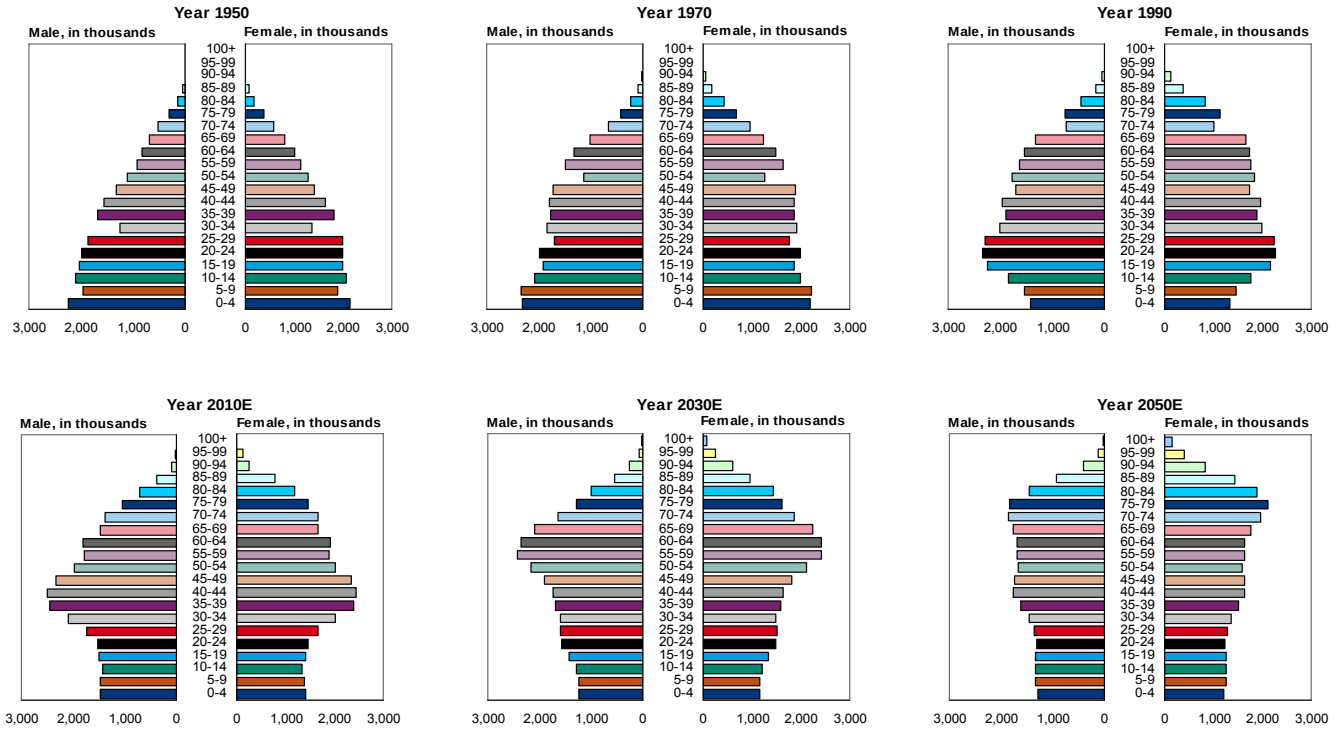
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 254: Ireland Population Pyramid



