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### **Demographic challenges and social security**

Societal challenges and the capacity to adapt:  
Social Security in an ageing world

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# Demographic challenges and social security

## Societal challenges and the capacity to adapt: Social Security in an ageing world

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### Demographic ageing

By 2030 half the population of Western Europe will be over 50 with a life expectancy at that age of a further 40 years. This will be historically unprecedented as we have never before had a region of the world with over half its population over 50. The latter half of the 20th century saw the more developed countries, and in particular Europe, experience population ageing to a degree unprecedented in demographic history. In the first fifty years of this new century, less developed and transitional countries are predicted to go through the same transition. Such population ageing is arising from a steady fall in both fertility and mortality across the globe, with exception of sub-Saharan Africa. Europe reached maturity at the turn of the millennium, with more older people (over 65) than younger (under 15). It is predicted that Asia will become mature by 2040, and the Americas shortly after.

Such global ageing is not occurring in isolation, it is emerging in the context of globalisation itself, a world increasingly dominated by the flow of human and economic capital across national boundaries. Indeed, a key stimulus to such capital flows is the emerging demographic imbalances arising from the differential movement of regions into maturity. Thus while an understanding of the dynamics of globalisation is essential to address the challenges and opportunities of ageing societies, so it is also necessary to understand the dynamics of global ageing as a component of globalisation.

### Emergence of demographically mature societies

By 2000 there were more people aged over 60 than under 15 in the European Union (EU) 15, by 2040 there will be more older than younger people in Asia, and it is predicted that by 2050 the number of the world's older people will outnumber the young. While in percentage terms, the world's population over 60 had risen from just 8 per cent in 1950 to 10 per cent by 2000, this accounted for an increase in numbers from 200 to 600 million older adults. It is expected that by 2050 the absolute figure will reach 2 billion, another tripling in just over 50 years, when the percentage over 60 will have reached more than a fifth of the total global population (21 per cent). The numbers of those aged 80 and above will show an even greater increase, rising from 69 million to an incredible 379 million by 2050.

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While my presentation will primarily focus on Europe, it is important to understand the global reach of population ageing, for the situation within Europe will be influenced by the population dynamics beyond the region. It is in fact the Asian/Pacific region, currently with 600 million older people, that is the most rapidly ageing world region. It will have some 20 per cent of its projected population over 60 by 2050, accounting for two-thirds of the world's 2 billion elders. Of key importance is the speed at which this transition is occurring with the less developed and transitional countries facing extreme rapidity of ageing. While it took Europe (EU 15) some 120 years to go from a young to mature population, maturity being achieved in 2000, such a shift in the proportion of young and old will have occurred in Asia in less than 25 years. France, for example, took 115 years to move from 7 per cent to 14 per cent of its population over 65, Japan in just 26.

While the predicated increase by 2025 in the per cent of people over 60 for the EU 15 is around 33 per cent, it is a staggering 400 per cent for Indonesia, 350 per cent for Thailand, Kenya and Mexico, 280 per cent for Zimbabwe and up to 250 per cent for India, China and Brazil. It is this rapidity of demographic ageing which will be one of the greatest institutional challenges for less developed and transitional economies.

If we take the proportion of the population aged 65 and over in the world's oldest countries at the turn of the 20th century, with the exception of Japan, the top 20 all are European. Globally, Italy has the highest proportion of persons aged over 65, primarily a consequence of its low fertility levels. In the EU 15, Italy has the highest proportion of older people (18.2 per cent) while Ireland has the lowest (11.2 per cent). Australia, Canada and the United States are the lower end of this scale (between 12 and 13 per cent). Interestingly, even the former Eastern European countries have higher percentages than Canada, Australia and the United States (US) but these proportions represent very different numbers of older people. The largest population of older people in the developed world is in the US, with 35 million people over 65, followed by Japan with nearly 23 million, and Germany with around 13 million.

