

**Economic Impacts of demographic ageing:
with special emphasis on Sri Lanka
and old-age income security**

Ravi P. Rannan-Eliya

1999

**Institute of Policy Studies of Sri Lanka
Health Policy Programme**



Copyright © January 1999
Institute of Policy Studies, Sri Lanka
All rights reserved.

ABOUT THE IPS HPP OCCASIONAL PAPER SERIES

Papers in this series are not formal publications of the Institute of Policy Studies. They are used primarily as a channel to promote timely dissemination of work in progress, or final dissemination of research results which may not warrant formal publication as IPS Working Papers. They may be preliminary and unpolished results of analysis, and have not necessarily been edited or reviewed as thoroughly as formal IPS Working Papers. In certain instances, IPS HPP Occasional Papers are duplicates of papers published elsewhere, but based on IPS HPP work. These papers are intended for free distribution to encourage discussion and comment, and to inform a wider audience of ongoing IPS research. Citation and use of such a paper should take into account its potentially provisional nature.

The findings, interpretations, and conclusions expressed in these papers are entirely those of the author(s), and do not necessarily represent those of the Institute of Policy Studies or of the Institute of Policy Studies Health Policy Programme.

IPS HPP Occasional Papers are made available free, but only as downloads as Acrobat PDF files from the IPS website (www.ips.lk/health). For further information, please contact the Health Policy Programme, Institute of Policy Studies, 99, St. Michael's Road, Colombo 3, Tel: +94-1-431-368, Fax: +94-1-431-395, Email: health@ips.lk, or visit the IPS website at www.ips.lk.

Recommended Citation

Ravi. P. Rannan-Eliya, .1999. Expenditures for Reproductive Health Services in Egypt and Sri Lanka. Health Policy Programme Occasional Paper 11. Colombo: Institute of Policy Studies.

Document information

This paper is a product of on-going research being done by the Health Policy Programme on the economic and social implications of demographic ageing for Sri Lanka. This unit will release other publications in the future from this research as it becomes available.

Table of Contents

<i>Overview</i> _____	1
<i>Developing a comprehensive approach to policy analysis of population ageing</i> _____	3
<i>Demographic background</i> _____	5
The demographic transition _____	5
Current global trends _____	6
Regional trends _____	6
Sri Lanka situation _____	7
<i>Domestic and International Macroeconomic Implications of Ageing</i> _____	9
Introduction _____	9
Fiscal impacts _____	9
Impacts on savings _____	11
i) The life cycle model _____	11
ii) The bequest model _____	12
iii) Precautionary motives _____	12
Conclusion _____	14
<i>Ageing Populations and Labour Markets</i> _____	15
Implications of a slowly growing older work-force _____	15
Implications for retirement income programs _____	15
Conclusion _____	17
Japan and Asian NIE experiences _____	18
Implications for Sri Lanka _____	19
<i>Education and training</i> _____	21
Schools _____	21
Training _____	22
<i>Health</i> _____	23
International evidence _____	23
Impact of ageing on health care costs _____	25
Healthy ageing _____	28
<i>Long-term care</i> _____	29
Introduction _____	29
The rapid ageing of the elderly population _____	29
Disability and the need for care _____	30
Decline in family support due to modernisation and demographic ageing _____	31
Policy responses _____	34
<i>Old-age income security</i> _____	36
Introduction _____	36
<i>Issues in pensions funding</i> _____	38

Introduction	38
Reforming pension financing	39
World Bank approach to pensions reform	40
Arguments for funding	41
Funding cheaper in the long run?	41
Funding is fairer from an intergenerational perspective?	44
Funding is better than PAYG at signalling future pension costs, and therefore imposes greater discipline on pension policy formulation?	44
Funding is associated with higher saving (and a larger capital stock) than PAYG?	45
Funding lowers microeconomic distortions in the labour market?	46
Political economy concerns	46
Conclusion	47
Alternatives	48
Raising contribution rates	49
Modifying Indexation Provisions	49
Possible lessons for Sri Lanka	50
<i>Bibliography</i>	52

Acronyms

ASEAN	Association of South East Asian Nations
CAB	Current Account Balance
DB	Defined Benefit
DC	Defined Contribution
EPF	Employees Provident Fund
ESCAP	Economic and Social Commission for Asia and the Pacific
ETF	Employees Trust Fund
GDP	Gross Domestic Product
NIE	Newly Industrialised Economy
OECD	Organisation for Economic Co-operation and Development
PAYG	Pay As You Go

Overview

Ageing of the population is one of the few certainties about Sri Lanka's long-term future. Although ageing does not operate in isolation from other social and economic forces, it is one of the few aspects of the future where it is possible to make meaningful and reasonably accurate projections well into the next century. At the same time, these other forces are likely to be of greater relevance to policy, but they cannot by their very nature be projected into the long-term future with any accuracy.

While ageing and demographic trends are not likely to be the most important trends shaping future outcomes, they are the most predictable, and an ageing perspective based on demographic forecasts can provide policy makers with valuable insights on future challenges and potential policy options. In Sri Lanka's case, the expected rate of population ageing will be unusually rapid in comparison with other countries both in the region, as well as the historical experience of the advanced economies of Europe and North America. In comparison with the European countries where this took 50 to 150 years, the percentage of people aged 65 years and over will double from 7% to 14% in Sri Lanka in less than 20 years. Similarly, the median age of the population will increase rapidly from 25 currently to reach 50 in less than sixty years, or less than one life span.

The ability to take a longer-term perspective with the demographic future does not mean that policy action can be postponed. Sri Lanka has a short window of opportunity during the next two decades in which steps can be taken to modify existing policies, and develop new policy frameworks to cope with and mitigate the potentially negative impacts of population ageing on the country's economy and society. Measures can be taken which address both short- and long-term policy goals in ways that are mutually reinforcing. Separately, each of these measures are unlikely to have much impact, but combined they will be much more effective. If those steps are not taken, and policy adjustments are not made, it will be immeasurably more difficult for the country to adjust or recover lost opportunities when the problems are no longer undeniable and upon the country.

Much of the current discussion of the implications of population ageing by senior Sri Lankan policy makers and by the international financial institutions focuses on reform of the existing pension system only. However, population ageing will have impacts in all areas of the economy and society. The changes in each sector will in turn have implications for other sectors, and unless the problem is tackled in a comprehensive manner, no single set of measures focused only on one set of issues will succeed. The current narrow focus is unlikely to lead to sustained or effective reforms unless a broader perspective is taken, which understands the interrelationships between each sector, and which comprehends that the element of current pensions expenditures may only be the smaller part of the potential increase in fiscal pressures facing the government as a consequence of population ageing, and which takes into account the political and social feasibility of any reform options. For example, pensions reform and the establishment of a comprehensive pension system will not be possible for the whole population without commensurate changes in labour market policy, education and training strategies, and a sustained improvement in the underlying rate of economic growth and job creation. Similarly, if the experience of other democracies is relevant, a pension system based on individual savings accounts with no safety net or redistributive element is unlikely to be socially or electorally acceptable.

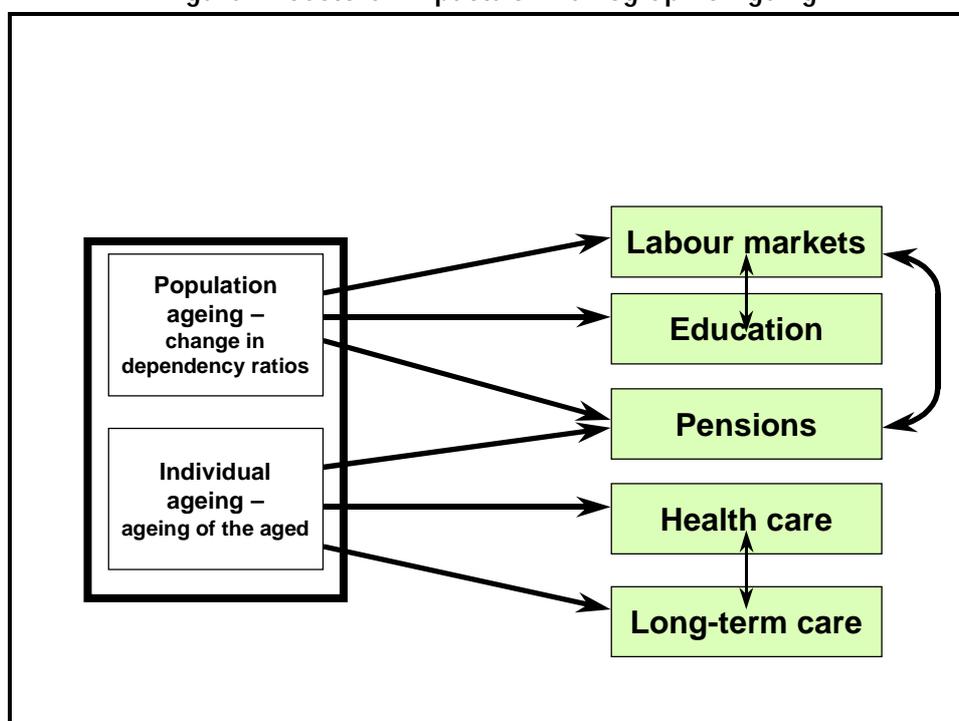
This report attempts to identify the key issues in each of the major sectors that are raised by population ageing in developing countries and Sri Lanka, review the literature, and to explore potential policy responses. It is not meant to be comprehensive or final in its conclusions. Given the importance of pensions policy in current discussions in Sri Lanka, this area is also covered in greater detail.

Developing a comprehensive approach to policy analysis of population ageing

Population ageing, which is a change in the age structure of the population towards older age groups, will have a number of diverse effects in all areas of economic and social activity. However, its effects can be simply categorised into two types:

1. Those due to the increasing share of the population who are elderly relative to those who are young, i.e., *population ageing*.
2. Those due to an increasing number of the very elderly, who are more likely to be dependent on the support and care of others in society to undertake normal activities of daily living, i.e., *individual ageing*.

Figure A: Sectoral Impacts of Demographic Ageing



The distinction is important, as much of the impact of the first type is mediated through the existence of artificial age divisions between education, work and retirement, and are unrelated to biological differences between young and old. For example, most Sri Lankans in the 55-70 year age group are physically, mentally and socially capable of continuing to lead economically productive lives, but the existence of artificial retirement ages can force many into non-productive existence. However, as people reach the ends of their natural life-span, they are more likely to suffer from physical and mental deterioration, which does not permit them to function as capably as younger persons, and can lead them to require the care of others in order for them to carry out the normal activities of daily living. The prevalence of this need for physical care is not significant amongst those aged 55-70 years, but increases substantially beyond the age of 80 years.

The effects of population ageing thus depend on the allocation of time to work, learning and the giving and receiving of care by people of different ages. For example, formal education is traditionally concentrated amongst the youth, work amongst those in the 25-55 year age group,

and leisure amongst older people. Changes in the age structure of the population will thus have large implications for education, the labour market and for the provision of pensions. However, patterns in the use of time can and do change. For example, today fewer young children work and more are likely to be in education than in previous decades in Sri Lanka, while more women in the 25-50 years age group are likely to be found in employment than twenty years ago. If government policies are to encourage individuals, employers and social institutions to adjust quickly to the impact of population ageing – with less need for government remedial action – they need to be sensitive to both the effects of ageing as well as the potential for and reality of changing life course arrangements.

Much policy analysis in most countries has tended to examine shorter-term phenomena. With an ageing and life-cycle perspective, policy analysis can also include a longer-term, more dynamic dimension by examining labour market and learning patterns, savings, investment and consumption decisions, health and illness, and equity and security – over people's entire lifetimes (OECD 1996a). Such analysis will lead to policies that are more coherent, without artificial distinctions between social and economic policy, between pensions and labour policy, between education and health policies, etc. With more coherent and more comprehensive life-cycle analysis, policies can be developed, which give more recognition to the fact that what happens at one stage of life often has a large impact on other stages or that policies in one sector can influence outcomes in another. For example, there is increasing evidence that malnutrition in early childhood can lead to a greater propensity towards degenerative and other diseases many decades later in populations which no longer suffer from chronic food scarcity (Barker 1992). Similarly, without more substantial employment creation in the Sri Lankan economy, many of the suggested pension reforms are unlikely to be politically acceptable.

The following sections attempt to keep such an ageing life cycle approach in mind, as they survey some of the key issues in each of the major sectors, and lessons that can be drawn for Sri Lanka from international experience.

Demographic background

The demographic transition

Demographic ageing is the consequence of demographic transition, which is the shift from high fertility (and mortality) rates to low and replacement-level or below-replacement-level fertility rates. The other long-term consequence of the demographic transitions underway in the world since the middle of the eighteenth century is an expansion of the world's population numbers, and its eventual stabilisation at a much higher total size. Fertility declines started in Europe at various points during the eighteenth century, and was followed in many, but not all cases, by mortality declines. In some countries, mortality declines were contemporaneous, or even preceded fertility declines [needs Princeton Project citation]. From the end of the nineteenth century, the demographic transition has commenced in all other regions of the world. A full explanation for the causes of the demographic transition is still required, particularly in the case of Europe, but fertility decline has been promoted by the increased availability of fertility-reducing technologies in the twentieth century, the increasing social acceptability of the conscious control of fertility by couples, the increased desire for smaller family sizes as the opportunity costs of child rearing increase with greater formal sector labour market participation and as education as a determinant of life chances increases, and changing expectations about future economic and labour market prospects (Becker, 1960; Easterlin, 1980; Caldwell, 1982).

Fertility decline combined with mortality decline results in a process of population ageing. As the number of births falls, and people live longer before death, the relative size of each age group in the population changes. Population ageing occurs when the proportions of adults and elderly increase, while the proportions of children and adolescents decrease. Demographic ageing is driven largely by fertility decline. Mortality declines, while they lead to increasing life expectancy, do not have as significant an impact on age structure, since mortality declines tend to occur at all ages, thus increasing the size of all age groups. Increasing age at first birth can also have a modest additional effect on ageing, even if the eventual cohort fertility rate is unchanged. The more rapid the rate of fertility decline, the more rapidly the population in future years will age. At some point if fertility reaches and maintains replacement level, the population will eventually stabilise in numbers and age structure. However, it should be noted that this has not been the case with any national population, and fertility is likely to move both upwards and downwards after it has reached replacement level.

Demographic ageing is characterised by a pattern of successive changes in age structure. In the first stage, youth dependency rates increase consequent to the lowering of mortality rates while fertility rates remain high. In the second stage, the working age population increases its relative share, and overall dependency rates fall. In the final stage, elderly dependency rates increase, driving upwards the overall dependency rate. The increase in the relative share of the working age population during the second stage is associated with a "demographic gift", as labour force growth under supportive circumstances can lead to rates of economic growth higher than would have otherwise been achieved (Bloom and Williamson, 1998)

Current global trends

The world population is expected to reach 6 billion in 1999, with current annual growth estimated at 1.3%. The most recent United Nations projections (medium variant of 1998 revision) suggest a final stable population of 9 - 10 billion in the second half of the next century. As fertility has fallen in most parts of the world, population growth has also moderated. Currently, more than 60 countries with replacement-level or below-replacement level fertility collectively account for 2.6 billion people – 44% of the global total. However, most populations will continue to grow well into the next century because of the demographic momentum of large youth cohorts already born (United Nations, 1998).

Historical experience of European countries is that fertility decreases and stays below replacement level for long periods. Recent empirical evidence has tended to revise downwards the levels of TFR, with many countries (e.g., Bulgaria, Estonia, Germany, Greece, Italy, Spain, Japan, Hong Kong) reporting fertility levels as low as 1.4, which would have been thought improbable a generation ago (United Nations, 1998).

With continuing fertility decline and increasing life expectancy, the world population is expected to age much faster in coming decades. The median age increased from 23.5 years in 1950 to 26.1 years in 1998, and is projected to reach 38.8 years by 2050. The proportion of older persons, aged 60 years or over, increased from 8 to 10 per cent during the same period, and is expected to reach 22 per cent by 2050.

Developed countries in Europe, North America and Asia (Japan) were the first to achieve replacement level fertility, from the 1960s onwards. The demographic transition is well advanced in East Asia, followed by Latin America and South East Asia, South Asia and finally Africa. As East Asian countries were the earliest developing countries to experience fertility decline, the process of ageing is more advanced in that region. However, all the populations of Asia are expected to age, with the process occurring next in Southeast Asia, followed by South Asia. In Asia, Japan, Hong Kong, Singapore, Taiwan, Macau, Korea, Thailand, Sri Lanka, China and Azerbaijan all have below-replacement level fertility in 1999. As fertility decline in Asia has been faster than historically the case in Europe, the process of demographic ageing will also be faster in Asian countries.

Regional trends

Within Asia, countries can be divided into four groups according to their stage in the demographic transition: (i) the East Asian countries – the most demographically mature and developed in economic terms, which include Japan, Hong Kong, Taiwan, Korea and Singapore; (ii) China, which remains low income but has achieved below-replacement-level fertility, but which has accelerated the process of fertility decline through intensive government efforts; (iii) Southeast Asian countries, which include Thailand, Malaysia, Philippines, Indonesia, which have recently achieved below-replacement level fertility or are about to; and (iv) South Asian countries, whose fertility declines started relatively recently, and include India, Pakistan, Bangladesh.

The first group of countries, experienced decreasing dependency rates during the 1960s to 1980s. The rapid increases in labour force size in Japan, Korea, Taiwan and others have been identified as significant contributors to their more rapid economic growth during this era (Bloom and Williamson, forthcoming?). Labour force growth is now slowing in much of

Southeast Asia and China. As countries in South Asia enter the next stage of the demographic transition, they may also experience rapid labour force growth and declining dependency rates, and a consequent demographic bonus during the first half of the next century.