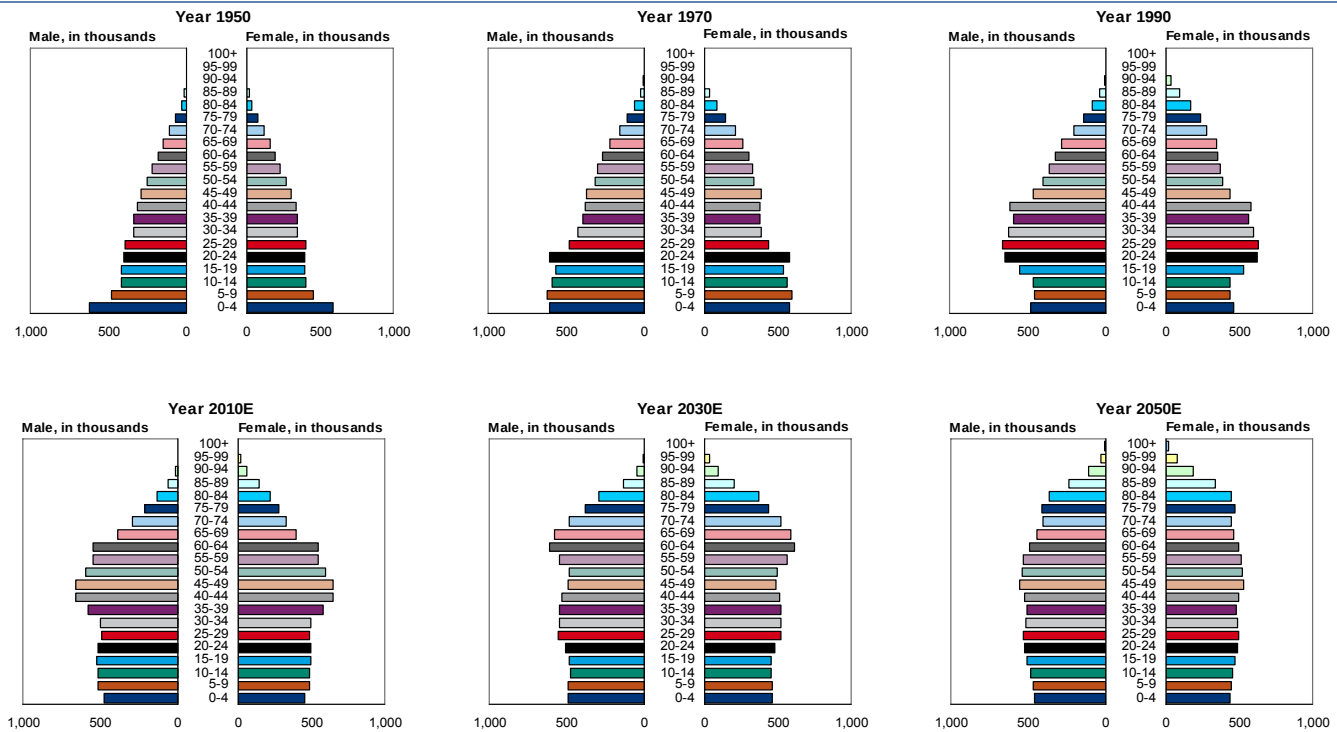
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 255: Italy Population Pyramid



Source: UN Population Database, BofA Merrill Lynch Global Research

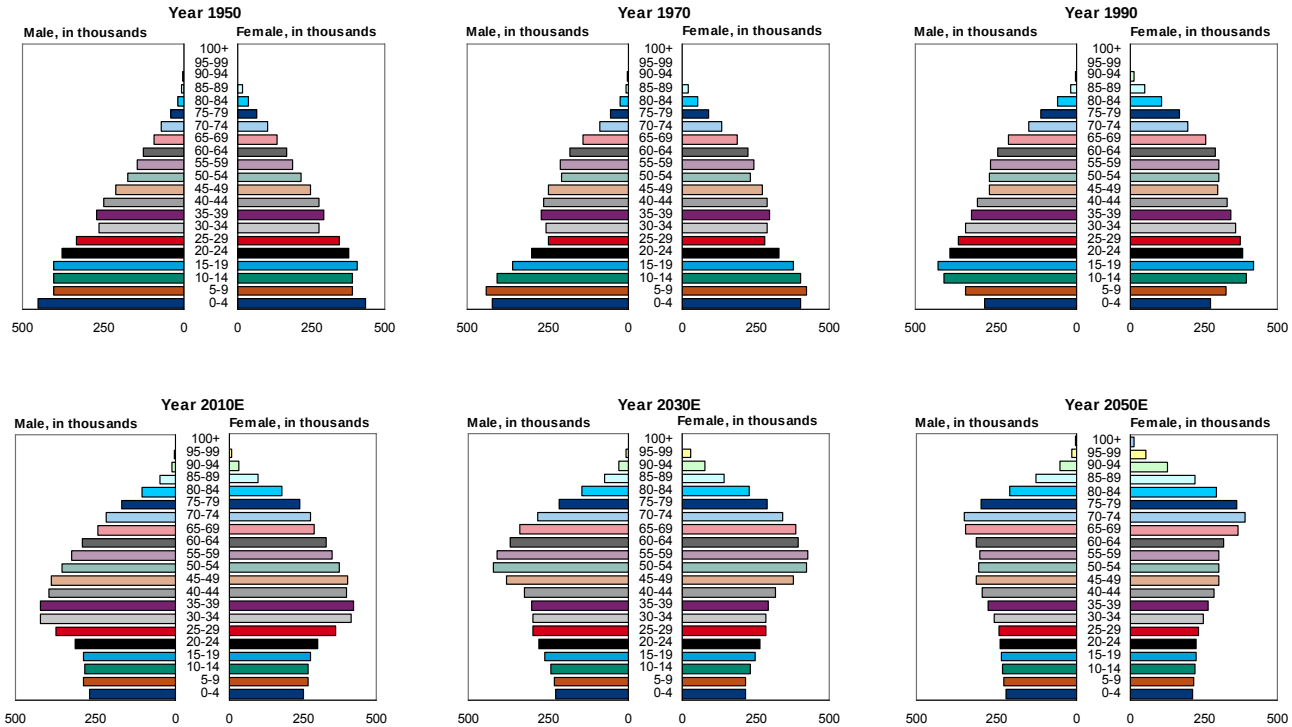
Chart 256: Netherlands Population Pyramid