A society's median age, that is the age that divides the population into numerically equal parts of younger and older people, provides another measure. All the countries in the Developed World have median ages over age 32. Median ages, however, will increase markedly in some countries over the next quarter century. Italy, Brazil, China, Mexico and Thailand, for example, will all experience more than a 10 year increase in median ages. Italy is currently predicted to have the highest median age at 52. Japan will reach 50, with most other developed countries, and some Asian, attaining median ages over 40. Singapore's population structure, for example, has been changing since the 1980s, with a steady decline in the proportion of children, and increase in the proportion of older adults. As a result the median age of the country's residents has increased by more than ten years over the past quarter century from 24.4 in 1980 to stand at over 35.5 today. Both Hong Kong and Korea are now over 35.

## **Oldest old**

The growth rate of those over 80 is of equal significance. This is the fastest growing age group in the world, with annual growth rate of 3.8 per cent. Low fertility around the time of the First World War and declining mortality rates among this cohort partially explain this – people reaching 80 in the mid-1990s were part of a relatively small birth cohort. Fertility increased again in the post 1st World War period, so that at the turn of the century a much larger birth cohort was reaching 80. In just 4 years, the growth rate of the world's 80+ group thus increased from 1.3 per cent to 3.5 per cent. The projected annual growth rate of this age group is 3.9 per cent until 2010, remaining above 3 per cent until at least 2020. By the year

2050, 20 per cent of persons aged 60 and over are predicted to be in this group. Currently 40 per cent of the over 80s live in Asia, some 16 per cent in China alone, partly a reflection of China's very large proportion of the total world population; 30 per cent are in Europe and 13 per cent in the US. Japan is predicted to have an outstanding 40 per cent of its older population aged 80 or over by 2030. In recognition of this increase in the oldest old the UN Population Division is now producing population projections with a final age category of 100+.

By 2050, it is predicted that the population pyramid for the Developed World will settle as population parallel lines, with around 10 per cent of the population in each age decade between birth and 100; that of transitional and developing countries will straighten considerably. Over the next 40 years, however, we shall continue to see a top heavy pyramid, with a large bulge of mature and then older adults moving up as the dominant population. In the developed countries this is due to the baby boom cohorts of the mid of last century. In the less developed and transitional countries, this is due to the "shelf" generation – the current cohort of young reproductive women who, while themselves typically part of large horizontal families with five to eight siblings, have chosen to bear only one, two or even no children.

## The drivers

Global population ageing has been fuelled by a fall in Total Fertility Rates. Along side the well recognised low fertility of Western Europe, with all countries below replacement level, and southern Mediterranean countries in particular at 1.2 and 1.3, we see a similar pattern emerging in Asia. Singapore and Korea have now fallen to below 1.2, while Hong Kong, at below 1, now has the lowest TFR in the world. The most striking feature of life expectancy rates at birth is that not only everyone born in the Developed World, with the exception of the former Eastern European countries, can now expect to live for more than 75 years, but also the high life expectancies now expected from birth in much of Asia and Latin America. Indeed with the exception of Africa, many countries in the Less Developed World now have life expectancies at birth of 70 years or older. Furthermore, continued declines in mortality in both the more developed and transitional and developing regions are expected to extend life expectancy at birth to 82 and 75 years respectively by the year 2050, thereby reducing the gap between these regions. Of particular interest is the rise in healthy active life expectancy, with current predictions for Europe and the US forecasting that both men and women in their early 70s can expect to live well into their 80s, enjoying most of those years disability-free (Manton et al, 2006). Russia and Central Europe have a different current and predicted demography to the rest of Europe and Asia. Despite the fact that fertility rates are projected to rise Russia's population is projected to fall from 144 million to 104 million in 2050, and Ukraine's from 50 million to 30 million over the same period. Much of this is due to lifestyle impacts on health such as alcohol intake and smoking (Grogan 2006). As this affects men more than women there is also a significant gender difference in life expectancy (United Nations 2009).

## Dependency ratios

A set of important factors to consider dependency ratios: Elderly Dependency Ratios (EDR), ratio of those over 65 (and thus considered unproductive) to those 15-64 (and thus considered productive); Youth Dependency Ratios (YDR), ratio of those under 15 to those 15-64; and Total Dependency Ratios (TDR), ratio of those 15-64 with those outside this age range. We can discuss the relevance of these broad age categories to productivity/non-productivity, or simply take them as a proxy.