Sri Lanka situation

Sri Lanka occupies an atypical position in the general Asian pattern. It was one of the first Asian countries to experience fertility declines in the post-war period, together with Taiwan and Korea. Consequently, the process of population ageing in Sri Lanka is not typical of South Asia, and is closer to that of Korea and China. Unlike China, fertility decline in recent decades has occurred largely without concerted government efforts, and has been mediated more so through increasing age at marriage and at first birth. As the trend to later marriage has been purely voluntary, reflecting underlying social and economic pressures, Sri Lanka is more likely than China to see increases in age at first birth to the levels seen in Taiwan and other European countries (from 26 years currently to approximately 30 years). Also in contrast to China, economic liberalisation from the late 1970s in Sri Lanka did not disrupt health service provision, and consequently the gap between Sri Lankan and higher Chinese mortality rates has widened in the 1980s and 1990s, despite much stronger income growth in China.

Sri Lanka's population can be estimated at 18.6-18.7 million in 1999, with a TFR of 2.0. Recent projections (De Silva, 1997) assume that fertility will continue to decline to 1.7 by the first decade of the next century, and to 1.4 by 2026. The demographic projections used throughout this report are given in Table A.

The population of Sri Lanka is set to age faster than any on earth, a result of declining birth rates and death rates. For example, the time taken for the share of the population aged 65 years and over to increase from 7% to 14% was more than a century in France, 60 years in USA, and 22 years in Japan, but will only be 18 years in Sri Lanka. In the region, the prospect of a rapidly ageing Japan and now China has long captured the attention of policy-makers, researchers and the public, but the process of ageing that faces Sri Lanka will be more profound, more rapid and more challenging in its wider implications than that which is being experienced by Japan or will be experienced by China. The challenge facing Sri Lanka in the years to come is therefore doublefold.

Table 1: Demographic projections, 1991 - 2031

	1991	2001	2011	2021	2031
Total population (millions)	17.0	19.2	21.1	22.4	22.8
Median age (years)	25.0	28.5	32.6	37.0	41.1
Percentage in age group					
Under 15	31	25	22	19	15
15-59	60	65	65	63	62
60 & over	8	10	13	18	22
TFR	2.2	1.9	1.7	1.5	1.5
Life expectancy					
Female	74.0	77.0	78.8	80.3	81.6
Male	69.3	72.1	73.6	75.2	76.4

Source: Standard projections given in De Silva (1997)

The working age population (15-64 years) is currently growing at 2% per annum. This will decline to 1% by 2010, and after 2030 the potential labour force will shrink (in the absence of large scale immigration). Through 2010, the overall dependency rate will remain stable or continue to decline, as the youth dependency rate declines faster than the elderly dependency rate increases. After 2010, the overall dependency rate will begin to increase, with an acceleration in the elderly dependency rate. The median age of the population will increase from 32 in 2010 to 44 by 2041. This implies an ageing workforce as well as an ageing population.

The share of the population aged over 65 years is currently less than 7%. It will rise rapidly after 2010 from 8.5% to reach 14% by 2025, and 20% by 2040. Within the elderly group, the most elderly will show much more rapid rates of increase. Those aged 80 years and more will increase from 1% currently, to 2% in 2020, and 5% in 2040. This is of critical importance, as it is amongst the most aged that the increased morbidity and problems of physical and mental dependency of the aged are most associated.

Domestic and International Macroeconomic Implications of Ageing

Introduction

Demographic ageing is expected to have profound impacts on public and private savings and investment, as will policy reactions to it. To some extent many of these expectations are based on theory or simulation models projected into the future, while others are based on observed experience.

Fiscal impacts

Demographic ageing may have all of these effects (Heller, 1997; OECD 1998; Kohl and O'Brien, 1998):

1. Reduce education expenditures as the youth dependency rate falls.
2. Increase government expenditures on pensions and other income transfers to the elderly.
3. Increase government expenditures on health care, as the number of older adults who need more health services increases.
4. Increase government expenditures on the provision of long-term care for the dependent elderly.

The literature generally concludes that while the first may result in lower public spending, the other impacts will lead to higher government expenditures in all countries. There a number of mostly IMF and OECD studies on the fiscal impact of future ageing in developed economies (Heller et al., 1986; OECD, 1985, 1986 and 1996). These studies reinforce theoretical expectations about the net impact on fiscal policy. Generally they find that pensions expenditures play the major role in the future projected deterioration of fiscal balances, although in some countries (e.g., USA, Canada) health expenditures are expected to be important. The net impact of these trends are expected to be declining public savings, with the USA and Japan projected to experience the largest falls in the OECD by 2030 (Leibfritz 1995).

These studies, however, are limited to advanced industrial economies, where governments generally have dominant roles in the social sector. In developing countries including fast ageing countries of East Asia, the government role in social sector financing is less comprehensive. Many types of social services are either not accepted as government responsibilities, or are not funded for all members of the population. Consequently, the impact of ageing may be expected to be less in developing economies, including Sri Lanka. However, there are reasons to doubt that this will be the case.

The lower level of social sector involvement by developing country governments may represent a developmental lag, or in many cases reduced accountability of governments to democratic pressures. Both these reasons favour increased government involvement in future (Heller, 1997), as countries develop, and as the global trend to increasing democratisation continues. For example, democratisation has brought universal health insurance in Taiwan, universal pensions in Korea, and more comprehensive social assistance in Hong Kong (Goodman, White and Kwon, 1998). In those countries, where provision of social services are limited, there may

be considerable pressures in future for expansion. In democratic states, these pressures will be magnified as the share of the electorate who are older increases.

For these reasons, recent analyses by the IMF have concluded that the major cause of future fiscal pressures in Southeast and East Asia will be from the pressures to expand coverage of social programs and to enhance social insurance policy commitments, rather than the simple demographic impact on current public expenditure commitments (Heller, 1997). In many cases, the pressure to expand secondary and tertiary education financing will outweigh the demographic benefits of smaller age cohorts.

The IMF projects much more substantial cost increases from expanded mandates than from simple demographic change, and it argues that the absence of comprehensiveness in many social programs represents a clear and real contingent liability for future government spending. Table 2 gives some IMF projections of potential pension liabilities calculated on the conservative assumption that governments will have to provide income support to all elderly at the rate of 35% of average incomes, which is the lower level of what has been observed in OECD and upper-income Asian economies with universal pensions coverage. The table also gives a separate estimate for Sri Lanka calculated on the same assumptions. As can be seen, expansion of pension coverage to the whole population would result in much larger increases in government expenditures than merely demographic ageing implies. Sri Lanka, despite already spending more than most on current pension programs, can still expect to see much larger increases than other Southeast Asian economies, because of its faster ageing population.

For these reasons, low coverage with social programs notwithstanding, demographic ageing can be expected to have as potentially as substantial effect on public expenditures on fast ageing Asian countries as in the OECD region. On the whole, IMF concerns about these potential liabilities must be judged more relevant than current concerns by the World Bank and others of the future costs of current schemes.

Table 2: IMF Projections of the demographic impact of ageing on public pension outlays in selected Asian economies compared to Sri Lanka

Country	Government outlays (1995)	Increased outlays from 1995 under current schemes (2035)	Increased outlays from 1995 assuming uncovered elderly population receive pensions at a replacement rate of 30% of per capita income (2035)
	% of GDP	% of GDP	% of GDP
Hong Kong	1.0	2.7	11.4
Korea	2.0	6.2	7.2
Average for East Asia	2.0	5.1	8.0
China	2.6	4.8	8.5
Malaysia	2.9	4.9	7.0
Thailand	0.6	1.2	4.8
Vietnam	1.7	1.5	4.0
Average for Southeast Asia	1.6	2.2	4.8
Sri Lanka	2.2	2.3	7.3

Source: Heller (1997).

Note: Outlays include net withdrawals from public provident funds for retirement only. Sri Lanka numbers estimated for cost of Civil Servants Pensions scheme only from Rannan-Eliya et al. (1997), and using similar assumptions to Heller including pension coverage for all those outside the public sector above 65 years in 2035 at 35% of per capita GDP.

Impacts on savings

Population ageing evidently will have negative impacts on overall public savings in both developed countries and emerging Asia. This in turn is expected to have profound impacts on long term national savings, and by extension, implications for capital market policy. National savings consist of government and private savings. Increased costs in the area of pensions, income support and social services due to population ageing creates pressures in favour of increased government dissaving, which must be offset by other means. Ageing will also have adverse effects on private savings, which will fail to counteract the decline in public savings, despite any uncertainty in the size of the effect.

There is a diverse theoretical and empirical literature on the impact of demography on savings. There are three broad theories of savings, which are not mutually exclusive.

i) The life cycle model

The LC model assumes that people primarily save to smooth consumption over their lifetime, and that their time horizon is generally their lifetime. A LC model might imply that introduction of a PAYG pension program would lead to a 100% displacement of private savings as household calculate their receipts from the program. However, more sophisticated versions also

account for changes in labour supply under such a scheme which result in earlier retirement and thus higher anticipatory savings by households, leading to less than 100% displacement.

ii) The bequest model

This assumes that individuals have a multigenerational time horizon, and they seek to maximise the utility of themselves and those of parents and children. In this model, a PAYG scheme would result in no net savings in the long term, as individuals adjust their savings in anticipation.

The impact of ageing on private savings can be visualised using a life-cycle framework, which postulates that households smooth their consumption over their lifetime by saving during their working life and dissaving during their retirement.

iii) Precautionary motives

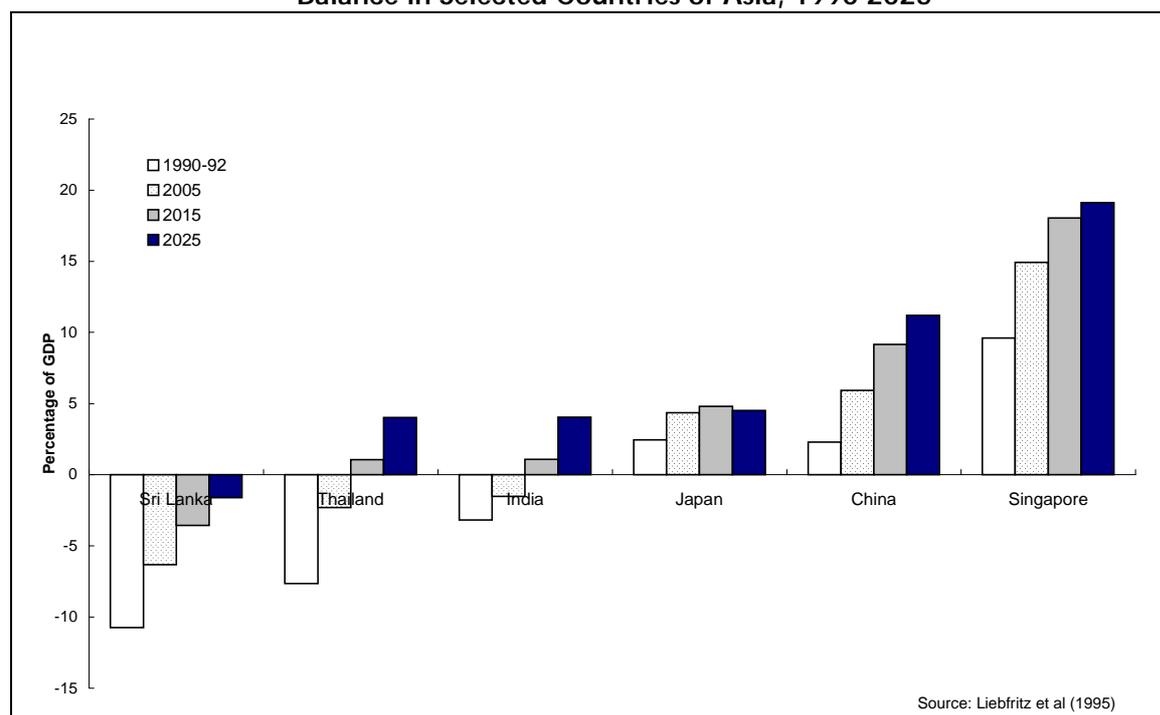
This explains savings as a precaution against uncertain death, unexpected health expenses, or income disruptions.

There are two key issues which might be answered by application of these models: (a) how much household savings will change with ageing, and (ii) how much displacement of private savings occurs with introduction or expansion of public retirement income schemes. There have been numerous empirical, mostly simulation and econometrics type, applications of these approaches. Useful summaries of the literature are provided by Kohl and O'Brien (1998) in an OECD review which concentrates on OECD economies, and by Heller and Symansky (1997) in an IMF review which attempts to review findings relevant to emerging Asia.

The results of these studies vary considerably, often sensitive to choice of data – time period, assumptions, country and variable selection, etc, whether analyses are cross-sectional or time series, of analytical method used. On the issue of demographic impact on savings, theory suggests ageing should lead to lower savings. Empirical estimates of the extent are mixed, with some studies finding large effects and other minimal effects. Nevertheless, some impact is generally demonstrated, although size remains debatable, with estimates for the impact on ageing on Asian countries savings in 2050 ranging ten fold, depending on the estimates used (Heller and Symansky, 1997). A caveat needs to be applied to these results, particularly in the Asian context. All these studies concentrate on household savings, but experience in East Asia was that the bulk of savings in many countries were generated by the corporate sector. It is not understood whether the results of studies based on household models can fully apply to national economies with significant corporate savings.

After empirical testing Higgins and Williamson (1997) arrive at results that suggest the following conclusion: substantial demographic effects, that bring about rises in youth and old age dependency, lead to falls in saving rates. The results also highlight an interesting fact that higher youth dependency depresses savings more than investment, inducing capital inflows, while higher elderly dependency depresses investment more than savings, inducing capital exports.

Figure 1: Projected Impact of Expected Changes in Population Age Shares on Current Account Balance in Selected Countries of Asia, 1990-2025



The impact of this on capital markets in the year 2025 as predicted by Higgins and Williamson (1997) is illustrated by Figure 1. South Asia will graduate from its current heavy dependency on foreign capital to complete independence (except Sri Lanka) by 2025. The current account balance (CAB) in Sri Lanka will improve significantly between 1990 and 2025. However, its CAB will still remain in deficit at -1.61 percentage points by 2025. This is in contrast to India and Thailand, which recovers from an initial deficit position in 1990 and 2005. A possible reason for this is the rapid demographic dynamics experienced in Sri Lanka compared to India and Thailand. The movement towards net capital export positions will be most pronounced in Southeast Asia. For instance, the CAB share will rise by 9.5 per cent in Singapore and by 11.7 per cent in Thailand.

The empirical evidence, mostly from OECD economies, for displacement effects is mixed (Kohl and O'Brien, 1998). Generalising, private saving appears to be an imperfect substitute for public pension promises. Although estimates vary considerably, the most recent and most methodologically sophisticated studies suggest that the net stock of public pensions in Japan, Italy and USA have lowered the stock of private savings by 10-30%. Cross-sectional studies show that different groups within a society have different responses, with the richer households generally more responsive and more likely to show displacement effects. This is partly because those on low incomes generally have low savings to start with, and so cannot reduce their own savings substantially in response to public pension provision. The evidence on private pension wealth is weaker, but indicates a larger displacement effect on saving than public pensions, perhaps as much as 50% in USA and Canada compared with the 10-30% for public pensions. Studies of tax incentives for savings in those few countries which permit this (USA, UK, Canada, Denmark) suggest that tax incentives do simulate new private savings, around 20-25% of total contributions, but that the effect is sensitive to design of the incentive. In some cases the net national savings impact is small or even negative, because of the revenue loss.

Conclusion

The broad policy conclusions that can be drawn from all this are few:

1. Demographic ageing will lead to substantial reductions in individual countries in public, private and national savings, *ceteris paribus*, although the role of corporate savings trends needs to be better understood.
2. Since ageing is occurring later in Asia, savings rates in OECD region will fall first but be compensated in the first part of the next century by increases in the absolute savings in East Asian economies. After that East Asian savings will fall, leaving open important questions about global savings interest rates. Much may depend on the outcome in low-income Asia, particularly China and South Asia.
3. Within Asia, South Asian economies may see significant reversals in their current account balances from demographic impetuses to savings and capital flows, resulting in them possibly becoming net capital exporters in the middle of the next century, but Sri Lanka would be the exception to this trend.
4. Public pensions schemes do reduce private savings, but the displacement effect is less than half.
5. Gains to national savings from public pension reform will be modest, and will only occur if public savings are increased by reducing net deferred liabilities of PAYG schemes. Even in OECD economies with large potential savings, the net impact of such changes in living standards will be minimal compared to continued trend productivity growth.
6. While public pension reform can increase net national savings, more substantial impacts on fiscal demands can be achieved by encouraging later retirement.

Ageing Populations and Labour Markets

An ageing population implies an ageing workforce. This can be expected to have implications for labour market policy for two sets of reasons:

- (i) Demographic ageing changes the age structure of the population, and the future rate of growth of the size of the labour force.
- (ii) The increased fiscal burden of pensions for retired workers can be reduced substantially by increasing the ratio of workers to pensioners, through encouraging increased labour force participation.

Implications of a slowly growing older work-force

The economic literature during the 1980s generally concluded that population change had little impact on economic growth. More recent work in the 1990s, using better specified endogenous growth models have found that growth in the working-age population is positively associated with higher economic growth. Bloom and Williamson (1998) find from a cross-sectional analysis of data from 1960-95 that growth in working age population accounted for up to one third of the additional growth that East Asian countries experienced during that time period in comparison with other developing countries. These results suggest that demographic ageing as it results in a stable working age population will have a net negative impact on potential economic growth. However, this effect will be mediated by how labour force participation rates modify the impact of changing population on labour supply, and by the extent to which countries fully exploit their labour resources through appropriate open economic policies, flexible labour market policies, and investment in human capital.

An older workforce may be expected to be less “vital” and less able to learn or increase productivity. It is also the case that older workers with families may be less willing to relocate with employment, and so an older labour force may exhibit less flexibility. However, the most productive societies today are also the oldest, so the likelihood is that investment in education and training both to impart skills and to assist workers to adjust can more than out-weight the impact of ageing on workforce age.