Source: UN Population Database, BofA Merrill Lynch Global Research

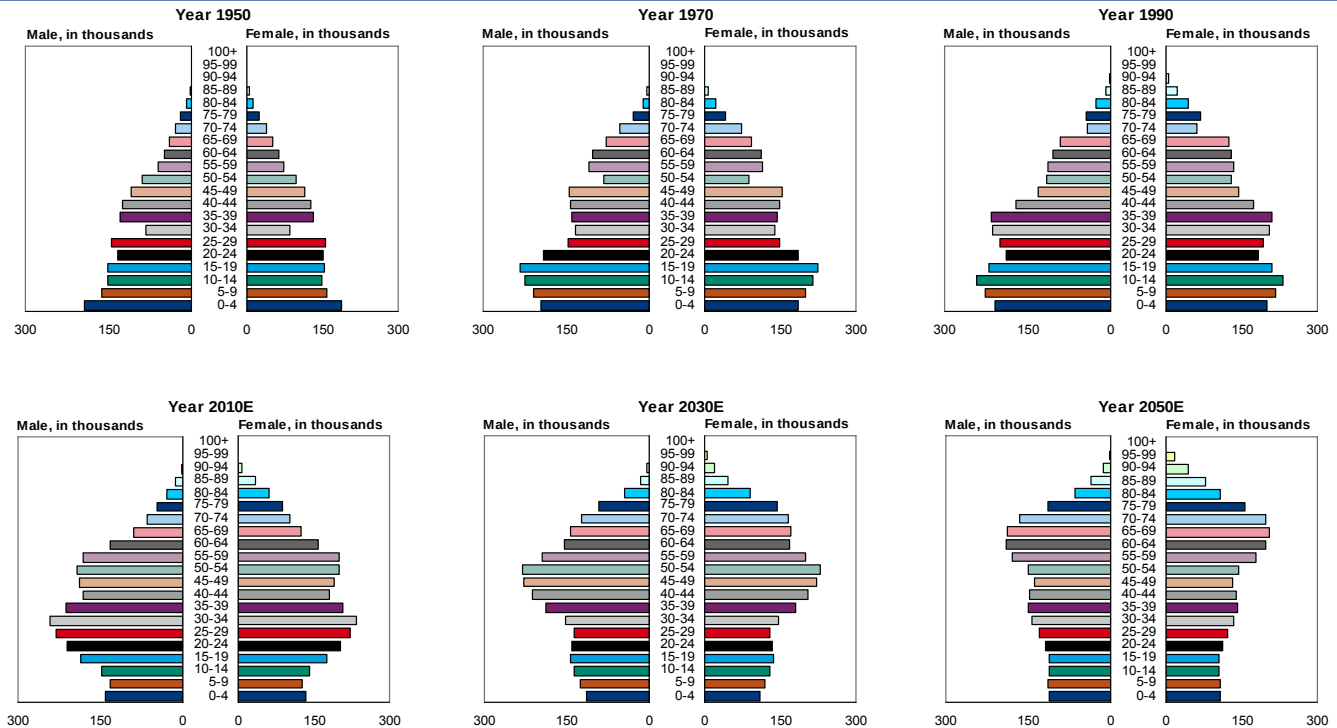
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Chart 257: Portugal Population Pyramid



