Sri Lanka
Addressing the Needs of an Aging Population

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Human Development Unit
South Asia Region

ABBREVIATIONS AND ACRONYMS

ADL	Activities of Daily Living
A/L	Advanced Level
CSPS	Civil Service Pension Scheme
DC	Defined Contribution
DCS	Department of Census and Statistics
DB	Defined Benefit
EPF	Employees' Provident Fund
ETF	Employees Trust Fund
GCE	General Certificate of Education
GDP	Gross Domestic Product
HIES	Household Income and Expenditure Survey
IADL	Instrumental Activities of Daily Living
IHD	Ischemic Heart Disease
IHP	Institute for Health Policy
ILO	International Labour Organization
LTTE	Liberation Tigers of Tamil Eelam
MOH	Ministry of Health
NCD	Non-Communicable Diseases
NGO	Non-Governmental Organization
OECD	Organization for Economic Cooperation and Development
O/L	Ordinary Level
SLAS	Sri Lanka Aging Study
SSB	Social Security Board
TEWA	Termination of Employment of Workman Act

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EXECUTIVE SUMMARY

I.   Background

1.   **In slightly more than two decades, Sri Lanka's population will grow to be as old as Europe or Japan's today, but its level of income will be much lower**. It would take a spectacular growth for Sri Lanka to catch up with developed countries' per capita level of income. Therefore, the traditional intergenerational systems in place today will have less time to adapt as the speed of the aging process will have been unprecedented in the industrial world. Without major changes, Sri Lanka will face this massive social challenge at a level of income and pension system coverage that is much below that of countries already at a similar stage in their demographic transitions. This study is about the key issues that will have to be addressed in order to successfully avert serious problems, or even crisis, as Sri Lanka's inevitable population aging unfolds.[1]

2.   **Sri Lanka faces serious challenges on several fronts in addressing the onset of rapid aging**. In developed countries, challenges of aging are associated primarily with the negative impact of aging on economic growth, and the need to plan for additional public and private outlays for old age income support and healthcare. In Sri Lanka, a developing country, these challenges are compounded by the fact that many old people, now and in the future, lack social security coverage and may therefore face poverty; that the effectiveness of traditional, family support of old people may be reduced; that many old people are deprived of choice, as they are forced to work late in their life and only retire because of health reasons; and that the health system may not be adequately focused to address the healthcare needs of elderly, and may be constrained by lack of resources and their inequitable distribution.

3.   **Developing an effective, coherent strategy to address population aging thus needs to concentrate on the following four key, interconnected challenges**:
- How to reinforce traditional family support to old people, the support confronted by formidable foes of demographic change and modernization? How to supplement it with formal systems without damaging the family support?
- How to improve formal old age income support programs? In particular, how to increase their coverage and ensure adequacy and sustainability? How to ensure that such a scheme would not "crowd out" other formal and informal support systems?
- How to improve healthcare and long-term care to support an aging population? How to orient health care towards the needs of old people, and facilitate continued improvements in healthy life expectancy amongst the old people? How to reorganize the system, including management of

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[1] Aware of the rapid aging process awaiting Sri Lanka, the National Secretariat for Elders (now part of the Ministry of Social Services and Social Welfare) in 2003-04 conducted a nationally representative survey of 11,663 persons (aged 60 years or more) and produced a rich report *National Survey of Elders* that provides the analysis of the survey (National Secretariat for Elders, 2004). The Sri Lankan government also recently introduced legislation mandating that adult children are responsible for the welfare of their elderly parents.

human resources, to strengthen its emphasis on primary health care, particularly the promotion and surveillance activities? How to improve the provision of long-term, institutional care of the frail, dependent old people?

- How to mitigate the slowdown of GDP growth when one of key production inputs – labor – will start shrinking in the coming years? In particular, how to promote longer working lives and improve employability of old workers, as well as improve labor market choices for those that are forced to continue working late in their lives?

4. **The four main chapters of this report focus on these four critical areas in turn**. Chapter 2 examines living arrangements, intergenerational transfers as well as the respect and authority old people enjoy. One of the biggest problems facing old people is lack of independent financial sources, so chapter 3 provides an analysis of formal income support programs including pensions and relevant safety net programs. Chapter 4 evaluates the health status of old people and how well placed the healthcare system is to cope with an aging population. Finally, Chapter 5 analyzes the implications of an aging labor force. These chapters are preceded by an overview chapter that presents demographic trends that have contributed to population aging and sketches a portrait of the current old people in Sri Lanka.

5. **While the report addresses the above four topics in separate chapters, it emphasizes their links and interrelated nature, confirming the need for an inter-sectoral, holistic approach**. For example, family support through co-residence and income transfers to the old people are both intricately linked to the performance of the pension system. Improvements in health conditions for older workers would allow many to continue earning and postpone retirement, which in turn, could ease the pressure on pension systems and on families with increasingly fewer working age adults having to care for and support each old people member of the household. Better health, income support and the ability to choose when to retire would all contribute to better intergenerational relations and attitudes towards the old people. Therefore, when implemented in conjunction, the proposed policy measures would reinforce each other and would have an effect greater than the sum of their parts.

6. The **report uses a variety of data sources, including a 2006 survey of old people in Sri Lanka**. International evidence has also been included where considered relevant. In some cases, as in Chapter 3 dealing with old age income support systems, the analysis also draws heavily from other studies, often produced by Sri Lankan researchers. In other cases, the report relies on original, unpublished data from a special aging survey conducted specifically for this report and available upon request (World Bank 2006 Sri Lanka Aging Survey – SLAS, the survey based on a representative sample of Sri Lankan old people). The report defines old people as individuals over 60 years of age.

II. Key Findings

7. **The demographic transition faced by Sri Lanka will be particularly dramatic**. Population aging is a universal phenomenon, but it looms particularly large for Sri Lanka: not only is its population among the oldest in the non-developed world, but Sri Lanka is also one of the fastest aging countries in the world. Sri Lanka's share of population over 60 years old in 2000 was 9.2 percent, which exceeded the average of all regions in the world except OECD countries, Eastern Europe and the former Soviet Union. Driven by low and declining fertility and increasing life expectancy, population projections show a record fast aging process, with the proportion of those aged 60 years or more reaching almost 30 percent by 2050, with especially rapid increasing of the share of the very old.

8. **Present socio-economic conditions of old people are not alarming, but some groups need special attention**. Most elderly—about 80 percent—live with their children, and rely on them for financial and in-kind support. This support is not all one way. The elderly also support their children,

through child care and other support. As the population ages, an increasing share of the elderly, particularly the very aged elderly, will be women. While poverty among elderly is much lower than for the population as a whole, the incidence of poverty among the very old women (widows) is higher, and will require focused attention. Workers in the formal sector withdraw from the labor market early because of mandatory retirement ages (and because they have access to pensions), while workers in the informal sector work longer and withdraw mostly because of ill health. The prevalence of non-communicable disease among the elderly is high, a result of risk factors (obesity, diet, etc.) and a legacy of malnutrition; and disability rates appear to have increased in the country.

9.   **The family is the main support of old people, but there are signs of emerging strains in the traditional support system**. As in other countries, elderly who receive pensions (or have other assets) receive less informal support, relieving the burden on poor families, but are more important in household decision making. The elderly are by and large satisfied with current arrangements and expect these to continue in the future (as do their children). Will these arrangements, including co-residence rates, decline, as they did in Korea, Japan and the US? Predictions are difficult, and expectations of family based support may not materialize (e.g., Japan). However, the report finds some signs that the traditional system is under strain. Primary caregivers, mainly women, who both work and care for both children and parents, including providing support for assisted living, report considerable stress in their lives. Despite being the last resort, institutionalization of elderly has reportedly increased. Many institutionalized elderly note that demanding working lives of their children and preference for living independently were responsible for their institutionalization. There is also some evidence that, as in higher income countries, those elderly who can afford to do so prefer to live alone with their spouse. As the dependency ratio increases with aging, the burden of care on primary care givers may increase significantly. Long-term care by the family for the elderly may decline as a result, putting pressure on the health care system. Alternatively, if families continue to provide care, this may well impose opportunity costs for care givers in terms of forgone labor market participation. Support to families taking care of an increasing number of elderly over a longer period of time through cost effective community based social care services and income support (pensions, safety nets) for the elderly, may be required. This option is largely non-existent in Sri Lanka today. Particular attention will be needed to ensure adequate safety nets and social care services are targeted to aged and widowed women who appear the most vulnerable population group among the elderly.

10.   **Formal old age income support systems have limited coverage, inadequate benefits and are financially unsustainable. Formal income support systems help workers smooth income over their lifetime**. Although Sri Lanka provides the most comprehensive social security system in South Asia, the coverage of current schemes is limited to minority of the working age population, the benefits are inadequate, and the financial sustainability of schemes questionable. First, pensions are received by less than one-fifth of the old people and only one-third of the labor force participates in pension scheme, with the vast majority of informal sector workers lacking coverage and considerable evasion among those in the formal sector. Second, civil servants are the only group that has reasonable levels of benefits and longevity insurance but costs may be unsustainable in the long run. The Employees' Provident Fund provides insufficient benefits due to low investment returns, a low pensionable age, and the lump sum payout that does not offer longevity insurance (for outliving one's savings). Fourth, population aging renders both formal and informal sector schemes fiscally unsustainable, or sustainable only if they pay inadequate pensions. Third, without means of transferring income from their working years in the informal sector to retirement, the elderly must rely on family support or very low benefits from the social assistance programs. The report indicates that elderly without income in old age have limited bargaining power in the household and very little influence over decisions that affect their lives. The aging of the population means that options to provide financially sustainable formal income support to complement family support will require considerably more attention.