Implications for retirement income programs

Demographic ageing has tended to increase the elderly dependency ratio. The greater the ratio of retired persons to workers, the greater the relative burden on those in work to support those who are retired. Ageing produces increased dependency because of a general trend to earlier retirement. This is the key to the major fiscal and economic burden of ageing. This burden exists whether the retired are supported through publicly funded pension schemes, or through private resources.

The general conclusion from most studies is that the age at which workers choose to retire is of critical importance to modifying fiscal and economic pressures associated with this burden (OECD, 1998). If people work longer, the output that can be shared among the population will be greater, the tax or contribution base will be larger, and there will be fewer dependent older persons receiving pensions or other income transfers – intergenerational or interfamilial. The

OECD therefore concludes that the timing of the retirement decision by individuals should be one of the main concerns of public policy. In fact, it is estimated that if the effective age at retirement was increased to 70 years this would completely offset the adverse impacts of ageing on fiscal balances in OECD economies.

Historically, the timing of the retirement decision by individuals would not have been of concern. However, the introduction of retirement income schemes in the 20th Century as well as rising affluence in most countries has led to falling retirement ages and labour force participation rates by the elderly. In previous centuries, the evidence suggests that the poorest may not even have enjoyed any retirement, generally working until they died. Workers who did manage to survive into retirement often lived in comparative poverty and ill-health before dying. While at the start of the century, those workers in OECD countries who survived into their early 60s were still working in the late 60s, by the end of the century very few are still working after the age of 65 in OECD countries. If labour force participation had not declined at the older ages then there would be no major economic challenge.

To some extent this trend must be regarded as welfare enhancing in that people may choose with greater affluence to trade leisure for income. Leisure in later life may be a luxury good for most individuals. There is strong evidence for this both from standard econometric studies, as well as the observation that most people who retire in developed countries at 65 years and above do so voluntarily. To the extent that people or their families bear the resulting costs of caring for those in retirement, such behaviour is rational.

Where public policy has a role to play is when the retirement decision is distorted by public interventions. Clearly, the existence of pension programs has a major impact, but to the extent that these programs are meant to permit individuals to enjoy some years in retirement, this is not a problem. Examples of other policies in developed countries which are known to distort the retirement decision include:

- The age at which individuals become eligible for full pension or when they are required to stop work is set below the age at which many individuals would voluntarily choose to retire at. The statutory age at retirement can act as an effective barrier to continued work for many individuals, and the numbers effected may be higher with lower set ages.
- Earnings rules (incorporated into many public pension schemes) which are a disadvantage to people willing to work longer than the statutory retirement age. For example, in many schemes any earnings above a prescribed limit may result in a reduction in pension payments, causing a high effective marginal tax rate on earned incomes and resulting in a disincentive to seek or continue in work. Several OECD countries have now abolished these rules, including UK and France.
- Provisions in some private pension schemes result in the loss of the pension rights if the employee resigns from that particular job. This has had the effect of reducing labour market mobility.
- The right to receive a public pension before the standard age of retirement has in many instances been given to workers.
- Early retirement has often been encouraged to help reduce unemployment. Some OECD countries (UK, Germany, Australia, Belgium) have explicitly or implicitly relaxed the rules governing the receipt of unemployment benefits. Italy has introduced a mobility allowance (an unemployment benefit) to workers on collective layoff whose dismissal is permanent.
- Introduction of benefits to allow employed workers to take early retirement provided their positions were replaced with unemployed youths. In the past, a few European countries have initiated such schemes. Although these measures have mostly been removed, the

perception exists that in times of high unemployment, these schemes are likely to be introduced. Denmark and Belgium continue to have such schemes, but they have been phased out in most, including France, Germany and the UK. In general these schemes tend to be costly because of differences between pension and unemployment benefits, and because of the loss of skilled workers from the labour force.

- Preferential tax treatment of retirement income compared to earned income can distort the income/leisure trade-off in favour of earlier retirement even when pension schemes are actuarially fair.

Comparisons of OECD economies suggest that there is no direct relationship between the fall in participation rates of older workers and unemployment. Most of the early retirement policies described above may therefore have failed in practice to reduce unemployment. Reasons include high levels of industry-specific human capital in older workers which make it difficult to find replacements from younger workers, the tendency for many old-age workers to look for another job after retirement, and a failure of these programmes in general to address the underlying labour market distortions that cause unemployment (OECD 1996a).

The recent review by the OECD (1998) suggests that the level of pensions does not have significant effects on the retirement decision, at least in developed countries. Other policies, as described above, do have significant effects on retirement decisions, and collectively encourage earlier average retirement.

Decreased demand for older workers is another factor that has resulted in lower participation rates of older workers. Experience has shown that employers are often reluctant to employ or retain older workers. Age profiles of earnings, coupled with employer perceptions of productivity of old-age workers, are likely to influence the demand for older workers. For instance employers perceive that:

- In the absence of continuous training, the skills and competencies of some older workers may become obsolete (this is likely to influence the implementation of many early retirement programmes for older workers).
- There is a positive relationship between age and earnings, which leads to increasing costs of employing an older worker.

Conclusion

Clearly, the appropriate demographic response to ageing is to encourage people to work longer. The evidence at least from developed countries is that the retirement decision is strongly influenced by policy, and that reforms can play an important role in reducing barriers to working longer in life. However, OECD experience suggests that simply raising the retirement age for pension qualification is not enough. It will also require major changes in the design of pension schemes and other social entitlement programs to prevent disincentives to early retirement. In particular, pension income should be actuarially linked to years worked.

Japan and Asian NIE experiences

In Japan and the more advanced Asian economies, population ageing has had or is expected to have qualitatively different implications. While labour remains cheap and plentiful in the poorer Asian economies of China, South Asia, Indonesia and Indo-China, sustained rapid economic growth has produced conditions of full-employment in countries such as Japan, Hong Kong, Singapore, Taiwan, Korea, Malaysia and Thailand; the current regional economic crisis should perhaps be regarded as a temporary setback. Under such conditions, continued economic expansion has tended to lead inevitably to labour scarcity, and rising labour costs as wages rise. This has major impacts on economies which have relied on labour intensive manufacturing (and agriculture) to drive economic development. Increasing unit labour costs erodes the competitiveness of labour-intensive manufacturing, and has tended to force economies to move out of labour intensive industries into more capital and skill intensive sectors. The problem of encouraging older workers to remain in employment in order to reduce pension burdens has not been so acute a problem in these countries, because pension commitments remain less than in the more established market economies. In the case of Japan, continuing participation in the labour force by the elderly after retirement has also been the norm.

Population ageing with its effects on both the growth of the labour supply, and the age structure of the work force, exacerbates the effects of labour scarcity, and can lead to reduced levels of economic growth. The scarcity of labour supply is expected to be exacerbated over the next 15 years as labour force growth rates are projected to decrease because of population ageing (Table 1). A decline in the expansion of their labour forces and an ageing work force is expected to strain their economic performance (Bauer 1995), and is consistent with predictions based on cross-sectional analyses (Bloom and Williamson, 1998).

Table 1: Labour Force Growth Rates in Selected Asian Countries (% per year)

COUNTRY	1980-1990	1990-2000	2000-2010
Japan	0.9	0.4	0.4
Singapore	1.6	0.6	0.3
South Korea	2.8	1.8	1.1
Taiwan	3.5	1.7	0.7
Sri Lanka	2.5	1.7	0.5

Source: Bauer 1995 and IPS estimates

As a result of this labour scarcity and loss of competitiveness in labour intensive production, the governments and firms of these Asian economies have shifted into higher value-added industries that require more intensive skills, transferring some of the manufacturing process overseas through foreign direct investment, importing labour, encouraging the participation of women in the labour force and prolonging the participation of older workers. In some instances, there has also been a shift in employment from the manufacturing to finance and business services sectors (Bauer 1995), and from labour-intensive manufacturing to non skill-intensive manufacturing.

Government policies of NIEs have accordingly been developed to encourage this restructuring process. In Taiwan and South Korea, the government has increased its spending on research and development and subsidised entrepreneurs in high technology fields. In Singapore, in addition to promoting research and development, the government has encouraged investments in high technology manufacturing and the financial business services sector. For example, it has

introduced significant tax concessions to 'pioneer industries' and 'new technology companies', and in an effort to meet the growing demand for skilled labour, it has raised the number of new enrolments to the national university and polytechnic institutes (Bauer 1995).

To counter the effects of a declining labour force, Japan and NIEs have resorted to increasing their labour supply by (i) importing workers from abroad, (ii) encouraging the participation of women in the labour force and (iii) postponing retirement. However, while employers in Japan, Hong Kong, Singapore and Taiwan hire significant numbers of overseas workers, this has come under severe social pressure and criticism, resulting in governments imposing restrictions on the importation of labour.¹ Thus, foreign labour has become increasingly expensive and has forced employers to use more skill intensive production methods (Bauer 1995). The current economic crisis in the region has led to several governments (Malaysia, Thailand) expelling foreign workers to deal with growing unemployment. However, reports from Malaysia and Thailand indicate that many jobs, previously done by foreign workers, are not being filled by those from the ranks of the newly unemployed, and so in practice the demand for foreign labour may continue.

Implications for Sri Lanka

Sri Lanka's human resources are its chief development asset, since it lacks significant natural resources of any kind. While this is generally recognised by policy makers, the problem to date that has confronted policy makers has been the difficulty in finding jobs for all those seeking employment. However, one of the most immediate impacts of the declining fertility rates will be a contracting youth age group, and in the very near future fewer numbers of new entrants to the labour force.² Already by 1998, the number of 15-19 years olds has peaked, and the number of 20-24 year old Sri Lankans in the population will start to decline by 2002 or earlier, according to IPS population projections (Figure 2). Combined with improved employment creation since the 1980s, Sri Lanka can expect to face the problem of labour scarcity in the first decade of the next century. The work of Bloom and Williamson (1998) suggests that this will be associated with a net reduction in the economic growth potential of the Sri Lankan economy. Increasing labour force participation rates thus should not only increase the growth potential of the economy, but also help to reduce the burden on workers of caring for the youth and elderly dependents.

In the case of labour force participation, two key options will be available. One is to increase female labour force participation, which in turn has implications for the provision of childcare facilities as well as formal services to assist families to care for dependent elderly relatives. The second option is to increase the length of time that Sri Lankans spend in work compared with the time spent in retirement, and increase the labour force participation rates of the elderly. In this regard, while increasing the average age of retirement in the public sector will have immediate positive effects on the pension system, it may also have important indirect impacts

¹ The recent currency crisis in Southeast Asia and the resulting economic downturn has led to rising unemployment in several countries, and the expulsion of foreign guest workers has been an immediate response of several countries, including Malaysia and Thailand.

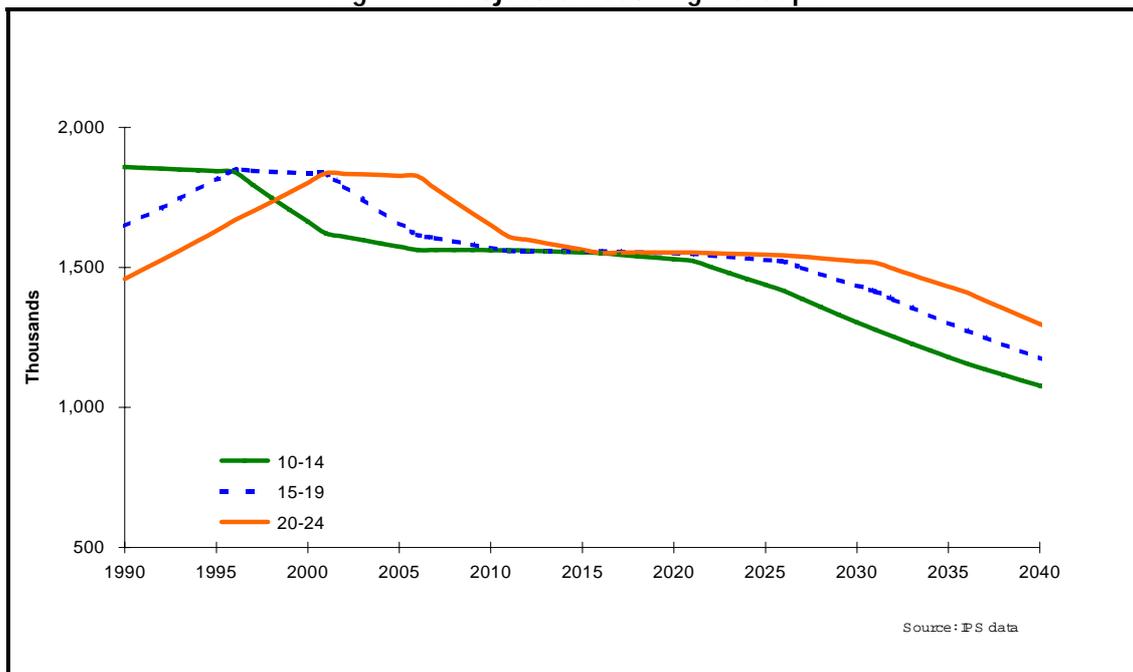
² Recent government constitutional proposals to expand the application of quotas for youth representation in local government bodies further can be regarded as a policy response to a problem that increasingly does not exist. Originally conceived as a mechanism to ensure adequate representation for a section of the electorate which was deemed to be under represented in government, the quotas being proposed will by the early years of the next century be guaranteeing to this age group of the population an over-representation in local electoral bodies, greater than their share of the population.

on private sector employment by signalling to private sector workers an appropriate norm for retirement.

Traditionally, and even currently, public sector employment has been regarded as an employment creation device, and so keeping the effective retirement age low or even lowering it has been regarded as necessary to reduce unemployment. However, the European experience has been that such approaches to unemployment are ineffective and counterproductive. In Sri Lanka's case early retirement of civil servants loses skilled workers thus lowering public sector productivity, and does little to save costs, as civil servants retire on pensions equivalent to 80% of their last salary, and any replacement staff must also be paid a full salary. If the reluctance of policy makers to raise retirement ages can be overcome – and that may be easier when full employment is achieved – a policy to raise retirement ages would be of utmost priority. Given the fact that many civil servants may not want to work longer, and that most will need to plan for such a change, such a policy might consist of the following elements:

1. Gradual raising of the retirement ages for civil servants at which they become eligible for full pension from 30 years of service as currently to a criterion based on age, initially 55 for men and 50 for women, and eventually to 65 years for both women and men. This would have to be done over a long time period to allow people to plan accordingly, for example an increase of 1 year every two years. This would imply that all new entrants would be recruited on the basis of a final retirement age of 65 years.
2. Creation of an option for those who want to work beyond the statutory retirement age to do so for a period up to another 5 years. This may require legislation to extend this right to the private sector. The government may need though to reserve the right to freeze wage increments during this period of extended work, and permit private sector employers to do the same, but at the same time some provision should be made to allow final pensions to partially reflect the increased length of service.
3. Link final pension rights to the length of service, with actuarially related adjustments for those who want to retire earlier than 65 years.

Figure 2: Projected Youth Age Groups



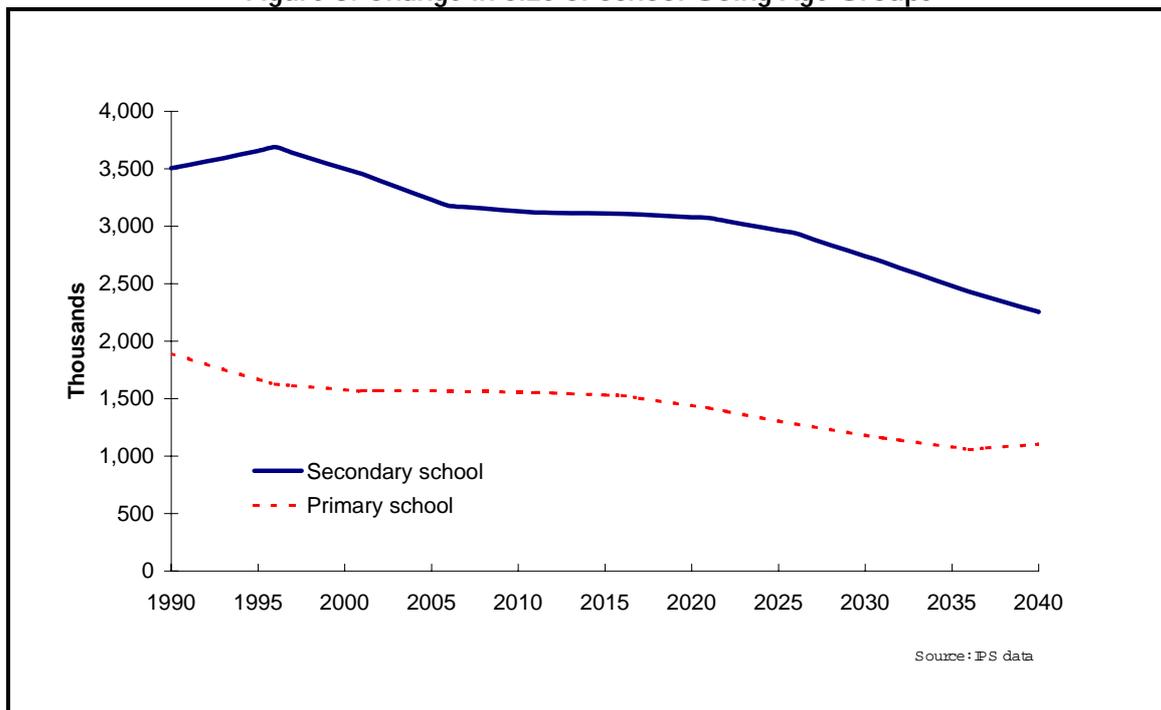
Education and training

Demographic ageing can be expected to have an impact on the education sector primarily through the mechanism of population ageing. Over time, the numbers of Sri Lankans in the child age groups will decline, which will have implications for the schooling sector, and as the labour force itself ages, there will be new demands generated from a training perspective.