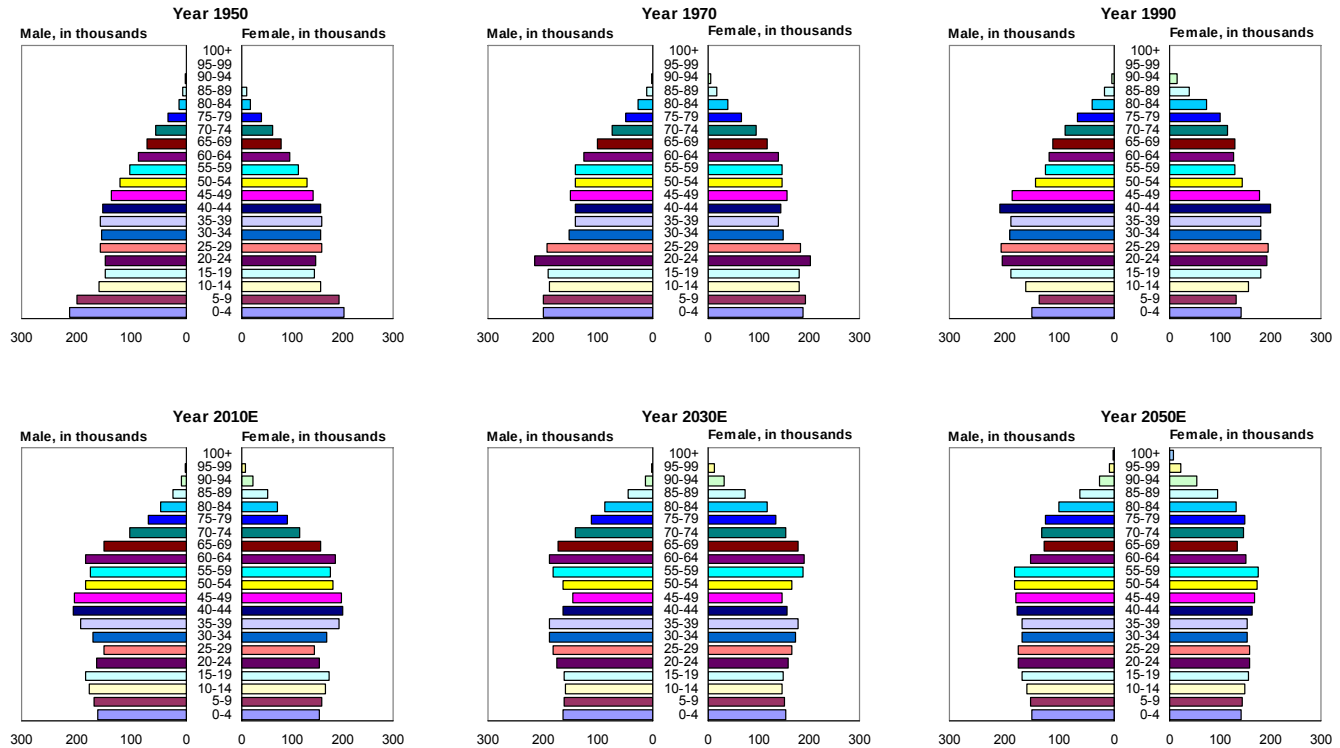
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 258: Slovakia Population Pyramid