For many countries the rise in the EDRs will be significant. The next decade will see a rapid shift towards increased EDRs in most industrialised countries. Italy will see its EDR double between now and 2050 to reach 70:100 workers. In contrast the United Kingdom (UK) will increase only slightly, reaching 67:100. By 2050, the EDR will exceed 70 per cent in Italy, Spain and Japan, while remaining below 40 per cent in Denmark, Iceland, Luxembourg, Mexico, Turkey and the United States.

However we also need to shift the emphasis away from ageing per se and increases in elderly dependency ratios (EDRs) towards impact of both mortality and fertility fall whereby in some countries the fall in youth dependency ratios (YDRs) is such that overall total dependency ratios (TDRs) will actually fall. China proves such an example. China will in fact see a fall in its overall Total Dependency Ratio, from a peak of 80 dependents for every 100 workers in the youth driven 1960s and 70s to 60 dependents by 2050. Indeed China is currently at an all time low of only 40 dependents per 100 workers due to its rapidly falling fertility as a result of the One Child Policy. Similarly, the US reached its highest TDR in 1965 when there were 95 dependents per 100 workers.

## The globalisation of population ageing

As we earlier indicated, global ageing is emerging in the context of globalisation, and is in itself stimulating the flow of human and economic capital across national boundaries as a result of the emerging demographic imbalances arising from the differential movement of regions into maturity. It is thus necessary to understand the dynamics of global ageing, as a component of globalisation, addressing it at the global/institutional, societal/institutional and individual level. Let us start with the latter two.

At the societal level, demographic change will clearly have significant implications for labour supply, family and household structure, health and welfare service demand, patterns of saving and consumption, provision of housing and transport, leisure and community behaviour, networks and social interaction. However, as governments and policy makers have awakened to the implications of population ageing, so the *demographic burden hypothesis* has spread. National health services, and even economies, are predicted to collapse under the strain of health and pension demand, and families will no longer be there to compensate for failing public provision. Above all, ageing is seen as a challenge for the West alone, having little relevance for less developed and transitional countries, and one that can be compensated for by immigration from the young South. The reality, however, is far more complex, and highly susceptible to policy changes. Indeed, understanding the reality of the demographic issues is vital, both for individuals who need to reassess their life courses in the light of the new longevity probabilities, and for governments charged with planning and developing appropriate policy frameworks to address the forthcoming demographic changes, challenges and opportunities. Indeed, the major concerns – public spending on pensions, high dependency ratios between workers and non-workers, increases in health care costs, declining availability of family based care, and a slowdown in consumption due to an increase in older people and a decrease in younger people, are dynamics of current cohorts and current behaviours, they are not fixed. In addition, they are all phenomena which can be addressed by policy, given the political and economic will.

## Societal challenges and capacity to adapt to population ageing

Population ageing will thus impact upon all social security provisions from health and long-term care, pensions, unemployment and disability provision, to family structures impacting

on family benefits. Regardless of the demand, whether health or financial, the key challenge will be society's capacity to adapt to population ageing. This includes:

- The capacity of individuals and households to make the relevant adjustments to savings behaviour, labour supply, private intergenerational transfers, and investment in human capital.
- The capacity of institutions to make the relevant adjustments to enable arrangements for savings, labour supply, public intergenerational transfers, and investment in human capital.

## **Challenge of social goals and population ageing**

As societies attempt to successfully adjust to population ageing, a key public policy question is how national collective goals will influence these necessary societal adjustments, and how such required adjustments will be facilitated or restricted by existing social goals.

### **Goal of increasing general prosperity**

This is a primary goal of most countries as general prosperity reduces poverty and increases both standard of living and health outcomes of the population, though not necessarily quality of life. There is a fear in some quarters that population ageing will reduce economic growth, and the policy challenge is to minimise this effect. Maximising the benefits of the "demographic dividend" and adjusting TDRs, through policies which regulate youth entry into and old age exit out of the labour market, (alongside policies which promote higher female participation and the integration of those with disabilities), is important here.