11. **Health systems are not ready to address the needs of an aging population**. The coverage of Sri Lanka's health system is extensive. The country also has a strategy to address non-communicable disease-based on prevention, including the promotion of healthy lifestyles. However, risk factors noted above remain important (some are comparable or higher than in developed countries). The treatment of non-communicable disease is outdated and relies on under-financing and under-treatment of cases. It has not taken advantage of the emergence of less costly medication. Population aging may increase current outlays to meet future needs (in complement with improved efficiencies in the system). This report estimates that, given current trends and expenditure patterns, population aging itself may add up to 1 percent of GDP by 2050, not including health awareness and demand likely having as large an impact, increasing costs by additional 0.5-1.5 percent of GDP. Separately from measures trying to control the costs of services, public delivery systems are not suited to address the needs old people. Health systems do not provide continuous or integrated care for the elderly that allow systematic screening for illness or disability, and many elderly patients who require secondary prevention do not receive it. Evidence from developed countries shows that increase in elderly population, if accompanied by prevention and active care of non-communicable diseases (NCDs), need not increase the burden of disease. While there are some pilots in progress to address active aging, resources are scarce, and an overall strategy for health in the context of aging has not been developed.

12. **The number of working age population will decline and—all else equal—may reduce growth**. A vast majority of old workers are self-employed or casual workers engaged in the informal sector and work full-time: skilled workers in agriculture, manufacturing, and wholesale and retail trade. Few are unemployed. Older workers generally fall into two categories—those that work until very old age (or death—even in the family, caring for grandchildren) due to poverty and the lack of pension income, and those that stop working earlier than they would like due to poor health (especially casual workers and the self-employed) or rigidities in the labor market including early retirement ages (especially civil servants and regular workers in the formal private sector). Are there constraints to the employment of older workers? Wages for older workers are lower than for younger ones, indicating that wages are not a constraint to hiring older workers. While there is some evidence—consistent with findings in developed countries—that strict employment legislation may reduce hiring of old workers, it is not conclusive. In OECD countries, work stress (related to poor working conditions) and lack of training/skills are factors that may well reduce employment of older workers, and these may be important for Sri Lanka as well. Better understanding of these issues will be important for designing policies to foster employment of older workers as one measure to counter the decline in the labor force.

III. Key Policy Recommendations

13. **The aging of the population does not have to imply slow down in growth as long as measures are enacted to boost labor productivity, increase labor force participation, or both**. Aging also need not have a large impact on public spending of health and pension systems, or impose a huge burden on families if appropriate policy measures are taken in advance.2 The report suggests the following key policy actions that could help mitigate the potential adverse impact of aging in the country (see summary of policy recommendations in a table below). Given the interlinkage between these measures, the report recommends an integrated action plan focusing on these four areas for addressing aging in Sri Lanka.

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[2] While outside the scope of the study, the impact of population aging on education spending has two potentially offsetting effects. The declining size of school-age population is likely to reduce public spending on education. On the other hand, efforts to improve the quality of the system, the increased outreach efforts towards those who drop out early from the system, and the promotion of life-long learning, may raise public spending on education.

14.   **Supporting informal care arrangements**. To help sustain informal support, as well as to complement it with necessary additional components, the report suggests the following: First, introduce or expand social welfare and care services targeted to the most vulnerable, and provide community- and home-based support services for the sick and frail old people. Through such approaches, the country can reduce the demand for expensive institutional care, reduce burden on caregivers and enable the old people to continue to live in their home/community. Second, increase the capacity of nursing homes to care for old people. Although institutionalization is regarded as a last resort by old people, the demand for such facilities will rise in line with the reduced probability of the provision of support by children, increasing demands of formal sector employment, and, possibly, future changes in value systems. Finally, improve income support programs and health services (see below) to the old people so that they can continue to contribute to the household welfare. Such policies could ease the increased strain on multigenerational households arising from the decline in the ratio of working age members to the old people in the household, as well as the strain on the informal mechanisms created by modernization (see below).

15.   **Strengthening formal income support for elderly**. A coherent policy for income support for the old people would begin with a predetermined set of objectives for the two functions of the pension system – providing a minimum income and smoothing consumption. Other guiding principles include: (i) differentiation of benefit eligibility and benefit levels for old people under broader social assistance program, and improving targeting of the Samurdhi program to allow for higher average benefits; (ii) integrating the consumption smoothing schemes for private and public sector workers for full portability, and equalizing retirement ages and replacement rate targets. This includes the introduction of contributions for civil servants; (iii) integrating schemes for informal sector workers to ensure full portability while allowing for more flexible contribution levels and periodic payments under a unified recordkeeping platform; (iv) encouraging the expansion of coverage by fiscal incentives in the form of targeted matching contributions; (v) facilitating or mandating a shift from lump-sum payouts to income streams either through annuitization or scheduled withdrawals; and (vi) establishing an overarching investment policy framework that would shift funded schemes away from government bonds and towards more diversified portfolios (and therefore, higher risk-adjusted rates of return).

16.   **Re-orienting the health system to respond to an aging population** will require developing a health system that enables Sri Lankans at all ages to achieve healthy aging, minimizing the costs of the health system to the economy, and reducing out-of-pocket catastrophic health expenditure. To achieve these goals, the report provides detailed recommendations, including: (i) strengthening health promotion and prevention to reduce the potential years of life lost in premature mortality as well as to ensure better quality of remaining life in the old people; (ii) integrating management of primary prevention and primary care for the old people using the maternal and child health network of the Ministry of Health for geriatric assessment, prevention, and rehabilitation. If services are appropriately staffed and proper equipment is provided, management of chronic diseases at primary care level is more cost-effective than outpatient hospital care or inpatient care; (iii) expanding the health information system to deliver the information and evidence required to support and monitor the responses to aging; and (iv) promoting productivity change in public sector health service delivery, to contain the expenditure of the healthcare system, but increase public healthcare expenditures in line with current commitments to reduce the shift in patients demand to the more expensive private sector.

17.   **Countering labor force declines by improving employment, productivity, and choice**. In the light of the prospects of shrinking labor force, policy recommendations thus include actions to increase labor market supply, labor productivity, and the choices of old people:

•   First, *increasing participation rates*, particularly of women but also of old workers – those that are currently forced to retire early. To increase labor force participation of old workers, labor market rigidities should be reduced, including inflexible retirement ages that force healthy older workers

out of the formal labor markets before they would otherwise choose. These policies could effectively counter the effects of population aging on labor supply – for example, simulations show that the increase of women's participation rate by 20 percent could delay the reduction of labor force by 15 years. The introduction of family-friendly employment policies (including increasing part-time/flexible working opportunities) would also be helpful, as would complementary policies aimed at reducing their burden as primary care givers to old persons (see above). More work is needed to examine obstacles for employment of old workers (inflexible labor laws, etc.) and to determine whether have employers' negative perceptions about the adaptability and productivity of older workers create work disincentives for old workers, and how important an obstacle is weak employability of old workers – and if so, what should be done about it.

- Second, *improving the productivity of the labor force* would help in boosting economic growth, another factor countering the taxation effect of population aging on growth. While improving productivity requires action on several fronts, three suggested by this report include (i) improving skills of older workers to help them improve their employability, through investment in life long learning; (ii) promoting formalization of the economy – for example, upon making the labor market more flexible and less restrictive, so that workers could shift towards better, more productive jobs, and, at the same time, jobs that offer improved social security; and (iii) improving health outcomes for informal sector workers is a complementary policy would help them to increase their earning capacity, thus reinforcing the above recommendations in the area of health.

- Finally, *improving the choices of old workers*. Formal sector workers withdraw from the labor market early because of early retirement ages (and because they have access to pensions), while the lack of resources forces many informal sector workers to work much longer and withdraw from the labor market mostly because of ill health. Providing old people with an independent source of income would therefore significantly improve old peoples' choices, the fact underscoring the need to extend the coverage of old age income support systems.

18.   **Investing in a healthy and productive aging is essential for reducing the burden of aging in Sri Lanka**. The policies noted above will need to be finalized carefully, with involvement of several line ministries, given their inter-sectoral linkages, In most cases, these policy changes would have to be phased in gradually, and they would take several years or even decades to implement in any case. The fiscal costs of these policies will also need to be carefully analyzed to ensure their overall sustainability. Given the speed of the population aging over the next two decades, delays in action are likely to prove costly. In order to avert an aging crisis in Sri Lanka, preparations to address aging will have to begin sooner rather than later: **inaction is not a viable alternative**.

Summary of Policy Recommendations: Investing in Healthy and Productive Aging is Essential for Reducing the Burden of Population Aging in Sri Lanka

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Supporting and Complementing Informal Care Arrangements

- Introduce/expand social welfare and care services targeted to the most vulnerable.
- Provide community- and home-based support services for the sick and frail old people.
- Improve income support programs as well as health services to the old people so that they can continue to contribute to the household welfare.
- Increase the capacity of nursing homes to care for old people.

Strengthening Formal Old Age Income Support

- Determine key parameters of the system: the minimum income and the targeted replacement rate.
- Improve social assistance programs (including Samurdhi) delivery to old people by increasing benefit levels and tightening eligibility rules.
- Harmonize and integrate retirement schemes for private and public sector workers (above all, equalize retirement ages and replacement rate targets).
- Integrate schemes for informal sector workers to ensure full portability while allowing for more flexible contribution levels and periodic payments under a unified recordkeeping platform.
- Encourage the expansion of coverage by fiscal incentives such as targeted matching contributions.
- Facilitate or mandating a shift from lump-sum payouts to income streams either through annuitization or scheduled withdrawals.
- Establish an overarching investment policy framework that would shift funded schemes away from government bonds and towards more diversified portfolios.