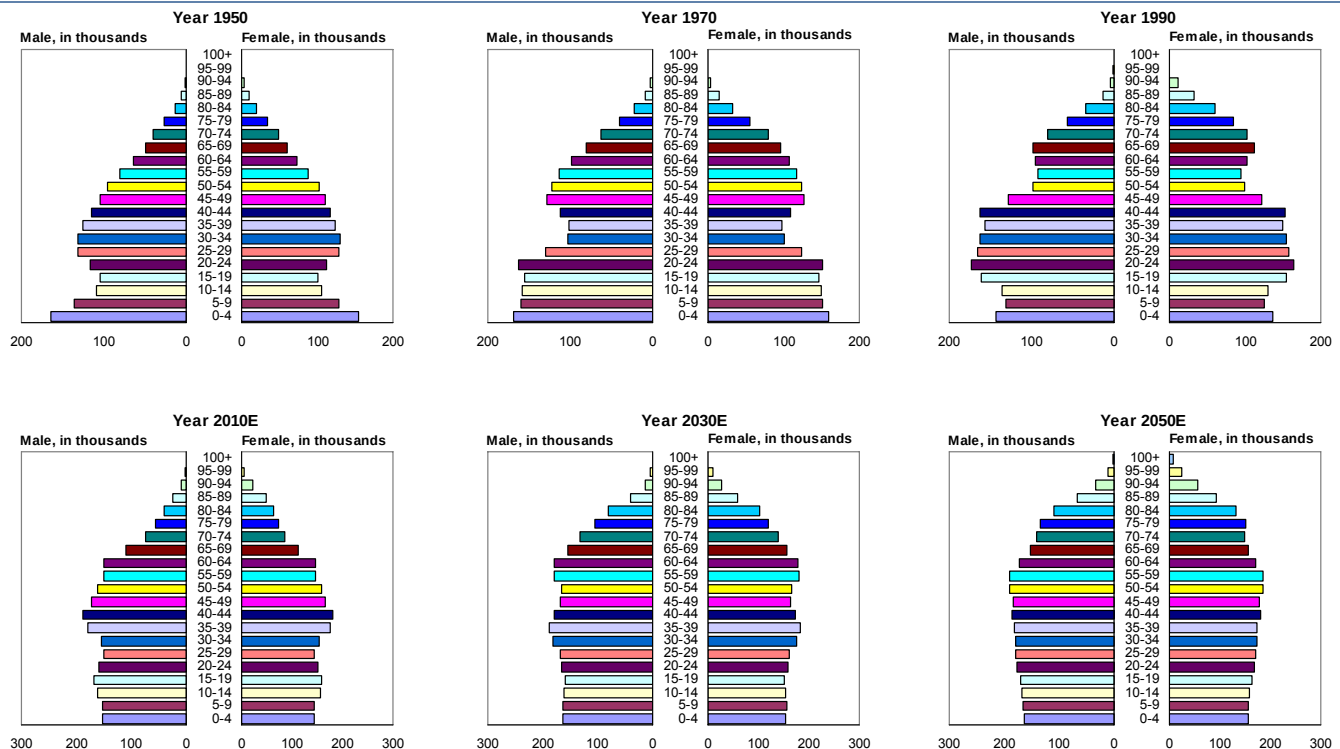
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 259: Denmark Population Pyramid