### **Goal of intra- (within) and inter- (between) generational fairness**

The goal of maintaining intra-generational fairness might well form an important government objective in many pension policies. Goals around inter-generational fairness are used to frame policies related to intergenerational transfers. This includes a sense of the appropriate ratio between average retirement income and average worker income. It also includes recognition of the potential impact of public policy on the well-being of different birth cohorts and whether public policy distributes the burden of population ageing fairly across older and younger cohorts.

An important factor here is the concept of intergenerational fairness and whether this will change in the light of the current population ageing.

- The traditional contract between the generations is based on a system of intergenerational reciprocity whereby adults provide for young dependents (children) and in return when those young dependents become adults they provide for older dependents. This is maintained in most societies both at the familial level (parents providing for young children, children providing for elderly parents) and at the societal level with adults within the labour market providing via public transfers for both older and younger dependents, to provide health care and education, and health care and income support respectively.
- The question for an ageing population which has arisen through both fertility and mortality reduction is whether successful cohorts (in terms of both fertility and mortality reduction) pass on the cost of such success to future cohorts via the

*traditional intergenerational contract*, or bear the cost of their success via an *adapted intergenerational contract*. This latter contract would require older cohorts to bear the costs of their longer lives through, for example, higher post-retirement contributions to their own welfare and/or a longer working life.

## Goal of maintaining social cohesion

The goal of maintaining social cohesion will be addressed in very different ways in different societies and cultures. In particular different governments will place a large emphasis on immigration as a policy instrument to mitigate the economic impact of population ageing and this will to an extent reflect their migration history and the potential social impacts which may arise from the arrival of large numbers of adults. Thus the UK and US, with their long history of encouraging immigrants from across the globe, have freely used migration to compensate for their ageing populations. While Japan and Korea, without such a history, is beginning to consider the potential social impacts of such immigration.

## Provision of financial security

Policy needs to set the framework of incentives within which individual and institutional decisions are made. A number of policy implications arise from the challenge that population ageing poses for the capacity and need to adjust. PAYG social security schemes face the challenge of a low or even potentially negative rate of return when workforce ceases to grow, as a sustainable rate of return equals the rate of growth in total wage bill. Capital reserve funded schemes face the effect of change in population age structure on asset prices. Key consideration in the light of population ageing include:

- *the importance of integrating public and private transfers into future systems* including understanding the complementary relationship between private and public intergenerational transfers, and the relationship between upward and downward transfers. Our research from the Oxford Global Ageing Survey, for example, reveals that while public transfers reduces private upward transfers from adult children to older parents, it has far less effect on private downward transfers from older parents to adult children and grandchildren.
- *a consideration of intergenerational fairness* through sharing out the proceeds of growth between workers and pensioners. This, for example, may occur through maintaining a link between pensions and wages so pensioners receive some share of a nation's economic growth. It may be implemented through linking pensions to increases in prices so pensioners do not see absolute living standards fall as a results of inflation. It could be ensured through pensions being tied to the capacity of the system defined by the growth in total wage bill. Or it may be maintained by a system which integrates several indices.
- *exploring frameworks to support and encourage individual responsibility*. It may be argued, for example, that population ageing necessitates a division between government responsibility to keep population out of poverty and individual responsibility to raise personal standards of living. However there are considerable variations in the provisions for promoting such responsibility.

## Health and social care

A second set of policy challenges arise through the provision of health and social care. A key question is whether the improvement in the health of older people in European OECD (Organisation for Economic Co-operation and Development) countries is occurring at a rate fast enough to compensate for population ageing. This refers to the dramatic increase in the oldest old in particular which will occur within the next 30 years, the numbers of those over 80 are forecast to triple across the EU by 2050 (Harper, 2006).

Howse (2010) clarifies the three main challenges that population ageing holds for the provision of health and social care: amount of ill health; type of ill health; ability to care.

- population ageing will have a large and independent effect on the total amount of ill-health and disability in the population and as a result will exert pressure to increase total health care spending.
- population ageing will also change the kinds of health problem that people bring to the system, and as a result will exert pressure for a major shift in the allocation of health care resources and the configuration of services.
- changing dependency ratios will make it harder for ageing societies to provide for the care of their older members. The challenge is likely to be compounded in countries where population ageing is associated with an absolute decline in the working age population, since this will have an adverse effect on the resources available to the health care system.