Re-orienting the health system to respond to an aging population

- Strengthen health promotion and prevention to reduce the potential years of life lost in premature mortality and to ensure better quality of remaining life of old people.
- Integrate management of primary prevention and primary care for the old people using the maternal and child health network of the Ministry of Health for geriatric assessment, prevention, and rehabilitation.
- Expand the health information system to deliver the information and evidence required to support and monitor the responses to aging.
- Promote productivity change in public sector health service delivery, to contain the expenditure of the healthcare system, but increase public healthcare expenditures in line with current commitments to reduce the shift in patients demand to the more expensive private sector.

Countering labor force declines by improving employment, productivity, and choice

- Increase participation rates of old workers (as well as women and young workers) by adjusting inflexible retirement age rules and by stimulating part-time/flexible employment arrangements.
- Improve the productivity of the labor force by improving skills of older workers (life long learning); by promoting formalization of the economy (for example, less restrictive employment protection legislation would help workers to shift to better and more productive jobs that, at the same time, offer improved social security); and by improving health of workers.
- Enhance choice of old workers by making retirement rules more flexible; by providing old people – particularly those who are forced to work in their later years – with independent source of income; and by improving the health of workers so that they could stay employed if they wished.

1. DEMOGRAPHIC TRENDS, THE PROFILE OF OLD PEOPLE, AND THE EMERGING ISSUES

Population aging is a universal phenomenon, but it looms particularly large for Sri Lanka: not only is its population among the oldest in the non-developed world, but Sri Lanka is also one of the fastest aging countries in the world. Sri Lanka's share of population over 60 years old in 2000 was 9.2 percent, which exceeded the average of all regions in the world except OECD countries, Eastern Europe and the former Soviet Union (Figure 1.1). And population projections show a record aging of population: in 2050, the share of Sri Lankan population over 60 years old is projected to reach 28.5 percent, an increase in comparison to 2000 matched by very few countries.3

Figure 1.1: Demographic aging, Sri Lanka and world regional averages (percentage of population over 60 years old, 2000-2050)
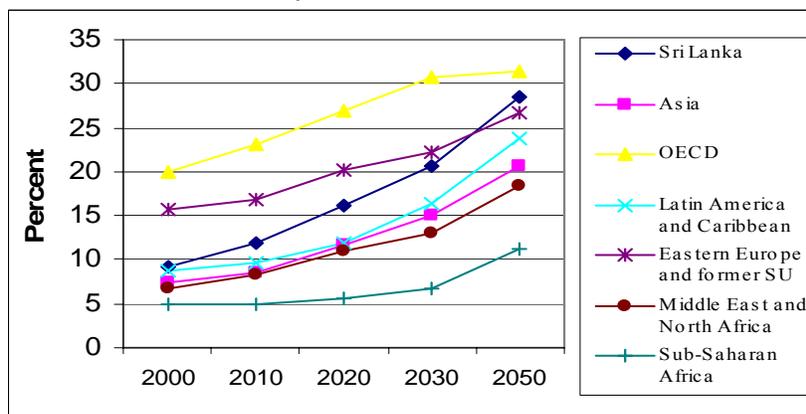
Source: De Silva (2007), for Sri Lanka; World Bank (1994), for other

1.1 **This chapter probes into the demographic factors that explain the aging of Sri Lanka's population, and sets out the broad challenges confronting the country**. Its first section details the demographic challenge faced by Sri Lanka by summarizing the future demographic trends and discussing its two main drivers: falling fertility and increasing longevity. The next section sketches a portrait of the current population of old people in Sri Lanka, summarizing their social characteristics and reviewing their socio-economic conditions. Based on these building blocks, the third section highlights the key challenges emerging in each of the four areas focused upon by the report: informal support for old people, old age income support, healthcare of old people, and the labor market. The annex to the chapter provides a description of the World Bank 2006 Sri Lanka Aging Survey, a special aging survey conducted specifically for this report.

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[3] One of the few countries with a similar projected increase of the share of old people is China – a country where government has been actively involved in limiting the number of children families may have and where UN projections show an increase from 10.1 percent in 2000 to 31.1% in 2050.

A. DEMOGRAPHIC TRENDS

1.2 **Sri Lanka's population was enumerated at 18.7 million in the 2001 census, and will increase modestly to 21-23 million by 2020-2030, before beginning to decline** (de Silva, 2007). Projections show that the era of continuous population growth will soon be in the past. Sri Lanka will experience a contracting population from the fourth decade onwards (Figure 1.2), comparable to the situation in Japan today, assuming fertility rates continue at low levels (Figure 1.3, see discussion below) and in the absence of substantial inward migration.

1.3 **The main driver of the slowing momentum of population growth has been rapid fertility decline since the 1950s**. The total fertility rate (the number of children that the average woman will bear during her lifetime) fell below the replacement level of 2.1 by 1994. It has continued to fall, reaching 1.7-1.9 currently, paralleling experience in several countries of East Asia (Japan, Korea, Taiwan, Thailand), and it is already lower than in certain developed countries with high birth rates, such as the USA.

1.4 **Increasing life expectancy is the next most important driver of Sri Lanka's population aging, with life expectancy already higher than in some OECD economies**. Sri Lankans are living longer, helped by investments in human development—health and education, resulting in an increasing proportion of Sri Lankans living to an advanced age. On present trends, life expectancy will reach the current average OECD level of 77.8 years by 2050 (OECD, 2005). However, a critical aspect of life expectancy trends in Sri Lanka is that male adult life expectancy has stagnated since the 1970s, even whilst female life expectancy has rapidly increased. The population projections assume that in future male life expectancy will keep pace with improvements in female life expectancy (Figure 1.44), but if it does not, the old people will be even more a predominantly female population than they are set to be already.

1.5 **Central to Sri Lanka's demographic aging will be an increase in the share of the old people in the population, with an increase in the proportion of the old people who are very old**. The share of the population aged 60 years and more will increase from 11% currently to 16% in 2020 and 29% by 2050, before peaking at 34% in 2080. At the same time, there will be a process of aging of the old people, as the oldest old people aged more than 80 years, who are the ones most likely to be frail and dependent, will increase from one tenth of the old people population to almost one third. By 2050, the 80+ year age group will account for more than 5% of the overall national population (Figure 1.5).

1.6 **The increase in the numbers of old people and reductions in the youngest age groups will change Sri Lanka's age structure** from the pyramidal structure typical of most developing countries to a flat pillar shape similar to that evolving in the most developed countries today (Table 1.6). This process will largely be complete by 2050. What can also be foreseen is that because of the decline of the fertility rate below replacement level in the early 1990s, there each age cohort born after the late 1990s may be smaller than the preceding one, resulting in a narrowing at the base of the age structure, which is already apparent today

Figure 1.2: Sri Lanka's population, 2001-2100
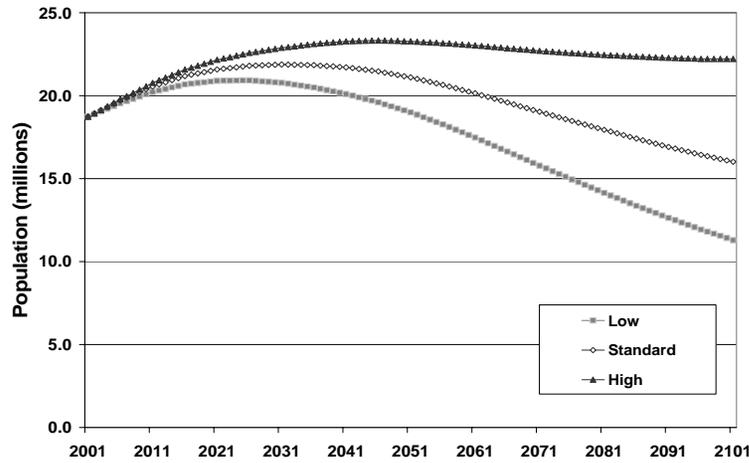
Figure 1.3: Projected trends in total fertility, Sri Lanka 2001-2100
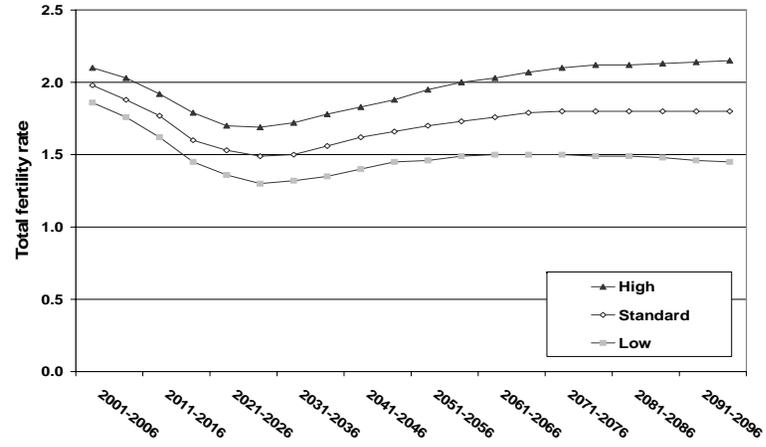
Figure 1.4: Projected trends in life expectancy by sex, Sri Lanka 2001-2100
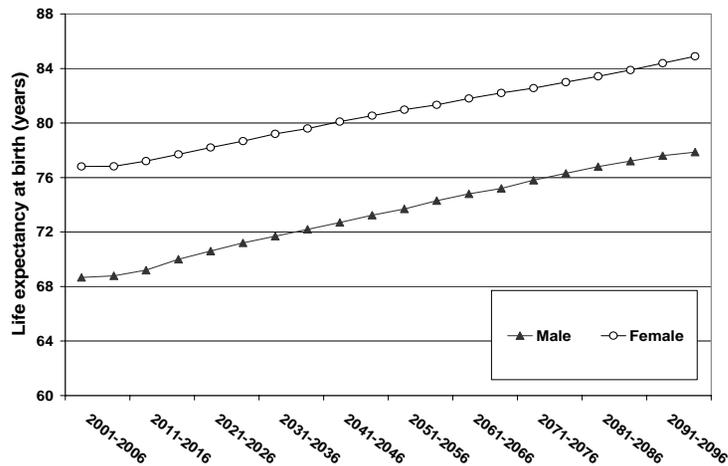
Note: Life expectancy assumptions in the mid-range standard projection