Schools

Figure 3 gives the expected change in the size of the primary and secondary school going age groups during the next five decades according to IPS projections. As can be seen, from now onwards the size of each cohort will be declining over time. In the primary age groups, since school enrolment is already almost universal, the decline in numbers offers the opportunity to improve the quality of primary schools with the available resources. In the secondary age groups, such a relative increase in resources might be used to improve school completion rates, and the overall quality of secondary schooling. Improving quality will also become important in the context of the expected labour scarcity, which will make improvements in productivity the priority. A better-schooled and educated workforce will be more able to acquire and maintain the necessary skills to ensure higher levels of productivity.

Figure 3: Change in Size of School Going Age Groups



In the case of university education, the expected decline in the relevant age group may offer welcome relief to national policy makers. The inability to provide university places in job-relevant subjects to all those who qualify has been a major social and political problem in Sri Lanka since the 1960s. The anticipated decline in the size of the relevant age groups will reduce pressure on university funding agencies, and also make it easier to improve the quality of university education.

Training

While the youth age groups will decline with population ageing, the labour force itself will stabilise and later age rapidly. In these circumstances, especially if people are going to be expected to spend a longer period of their lives in work, the training and education system will need to reorient itself towards maintaining the skills of workers, as well as allowing workers to keep pace with technological changes in their industries, or to learn new skills to allow them to move from one sector to another. At the present moment, the inadequacy of vocational and industry specific training for Sri Lankan workers is well known. Future demographic trends underline the urgent need to deal with these sectoral problems and develop new training strategies for the workforce.

Health

Demographic ageing presents challenges to systems of health care, both through the mechanism of population ageing as well as through individual ageing. Older people generally need more health care than younger people do, and at older ages the pattern of illness itself differs from that at younger ages, with a greater prevalence of disabling, chronic and degenerative diseases.

International evidence

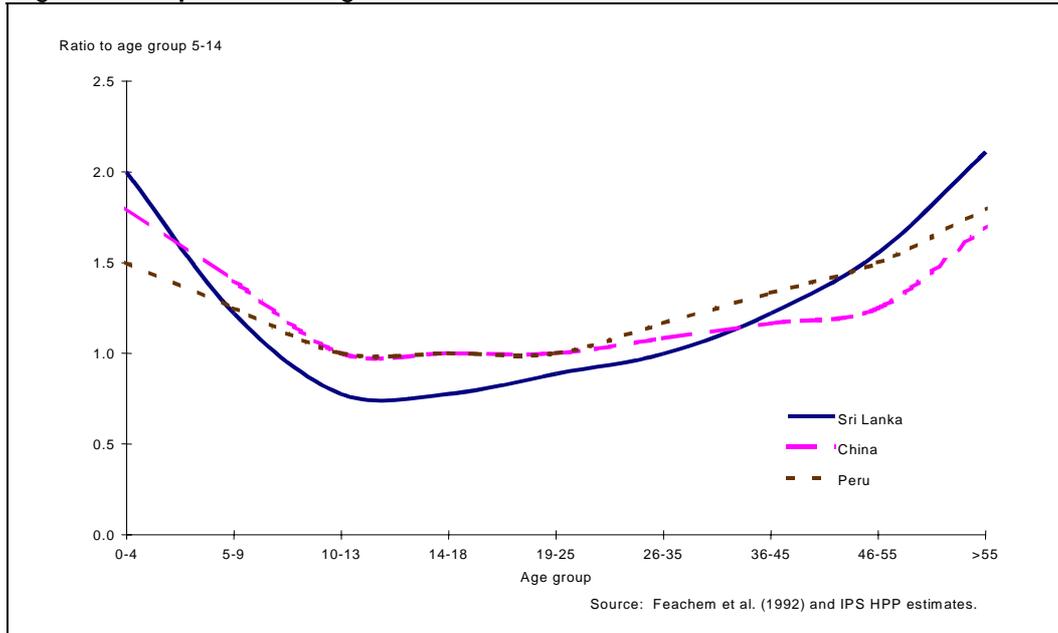
It is important to note that international studies also show quite clearly that there are substantial variations within each older age group with respect to infirmity, with many people showing hardly any impairment, and others severe disability. It remains difficult to compare levels of old age disability across countries, but some evidence does exist for developed countries. For developed countries, the data show quite clearly that disability incidence increases with age, but also that disability-free life expectancy has also been increasing as overall life expectancy has increased. Increasing life expectancy has been associated with a decline in prevalence of severe disability at all ages between 60 and 80 years. Severe disability that requires social interventions seems to be concentrated at the very end of life, with a constant period of disability of about two to four years on average expected in most developed country populations (OECD, 1998).

The significance of increasing disability-free life expectancy is that it may substantially reduce the impact of demographic ageing on the numbers of dependent elderly. For example, pure demographic projections in USA and France suggest increases of 50% in the numbers of dependent older people during the next 25 years, but analysis of trends towards reduced prevalence of disability suggest that the increase will only be 15%. These data also imply that there is no biological basis for a retirement age set in people's 60s. As population have become healthier, current cohorts of 60 year olds in developed countries are as disability free as earlier generations of 50 year olds. The evidence also suggest that there is considerable scope for extending disability-free life expectancy by encouraging people to adopt life styles with increased physical activity during earlier years.

Health expenditures and especially long-term care expenditures are heavily concentrated among older people, particularly the very old. As individuals grow older, personal health care consumption increases as the incidence of illness increases, and as the rates of health care utilisation increase. Data from OECD countries show that health care expenditures increase moderately before age 60, when mortality rates are still low. After age 60, expenditures rise to reach twice the average at age 70, and peaking at four times the average at age 80 and above.

Data for developing countries are limited, but the available evidence does confirm that similar patterns of health care use and expenditures are found in developing countries too. Data for disability in the elderly is much more limited than for developed countries. Figure 4 shows the pattern of health care utilisation for Sri Lanka and a number of different developing countries, using available data.

Figure 4: Proportion Using Health Services Relative to Five to Fourteen Year Olds



In OECD countries, spending increases associated with ageing are particularly steep for institutional care services, such as acute hospital care and nursing home care. Increases are less significant for outpatient consultations, pharmaceuticals, medical supplies and other ambulatory services. Consumption of dental services peaks at age 60 and then declines thereafter. OECD experience is that the costs per service for older people are lower than the average for the population as a whole. Although lower costs per services are then more than offset by higher rates of utilisation (OECD 1996a).

Intercountry differences can be substantial. Figures 5 and 6 show recently collected data on differences in health expenditures by age for a selection of OECD countries compared with IPS estimates for Sri Lanka.

Figure 5: Health Expenditures by Age Group

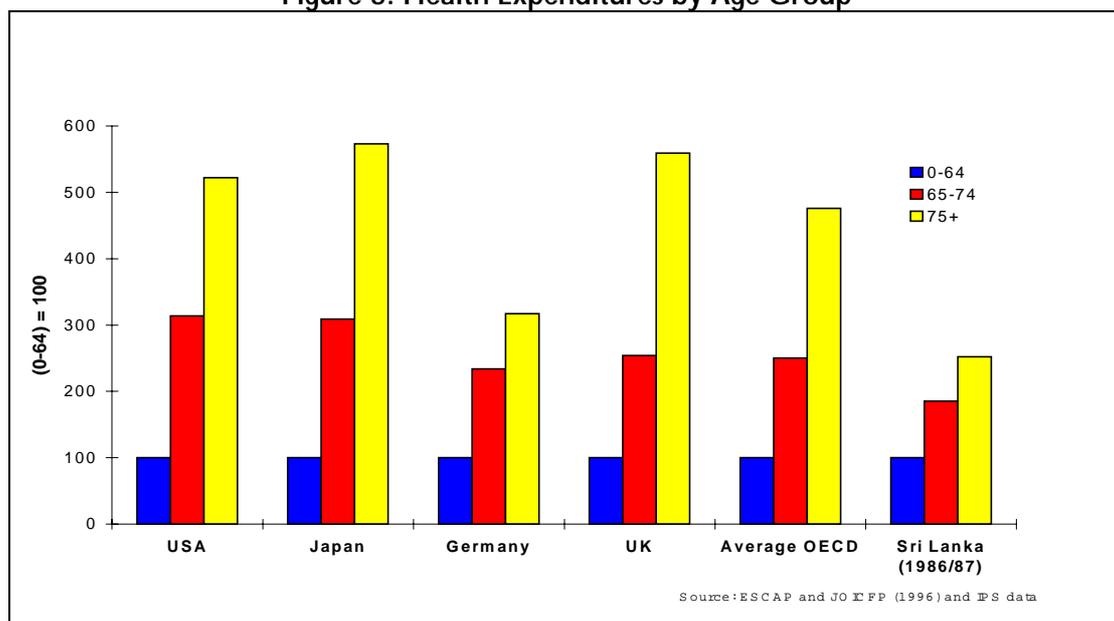
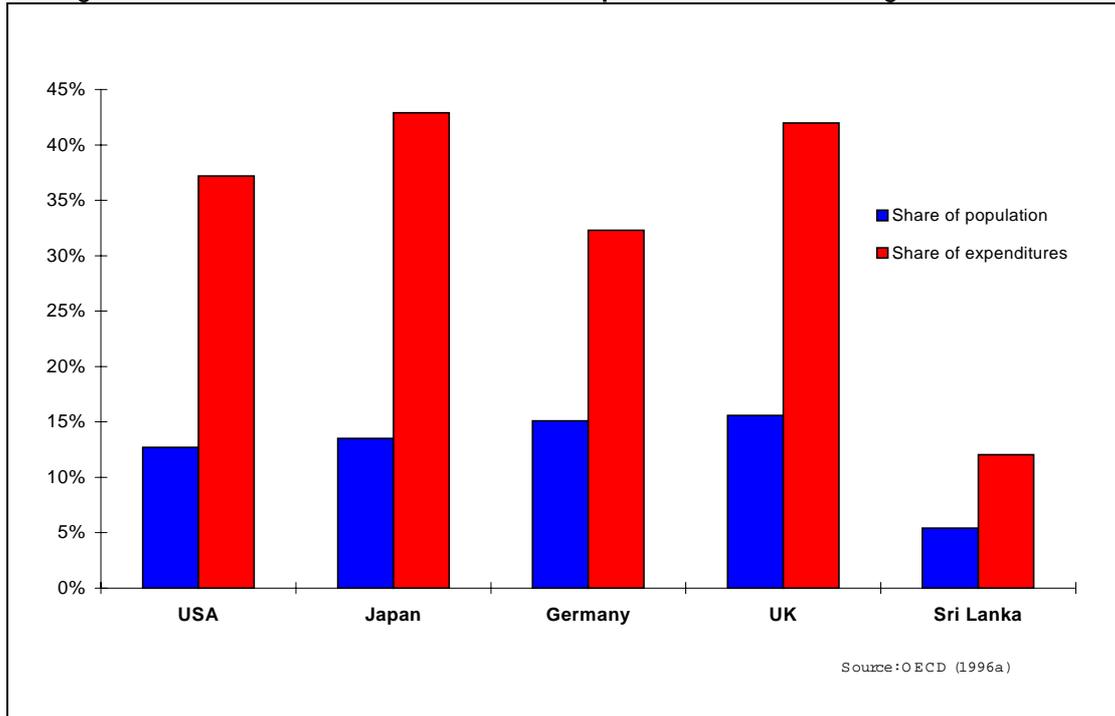


Figure 6: Concentration of Total Health Expenditures on those Aged 65 + Years



As is clear, there are some variations between countries in the relative health care costs for the elderly. These differences appear to be related to institutional differences, for example the extent of public coverage of long-term care costs, and to underlying differences in unit costs of health care. As populations age, one might expect that these age differences in costs would lead to upward pressure on national health expenditures.

Impact of ageing on health care costs

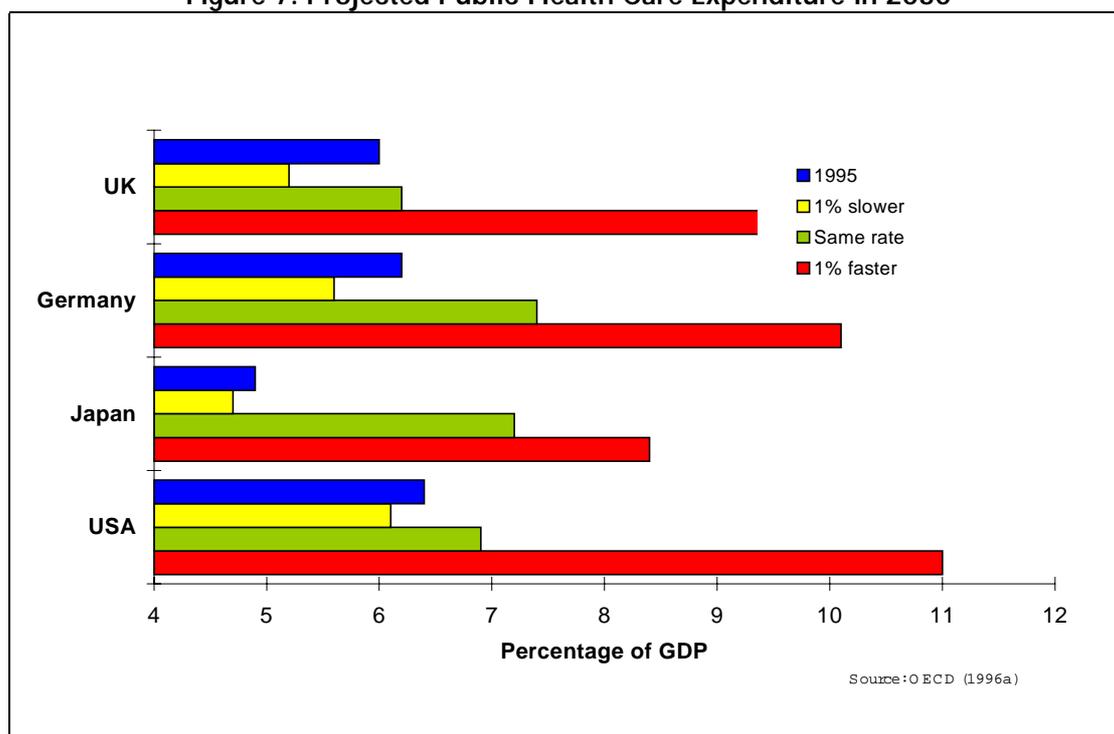
To what extent population ageing will lead to increased health care costs in a particular country is not a simple question to answer. Moreover, the impact can be evaluated from purely a public fiscal perspective, i.e., the impact on government health expenditures, as well as from an overall societal perspective; i.e., the impact on household expenditures, and the ultimate share of national income devoted to health.

The conventional assumption has been that ageing is a threat to health care costs. However, the most recent evidence is reassuring, and even provides grounds for optimism (OECD, 1998). Many of the health care costs of the elderly are associated with the period just before death, regardless of the age of death. Much of health care in the last few years of life in developed countries, at least, is designed to prolong life, and in fact costs are observed to taper off in the oldest age groups. It is not the case that health care costs increase at every age. So population ageing may not increase medical costs as much as feared.

Several studies of OECD countries have suggested only limited impacts to date of population ageing on total national health care expenditures. One recent time-series analysis of OECD health expenditures found that changing age structures did substantially increase health expenditures, but that the effect was seen only for some countries and not others. Of these only the USA and Canada were found to have significant positive age effects (O'Connell 1996). The most recent OECD review suggests that demographic ageing itself will only add 10-20% to health care costs in the next 15-20 years (OECD, 1998)

Projecting future health care costs is a hazardous exercise, as it depends on many assumptions, and can require considerable data on existing health expenditure patterns and trends. The impact of ageing on future health care costs has been projected for several OECD countries. Most of these projections assume that per capita health costs remain the same, and then estimate by adjusting for the future changes in age structure. A key conclusion of these types of projections is that the eventual impact of ageing is highly dependent on the rate of medical cost inflation over time. Figure 7 gives the OECD estimates of future public health care costs in a number of OECD countries taking into account the expected increases in the number aged over 65 years, but making different assumptions about future medical cost inflation.

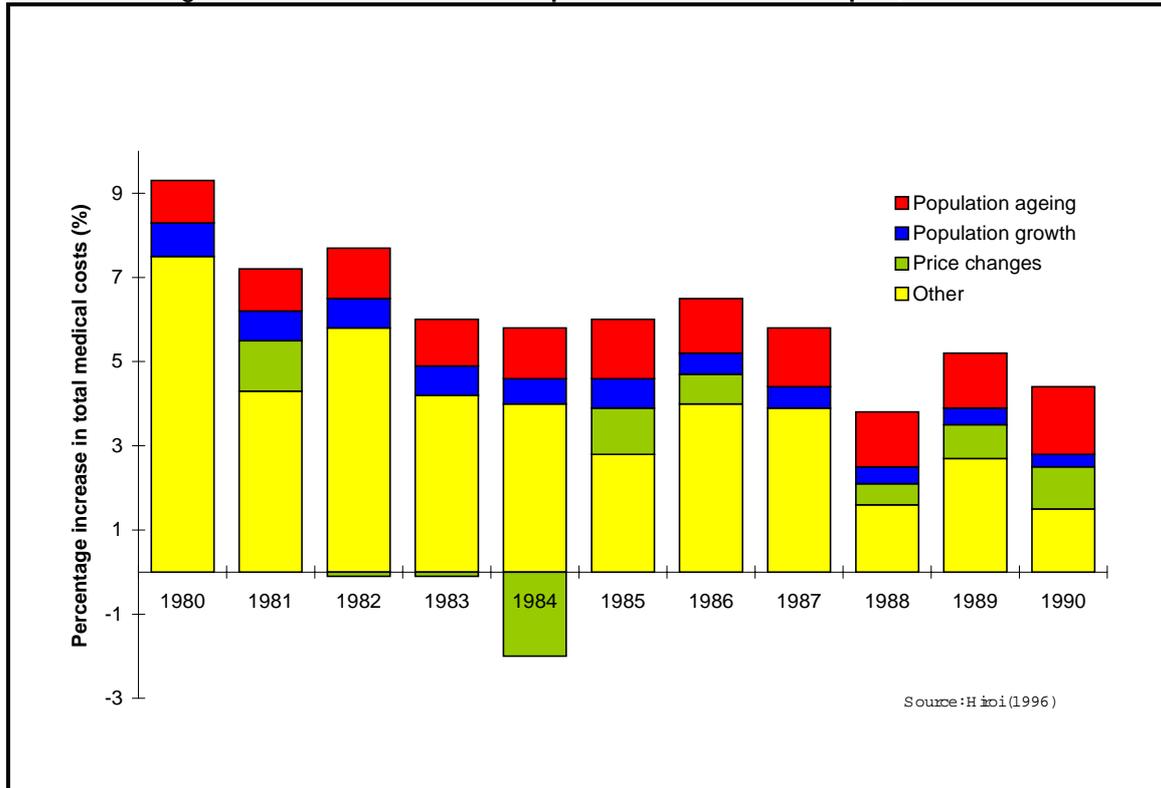
Figure 7: Projected Public Health Care Expenditure in 2030



As can be seen, if health treatment costs grow at 1% less than real GDP growth, eventual public costs in OECD countries will be almost half of expected public costs if treatment costs grow at 1% more than real GDP growth.