We can consider each of these in turn.

### Total amount of ill-health and disability

In order to understand the impact of population ageing on health care systems we must understand both

- the relationship between population ageing and the scale of health needs;
- the relationship between increasing health care needs and levels of health care spending.

*The relationship between population ageing and the scale of health needs.* This relationship arises because each individual who survives into later and later old age is likely to have more and more serious health problems than they did in former years. Thus as societies improve their population life expectancy, so the proportion of the population with serious health problems will increase, unless there is a countervailing improvement in the health of successive birth cohorts which shows up as a decrease over time in age-specific prevalence rates.

*“If, for example, it turns out that people are surviving longer because they are staying healthier for longer, then it is possible that an increase in life expectancy will have no net effect on the prevalence of ill-health and disability in the older population. Since the proportion of the older population with serious health problems would in this case remain unchanged, any effect of population ageing on the amount of ill-health in the general population would depend entirely on the increase in the relative size of the older population.” (Howse, 2010)*

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Similarly of course, if a larger proportion of the overall population falls within the age categories which are associated with a steep rise in the risk of disease and disability, then the average person in the general population will have more health problems to bring to the attention of the health care system.

However the change in healthy life expectancy is currently contested. In some countries, notably the US, healthy life expectancy is improving fast enough to offset the impact of declining mortality at older ages; in others life expectancy without the bonus of increased health may be increasing to such an extent that we are on the verge of an epidemic of frailty. This has been defined by Robine and Jagger (2005), for example, in relation to an increasing number of individuals who are surviving to experience the kind of prolonged and severe dependency associated with advanced old age. Even if the improvements in healthy life expectancy keep pace with increasing life expectancy, as Howse highlights, the change in the age structure of the population that will result from the ageing of the baby boom generations will increase the scale of health care needs in the population.

*The relationship between increasing health care needs and levels of health care spending.* Here the relationship between the amount of ill-health in the population and the consumption of health care resources is mediated by a host of non-demographic factors. For example, as Leeson (2004) has pointed out, although a number of cross-national studies have considered the determinants of health care costs, only one has found that the *age structure* of the population, that is the proportion of population aged 65 and over being taken as the age structure indicator, is the explanatory factor. Rather, it is the wider effects of income, lifestyle characteristics, and new technology, alongside the effects of environmental factors, which are driving up the demand for new advanced medical applications. Indeed, analysis of OECD data (OECD 1987) by Seshamani and Gray (2002) reveals that in developed countries at least, per capita health care costs for those aged 65 years and over have increased at the same rate as for those aged less than 65 years.

The second important complication in the relationship between population ageing and the level of health care spending concerns the relative importance of age and remaining life expectancy or proximity to death in determining the age profile of health care spending in the population as a whole. As Howse asks *Why does per capita health spending rise with age? Is it because older individuals have more ill-health than younger individuals? Or is it because health care spending tends to be heavily concentrated in the last few years of life, and calendar age is a reasonably good indicator of the proximity of death?* On this second view, the main reason why more money is spent on the average 75 year old than the average 50 year old is that the former is more likely to have the kind of life-threatening disease which triggers a large increase in the use of health care resources.

Although it is clear that *per capita* health spending does increase quite steeply once people reach their 60s, repeated analyses of age-related data on health spending have shown that proximity to death is more important than age *per se* as a predictor of the consumption of health resources (e.g. Zweifel et al 2004; Seshamani & Gray 2004). In other words, health care spending *is* heavily concentrated in the last few years of life, so much so that some analysts have argued that ageing *per se* has virtually no effect on the way that the consumption of health care resources increases with age (e.g. Zweifel 1999). Gray even goes so far, for example, to suggest that the relationship between age and health expenditure is possibly even inverse once proximity to death is allowed for (Gray, 2005). The ageing of the population shifts this into progressively older ages, rather than significantly increasing total medical care expenditure (Heller, 2003). In conclusion we can see that predicted increases in medical and health care costs are therefore not the result of growing numbers of older people *per se*, but of *current policy frameworks* within which these costs will occur.