Figure 1.5: Share of the old people age groups, Sri Lanka 2001-2100

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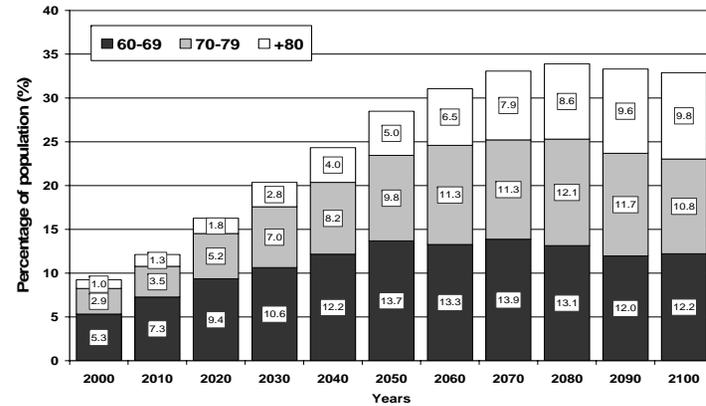
Figure 1.6: Changes in age structure of Sri Lanka's population 2007-2075

2007

2050

2025

2075
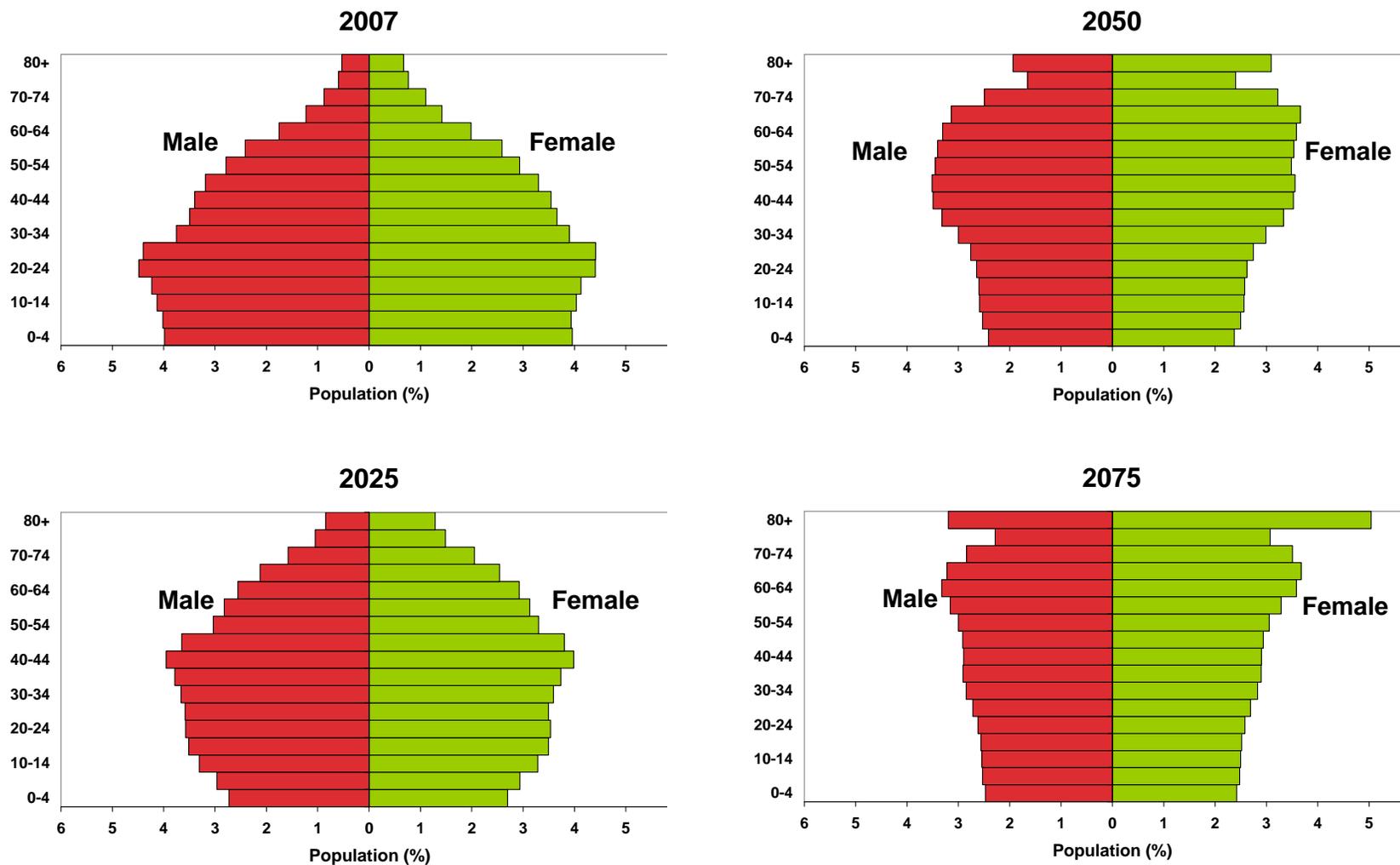
Source: De Silva (2007)

1.7   **These changes will result in a rapid increase in the dependency ratio starting in slightly over a decade (from 2020)**. Although the old age dependency ratio (proportion of population aged 60 years or more versus the proportion aged 15-59 years) has been increasing in recent decades, there has been a corresponding fall in the child dependency ratio (proportion of population aged less than 15 years versus the proportion aged 15-59 years). The two trends will roughly balance until 2025, implying that some of the increase in social costs in aging might be met by savings in the need for investments in children. However, from 2025, the total dependency rate will begin to increase rapidly from 55% to reach more than 75% by the middle of the century (Figure 1.71.7). This change in the dependency ratio has important implications for policies as noted below.

Figure 1.7: Trends in dependency ratios, Sri Lanka 2001-2101
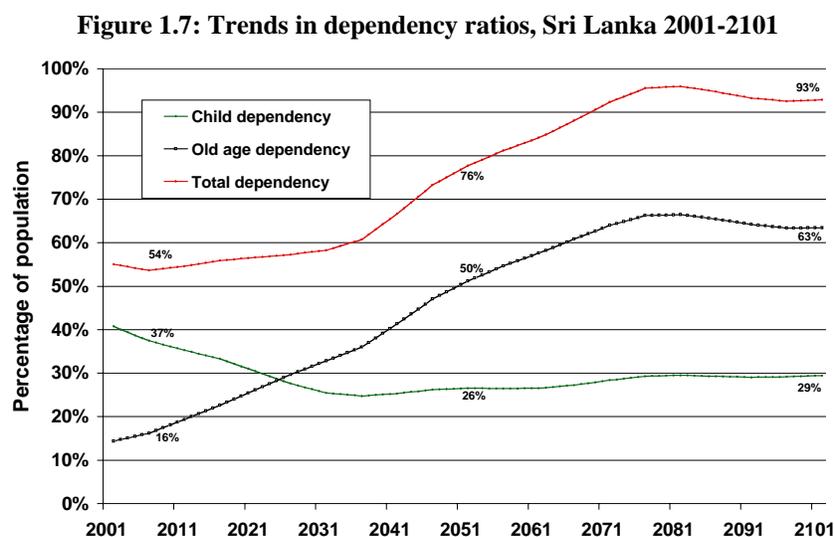
Source: De Silva (2007)

Forecasting the Future Fertility Trend

1.8   **The future fertility trend is the most difficult to forecast**. The population projections used in this study, De Silva (2007), assume that fertility will continue to fall for the next two decades to a forecast range of 1.3–1.7, before beginning to recover upwards to reach a range of 1.5–2.1 towards the end of the century (Figure 1.3: 3). However, this is inherently speculative, and the recent experience of European and Asian societies shows that fertility has continued to fall to previously unimaginable levels of 1.3-1.4, but in only some has there been a rebound to higher levels. Even in the latter, fertility has rarely reached replacement level.

1.9   **The phenomenon of low fertility (below replacement level) is a recent phenomenon, which started in Europe at the end of the 1960s, but is now most marked in advanced East Asian economies**. Almost thirty countries have what are termed "very low fertility" rates, defined as less than 1.5 births per woman. Although declining fertility was originally seen as a common feature of advanced industrialized nations, it has become increasingly clear that very low fertility is not universal in all high-income economies, and that there are clear differences between countries. In particular, very low and persistent fertility is a particular feature of two groups of countries (Figure 1.81.8): (i) predominantly Catholic, southern European nations such as Spain and Italy, and (ii) East Asian societies such as Japan, Korea, Taiwan, Hong Kong SAR and Singapore. In these societies fertility has continued to fall to about 1.3, and has dipped below 1.2 in some (Korea, Taiwan, Singapore).