This is consistent with projections prepared on a national basis. For example, in projections prepared by Health Care Financing Administration for the USA, national health expenditures are expected to increase from 13.9% of GDP in 1994 to 17.9% of GDP in 2005. However, only a very small proportion of this is due to ageing, which is expected to account for less than 1% per year of the growth in personal health expenditures. Similarly, other official US estimates indicate that only a small part of the actual increase in health expenditures during the 1980s was due to population increases and ageing (Office of National Cost Estimates 1990). In Japan's case, a similar type of analysis shows that population ageing accounted for only a small part of overall health care expenditure growth during the 1980s (Figure 8).

Figure 8: Causes of Medical Expenditure Growth in Japan, 1980-90



Health care costs in most OECD countries remained stable during the 1980s, despite increases in the aged population, as structural reforms proved effective in restraining expenditure growth. Although population ageing did not motivate most of these reforms, they have had favourable implications for the costs of delivering care to an ageing population. It is important to note that in the case of Japan these reforms did not work by reducing utilisation of services by the old, but by reducing the unit cost of treatments. Measures such as increases in user fees for the elderly had minimal impact, and policies designed to reduce the overall price of medical services took most of the credit (Hiroi 1996). Given that medical cost inflation remains more of a problem in USA than in Japan, it is likely that medical care costs will rise more substantially in USA than Japan in future, despite the fact that population ageing is expected to be more substantial in Japan.

Medical technology costs are central to the issue of medical inflation. While new more expensive technologies have a role to play in improving health status of the elderly, there is also considerable evidence from many countries that technology spread – driven by providers' financial incentives – may lead to more intensive use of technology, beyond that suggested by cost effectiveness.

The implications of this are that the future impact of population ageing may be muted in most advanced economies, if cost inflation in health care systems can be moderated. As argued by OECD (1996a), continuing efforts **to improve the efficiency and effectiveness of health care systems are an important element in responding to ageing populations**. This conclusion has been re-emphasised more recently in OECD's 1998 report on ageing policy (OECD, 1998).

The other related lesson to be drawn from OECD countries is that policy makers cannot expect that increased health expenditures because of ageing can be simply passed on to households and the private sector. In all OECD countries, an increased share of government financing in

health care expenditures has accompanied population ageing. This is only partly because increased affluence leads to greater government involvement in health care financing. The elderly sick are often the least able to pay for the increasingly expensive costs of their regular health care, because of their relative poverty, and the inability of insurance markets to provide insurance cover for such frequent and predictable costs of the elderly's health care.

For developing countries, such as Sri Lanka, the major lesson to be drawn from the limited OECD experience to date is that population ageing does not necessarily lead to an increase in health care expenditures. If policy is focused on reducing the costs of producing services, an increased volume of services can be provided without straining government budgets or household health expenditures. It is important to focus on the macro efficiency of the health care system, on control of medical technology spread and cost inflation, and to understand that the increased health care needs of the elderly does not necessarily imply greater overall health care costs, if unit costs can be reduced.

Healthy ageing

After the age of 65 years or so, the probability of disability or of impairment in general functioning increases dramatically. While people are increasingly living beyond seventy years of age, this increased life expectancy is not necessarily additional years of life free of disability. As the numbers of elderly increases, the numbers of disabled elderly will increase, and these individuals will need additional support in order to maintain themselves.

Recognition that these variations exist has prompted most advanced countries to examine ways in which to increase the number of years that the elderly can live without disability, and to prolong health life expectancy. Examples include interventions to prevent illness such as hip fractures, osteoarthritis, etc., secondary prevention through screening and periodic examination, and tertiary prevention to assist the elderly rehabilitate rapidly after illness or injury.

Much of these responses depend on the ability of the medical system to deal knowledgeably and adequately with the specific needs of an ageing elderly population. Most developing countries have not had to think about strategies for providing health services to the elderly, but an implication of demographic ageing is that such approaches need to be developed.

In Sri Lanka, the health ministry has historically focused (and rightly so) on the health care problems of the children and mothers. In future, a declining number of children will allow greater emphasis on improving the quality of existing MCH services with the existing resources, while allowing expansion of spending on services for elderly people. In doing so, there will be a need to develop those clinical specialities which pertain to the problems of the elderly, such as geriatrics, orthopaedics, urology, etc., and to better integrate and organise such services in order to make them more accessible to the elderly with their decreased mobility. At the same time, there will need to be a reorientation of public health activities to focus more effectively on the primary, secondary and tertiary preventive activities which will need to ensure that elderly people remain as healthy as long as possible, and to reduce the level of disability, that arises with increasing age.

Long-term care

Introduction

The problem of ensuring adequate long term provision of care for elderly people who are frail or disabled is a recent concern in the advanced countries, and in general not yet on the policy agenda of most developing countries, including Sri Lanka. This is not surprising, as it has only recently moved from being a rather marginal issue in welfare policy to the centre stage of discussions in the developed countries. Nevertheless, it is probably the most under appreciated and understated policy problem, created by population ageing, which faces Sri Lanka and other rapidly ageing developing economies, particularly in Asia.

The rapid ageing of the elderly population

As populations age, the numbers of the most elderly of the elderly increases substantially, and eventually significantly faster than the numbers of all elderly people. This ageing of the aged has created new policy challenges in modern economies. The very elderly, typically aged 80 years and over, are significantly more likely to be disabled or chronically ill, and dependent on others for their well being. Traditional social mechanisms, which have involved family support systems, erode during modernisation, and increasing numbers of the most elderly will not be able to depend on their families or their own resources for support. These trends increase the demand for formal services, and eventually force governments to intervene to ensure adequate provision of such care.

Although the size of the 80+ population remains small in relative terms in all countries, it is expected to grow considerably faster than the population as a whole in demographically ageing countries. The projected growth in the numbers of this section of the population is shown in Figure 9 for a number of OECD countries, and for Sri Lanka. Advanced European countries are expected to experience an increase of 200% - 400% in the numbers aged 80 and over during 1990-2040, while non-European OECD members, most remarkably Japan, are expecting increases of 300% - 450%. In contrast, Sri Lanka is expected to experience an increase of more than 700%. The rate at which this section of the population will increase in Sri Lanka should be of concern, as it implies that the country and policy makers will have relatively little time to respond to develop solutions, or to recognise the problem.

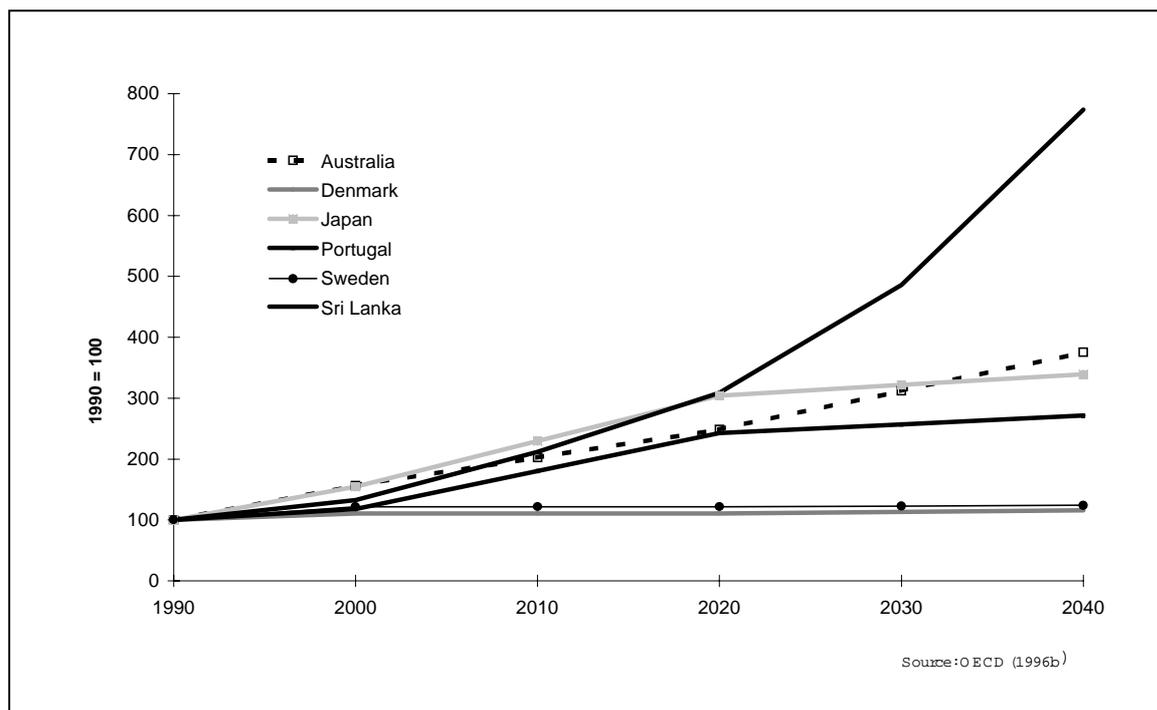


Figure 9: Growth of the Number of People Aged 80 and Over

Disability and the need for care

The increase in the numbers of the most elderly is being or will be accompanied by greater inter-generational independence, and increased numbers of elderly living alone. It is this trend, plus the increase in absolute numbers, which raises significant policy challenges for Sri Lanka.

The prevalence of disabling conditions rises sharply after age 75, and the consequent loss of independence in daily activities leads to corresponding growth in the need for care from others. For example, in a survey in the United Kingdom in 1986, nearly 50% of those aged 75 and over were found to have some difficulties with walking and climbing stairs, 31% had difficulties with personal care, 26% had difficulties with seeing clearly, 15% had difficulties with incontinence, and 11% had difficulties with intellectual functioning. Similar findings have been reported from other developed countries (OECD 1996b), as well as from Sri Lanka (Feachem et al., 1992). From the limited evidence available for developing countries in Asia, it is clear that this pattern of substantially increased chronic disability at ages above 75 years holds true for countries in developing Asia. The evidence in fact points to higher levels of prevalence of such disabilities in the poorer Asian countries, perhaps due to lower levels of health care and nutrition in their younger years in comparison with people in developed countries (Table 2).

**Table 2: Some Indicators of Disability in the Most Elderly in Southeast Asian Countries
(percentage of age group)**

	Indonesia	Philippines	Thailand	Malaysia	Singapore
Can see well					
75+	28	18	36	24	80
All ages	42	23	49	33	89
Can hear well					
75+	52	49	64	73	82
All ages	74	71	79	81	92
Can get around home					
75+	67	56*	35#	n.a.	84
All ages	86	72*	59#	n.a.	91

* Refers to those who could get around the home without physical disability as observed by the interviewer.

Refers to those who could get around the home with or without difficulty

Source: *Chen and Jones 1989*

It was previously thought that with time the increase in life expectancy would slow down, and that a “natural” human life span of around 85 years would emerge. Further improvements in health would then result in delays in the onset of disability with age, and an overall decline in the prevalence of disability in old age (Fries 1980). However, recent studies reviewed by the OECD (1996b) have concluded that the available evidence does not support this hypothesis, and that improvements in life expectancy have not been accompanied by an increase in human ability to prevent or delay disabling conditions. Given this, demographic ageing can be expected to create in future the same increase in the numbers of the disabled and dependent elderly in Sri Lanka, that it has created in the advanced societies.

Decline in family support due to modernisation and demographic ageing

Currently, the overwhelming majority of elderly Sri Lankans are cared for by their families, in most cases by co-residing children. In this regard, the Sri Lankan situation differs little from elsewhere in the developing countries of South East Asia. As shown in Table 3, more than 80% of the elderly aged over 60 years live with their children, and two thirds live in households with at least four other people.

Table 3: Living Arrangements of the Elderly

Country	Sex/year	Living with children (%)	Living alone (%)	Living with four or more people (%)
Sri Lanka	Male	86	1	67
	Female	81	5	61
Indonesia	Male	75	2	53
	Female	60	9	50
Thailand	Male	78	2	54
	Female	76	6	49
Japan	1953	80		
	1975	75	7	
	1985	65	10	
United Kingdom	1945		12	
	1981	16	34	
	1991		38	

Source: Andrews and Hennink (1992), OECD (1996b).

However, this reassuring situation, where most elderly people can expect to be cared for in their children's household, cannot be expected to remain indefinitely. Modernisation and economic development can be expected to lead to a decline in such coresidence.

In traditional peasant-agrarian societies, production tends to be family-based and un-specialised (Ogawa and Retherford 1997). Successive generations tend to have the same occupation, typically farming. Parental authority over children is reinforced by parents' longer experience and expertise in shared work, and coresidence of parents and adult children makes both economic and social sense. With modernisation, production shifts to more specialised processes; modern market economies depend on an inherent division of labour. Increasing individualism in the labour market eventually diffuses into other areas of life, including the legal system, family relations and social values. Parental authority of elderly parents over adult children loses most of its economic and legal basis, and generally weakens. Changing outlooks, and the need for adult children to move in search of employment result in a decline in coresidence. This is particularly the case in the event of rapid urbanisation, which can result in parents being left behind in rural areas as children move to the cities.

As coresidence declines and labour mobility increases, the extended family system contracts, and nuclear families become the dominant household type. The decline in the extended family system may be more dramatic in Asian countries than in the West, since the available evidence suggests that extended family systems were not the norm in northern European societies even in the pre-industrial era. Table 3 shows that while co-residence in the most advanced Asian society, Japan, remains considerably higher than in Western nations such as United Kingdom, that even there development since the 1950s has led to a decline in co-residence. Once that trend begins and social norms begin to shift, it has been Japan's experience that such a trend occurs relatively rapidly. In Sri Lanka's case, one redeeming aspect of the country's development has been that industrialisation to date has not been associated with significant rural-urban migration, which has been one of the forces driving the decline in co-residence in the middle-income Asian countries. However, given that industrialisation to date in Sri Lanka has lagged considerably behind its neighbours in Southeast and East Asia, it is not clear whether

this is more the artefact of limited development than a positive feature of the country's development experience.

The elderly continue to require support and care. An intergenerational consensus will tend to arise that government should intervene and shoulder a substantial part of the burden of supporting and caring for the elderly. This trend is hard, if not impossible, to resist in democratic societies. As social security systems, pension plans, and other systems of old age income support are established, they will tend in turn to reinforce the changes in values that are already occurring. Expectations of old-age support from children weaken, as do filial values and norms of caring for elderly parents. Contributing to these trends in most advanced economies is the increasing prevalence of female labour force participation, which increases the opportunity costs of staying at home to care for elderly parents who need such care (Ogawa and Retherford 1997).

In all societies, both developing and advanced countries, Western and non-western societies, informal sources, principally family members, remain the primary providers of care to the elderly. Elderly spouses, or younger relatives, usually female relatives provide this care in most cases. Most of these female relatives tend to be in the 45-64 age group. The care provided by these relatives is substantial, and comprises an "invisible welfare state", underpinning even the formal welfare states of advanced economies (OECD 1996b).

Data on the identity of caregivers to elderly people in developing countries are limited, except for Southeast and East Asia, where there has been considerable comparative research in the past decade. Surveys in Sri Lanka indicate that middle aged women do play an important role in Sri Lanka as elsewhere (Table 4), and that spouses and daughters are the major caregivers for most elderly people (Andrews and Hennink, 1992).

Table 4: Identity of Primary Care Providers for Elderly in Sri Lanka by Location (percentage of total)

Age (years)	Urban		Rural		Estate	
	Male	Female	Male	Female	Male	Female
20 - 34	11	11	9.5	21.2	6.7	26.7
35 - 44	18.5	11	14.6	14.6	6.6	33.3
45 - 69	14.8	33	10.2	26.3	6.7	20
70 - 79	-	-	1.5	2.2	-	-

Source: Derived from Table 152 in Perera (1989). Data obtained in a small-scale survey of 179 resident primary care providers in 1986/87.

Demographic ageing, in addition to producing an increase in the numbers of the most elderly is simultaneously reducing the potential of the younger, predominantly female population to provide care for older relatives. With demographic ageing, the ratio of middle-aged women to more elderly people will itself decrease. Table 5, shows the trends in several OECD countries during 1960-90, which illustrates clearly the diminishing level of the so-called "daughter care potential". This "daughter care potential" similarly calculated for Sri Lanka is currently around 1.8, and will remain at this level to about 2010, when it will begin to rapidly contract, reaching 1.5 by approximately 2020, 1.2 by 2030 and 1.0 by 2040. Sri Lanka can therefore expect to face a significant care issue from 2010 onwards (if not earlier) due to the decline in the relative numbers of women in the middle-age groups. This contraction will probably result in an increasing need for externally provided support services to assist families to care for their

elderly relatives and nursing/residential homes for those elderly without close relatives, and a corresponding need for government action.