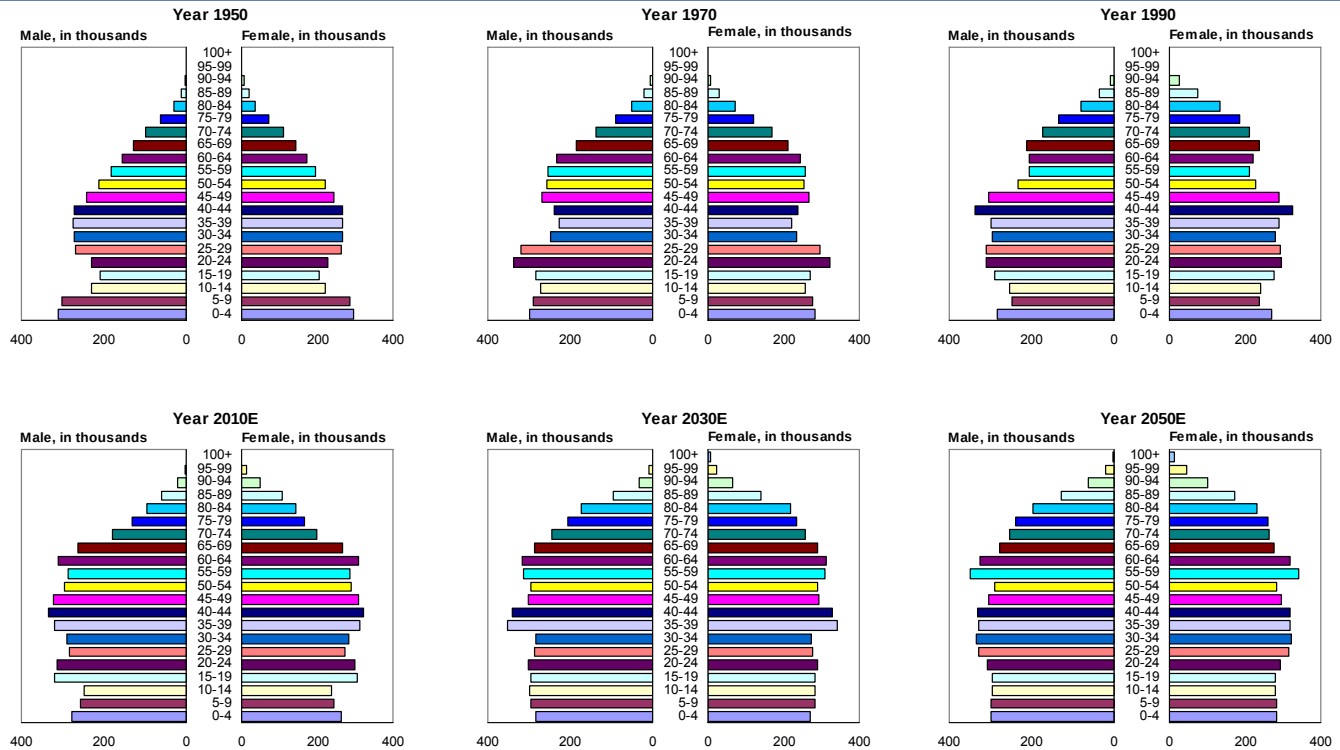
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 260: Norway Population Pyramid



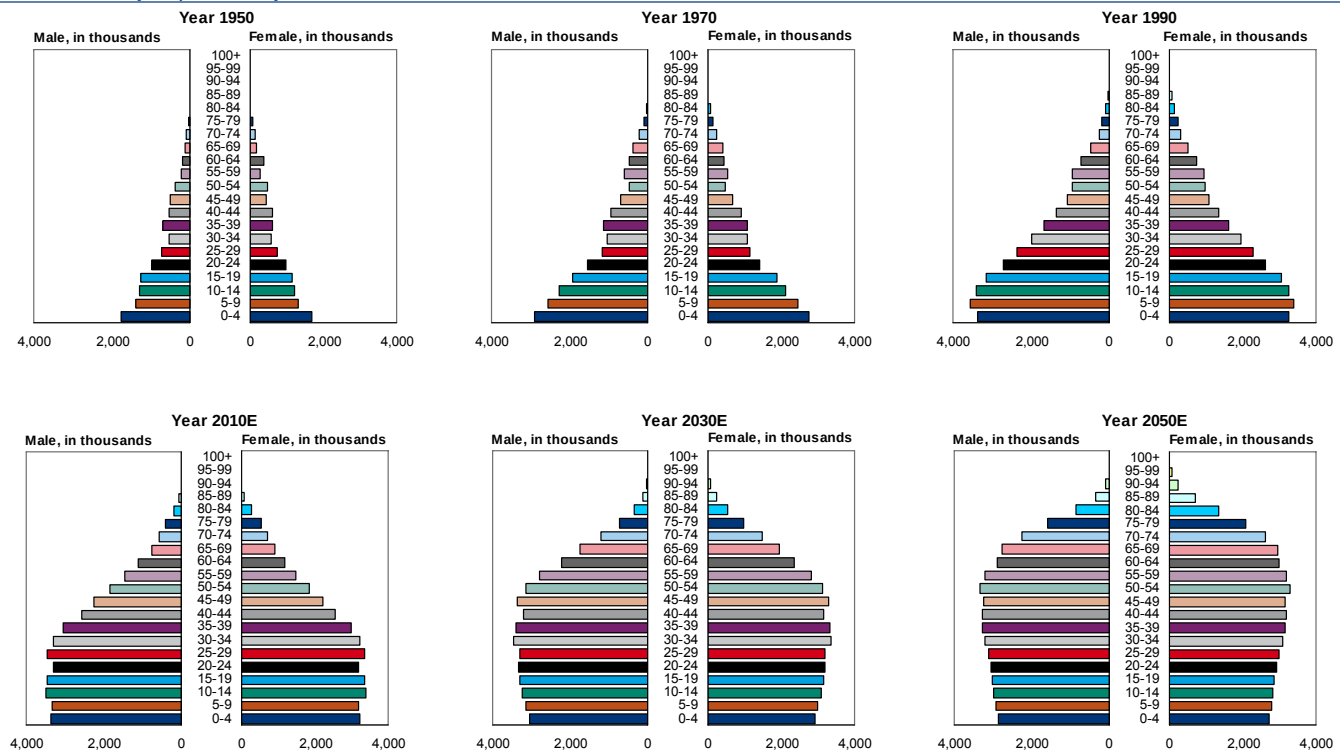
Source: UN Population Database, BofA Merrill Lynch Global Research