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Figure 1.8: Fertility trends in low fertility countries and Sri Lanka
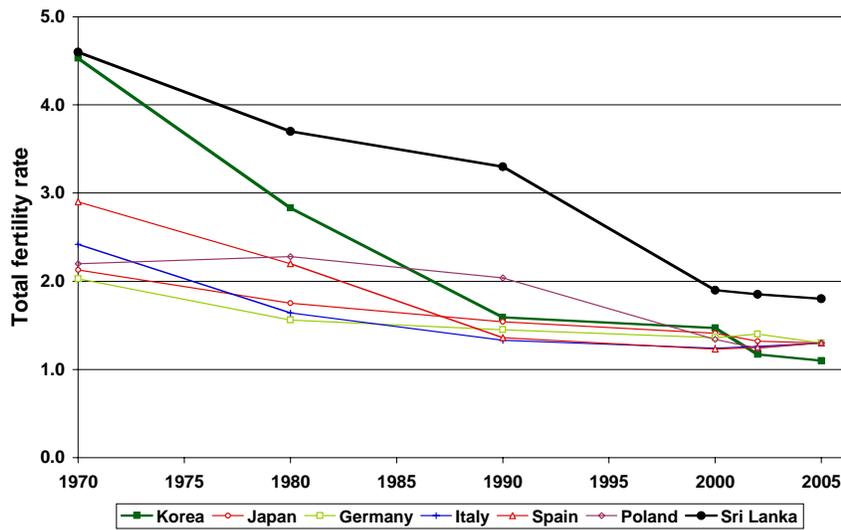
Source: Cho (2006)

1.10 **There are reasons to anticipate that fertility in Sri Lanka may follow a similar trajectory to East Asian countries, such as Korea and Japan**. In developed countries, fertility decline has been driven partly by the availability of contraception, and changing norms about the ideal number of children. In addition, socio-economic changes, such as increasing education of women and increased female labor force participation, have led to increased age at marriage and reduced marital fertility. These factors have also been present in Sri Lanka. However, in some OECD countries, such as UK, France and USA, this has been accompanied by dramatic changes in social norms, which can be termed a sexual revolution, in which child-birth outside marriage has become common, and in some cases accounts for half of all births (Cho, 2006). In the very low fertility OECD economies, such as Korea, Japan and Spain, social norms have not changed in this way, and the marital fertility rate has dominated fertility decline. It is also thought that the strong antenatal policies pursued by Asian governments in the 1970s may have inculcated today's younger adults with norms encouraging low fertility. Given that social norms in Sri Lanka may be more akin in these respects to Korea and Japan than they are to the USA and UK, it is possible that as the economy develops fertility will fall to and persist at levels as low as they are now in these Asian countries. In summary, **there exists considerable uncertainty over the future trend in fertility, because global experience of such low fertility levels is limited to the past few decades and a few countries**.

B. SOCIO-ECONOMIC CHARACTERISTICS OF OLD PEOPLE

1.11 To understand how population aging will affect future generations of old people and economic growth in general, it is useful to review key socio-economic characteristics and conditions of the current generation of old people in Sri Lanka.

1.12 *Gender composition and marital status*. Among old people, there is a large share of women and widows. The old people aged over 60 years numbered 2.1 million in 2006, representing 10.6 percent of the population, The female share of the old people is higher than male, owing to the increased life expectancy of women compared to men since the 1960s. The female share increases with advancing age, from 53% in the 60-64 year age group, to 60 % in the 70-74 year age group to almost 70% in those aged

over ninety years (Figure 1.9). At the same time, the likelihood of being a widow also increases with age, so that the majority (66%) of the oldest old people (>80 years) are widowed, compared with only 29% of the young old people (Figure 1.101.10).

Figure 1.9: Numbers of old people by sex and age, 2006
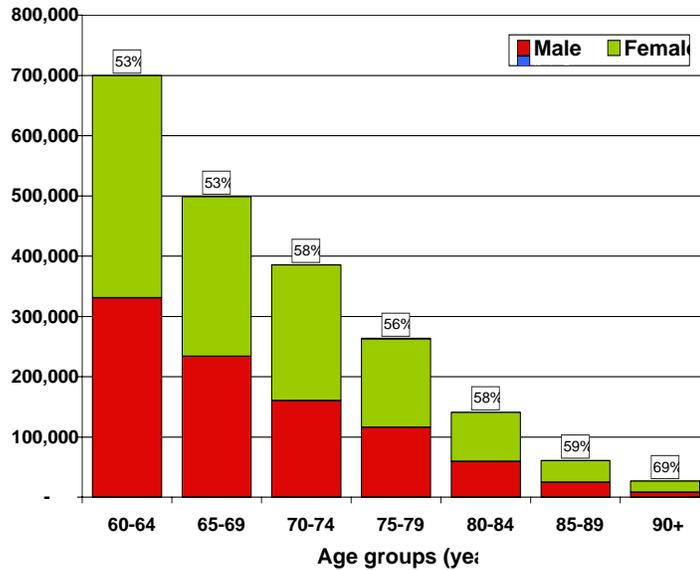
Source: Estimated using results of: World Bank 2006 Sri Lanka Aging Survey and de Silva (2007).
Note: Percentages indicate percentage of each age group that is female.

Figure 1.10: Marital status of old people, 2006
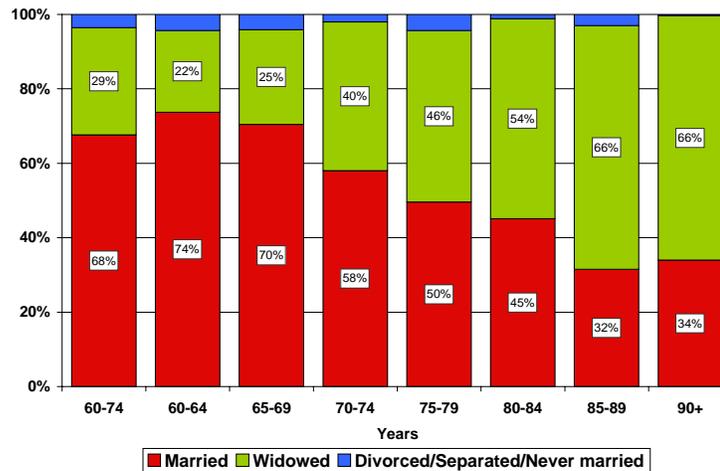
Source: World Bank 2006 Sri Lanka Aging Survey (2007).

1.13   *Residence*. As in most developing countries co-residence rates are high in Sri Lanka. Almost 80 percent of old people live with their children, and many rely on their children for financial and other support. Only 6 percent of elderly live alone. Most elderly also reside in rural areas and in the more developed regions of the country. According to the results of the SLAS, 80 percent of the old people lived in rural areas, compared with 13 percent in urban areas and 6 percent in the estate sector. The results of the 2001 national census indicate that the old people share is highest in Western (9.9%) and Southern

Provinces (11.2%), and lowest in North-Central Province (6.5%) and Uva (7.4%). The explanations for this pattern may lie in the higher fertility levels seen in the poorer provinces and possibly in the higher life expectancy of those living in the more developed areas.

1.14   *Poverty profile*. Poverty does not affect old people disproportionately more than the population as a whole, but the incidence of poverty among the very old is large, and it affects more old women than men. According to 2002 data form the household income and expenditure survey, the total rate of poverty in Sri Lanka was 22.7 percent, and among the old the poverty rate was significantly below that and only for the people older than 85 it approached the national average (Figure 1.11).4 In contrast, the poverty rate among the young was above the national average, and for the group of 5-14 olds it amounted to 30.8 percent. According to Gamiratne et al, (2004), old women are more likely to be poor than old men – women aged 70-79 were about 5 percentage points more likely to be poor than men in that age group (interestingly, the poverty statistics for 60-69 year olds were about the same for men and women). Note that the above results assume that resources are shared equally within the household, irrespective of gender and age, and that some empirical studies have found that men tend to consume more their a proportional share.

Figure 1.11: Poverty incidence by age groups (2002)
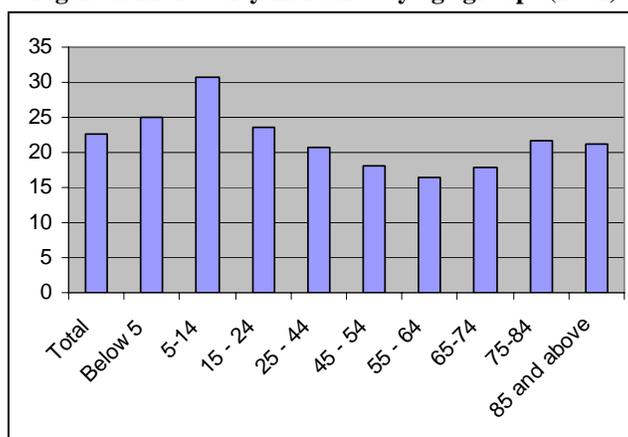
Source: Own computations, based on HIES 2002.

1.15   *Health profile*. **Overall health indicators for Sri Lanka's population are better than for almost all low and low-middle-income countries**, with life expectancy and mortality rates comparable to some of the poorer OECD countries. However, overall positive life expectancy trends mask important differences in gender. Female adult life expectancy has continued to increase, but male older adult life expectancy has largely stagnated, resulting in men living eight years on average less than women. The failure to improve older adult mortality has been due primarily to increasing mortality in older adults from non-communicable disease, particularly ischemic heart disease (IHD), strokes and diabetes. Also worrisome, the disability rates in the old people in Sri Lanka are not declining, as they are in most developed countries. The rates of blindness, and disability in limbs, hearing and speaking generally rose in Sri Lanka (but blindness in the young old people decreased)5. Thus, as in all countries, old people are

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[4] It has to be emphasized that a similar poverty profile by age cohort emerges even if poverty rates are calculated by adjusting household income per capita for the age composition of families (Gaminiratne et al, 2004). Poverty is based on an absolute poverty line of Rs. 1,423, corresponding to the per-capita consumption expenditure providing nutritional intake of 2030 kilocalories (Department of Census and Statistics 2004).
[5] Though somewhat contrary to this finding, the self-assessed health ratings of old people did not change between 1991 and 2006.

more likely to suffer from a chronic illness, and more likely to be disabled than the young. (See also chapter 4.)