Table 5: Contraction of the “Female Care Potential” in Eight OECD Countries
Number of women aged 46 to 69 in proportion of the population aged over 70 years

	1960	1990	1990 ratio as a % of 1960 ratio
Belgium	2.00	1.42	71
Germany	2.64	1.57	59
Ireland	1.60	1.40	88
Italy	2.30	1.60	70
Luxembourg	2.43	1.61	66
Netherlands	2.16	1.48	69
Portugal	2.50	1.60	64
Spain	2.48	1.53	62
Average of 8 countries	2.26	1.53	68

Source: OECD 1996b

While the demographic basis for informal support declines, economic modernisation is associated with growth in women’s paid employment. Increased female labour market participation has been the case in all OECD countries in the post-war period, and it has added to the pressures facing these societies, by further reducing the available ‘care potential’ (OECD 1996b). In the Asian industrialising economies, economic modernisation has been accompanied by similar and more rapid changes in female labour market participation (Table 5) and there is already concern that this will have negative implications for these countries (Chen and Jones 1989).

Female labour force participation has increased over time in Sri Lanka. The continuation of this trend in future can be expected to have implications for the care of the elderly in Sri Lanka too. Moreover, the labour scarcity to be expected from population ageing and the need to reduce system dependency in the pension systems will also act to encourage increased female labour force participation.

Policy responses

The combination of, (i) increasing numbers of very elderly, many of whom are disabled and dependent on others for support, (ii) declining ratios of middle-aged women to the elderly, (iii) declines in the extended family system, and (iv) increased labour force participation by women, will create new problems of how to care for the dependent elderly in Sri Lanka during the next four decades. The lack of close relatives in many cases, and a general decline in the capacity of families to look after dependent elderly relatives, will create new demands on public budgets, as society looks to government to assist.

In the advanced economies, it took a considerable time for governments to recognise their responsibilities in this field, and when they did so it was with some reluctance. Governments in OECD countries have been forced to provide an extensive mix of health and social services to support the dependent elderly. The financing and organisation of this care has been quite mixed, and there has been no uniform OECD approach. Nevertheless, in most OECD countries, public agencies do expect families to bear part of the financial costs of providing

long-term care to the elderly, typically by requiring better-off families to run down their assets before receiving public support. This principle is contrary to that applied to most health care services, where the protection of households from “catastrophic costs” is the generally accepted principle (OECD 1996b).

In the Asian advanced economies, such as Japan and Singapore, it has taken longer for these problems to be officially confronted for several reasons. First, because economic modernisation has occurred more rapidly in Asia than in the West, social values have tended to lag economic developments and so pre-existing family support arrangements and family expectations of providing support have persisted longer (Ogawa and Retherford 1994). Second, the demographic ageing process itself has started later than in the West. Third, Asian policy makers have tended to regard social trends in the Western countries, in particular the greater reliance on formal elderly support services and institutional homes for the elderly, as not being relevant to their own cultural situations. However, although the evidence does support the view that the extended family system and traditions of filial piety are stronger than in Western countries, economic modernisation has not spared even Japan or Singapore from such social trends. When these changes do occur, they have occurred more rapidly than in the West. Initial responses by most advanced Asian countries has been to discourage families from shifting the burden to the state, and some cases using legislation to force families to adhere to what is perceived to be their filial duties. Both Japan and Singapore have legislation to force families to look after their elderly relatives. In its 1998 Budget proposals, the Hong Kong government has offered substantial tax deductions for personal income tax payers with dependent elderly relatives. However, these responses are not an ultimate solution, and eventually governments are being forced to develop more comprehensive solutions based on public financing to look after the dependent elderly. This process is most advanced in Japan (Ogawa and Retherford 1997).

In Sri Lanka’s case, since the demographic composition of the future population is relatively well known, and since much of the recent experience of other Asian developing economies is well documented, policy makers cannot be excused on the grounds of lack of information if they take no action to prepare for such trends. However, the experience of other Asian countries to date has been that perceptions of senior policy-makers do take time to change and adapt, and that policy formulation tends therefore to lag actual social and demographic trends. In these circumstances, the major immediate priority should be to sensitise policy makers to the issues and long-term challenges facing Sri Lanka than to develop new policies.

Old-age income security

Introduction

Demographic ageing increases the proportion of those in older age groups to those in younger adult age groups. As people age, they become less able to work and to earn the material resources necessary to maintain their living standards and consumption level. Traditionally, in developing countries, such as Sri Lanka, the reduced ability of the elderly to work has not always meant relative poverty for several reasons. Firstly, the elderly who do seek work are much more likely to be able to find work and to do so at higher wages than the young, or they can command a share of a families income by virtue of their position. Secondly, given the social structure of many developing countries, particularly in Asia, the elderly have generally been able to rely on the support of their children and the extended family to look after them. Typically, this has been reinforced, by the elderly having greater authority in family decision making, and retaining ownership of the major household economic assets, such as land and property (Perera, 1989).

The social and economic trends accompanying development have and will affect the ability of the elderly to command access to social resources, and maintain their standard of living. Firstly, the decline in fertility will result in a decline in the number of living children that the average elderly person can expect to have, and increase significantly the number of elderly who have no living children. This trend will be reinforced by a general decline in the breadth of the extended family network with social modernisation. Although there is little substantive evidence of this occurring to date in low income countries such as Sri Lanka, such trends have been observed in recent years in the more advanced economies of East and Southeast Asia, and there is no reason to believe that they will not be replicated in Sri Lanka in the next two decades.

In the advanced economies, social security systems are the most important source of income for elderly individuals. In addition to publicly administered pension schemes and public assistance, elderly people in the developed world rely on income from assets accumulated during their working careers. These mechanisms have historically developed in response to perceived poverty in old age, and the increasing lack of direct family support. In general, most elderly people in Sri Lanka and other developing economies of South and Southeast Asia do not depend on formal systems of income support in old age, but largely on the family network (Chen and Jones, 1989). Pensions systems remain limited in Sri Lanka, despite the existence of government policies in this area for at least fifty years. This is not too surprising, as the Sri Lankan labour force remains largely rural and outside the organised formal sector. The pension systems that do exist are essentially the preserve of the public sector workforce.

Population ageing can be expected to confront policy makers in Sri Lanka with two sorts of issues related to pensions. The first involves the existing pension systems for public sector workers, which are largely funded from general revenues. As the population ages and the numbers of government pensioners increase, the fiscal cost of providing for these pensions will correspondingly increase. This raises questions about the current organisation and structure of the government schemes.

The second and in the longer term more significant set of issues relates to the provision of income security to those outside the government workforce. Those in private formal sector employment are already covered by provident funds, but given the historical rate of return on

EPF and ETF investments and the lack of any redistributive mechanism from higher paid EPF enrollees to the lower paid, it is quite likely that these provident funds will not provide adequate income support for many in old age, especially those whose lifetime earnings were low. For the remaining majority of the population, who are not covered either by pension schemes or provident funds, the traditional mechanisms of income support may not prove adequate for many, and government will face an increasing demand for more universal pension arrangements which can cover those who never participated in the formal sector workforce.

The experience of all democratic societies at all income levels, as well as those, which are not formally democratic (e.g., Hong Kong), is that such public pressure cannot be resisted indefinitely. Even in Asia, where it has conventionally been thought that countries were less supportive of welfare in general, including pensions and other retirement income support arrangements, the trend is clearly towards universal provision of pension arrangements as countries become richer and more democratic (Goodman, White and Kwon, 1998). The most likely scenario is that such arrangements will become more widespread in the rest of Asia with time (Heller, 1997). Table H indicates the comprehensiveness of pensions coverage in Asia. Sri Lanka, despite its low income, is already relatively advanced in this respect, suggesting that it is more likely than most to attempt universal coverage as the country approaches a middle income level.

Given Sri Lanka's history of early state involvement in social policy and general commitment to equity, it is almost certain that Sri Lanka will move towards universal pensions or old age income security arrangements with time. In fact, the recent profusion of new pension schemes (e.g., farmer's pensions, fisherman's pensions) shows that Sri Lankan policy makers are not immune from such pressures, and have already begun to respond to such demands, albeit in an uncoordinated and unplanned manner. Given the experience of the more advanced economies that universal pension systems can be very expensive in the long-term if they are not adequately structured, it is essential that Sri Lankan policy makers begin to examine more critically how the state will respond meaningfully and systematically in future to these demands as well as meet the needs of those who are currently covered by some scheme or other, without creating irreparable damage to the country's economy. The following section reviews evidence and thinking on pensions funding.

Issues in pensions funding

Introduction

In principle, individuals should be responsible for making adequate provision for their own retirement, but in practice this has usually not been considered appropriate, and public intervention has been necessitated. Individuals may suffer from myopia and not save sufficiently for retirement, they may be unable to save for their future owing to low incomes, there are risks associated with the unpredictability of knowing whether one will live a longer life for which insurance markets may not exist, and there may be risks associated with the investment of personal savings. In addition, societies may decide that they prefer that elderly people, who are no longer able to work, should not live in poverty, which may historically have been the normal outcome in many societies. An ageing population is characterised by a growing proportion of elderly people to younger people. Where pension schemes exist to distribute income from those in work – generally in the younger age groups – to those in retirement – generally those in older age groups, demographic ageing can place serious stresses on the sustainability of the systems, and raise serious fiscal, economic and social issues. Demographic ageing both changes the ratio of workers and contributors to those in receipt of transfers, as well as increasing the political strength of the elderly. This section attempts to review some of the concerns with existing schemes and with alternatives that have been proposed.

Methods of pensions funding

Formal schemes for providing income for the elderly date from Bismarck's social security reforms. By the second half of the twentieth century, most Western nations had introduced formal systems covering most if not all of their populations.

The main pillar of schemes in most industrial countries is a mandatory public pension plan. This may be complemented in many by voluntary private pension schemes. Public pension plans in developed countries can take many forms. Most involve mandatory payroll contributions by employers and employees to a pension fund, in return for rights to a future pension, whose value is usually defined in terms of the individual's earnings history and number of contribution years. These are **defined-benefit** schemes (DB). In most cases, the pension fund is treated as an extension of the government's general budget, if not formally part of it, with excesses of contributions over payments being credited to the government's general revenues, while deficits are funded from general revenue transfers. The process of crediting to the general revenue budget may involve the pension fund purchasing government securities, exchanging money in return for government liabilities.

Public pension plans can also be alternatively be based on the **defined-contribution** principle (DC). Under this, the annual contribution paid is typically specified, usually as a proportion of gross salary, and pension benefits depend upon accumulated contributions and the realised rates of return on their past investment.

Financing of pension plans can be classified as fully funded, partially funded and Pay-As-You-Go (PAYG). In a fully funded plan, pension payments are fully covered by assets, paid for by contributions made by individuals during their working lives. Under such a scheme, individuals receive a lump-sum payment when they retire, or a pension if that lump-sum is converted into

an annuity. In a PAYG plan, payments to current pensioners are financed by contributions from current workers or budget transfers. A partially funded plan combines features of both, but assets built up are not sufficient to cover all future benefits. DC plans are generally fully funded, while DB plans are most often PAYG or partially funded. PAYG public pension programs are found in most developed economies, including Germany, France, UK, Canada and Hong Kong. The USA, Japan and Sweden have partially funded public programs; in the USA case the funding is only intended to smooth out contribution rates rather than to create assets to back all pensions.

In most public pension programs, financing is from mandatory social security contributions levied on wages. In some countries the contribution is shared equally by employer and employee, and in others the employer pays more than half. Eligibility for pension benefits is typically determined by a statutory retirement age and a minimum contribution period. In DB plans, benefits may be earnings related, flat rate, or means tested. Earnings-related benefits can be computed (1) as a percentage of the average wages received over a period that can vary from a few years to the whole working career; (2) according to an accrual rate where the pension is a multiple of a set accrual rate (typically a percentage of the earned wage) multiplied the number of years contributing to the plan. Pensions may be indexed, especially in the case of DB schemes. In most developed countries, pensions are indexed according to inflation, but some (Japan, Germany) index to growth in net wages, while others (France) index according to gross wages (Chand and Jaeger, 1996).

Reforming pension financing

Most public pension schemes in developed countries were established either in the late 19th Century or in the first half of the 20th Century. Established early on or midway during the demographic transition, they were designed at a time when the ratio of older age groups to working age groups was lower than now or in future, and most were PAYG or only partially funded. In fact, PAYG and partial funding was the only mechanism by which pensions could have been offered to the first generation of workers covered by such schemes.

As the dependency ratio increased over the decades, particularly after the 1960s with the fading away of the baby boom, public pension schemes in developed countries have come under increasing pressure, and considerable alarm was raised about their sustainability in future decades. This led to numerous reviews and analyses of the problem in advanced economies from the 1970s onwards, both at the individual country level and also at the international level, principally by the IMF and OECD. These studies identified two sources of financial strain: (1) the generosity of pension benefits, which had not been clear at beginning, and (2) the impact of demographic ageing in reducing the ratio of workers to retirees and thus raising contribution rates in PAYG systems. With long-term projections revealing unsustainable contribution rates in the early 21st Century, the almost unanimous judgement was that the appropriate policy response was scaling back the generosity of pension benefits and other design reforms to make them more sustainable. Relatively little attention was paid to switching the financing basis of public pensions, and in particular replacing PAYG with funding (Hemming, 1998).

During the 1980s and continuing into the present, developed economies introduced a series of reforms to public pension systems, which have acted to improve the sustainability of programs, or in some cases, such as the UK, have ensured that future burdens will not be appreciably more than at present. These reforms involve generally changes to benefit and contribution rules,

and can be termed **parametric** reforms. They involve areas as indexation rules, retirement ages, penalties for early retirement, tax treatment of benefits, and contribution rates.

At the same time, outside the OECD region, policy discussions have shifted to funding as a possible solution to sustainability of pension programs. In the developing countries, there is now considerable pressure by key agencies to push funding as the basis of pension programs. As IMF staff have noted (Hemming, 1998), this has happened while "there has certainly been no significant intellectual debate in the interim that has produced a widely accepted conclusion that funding is inherently superior to PAYG. Nor has much fault been found in the approach some industrial countries have taken to scaling back pensions. Indeed, where there has been the political will to make quite large adjustments to pensions . . . it has been shown that PAYG pension finances can be placed on a sustainable path (Chand and Jaeger, 1997)." If there is a simple explanation for this, it is the apparent success of pension reform in Chile, where the pension system was changed to a funded system in 1981, and was associated with an impressive improvement in the country's growth, savings and investment performance.

The Chilean experience provides much of the inspiration behind the World Bank's recent recommendations for pensions policy, best encapsulated in World Bank policy report prepared by Estelle James (World Bank, 1994). The World Bank's policy prescription has been pushed globally since its 1994 report, as it is traditionally the Bretton Woods institution primarily responsible for pensions advice. In Latin America, the example of Chile has encouraged most other Latin American countries to attempt similar reforms, while in Eastern Europe such reforms are consideration in many countries as a solution to the crisis in most social security systems brought about the transition to the market and the unique demographic transition of most East European countries. In Asia, the World Bank's recommendations have also been supported by the Asian Development Bank (ADB, 1997).

The World Bank's enthusiasm for funding is not shared by the IMF and the OECD, and in the past two years, there has been increasingly open critique of the World Bank's recommendation by the IMF. Virtually all OECD governments also continue to persevere with parametric reform of existing PAYG systems, while declining to adopt funding as a solution. This paper explores the reasons for IMF and OECD reluctance, and argues that on the basis of the literature and evidence, that the argument for funding in the case of public pensions is weak, and that policy makers should be cautious about arguments that funding is superior to parametric reform of PAYG. It starts with an overview of the argument for funding and the World Bank's own thinking. It follows this by a review of the current critique of funding, and discusses alternative reform options. Finally, some brief recommendations are made for Sri Lanka.

World Bank approach to pensions reform

World Bank (1994) recommends a three pillar pension system, to separate the savings function implicit in most pension systems from the redistributive function. The first pillar is a safety net, providing a minimum level of income, guaranteed for all who have no other income source. This pillar would be the responsibility of the public sector, and financed from general revenue. Pillar 2 would be a mandatory, privately managed fully funded pension scheme consisting of personal savings accounts or occupational plans. Pillar 2 would be the dominant pillar in the system and would cover the formal sector. Pillar 2 could be either publicly or privately managed, but the World Bank preference is for competitive, private management, as this is argued to be superior in terms of returns to public management. Regarding the choice between occupational plans and personal savings accounts, the Bank is also clear that it believes that

personal savings accounts are superior, as occupational plans tend to be underfunded, default-prone, and restricting labour mobility. Pillar 3 would be a voluntary system of optional occupational or personal savings plans for those people who want and are willing to pay for more income and insurance in their old age.

Arguments for funding

Hemming (1998) summaries five main arguments in favour of funding.

1. Funding may be a lower cost form of financing than PAYG in that a given pension benefit can be provided with a lower contribution rate under funding.
2. Funding may be fairer from the perspective of intergenerational redistribution than PAYG.
3. Funding may be better than PAYG at signalling future pension costs, and therefore impose greater discipline on pension policy formulation.
4. Funding may be more capable of handling demographic and economic risk than PAYG.
5. Funding may be associated with higher saving (and a larger capital stock) than PAYG.

To these may be added.

6. Funding would lower microeconomic distortions, as workers would see a direct link between contributions and benefits, and therefore compliance would be greater, with less disincentive to work in the formal sector.
7. Funding by assigning savings to the private sector reduces the role of government – ideologically desirable.

Each of these will be reviewed.

Funding cheaper in the long run?

Under any fixed replacement rate, the rate of return in a PAYG system is equivalent to the rate of earnings growth, which in the wider economy is equal to productivity growth (or GDP per capita or wages growth) plus population growth (Hemming, 1998). In a funded system, which invests the payroll contributions of workers, the rate of return is equivalent to the interest rate or rate of return on investments. A funded system is cheaper if the rate of return on investments is greater in the long term than that of real earnings growth. Generally speaking, the real interest rate must exceed the growth rate (Fischer and Easterly, 1990), and this is the case empirically, although it has not been the case always. If not, debt would build up as the incentive would be to borrow, and the real interest rate would eventually be forced up. With a rapidly growing population, PAYG would be superior, but with slow population growth, which is characteristic of demographic ageing, funding has the apparent advantage. However, the higher potential returns from investments has to be balanced against the risk of those investments, and the cost of managing the funds and providing a pension from those funds. These risks give rise to contingent and conjectural liabilities, as well as hidden costs from private market failure.