## Kind of ill-health and disability

Let us turn to the kind of disease the 21st century heralds, and the role of population ageing in mediating this. This concerns the shift from acute infectious disease to complex chronic long term ill-health and disability: the chronic disease burden (Nolte & McKee, 2008). Whether by population ageing, probably the major determinant in European OECD countries, or by the rise in affluent societies, probably the major determinant in many transitional economies, it is clear that the rise in chronic disease will be driven in all modern societies by elements of both (Stuckler 2008). Furthermore, most European OECD countries are now also experiencing an epidemic of the diseases of advanced old age, in particular dementia. Regardless of the causes behind this growth, there will be a future need for a reallocation of health and social care resources away from infectious and acute medicine, driven not only by the epidemiological transition of conquering of infectious disease but also by the changing demographics of falling fertility and mortality at younger ages, towards preventing and managing late life chronic disease.

## Capacity to care

The third factor concerns the impact of population ageing on a society's capacity both to provide workers to care for the older population and tax income to finance this. *"Most rich countries have well-developed mechanisms for the distribution of the costs of financing health care in such a way that the healthy support the sick, the young support the old, and the rich support the poor"* (Hurst, 2000). As Howse (2010) concludes, it looks therefore as though changing dependency ratios will shift the generational distribution of the costs of financing health care systems. In addition, demographic change will reduce both informal family care through a reduction in the availability of younger members to provide such care and formal care as the provision of overseas migrants providing health care is reduced as their own societies start to age. Furthermore this will occur at a time when the epidemiological transition is towards labour intensive chronic disease care.

## Key policy lessons

Aged societies of the economically developed North have relied on human capital in the form of migrant workers from the younger poorer South to prop up their economies. The dramatic falls in TFR which are now occurring in both Asia and Latin America means that this will not be a viable option in the coming decades. While substitution by new technologies may reduce the need for labour market growth, many countries now recognise the need to retain older workers in the labour market, not only to reduce pension burden, but also to retain valuable skills and experience in the light of an upcoming global skills shortage. Policies which facilitate healthy active living, the support of physical and mental activity, and the ability and willingness to retain and upgrade skills, are an important component of both retaining older productive adults in the labour market and informal care sector, and reducing the burden of older dependents.

The final part of the puzzle as to the impact of population ageing on future social security provision, including health and social care, lies in the acceptance by the European electorate of government policies which promote independent responsibility in and for old age. The Oxford Global Ageing Survey, GLAS, provides some indication of this. In the European economies surveyed, all had a long history and a contemporary culture of government provision in old age. Here, while almost two thirds of those coming up to retirement state that they believed that their government should take responsibility for providing for them in their old age, there is widespread acceptance that in reality governments will no longer be able to

do so. Thus, only around a quarter of these Europeans believe that they will be supported by government in their old age. As Leeson and Harper (2007) conclude, Europeans appear to be increasingly mature in their approach to addressing the challenges of an ageing population – and of their own increasing longevity. There is a growing realization that working longer and saving more will be a vital component of financial security as they age.

Key policy lessons in the light of population ageing focus around the development of broad, coherent and integrated multi-pillar approaches to labour markets, social security and health and social care.

These should

- enable and promote longer working lives through life long training, education and skills updating, and the provision of appropriate working environments for older workers
- ensure that private family/household transfers are integrated into old age security systems where possible
- promote wellbeing and enable healthy active living to reduce chronic illness and health care costs and support active contributory life for as long as possible
- provide access to education across the life course to ensure that all individuals are prepared physically, mentally, socially and financially to cope with increasing individual responsibility for old age

The building blocks for policies to address population ageing are in place in most European countries. These countries are now entering their time of high Elderly Dependency Ratios and alongside social security programmes need to tackle their Total Dependency Ratios by, among other things, introducing policies to regulate youth entry into and old age exit out of the labour market, promote active ageing, and introduce public health measures and lifelong learning to encourage disability free long lives.

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