1.16 *Labor market profile*. **In comparison to other countries in the region, fewer Sri Lankans over 60 years of age participate in the labor force** (but participation rates of old persons in Sri Lanka exceed those in developed countries). For both men and women, labor force participation rates have remained largely constant since late 1990s. A vast majority of old workers are self-employed or casual workers engaged in the informal sector, where both men and women are working mostly as skilled workers, in full-time jobs in agriculture, manufacturing, and wholesale and retail trade. Unemployment among the elderly is very low (relative to young people). The labor market duality in Sri Lanka (a small well protected formal sector co-existing with a large un-protected informal sector) carries over to old age and importantly determines the fate of old people: the majority of formal sector workers in public and private sector retire early, most of them before they reach 60, and for work-related reasons (including mandatory retirement); in contrast, a large share of self-employed and casual workers continues to work full-time into very old ages, perhaps longer than they would wish, and most of them withdraw from employment for health reasons. (See also chapter 5.)

C. EMERGING ISSUES

1.17 Above we showed that Sri Lanka's population will age rapidly in the decades to come, partly because Sri Lanka is becoming a victim of its own success—what implications does this predicament have for economic growth, public and private outlays for old age income support and healthcare, as well as for the fight against poverty, both among young and old?

1.18 **Will rapid aging and modernization put a strain on the traditional family support to old people**? The modernization of Asian societies is associated by several mechanisms that affect family support of old persons, and they may apply to Sri Lanka as well (Cowgill and Holmes 1972, Hermalin 2002, Martin and Kinsella 1994, and World Bank 1994): (i) lower fertility translates into fewer children available to provide familial support higher rates of non-marriage; (ii) higher education levels increase the information gap between old parents and children, which may lead to differences in attitudes and perceptions of obligations to provide familial support; (iii) increased female labor force participation decreases the number of caregivers available to provide support to older family members; and (iv) rural-urban migration is drawing younger persons out of rural areas and into urban areas to find employment. While modernization is affecting Asian societies in different ways, these studies show that there is evidence of declining levels of familial support in some Asian countries (including China, India, as well as more developed countries such as Japan and South Korea). Sri Lanka will face the challenge of how to reinforce traditional family support to old people and how supplement it with formal systems without damaging the family support. (These issues are taken up in Chapter 2.)

1.19 **Sri Lanka provides the most comprehensive social security system in South Asia, but will this system be ready to support an increased elderly population**? As the ratio of old people to working age persons grows, the problems of low coverage, inadequate pensions and a growing pension liability—all characteristics of the current pension system—will weigh heavily on society, potentially straining intergenerational relations. How to modify existing pension systems to improve their fiscal sustainability in the face of aging workforce? Will the country be in a position to take advantage of new initiatives to expand sustainable coverage and provide greater protection for the poorest elderly, including widows? Such approaches are particularly attractive because it may be increasingly difficult for families in the lower part of the income distribution to cope with the tradeoffs that arise in joint family structures, and especially households with more dependent members, children, disabled and old people may end up in poverty. (These issues are taken up in Chapter 3.)

1.20	**Sri Lanka also provides universal health care to its population, but how to adapt this system to caring for an increasingly old population**? Specific issues that will confront the health system include: How to improve healthcare and long-term care to support an aging population? How to orient health care towards the needs of old people, and facilitate continued improvements in healthy life expectancy amongst the old people? How to reorganize the system, including management of human resources, to strengthen its emphasis on primary health care and to rationalize treatment of NCDs and the elderly? How to improve the provision of long-term, institutional care of the frail, dependent old people? (These issues are taken up in Chapter 4.)

1.21	**How to mitigate the slowdown of GDP growth, as population aging will translate into a contraction of labor force**? Projections show that Sri Lankan labor force will continue to grow for another two decades, and it will shrink thereafter in a foreseeable future (calculations show that labor force will stop growing around 2030, and will thereafter start to shrink, dropping to the current size of the labor force in about 30 years – see Chapter 5). Population aging will also significantly change the age composition of the labor force, with the share of workers younger than 30 years significantly shrinking and the share of those older than 50 years strongly increasing. The challenge in the area of labor market will thus be to counter the shrinking of the labor force resulting from the aging of population – indeed, projections show that it will take 7 percent per annum growth to reach Japan's income at the same point in its aging process (Figure 1.12). Faced with the prospect of shrinking and older workforce, will Sri Lanka be able to sustain solid GDP growth? The key questions that need to be addressed are: How to promote higher worker productivity? How to prolong working lives – and options of employment for old workers? How to improve employability of old workers? (These issues are taken up in Chapter 5.)

Figure 1.12: Comparison of needed rate of GDP per capita growth to catch up with Japan at the same point of population aging and historical growth record, Sri Lanka and regional comparators
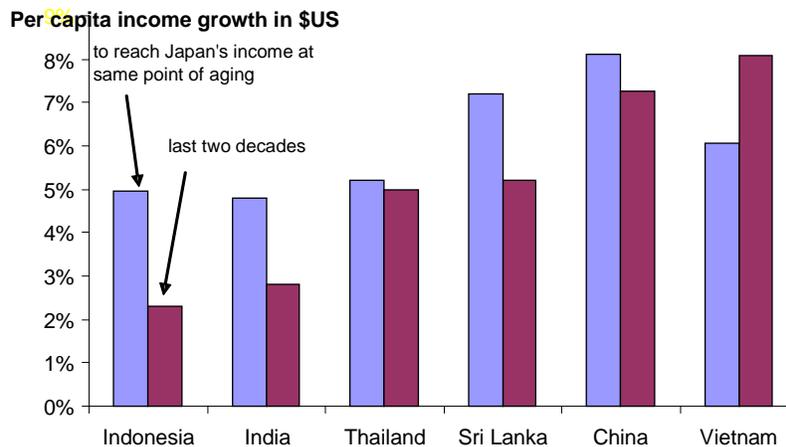
Source: Palacios (forthcoming).

For the purposes of this report, a special aging survey – the World Bank 2006 Sri Lanka Aging Survey (SLAS) was administered. The survey is based on a representative sample of 2,413 Sri Lankan old people (persons 60 years old or above).

Sampling Process

The Sample Survey Division of the Department of Census and Statistics designed the sample framework. The sample process consisted of the following steps:
- Selection of targeted population (people in the age bracket 60+). Targeted population was estimated to be 9.2 percent of the total population (around 1.5 million).
- Selection of districts. North-Eastern provinces were excluded, and among other districts, 13 districts were covered out of the 17 districts (districts with escalating tensions arousing from the ethnic conflict were excluded – see below the selection of districts).
- Random selection of 260 Primary Sampling Units (PSU), based on the 2001 census of housing and population framework in the urban, rural and the estate sector.
- Obtaining basic personal information on household members in all households in selected PSU ("listing exercise").
- Random selection of secondary sampling units (households), based on completed the listing results, by DCS. In each PSU, 10 households (Secondary Sampling Units) were selected.

The listing exercise started in October 2005 and was completed by the end of December 2005. The following table present 260 PSU listing results at aggregate levels.

	Total number of HH	60-74 yrs households	75 + yrs households	Above 60 yrs. households
Number of households	14,080	3,616	1,164	4,780
Average number of households	54	14	4	18

Field work

The field work commenced in February 2006 and was completed in April 2006. There were up to three interviews in each household: (i) with the selected old person; (ii) with one adult child (15+) – every second surveyed household; and (iii) with the household head or the most knowledgeable person.6 In addition, a community-level questionnaire was administered to the Grama Niladhari (village head) corresponding to the PSUs chosen. On an average, each interview took about one and a half hours to complete. In exceptional cases (including, for example, impaired hearing and reading ability), interviews were lengthier and were broken down to several parts. Sometimes proxies were utilized for answering questions.

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[6] Should the Head of the Household not be available, the housewife or a person most knowledgeable about household matters, income and expenses was interviewed

The detailed breakdown by district of the sample is as follows:

	Household	Elders	Adult Child	Community
Colombo	249	289	77	30
Gampaha	257	277	65	30
Kalutara	192	217	70	22
Kandy	192	218	58	23
Nuwara- Eliya	108	131	36	15
Galle	176	203	44	22
Matara	168	208	65	20
Kurunegala	205	233	47	25
Puttlam	123	131	19	15
Anuradhapura	117	140	33	15
Badulla	96	107	26	14
Monaragala	65	67	22	10
Ratnapura	167	192	47	19
Total	2,115	2,413	609	260

2. INFORMAL SUPPORT SYSTEMS

This chapter focuses on living arrangements of old people and intergenerational transfers with which they are involved, and briefly discusses formal care of the elderly. It uses evidence from Sri Lanka and other countries to assess how these arrangements may change with population aging, and the implications for policy. The structure of the chapter is as follows. The first section analyzes the living arrangements of old people, examining the levels and determinants of co-residence, and the preferences of Sri Lankan elderly concerning living arrangements. The second section examines the types of intergenerational transfers in kind support that occur within Sri Lankan families, including caring for the elderly requiring assisted living. The role of old people in the family, investigating the respect and authority enjoyed by old people is reviewed in the third section. Future expectations of support are discussed in the fourth section, while fifth section discusses formal support arrangements. The chapter concludes by summarizing policy implications.