Contingent and conjectural liabilities

The rate of return on investments is critically dependent on the type of investment. Higher return investment are inherently riskier. For example, equities have higher returns than

government bonds in most situations. In the OECD, the average rate of return on a 50-50 portfolio of equities and government bonds during 1971-90 was 4% compared with 1% for government bonds, and 2% growth in earnings – the implicit rate of return in a PAYG system (World Bank, 1994a).

Higher returns on funded investments is therefore dependent on allowing greater choice in investments. However, in practice most governments would wish to limit such choice and risks taken in order to protect savers, since they would face a contingent liability if some individual's savings are invested poorly or lost through fraud and abuse leaving them with no assets. This is not just a problem relevant to unregulated capital markets in developing countries. Stringent regulations exist even in developed economies such as the UK for this reason, and despite this they have not been sufficient to prevent substantial investment failures by pension managers, as evident by the US\$ 18 billion pensions funds scandal in the UK in the 1990s, and the even larger savings-and-loans debacle in the USA in the 1980s. Even in the USA, divestiture of Social Security Fund assets to private managers is strongly resisted on these grounds across the political spectrum. For these reasons, responsible governments will prudentially constrain fund investment strategies, which may mean stipulating a minimum share of a portfolio to be invested in government bonds and bills, thus implying that returns on pension fund assets may be lower than theoretically achievable in the equity market.

Even if investment are constrained to reduce risks, some investors will suffer low or negative returns. Since this is a real possibility, governments would be forced to provide a minimum income guarantee to all workers, as is in fact the case in Chile. This guarantee represents a hidden liability for governments, which must be counted as an additional fiscal cost of running a funded system. The size of this liability is often ignored, and can be substantial, as even Chilean officials have noted (Ruiz-Tagle and Castro, 1998).

The alternative to regulation of private managers is for the government itself to take over management of funds. This is in fact the case with the Provident Funds of Singapore, Malaysia, Sri Lanka and Indonesia. However, the problem with this is that in practice this results in government intervention in the allocation of funds, and thus sub-optimal capital allocation with lower investment returns. In certain cases, such as Sri Lanka, where EPF funds are > 90% invested in government securities, and Malaysia, where provident funds have recently been invested in propping up share prices following the regional currency crisis, governments can plausibly argue that this is in the public interest. When investing part of the Social Security Fund in the stock market was suggested in the USA by President Clinton in January 1999, Alan Greenspan, head of the Federal Reserve, immediately and publicly rejected such an idea on the grounds that it would result in suboptimal capital allocation in the US economy, given the risk of government intervention. In Singapore's case, the government simply decides on returns on CPF balances, and this is estimated to cost 1.8% in returns for contributors (Asher, 1997).

Higher rates of return on fund investments are associated also with longer term market wide risks. For example, the recent currency crisis in Asia has resulted in major losses for pension funds. Similarly, there are long term variations in return in all stock markets. For example, Hemming (1998) shows that an individual who invested for 40 years in the Dow-Jones composite index, would receive a sum equivalent to a wealth-income ratio of 10:1 if he retired in 1967 or 1995, versus 4:1 if he retired in 1974.

It could be argued that the government can divest itself of formal liabilities for poor investment returns – *caveat emptor*. The problem with this reasoning, as the IMF itself notes, is that in analogous situations, governments do accept some responsibility, for example when protecting bank depositors in the context of bank failures. Moreover, the political and social pressure to

intervene is greater than with bank deposits, since a sharp decline in pension assets has far more serious consequences than the loss of a household's bank deposits. Additionally, the IMF has pointed out that with mandated funded schemes, the government is directly involved by requiring contributions and by approving the investment framework, and so would be inevitably be subject to some responsibility in event of adverse investment returns (Heller, 1998).

There are thus two sorts of hidden government liabilities associated with funded DC schemes – the fiscal cost of guaranteeing a minimum income for all savers, and a conjectural liability to compensate savers in event of poor returns, some of which may be systemic in nature. While these costs can be reduced partially by increased government regulation, risks of a systemic nature cannot be. In addition, increased regulation comes at the cost of lowered investment returns.

Private market failures

Under DB type schemes, the retiree is insured implicitly against the risk of longevity, and in most cases against inflation either in prices or in real incomes and wages. In theory, such insurance can also be built into a DC type scheme, if annuities are available for the retiree to invest his lump sum. Practically there are a number of factors militating against this. First, annuity markets are insurance markets and suffer from well-known insurance market failures. Cream-skimming and adverse selection is a feature of even developed economy annuity markets, which implies that many individuals may not be able to purchase annuities at prices which offer them some insurance protection. In practice annuity markets are highly undeveloped in developing countries (Heller, 1998), and serious market failures are still prevalent in developed markets such as the UK (Financial Times, 1999). The second problem is that private sector agents will only sell indexed annuities which offer protection against inflation risk, only at significant margins, given the uncertainty they face. These margins may need to be substantial as recent UK experience suggests. There mistakes in calculating annuity returns in the 1970s have left some insurance firms with individual liabilities amounting to almost \$2 billion each (Financial Times, 1999).

This type of failure again reinjects the government into the process as guarantor of a minimum income, or as provider of indexed annuities given that private markets may fail to provide these. This creates a hidden contingent liability for the government, or in the absence of government involvement to stem market failure reduces the real rate of return that workers would eventually receive from their accounts, once margins of insurers are taken into account.

The issue of indexation also underlines the necessity for governments to be involved in regulating investment strategy. It may well be that in most cases government intervention to reduce risks and to improve indexability might be consistent with what individual savers themselves would prefer. On theoretical grounds, assuming that individuals are somewhat risk averse, it will always be the case that a rational investor would be willing to trade some level of investment return in exchange for indexability of returns. That is they would be willing to accept a lower pension that is indexed instead of a pension that is expected to be higher, but subject to risk. From this perspective, government intervention at the cost of lower investment returns is also consistent with individual preferences and maximises welfare (Hemming, 1998).

As the IMF forcefully argues, while PAYG has been traditionally associated with unfunded future liabilities, DC type schemes are in practice associated with as yet unquantified contingent and conjectural liabilities, which may be equally as large (Heller, 1998).

Funding is fairer from an intergenerational perspective?

PAYG systems are essentially implicit social contracts between successive generations. Each generation of workers pays for the pensions of the current retirees on the understanding that its pensions will be paid for by the next generation of workers. With growing populations and an expanding wage base, successive generations are better off than under funding, as their implicit rate of return will be better than the long-run real interest rate. Unfairness might arise in this arrangement if the PAYG schemes closes, leaving the last generation of contributors with nobody to pay its pensions, or if with demographic ageing contribution rates rise to such levels that workers (i.e., voters) decided not to pay such high rates, thus ensuring lower pensions for them and successive generations. It is also argued that first generation is also a beneficiary of unfairness in that they receive pensions, despite never having made contributions. This particular argument is somewhat disingenuous as one of the avowed objectives in many PAYG schemes was to ensure the first generation a pension.

The IMF is again cautious on this argument. It points out that the risk of default on the social contract is only theoretical, and that equally large and arbitrary variations in rates of return across generations occur under funding owing to variations in market returns. Moreover, as is widely recognised, a shift from a PAYG scheme to full funding creates explicit unfairness to the current generation of workers who must both pay taxes for current retirees' pensions as well as making contributions to their own accounts. The transition costs associated with this can be quite large, and equally unacceptable.

Nevertheless, it can still be argued that at least with funding, pension claims are backed up real assets and not subject to simple refusal to pay. However, IMF staff argue that is flawed, since in reality "the pension burden on future generations of workers is determined by the pensions that have to be paid and not by the way in which they are financed" (Hemming, 1998). What is ignored is that the value of assets held by pensioners will fall as increasing numbers of pensioners attempt to sell assets to fewer workers. This would occur in the case of a closed economy, and is also expected to occur globally with worldwide population ageing (Turner et al., 1998). Thus both PAYG and funding are exposed to demographic risk, except that transparency in this case occurs with PAYG and not with funding.

Funding is better than PAYG at signalling future pension costs, and therefore imposes greater discipline on pension policy formulation?

PAYG promises to pay pensions at a future date, without having any immediate financial implications. The value of such promises may be uncertain at the current time. On the other hand, funding future pension rights equal only accrued rights. Therefore, it is argued that funding provides clear information about future pension costs, while PAYG can be misleading and moreover permit policy makers (i.e., politicians) to make extravagant promises which are not sustainable (World Bank, 1994).

There are two difficulties with this argument. The first is that the superiority of funding with respect to signalling does not require a fund to be built up. Within PAYG systems, the option of **notional funding** exists to permit the signalling function to be enforced. Under this option, contributions are charged on the basis of some actuarially determined rate equivalent to what would have occurred if there was a funded scheme, but with the excess of contributions over pension payments accruing to the government as general revenue. Notional funding is not widely practised, but is used in the UK and Sweden, and is implicitly practised in the USA. The advantages of notional funding are (i) that it avoids the distortion of public sector and private

sector prices which occurs when one sector finances pensions on PAYG and the other fully funds, and (ii) that it avoids the administrative costs and other complications and distortions that arise when the public sector engages in large-scale acquisition of private sector assets (Hemming, 1998). Even if one does not engage in notional funding, it is still possible to ensure that the size of future pension liabilities is fully taken into account by current policy by making regular projections of their size. The best example of this would be the UK, where projections of future liabilities in the 1970s and 1980s induced debate and subsequent reforms to the public pension system, which have been quite successful in making it sustainable. Similarly, in the USA the lack of funding has not prevented there being serious attention given to reforming Social Security, largely because of the annual provision of long-term projections of the viability of the Social Security Trust Fund. In fact, the whole push for PAYG pensions reforms in the OECD region was driven by such projections prepared from the 1970s onwards. It must also be noted that is technically easier to make credible projections of PAYG liabilities than to make actuarial calculations of required contribution rates for a funded system, especially in the developing world, where actuarial expertise is typically scarce or even non-existent. So any country which can design an effective funded system would have the technical capacity to make projections of PAYG liabilities.

The second difficulty, which is of especial concern to the IMF, is that funding may actually make the fiscal situation less transparent, not more, and complicate fiscal policy management. There are two issues. One is that while in PAYG it is straight-forward to estimate value of unfunded future pension debt, it is easy to underestimate or even ignore the contingent liabilities that exist with funded schemes – namely the contingency that the minimal income guarantee will come into effect as in Chile, or that governments have to intervene to bail out distressed pension funds. As the IMF notes, this contingent liability is likely to be seriously discounted, because these debts are related to private funds, for which data are less likely to be available (Heller, 1998). The second issue which IMF staff raise is that mandatory contributions to private pension funds differ little from general revenue taxes, yet data on these flows are rarely fully captured in public accounts data, making fiscal policy more difficult, and in effect hiding the true level of public sector involvement in the economy. For example it may not be easy to evaluate the macroeconomic impacts with many of these schemes, since data are generally less available (Heller, 1998). This may not be idle speculation, since in an earlier IMF analysis of pensions funding in OECD countries, lack of data prevented simulations being made for public pensions schemes in several developed economies accounting for 5-60% of total public pensions spending (Chand and Jaeger, 1996). This concern of the IMF for problems in macroeconomic management caused by lack of data on private sector operations appears to be new, and may stem from the realisation that similar problems with data on private sector debt may have masked the Asian currency crisis as it was developing.

Funding is associated with higher saving (and a larger capital stock) than PAYG?

The relationship between funding and increased savings has been covered in the section on savings and capital markets. The theory is mixed, and the empirical evidence suggests that if funding increases savings it is only modestly, and even then only if funded schemes are mandatory for low-income household who are generally low savers. This last point is of relevance to developing countries, who by definition have economies where it is in fact difficult to cover such household with such schemes, as they may be outside the formal sector. The OECD itself notes that if the question is converting a PAYG scheme to a funded one, then the argument is tenuous or irrelevant, since other reforms to a PAYG system would have much larger impacts on capital stocks, productivity and long-run income, in particular extending

retirement ages. The savings increases of private pension funds may also be nullified completely, if favourable tax treatment results in lost revenues (Kohl and O'Brien, 1998).

Funding lowers microeconomic distortions in the labour market?

This argument appears relatively sound. Since workers see a direct link between contributions and their own pensions, there is less incentive for evasion. Additionally, as workers can port personal accounts from one job to another, they allow greater labour market mobility than might be the case with DB pension plans. These benefits in terms of greater labour market flexibility might have substantial long-term growth benefits (Sachs, 1997), and may even outweigh any potential benefits from increased savings rates.

However, one note of caution must be sounded. Where investment returns are low and below market interest rates, as would be the case with most publicly mandated provident funds in Singapore, Malaysia and Sri Lanka, workers may see little benefit from making contributions. Evasion may then still exist. Evidence at least from Sri Lanka suggest that such behaviour both by employers and by employees is substantial.

Political economy concerns

The above concerns apply to all funded DC type schemes. However, political economy arguments are sometimes implicitly brought to bear in favour of changing from PAYG to DC type systems. A major criticism of PAYG, is that although there are mechanisms for running a sustainable PAYG system, political reality often prevents policy-makers from making sensible decisions – the pressures of short-term expediency may be too great. Reform of PAYG may also be difficult, and reform is probably necessary from time to time, inevitably as the demographic and economic profile of the country changes. Such reforms are difficult under PAYG, but would be easier under DC. This would be an argument for switching systems, as in Chile, since under DC workers see much clearer links between system design and their own benefits, and thus would be more likely to support change (World Bank, 1994).

However, Diamond (1996) notes a major flaw in this logic. Once a DB system has matured, changing to a DC system will not undo the transfers that have already taken place, nor replace the capital that would have accumulated in the absence of the give-away. In the case of PAYG schemes which are being changed into funded DC schemes, there are additional transition costs, as the transition generation will have to pay both for the PAYG scheme as well as for their own pension contributions. The size of these transition costs are such that most governments would find it politically difficult to make such a change, if they are sensitive to public opinion. Reducing *future* transfers is only possible, and that can be achieved equally well with either a reform to reduce DB benefit promises, or with a switch to DC.

Diamond raises the question as to which of these two options are more politically feasible. He asserts that the Chilean reform under a military dictatorship cannot provide any evidence on this for reform in a democracy. So the World Bank's example of Chile is clearly not relevant here, at least for democratic states. The general evidence on this is limited, but clearly if a democratic government has political trouble reforming a PAYG system, then it is highly implausible that it would find it politically easier to replace it with a DC type system providing lower returns to workers than under their existing system. Although Diamond does not remark on this, it may be no coincidence that the only OECD state to have changed from a PAYG system to a DC system is also the only non-democracy in the OECD – Mexico, while all the

other OECD states have taken the route of reforming PAYG. Mesa-Largo in his review of Latin American pensions reform finds that pensions reform in other countries after Chile have only partially copied the Chilean reform, with radical changes becoming more difficult in the late 1980s and 1990s, as most Latin American states democratised.

Sri Lanka's case suggests that the political arguments in favour of transition maybe on occasion be non-existent. Sri Lanka's CSPA main problem is that it is overly generous in terms of the length of time people spend in work compared to retirement given the high replacement rate of the final pension.³ While reforming the CSPA design may be politically difficult, a DC type system with equal generosity would be more difficult to reform, as any changes in design which reduced generosity would be explicit and much more transparent than under a DB system, where one would have to have detailed actuarial knowledge to fully comprehend the value of any changes.

The alternative of course to burdening the transition generation is to borrow, in effect distributing the transition costs across generations, but this imposes other costs and burdens for macroeconomic policy and debt management. Making a transition from PAYG to DC imposes major fiscal costs at least for a generation. In the case of Chile, this transition cost was equivalent to 3.5-4.0% of GDP each year in the 1980s. However, Chile did not borrow to finance this, as the government built a primary surplus of 5.5% of GDP before the start of the reform with a view to avoiding debt financing of the transition. However, Chile's fiscal situation is quite unusual – then and now, and may have required the imposition of a military dictatorship. However, this has not stopped arguments that such a transition is a tool to deal with the exact opposite – namely a chronic fiscal deficit. In fact, in Sri Lanka's case, the World Bank has in fact urged such a reform precisely in order to promote fiscal deficit reduction. Diamond (1994) argues "that there is a serious political risk associated with such an approach. With a sizeable government deficit, there will be considerable political incentive to channel privatised mandatory savings into government debt. With large government debt holdings by the intermediaries and a large continuing deficit, there is a strong incentive to pay low interest rates on this debt in order to lower the deficit." Diamond gives the example of the Philippines at this point, but Sri Lanka's situation is little different, with the government financing part of its deficit by borrowing funds from the existing provident funds at below market interest rates. Again Diamond (1994): "The combination of primarily government debt and politically set interest rates defeats much of the purpose of privatisation. Rather than privatisation being a cure for a chronic deficit, it may be the case that a surplus is an important condition for a successful privatisation"

Conclusion

Despite the considerable support for funding in some quarters, the case for it appears particularly weak. Funding is not superior in terms of reducing demographic risk and economic risk. Moreover, there are several reasons which would make funding inferior as an option to PAYG. If funding does have an advantage, it is relatively modest, and comes with some costs.

Funded schemes are associated with substantial contingent liabilities for the public sector, which can only be reduced partially by regulating investment to such an extent that returns are lower for individual workers. The superior investment performance of private pension funds must be balanced against much higher administrative and marketing costs than centralised

³ Full details of Sri Lanka's Civil Servants Pensions Scheme are given in Rannan-Eliya et al., 1998.

publicly managed funds. These costs account for a third of the investment return on Chilean pension assets.