Chart 261: Sweden Population Pyramid



Source: UN Population Database, BofA Merrill Lynch Global Research

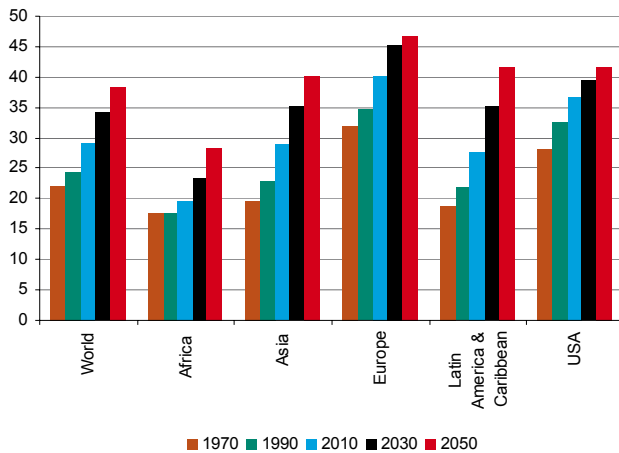
Chart 262: Turkey Population Pyramid



Source: UN Population Database, BofA Merrill Lynch Global Research

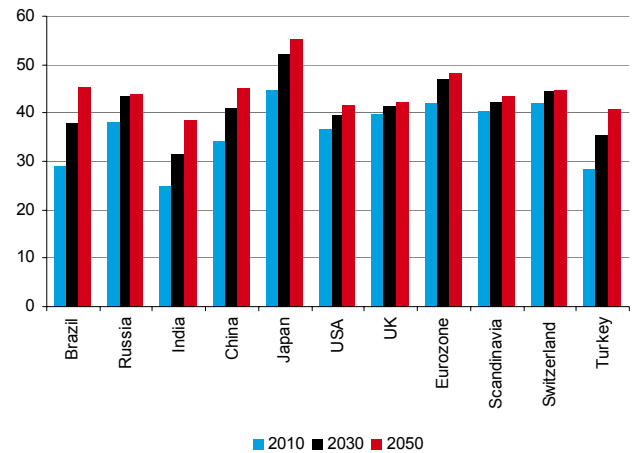
Median Age

Chart 263: Median Age



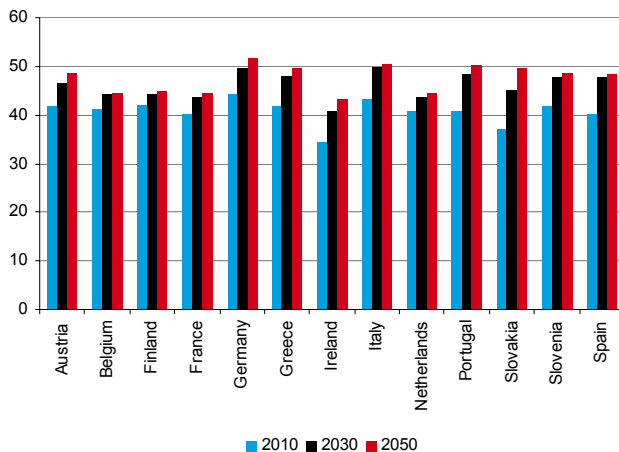
Source: United Nations, BofA Merrill Lynch Global Research