A.   LIVING ARRANGEMENTS

2.1   **The majority of Sri Lankan elderly live with their children—only 6 percent live alone**. As shown in Table A2.1, about 77 percent of elderly live with their children in either of two arrangements: with their spouse and children (40 percent) or only with their children (37 percent). Those elderly who do not co-reside with their children live either with their spouse (10 percent), alone (6 percent) or in other arrangements (4 percent). The share of Sri Lankan elderly co-resident with at least one child is higher than in the Philippines (70 percent), Thailand (71 percent) and Taiwan (69 percent), but is lower than for Singapore (85 percent – see Table A2.2).

Living without children

2.2   **Elderly who live with their 'spouse only' comprise younger, well educated and the better off among the elderly population** (Table A2.1). This profile is similar to that of the elderly who live with their spouse and their children and suggests that more educated (and therefore wealthier) elderly may prefer to live alone. Together with the evidence on living with children (see below), these results are suggestive of a life cycle effect for co-residence. When relative younger, elderly live with their spouse or spouse and child. As they age, lose their spouse (generally male, given longer life expectancy for women), and can no longer support themselves, they transition to co-residence with their children.7 It is important to note, however, that decisions to co-reside may also reflect the preferences of children. In Indonesia, Beard and Kunharibowo (2001) find that the needs of younger generation rather than preferences of older persons drive decisions to co-reside.

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7 This inference on time trends is from cross-section data and needs therefore to be interpreted with care.

Living with children

2.3   **Elderly who live only with their children comprise the more aged, widows, and those with less education** (Figure 2.1). These elderly comprise a high share of those who never worked, widows, and those with somewhat worse health status (Table A2.1). In contrast, old individuals who live with their children and spouse comprise younger, healthier, more educated, and still working elderly (children in these households may still not have left home).   Multivariate regressions confirm that these characteristics significantly increase the probability of living in either arrangement respectively (Table A2.3).

Figure 2.1: Living arrangement of old people by age, gender, and education
(a) By age

(b) By gender
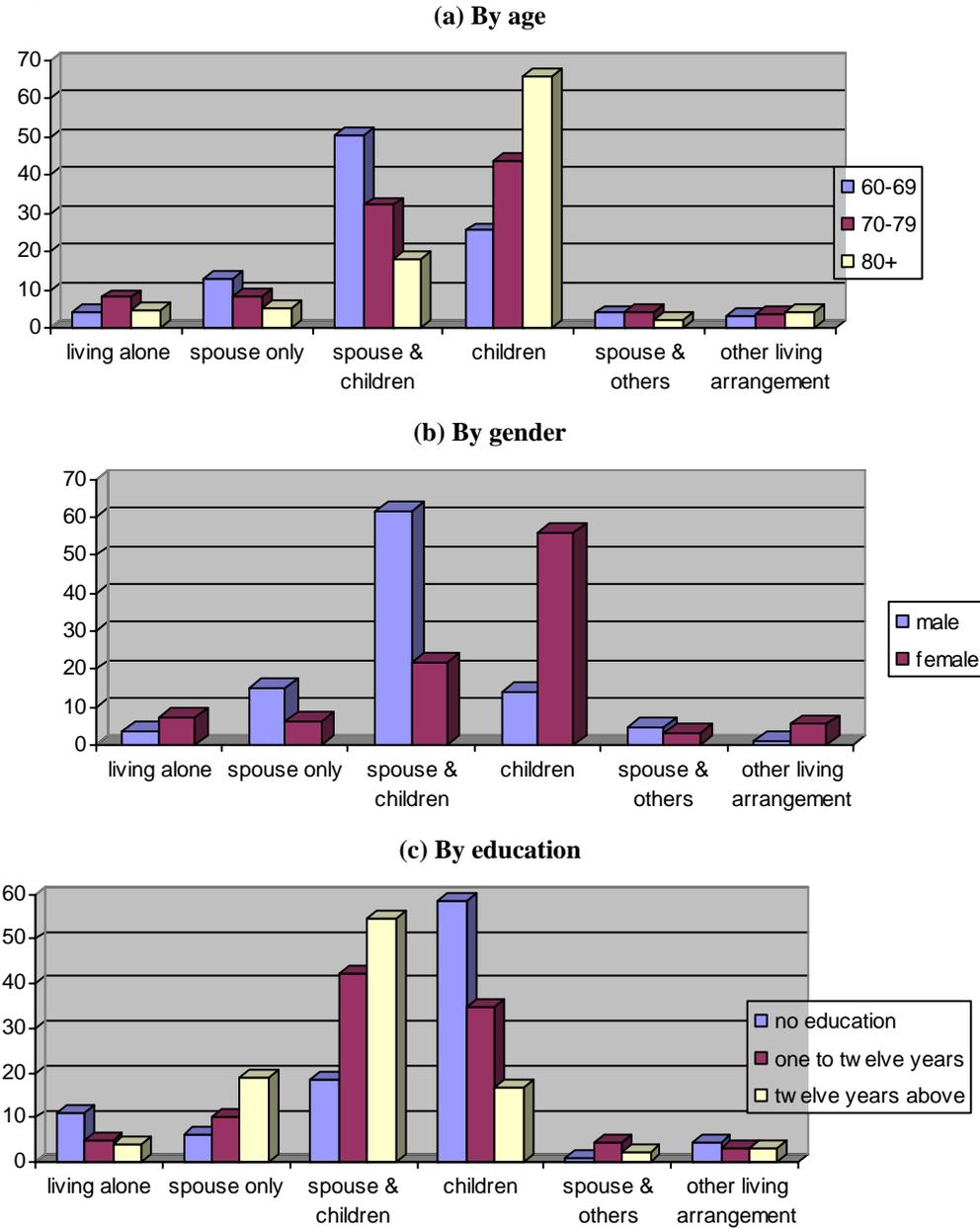
(c) By education

Source: World Bank 2006 Sri Lanka Aging Survey (2007)

2.4   **Similarly, elderly who live completely alone comprise a large share of older widowed women, with little education**. Seventy five percent of elderly living alone are women, about two thirds are 70+, and a similar proportion is widowed (Table A2.4). Most have between 1-12+ years of education. Given advanced ages, and limited labor force participation among women, most are retired or those who have never worked and most report their income as inadequate. These elderly rate their health as fair/poor (vs. excellent, very good), with about two-thirds reporting mobility problems, or the presence of at least one chronic illness.

2.5   **Among those living alone, women appear to more vulnerable than men**. A much higher share of women living alone in Sri Lanka is widowed, has less education (and income) and reports worse health status than men (Table A2.4). This evidence is consistent with the characteristics of older women found in other Asian countries. Older women have worse health indicators than men. About half of all females aged 80 and above in Taiwan had difficulties performing at least one activity of daily living (ADL) and one instrumental activity of daily living (IADL) compared to 33 percent of elderly men (Bartlett and Wu, 2000). Older women (current cohort) are less educated), and consequently have lower income. For example, in Malaysia, 67 percent of older females have no formal education, compared to only 31 percent of older males (Tan and Ng, 2000). Older women are also less likely to be working or to have worked. In Indonesia, only 42 percent of older women (above 60) were working as compared to 65 percent of older men (Hugo, 2000. Households headed by widows in India are extremely poor, with income per capita 70 percent below the national average (Dreze, 1990). Worldwide, widows are more vulnerable than men are to income insecurity owing to their younger age at marriage, longer life expectancy, growing probability of divorce, lower rates of remarriage, labor force participation, inheritance, and ability to borrow (World Bank, 1994).

Trends in living arrangements

2.6   **Living arrangements in Sri Lanka are not likely to have changed much from the past**. As shown in Figure 2.2, the living arrangements of a random sample of Sinhalese (aged 65 and older) in the Kandy Municipal Council area in 1992 shows remarkable similarity to the living arrangements shown in the data for 2005. While this result come from a particular region and tracks changes only over a decade, it indicates that these living arrangements are likely to have persisted over time.

Figure 2.2: Living arrangement of elderly, 1992 and current
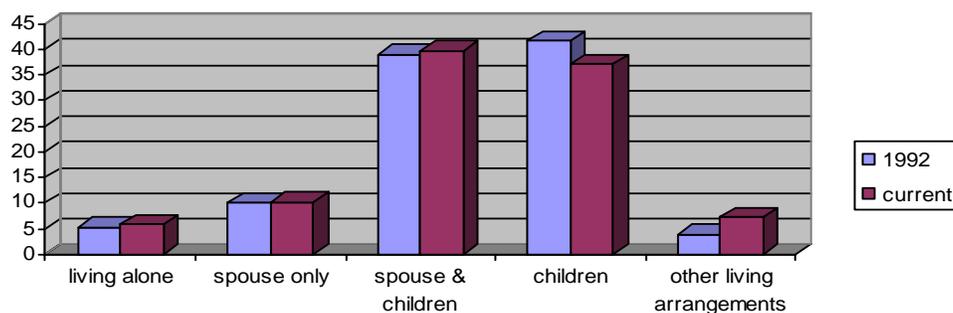
Source: World Bank 2006 Sri Lanka Aging Survey, and Siddhisena (2004).
Note: Data for 2006 are from 2006 Sri Lanka Aging survey (n=2336), data for 1992 are from a random sample of old people Sinhalese (>=65) in the Kandy Municipal Council area (n=149)

2.7   **There has also been little change in living arrangements in some East Asian countries, but remarkable declines in co-residence in others** (also in the US). Consistent with findings for Sri Lanka,

the percent of old people living with children in the Philippines, Thailand, and Taiwan has not changed much over time (Chan, 1998). For example in Thailand, between 1986 and 1995, there was only a 5 percentage point decrease in the share of children co-residency among the elderly (Table A2.2). However, in higher income Asian countries, such as Japan and South Korea, co-residence rates have declined sharply. In Japan, the percentage of people aged 65 and over co-residing with any child fell from 77 percent to 52 percent between 1970 and 1977 (Hermalin 1995; Knodel and Ofstedal 2002). In South Korea the percentage of older adults co-residing with a child fell from 78 percent in 1984 to 54 percent in 1994 (Kim 1999). Multiple generation households were also common in the United States at the turn of the century (Costa 1998), but as shown in Figure 2.3, co-residence rates have fallen throughout the century.8 Rising incomes and increased affordability of separate housing rather than changing social preferences for co-residence explain observed changes in US. The affordability of housing is also important for explaining the degree of co-residence in Asian countries. For example, the higher cost of housing can promote co-residence, as in the case of Malaysia and Singapore (DaVanzo and Chan, 1994; Chan, 1997).