Even if returns are higher, the net benefit to the individual retiree may be much less, since annuities may not be available, or if so only at a substantial margin. Even if annuities are available, indexed annuities may not be, yet rational individuals may be willing to trade higher investment returns for guaranteed inflation indexation, which would be available under PAYG. In fact, if insurance markets are highly developed, the expectation is that insurers will be more likely to screen risks, and increasing numbers of people would be unable to acquire annuities.

What benefits exist probably arise from greater labour market flexibility due to better linkage between individual payments and benefits. However, even this has its disadvantages, in that better individual linkage implies less redistribution across individuals, which raises costs for the public sector, which must provide safety nets and a redistributive mechanism separately.

Finally, even if benefits do exist and are substantial, similar benefits can also be achieved by reforming existing PAYG systems. Transition to a DC system has been argued may be superior to reform in that is politically more viable. However, all the available evidence and logic suggests the opposite – changing to a DC system may be politically more difficult than reforming a PAYG system – at least in a democratic society.

What makes these concerns about funding more pertinent is that they are raised primarily by the IMF and in particular its fiscal affairs experts. Funding is generally touted as being fiscally responsible. On the other hand, the guardians of fiscal orthodoxy themselves appear to be little impressed, and judging from the increasing number of IMF papers on the topic since 1996, more than a little concerned.

Alternatives

Its critique of funding, DC type schemes and of private management, leads the IMF to recommend (Heller, 1998, Hemming, 1998) that the World Bank's Pillar 2 should not be the dominant one in a pension system. Instead, it argues that "the principle source of old age support should arise from a *well-formulated public DB pillar.*"

That still leaves unanswered what is a well-formulated PAYG system. However, this is not that difficult to outline, and in substance there is considerable agreement between the IMF and the OECD on this. The following is a brief listing of recommended (by IMF, OECD) reforms to PAYG systems. Most of these have actually been implemented in OECD economies, and have had considerable success in reducing the size of the pensions problem, if not removing it altogether as in UK.

Both IMF and OECD (1998) agree that the main problem that demographic ageing poses for established is the change in ratio of workers to retirees as the population ages. The ultimate solution to this if contribution rates cannot be increased further, is to either reduce the size of transfers by reducing pension generosity, or to change the ratio of workers to retirees, so as to spread the burden over more people and raise overall economic output by increasing labour supply. Each of these approaches has limits – both political and economic. In practice, a combination of all these parametric reforms, introduced gradually and with a consensus building is likely to be the most effective, and viable. Where combinations of reforms have been introduced, they have been quite successful in making PAYG systems more sustainable

(e.g., United Kingdom, Sweden), although successive reforms may be necessary (e.g., USA after 1983).

Raising contribution rates

This only applies to contributory schemes. Where these exist, raising contribution rates clearly reduce the imbalance in a system. In practice, there are political and social limits to this, in addition to economic limits because of the incentives it creates for evasion or for leaving the formal sector. Very high contribution rates are associated with reduced employment, and in particular for low-wage labour and of workers with elastic labour supply elasticities. Raising rates may also be seen as unfair if it is mainly to benefit higher income retirees who live longer at the expense of the majority of lower income workers (Chand and Jaeger, 1996).

Although contribution rates in many OECD countries have been raised, the limits to this approach appear to have been reached in many. Given this reality, the emphasis has switched to other types of parametric reform (OECD, 1998).

Reducing average replacement rates

Three options generally exist. One is to reduce the average replacement rate in a discontinuous manner, lowering final pension benefits in one step. The second is to do so only for new workers. The third option is to lower the net replacement ratio by reducing accrual factors, in particular increasing the number of years of service required to achieve a given replacement rate. Combinations of all of these are possible.

IMF staff estimates, which are comparable with OECD estimates, indicate that if average replacement rates were reduced by 5% of equivalent salary, substantial improvements in pension imbalances would be achieved in most OECD economies, with complete elimination of contribution gaps in some countries such as the USA, UK and Sweden (Chand and Jaeger, 1996).

Modifying Indexation Provisions

Most public schemes formally index pensions, generally choosing between indexation to gross wages, net wages and inflation. Since gross wages don't reflect the taxes that workers are paying to support pensions, it would make sense for reasons of fairness to index to net wages and not gross wages. Generally, indexation to inflation results in a lower net replacement rate than with wages. However, caution must be attached to pure inflation indexation, as this leads to an erosion of replacement rates over the retirement of a pensioner in the context of positive labour productivity growth. IMF therefore suggests that pure inflation indexing may not be desirable in OECD economies, noting that a labour productivity growth rate of 2.5% implies a net 39% reduction in pension value for a retiree who lives 20 years. This problem of relative poverty over time would be much more significant in developing countries experiencing high growth. In their contexts, at least partial wage indexation may be necessary and desirable to prevent relative poverty (which is one of the key objectives of pensions in the first place).

Extending Retirement Ages

Demographically this is the most logical and promising. Problems arise because people are living longer, but continuing to retire at the same age, typically set in the 1950s or earlier in OECD. Extending retirement ages simultaneously increases the wage base and reduces net pension transfers. The USA is the most notable example of this, with its 1983 Social Security reforms which moved to extend retirement to 67 years for both sexes.

OECD and IMF estimates are that in OECD countries a simple extension of the retirement age to 67 for both sexes would reduce anticipated contribution gaps by more than two thirds, completely eliminating it in several, and in fact permitting reductions in some such as Italy (Chand and Jaeger, 1996, OECD, 1998).

OECD analysts report that extending retirement ages would through its effect on increased labour supply also increase long-run economic output and capital stock in developed countries.

Mix of Reforms

Both the OECD and IMF believe that a mix of these reforms will be sufficient to eliminate projected imbalances in OECD countries (OECD, 1998). They suggest that the exact mix depends on the specificities of the demographics and pensions system in individual countries. For countries with modest imbalances, simply raising contribution rates may be enough, or lowering replacement rates if these are particularly generous. Where retirement ages are low, increasing them would have a substantial impact. In all countries, increasing retirement ages would have the largest impact, and also have additional benefits in term of increased economic output.

Possible lessons for Sri Lanka

Sri Lanka currently faces two issues. One is continuing pressure from the World Bank to reduce its chronic fiscal deficit by converting the existing non-contributory, DB type Civil Servants Pension Scheme (CSPS) to a funded DC type scheme, and the generosity of the scheme itself. The second is that arrangements for other workers and individuals are inadequate or non-existent, implying that there will increasing pressure in future years for more direct government involvement and for more universal arrangements.

On the issue of using pensions reform as a fiscal deficit strategy, the evidence is quite clear that this is not a wise policy. The experience of Chile and others is that a fiscal surplus may be a necessary first step for this type of pensions reform, not the end goal. If the Sri Lankan government was to introduce such a change, it is likely as Diamond (1994, 1996) suggests to use the accumulated pension assets created to purchase government debt paying below market interest rates, thus defeating the whole objective of fiscal reduction.

The main design weakness of the CSPS system is not its funding basis. It displays several features which suggest parametric reform to be the most appropriate: (i) a high replacement rate of 80% of final wage, and (ii) a low retirement age of 55 years and 50 years for men and women with full pension receivable regardless of age after 30 years of service, and (iii) poor linkage between taking early retirement and the amount of pension benefit lost.

All these point to several possible options for reform, all of which are possible without changing the funding basis:

1. Increase the retirement age for civil servants from 55 and 50 years to 65 years, which is the norm in other countries with similar life expectancies, with the possibility of later increasing it to 67 years or more in line with international trends. As such a change would represent a major difference, it would have to be discussed to build support, and then introduced gradually after an appropriate waiting period with plenty of time for individuals to adjust. As these changes are substantial, options may need to be created to allow those who want to retire at the current ages do so, but with some loss in benefits, perhaps involving new benefits provided under a reform. The USA reforms of Social Security serve as a good model in this respect. For reasons of gender equality, unifying the retirement ages for both sexes should also be a priority, especially since Sri Lankan women live significantly longer than men, and give the high ratio of women in public service. Increasing retirement ages would also address the anticipated slow down in economic growth potential which is predicted on the basis of declining labour force growth.
2. Increase the length of service required for full pension from 30 to 45 years – again gradually and with a warning time. This may require changes to salary scales, perhaps, flattening annual increments.
3. Better link the taking of early retirement to final pension, with an actuarially determined reduction in replacement rate for every year of service less than the set limit to reflect the implied increase in costs.
4. The current system involves ad hoc inflation indexation, although full wage indexation has been recommended. Recognising that inflation indexation has significant disadvantages in rapidly growing economies, net wage indexation (partial or full) with a mechanism to ensure that annual adjustments are not subject to administrative discretion as now may be desirable, and even provide an incentive for workers to accept other reforms.
5. Converting the scheme from a non-contributory to a contributory basis, but with contributions being financed by the government and accruing as general revenue, would have some advantages in terms of better signalling to workers, without the macroeconomic distortions created by large pension funds. If such a mechanism was in place together with regular projections of the future nominal contribution rates, then there may be a place for some notional advance funding to better prepare for future increases in the dependency burden.

As all these changes involve large numbers of people in a democratic society, they could not be introduced without widespread debate to build understanding of the issues. In that sense political sustainability would not be served by hidden negotiations, which has characterised the process until recently.

Such a debate and reforms would also serve to set the stage for thinking about how pensions can be extended to the whole population, given that international experience suggests that that is inevitable. By reforming the CSPS into a sustainable PAYG DB system, policy makers would be able to create a model upon which to base the general revenue funded system which is the only option for achieving universal pensions coverage.

Bibliography

- Andrews, Gary R and Monique M. Hennink. 1992. *The circumstances and contributions of older people in three Asian countries: Preliminary results of a cross-national study*. Asia Pacific Population Journal. 6, 3.
- Barker, D.J.P. (Ed.) 1992. *Foetal and infant origins of adult disease*. London: British Medical Journal.
- Bauer, John G. 1995. How Japan and newly industrialized economies of Asia are responding to labour scarcity. *Asia - Pacific Population Research Reports* 3, (March). USA: East - West Center Program on Population.
- Becker, G.S. 1960. *An economic analysis of fertility*. In National Bureau of Economic Research, *Demographic and Economic Change in Developed Countries*. Princeton: Princeton University Press.
- Baillu, Jeanine, and Helmut Reisen. 1998. *Do funded pensions contribute to higher aggregate savings? A cross country analysis*. Ageing Working Paper AWP 5.1. Paris: OECD.
- Bloom, David E. and Jeffrey G. Williamson. 1998. *Demographic Transitions and Economic Miracles in Emerging Asia*. World Bank Economic Review. 12 (3).
- Caldwell, John C. 1982. *The Theory of Fertility Decline*.
- Chand, Sheetal K. and Albert Jaeger. 1996. *Aging Populations and Public Pensions Schemes*. Occasional Paper No. 147. Washington, DC: International Monetary Fund.
- Chen, Ai Ju and Gavin Jones. 1989. *Ageing in ASEAN: Its socio-economic consequences*. Singapore: Institute of Southeast Asian Studies.
- Department of Census and Statistics. 1995. *Sri Lanka Demographic and Health Survey 1993*. Colombo: Department of Census and Statistics.
- De Silva, Indralal. 1997. *Population Projections for Sri Lanka: 1991-2041*. Colombo: Institute of Policy Studies.
- Diamond, Peter. 1994. *Privatisation of Social Security: Lessons from Chile*. Revista de Análisis Económico. Vol. 9, No. 1. P. 21-33.
- Diamond, Peter . 1996. *Government Provision and Regulation of Economic Support in Old Age*. In Annual World Bank Conference on Development Economics 1995. Washington, DC: World Bank.
- Easterlin, R.A. 1980. *Birth and Fortune*. New York: Basic Books.
- Feachem, Richard J, et al. (Eds.) 1992. *The health of adults in the developing world*. Oxford: Oxford University Press.
- Financial Times. 1999. *What exactly is guaranteed by a guarantee?* Article by Christopher Brown-Humes. January 23/January 24 1999 weekend edition, p. 22. London: Financial Times.

- Fries, J.H. 1980. Aging, natural death and the compression of morbidity. *New England Journal of Medicine* 303, 3.
- Goodman, Roger, Gordon White and Huck-ju Kwon (Eds.). 1998. *The East Asian Welfare Model: Welfare Orientalism and the State*. London: Routledge.
- Heller, Peter S. 1997. *Aging in the Asian Tigers: Challenges for Fiscal Policy*. IMF Working Paper WP/97/143. Washington, DC: International Monetary Fund.
- Heller, Peter S. 1998. *Rethinking Public Pension Reform Initiatives*. IMF Working Paper WP/98/61. Washington, DC: International Monetary Fund.
- Hemming, Richard. 1998. *Should Public Pensions be Funded?* IMF Working Paper WP/98/35. Washington, DC: International Monetary Fund.
- Heller, Peter and Simon Symansky. 1997. *Implications for Savings of Aging in the Asian Tigers*. IMF Working Paper WP/97/143. Washington, DC: International Monetary Fund.
- Higgins, Mathew and Jeffrey G. Williamson. 1997. Age structure dynamics in Asia and dependence on foreign capital. *Population and Development Review* 23,2, (June).
- Hiroi, Yoshinori. 1996. Natural Increase and cost control. In *Containing health care costs in Japan*, Naoki Ikegami and John C. Campbell (eds.). Ann Arbor: The University of Michigan Press.
- Kohl, Richard and Paul O'Brian. 1998. *The Macroeconomic Implications of Ageing, Pensions and Savings: A Survey*. OECD Working Paper AWP 1.1. Paris: OECD.
- Leibfritz, Willi, Deborah Roseveare, Douglas Fore and Eckhard Wurzel. 1995. *Ageing populations, pension systems and government budgets: How do they affect saving?* Economic Department Working Paper 156. Paris: OECD.
- O'Connell, J. M. 1996. The relationship between health expenditures and the age structure of the population in OECD countries. *Health Economics*. 5,6:573-78.
- Office of National Cost Estimates. 1990. National health expenditures, 1988. *Health Care Financing Review*. 11,4:6.
- Ogawa, Naohiro and Robert D Retherford. 1994. *Care of the elderly in Japan: Changing norms and expectations*. NUPRI Reprint Series. Tokyo: Nihon University.
- _____. 1997. Shifting costs of caring for the elderly back to families in Japan. *Population and Development Review*, 23,1:59-94, March 1997.
- Organisation for Economic Co-operation and Development (OECD). 1996a. *Ageing in OECD countries. A critical policy challenge*. Social Policy Studies 20. Paris.
- _____. 1996b. *Caring for frail elderly people: Policies in evolution*. Social Policy Studies 19. Paris.
- Organisation for Economic Co-operation and Development (OECD). 1998. *Maintaining Prosperity in an Ageing Society*. Paris: OECD.
- Perera, P.D.A. 1989. *Emerging issues of population aging in Sri Lanka*. Bangkok: Economic and Social Commission for the Asia Pacific (ESCAP).

Rannan-Eliya, Ravi, Nishan de Mel, Easha Ramachandran and Dananjane Senagama. 1998. *Ageing and Pensions Study: Final Report*. Draft report prepared for UNDP/Colombo. Colombo: Institute of Policy Studies.

Sachs, Jeffrey D. and Felipe B. Larrain. *Macroeconomics in the global economy*. 1993. Prentice-Hall Inc.

Turner, Dave, Claude Giorno, Alain De Serres, Ann Vourc'h, and Pete Richardson. 1998. *The Macroeconomic Implications of Ageing in a Global Context*. OECD Working Paper AWP 1.2. Paris: OECD.

United Nations. 1998. *World Population Estimates and Projections. 1998 Revision*. New York: Population Division, Department of Economic and Social Affairs, United Nations.

IPS HPP Occasional Paper Series

<i>Number</i>	<i>Title</i>
1	Results of Private Health Insurance Study. <i>Ravi P. Rannan-Eliya and Nishan de Mel</i> . 1996
2	Results from the IPS/Harvard Public Opinion Poll on User Fees. <i>Ravi P. Rannan-Eliya</i> 1996
3	Analysis of Private Health Insurance in Sri Lanka: Findings and Policy Implications. <i>Ravi. P. Rannan-Eliya</i> 1997
4	Responses to Population Ageing: A Review of International Experience. <i>Ravi. P. Rannan-Eliya, Nishan de Mel, Easha Ramachandran and Danajanee Senagama</i> 1997
5	Ageing and Pensions. <i>Ravi. P. Rannan-Eliya, Nishan de Mel, Easha Ramachandran and Danajanee Senagama</i> . 1998
6	Unit Cost Analysis of Public and Private Health Facilities in Sri Lanka in 1992. <i>Aparnaa Somanathan</i> 1998
7	Framework for Developing Sri Lanka Health Expenditure Estimates using Health Accounting Approach. 1998 (Revised May 2000)
8	Review of international NHA approaches and proposed conceptual framework for Sri Lanka National Health Accounts. 1998 (Revised May 2000)
9	Provisional Functional Classification System for Domestic Health Accounts of Hong Kong SAR, People's Republic of China. 1998
10	Estimates of Domestic Health Expenditures 1989/90 to 1996/97, Hong Kong SAR, People's Republic of China. 1998.
11	Economic impacts of demographic ageing: with special emphasis on Sri Lanka and old-age income security. <i>Ravi P. Rannan-Eliya</i> 1999
12	Bangladesh Health Facility Efficiency Study Report. <i>Ravi P. Rannan-Eliya and Aparnaa Somanathan</i> . 1999
13	Expenditures for Reproductive Health Services in Egypt and Sri Lanka. <i>Ravi. P. Rannan-Eliya, Peter Berman, Eltigani E. Eltigani, Indralal de Silva, Aparnaa Somanathan, Varuni Sumathiratne</i> 2000
14	Estimation of Confidence Intervals for Estimates of National Health Expenditures derived from Health Accounting Studies. <i>Ravi. P. Rannan-Eliya and Aparnaa Somanathan</i> , 1999
15	WHO Fairness in Financing Study. Estimates for Sri Lanka 1995/96 using WHO Methodology. <i>Tamara Dorabawila, Suharshini De Silva, Jehan Mendis and Ravi P. Rannan-Eliya</i> . 2001