Chart 264: Median Age



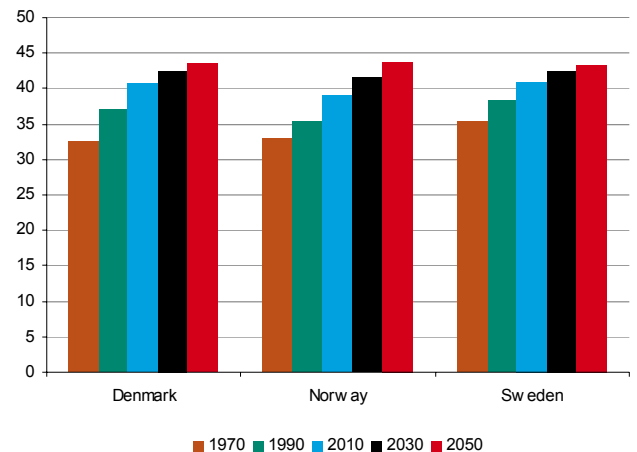
Source: United Nations, BofA Merrill Lynch Global Research

Chart 265: Median Age



Source: United Nations, BofA Merrill Lynch Global Research

Chart 266: Median Age



Source: United Nations, BofA Merrill Lynch Global Research

Key Takeaways

Europe has and will continue to have the highest median age of major global regions.

Japan will continue to have the highest median age, followed by the Eurozone and Brazil and China in 2050 (greater than the UK and USA).

Within the Eurozone Germany, Greece, Italy and Portugal will lead the way with the highest median ages.

Appendix - Key Definitions

- **Child Dependency ratio:** Population aged below 15 years divided by population aged between 15 and 64 years, both inclusive.
- **Crude birth (death) rate:** Number of births (deaths) in a given year divided by per thousand persons (based on mid-year population). It is expressed as number of births (deaths) per 1,000 population.
- **Elderly dependency ratio:** Population aged above 64 years divided by population aged between 15 and 64 years, both inclusive.
- **Fertility Rate:** The average number of children that would be born per woman.
- **High Net Worth Individuals (HNWIs):** Persons having investable assets of US\$1 million or more, excluding primary residence, collectibles, consumables, and consumer durables.
- **Life expectancy (at birth):** The number of years that a person at birth is expected to live.
- **Mid-Young Ratio:** Population aged between 40 to 49, both inclusive, divided by the population aged between 20 and 29, both inclusive.
- **Net Migration Rate:** The number of immigrants minus the number of emigrants in a given year divided by per thousand persons (based on mid-year population). It is expressed as the net number of migrants per 1,000 persons.
- **Prime savers:** Population aged between 40 and 60 years, both inclusive.
- **Sex Ratio:** Male Population divided by female population (in percentage) for a specific age group.
- **Total dependency ratio:** Equals to elderly dependency ratio plus child dependency ratio.
- **Urban (Rural) population:** De facto mid-year population living in areas classified as urban (rural) according to the criteria used by each area or country.
- **Working age population:** Population aged between 15 and 64 years, both inclusive.
- **Workers' remittances and compensation:** Workers' remittances and compensation from World Development Indicators (World Bank) is the sum of three items: workers' remittances, compensation of employees, and migrants' transfers.
- **Stocks traded:** the total value of shares traded during a given year.

Link to Definitions

Macro

Click [here](#) for definitions of commonly used terms.

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Investment rating	Total return expectation (within 12-month period of date of initial rating)	Ratings dispersion guidelines for coverage cluster*
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Neutral	≥ 0%	≤ 30%
Underperform	N/A	≥ 20%

* Ratings dispersions may vary from time to time where BofAML Research believes it better reflects the investment prospects of stocks in a Coverage Cluster.

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