Figure 2.3: Percentage of 65+ year old US males living with family, 1880-1990
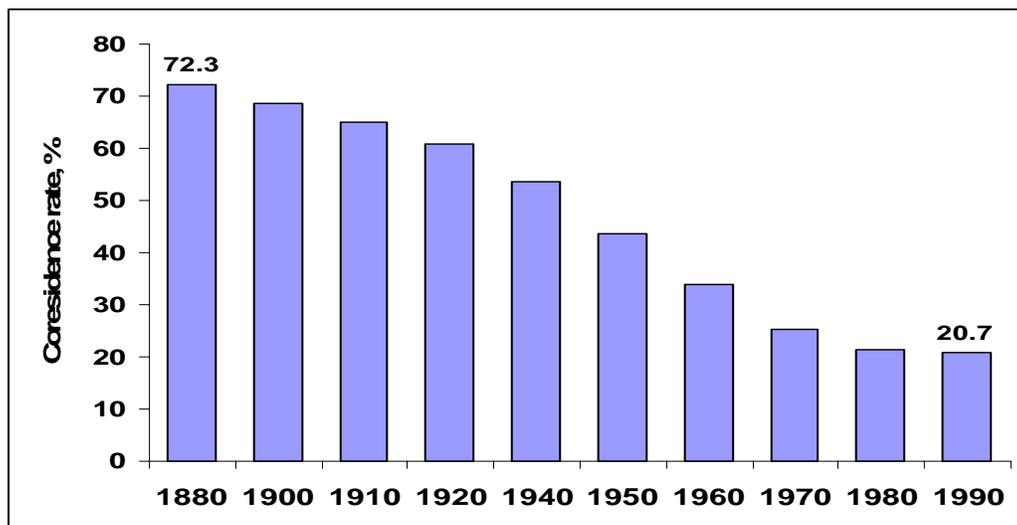
Source: Costa (1998); Borsch-Supan et. al. (1992).

2.8 **On the opposite side, the proportion of elderly living alone tends to be higher in richer countries, with four East Asian countries being outliers**. Figure 2.4 shows that there is positive association between income per capita and the share of elderly living alone. Interestingly, three East Asian countries appear to be outliers. Despite relatively high incomes, a small proportion of older people live alone in Malaysia, Korea, Japan and Singapore. Results of cross-country regressions show that even after accounting for income and pension spending as a share of GDP, a dummy variable for Asian countries is significant. The coefficient for the Asia dummy suggests that sole residence rates are approximately 9 percentage points lower in Asian countries. This difference may be due to cultural differences that emphasize filial piety in the oft-mentioned Confucian tradition.9 Another possibility is

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8 Schoeni (1998) qualifies these figures however, suggesting that a different measure – life-years spent in co-residence – is superior because it takes into account changes in life expectancy that have occurred throughout the century. Using this measure, the US rates of co-residence decline much less through 1940. Most of the decline takes place between 1940 and 1990.

9 Further support for cultural differences is evident in the historical evidence in pre-industrial England. Laslett (1985) presents data showing relative high rates of living alone among the elderly in the 18th century.

that this pattern reflects the relative immaturity or limited generosity of public pension schemes, (these same cultural factors may also influence these outcomes). Part of the reason for fewer people living alone in Singapore (or high co-residence rates) is probably a result of targeted public policies. Chan (1998) describes tax incentives and housing subsidies provided to children that live with their parents. In Singapore, these incentives are justified based on cultural or moral values encouraged by the government.

Figure 2.4: Percentage of persons over 60 living alone, selected countries
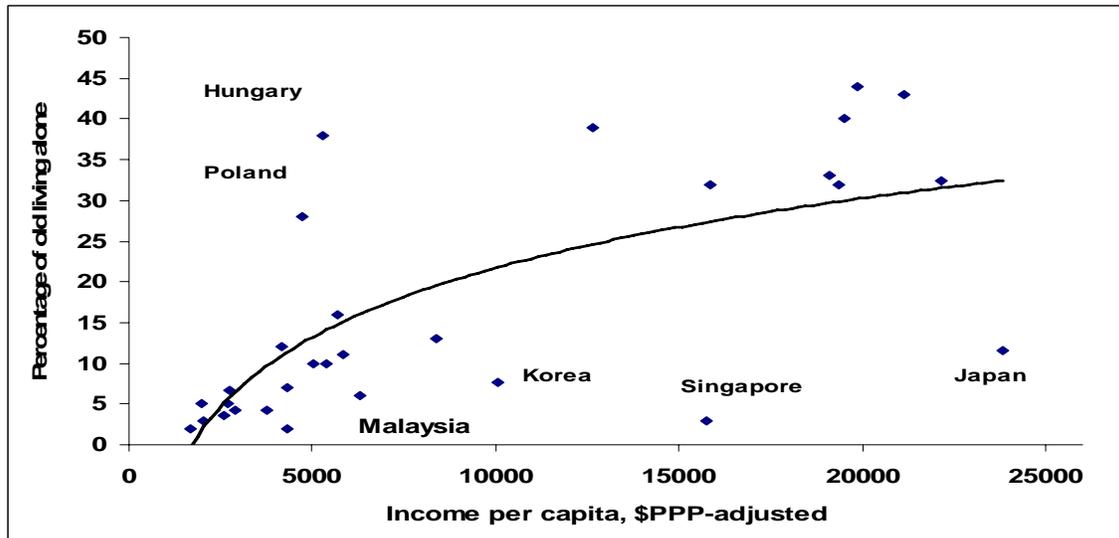
Source: Palacios, forthcoming.

2.9   **Will Sri Lankan elderly continue to co-reside with their children if they are able to afford living separately**?   The aging survey explores the preferences of elderly with respect to living arrangements. As shown in Figure 2.5, only about half of all Sri Lankan elderly consider living which children to be the best living arrangement. About 45 percent of elderly—comprising a higher share of educated (and presumably wealthier) would prefer to live in alternate arrangements, either with their spouse only (12 percent) or in other situations (33 percent). In contrast, nearly 80 percent of all children believe that their parents should live with them.   Though it is difficult to predict future living arrangements, these findings, together with the evidence presented in the previous sections suggest that as income and education increase, co-residence with children may decline in Sri Lanka.

B.   INTERGENERATIONAL TRANSFERS (CASH AND IN-KIND)

2.10   Co-residence is only one way in which Sri Lankan children support their parents. Cash and in kind transfers are also used by children to provide support to the elderly. About half of all Sri Lankan elderly receive cash assistance as the primary source of income (Table A2.5). A much larger share (about three quarters) receives food and in kind-transfers, while slightly less than a third report receiving household help from their children. A very small share of elderly also report receiving emotional support.

Figure 2.5: Opinions from old people and adult children on the best living arrangement for the old people
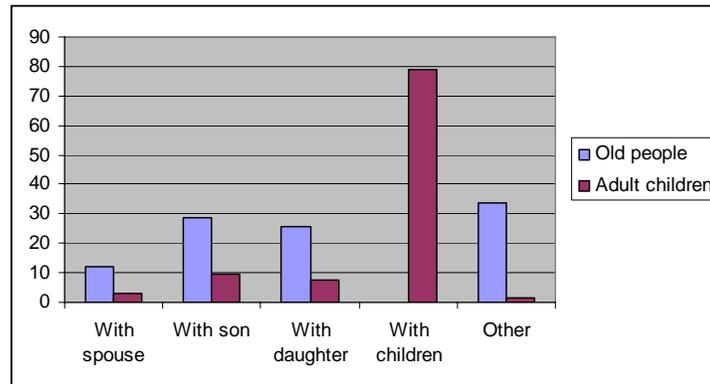
Source: World Bank 2006 Sri Lanka Aging Survey.
Note: Sample of old people included 2413 persons, and of adult children 609 persons.

Cash Transfers

2.11 **Sri Lankan elderly receive cash support from a variety of sources, both public and private**. According to World Bank 2006 Sri Lanka Aging Survey, the elderly report receiving cash transfers over the past month ranging from about Rs. 2,000 (US$20) to Rs. 9,999 (US$98). Government assistance is also important for the elderly. According to the same source, for a significant share—nearly a third of all elderly—non-pension government assistance is some source of support, while a much smaller share—about a tenth of the elderly —receive pensions as their major source of income. Not all elderly Sri Lanka are dependent on transfers from others. About a fifth of the Sri Lankan elderly rely on agricultural activity as a major income source (World Bank 2006 Sri Lanka Aging Survey). As shown in Table 2.1, the share of Sri Lankan elderly receiving money from children (about 50 percent), is much lower compared in Singapore (85 percent), Philippines (94 percent) and Thailand (87 percent).

Table 2.1: Sources of support in five Asian countries

Source of support	Singapore[a]	Philippines[b]	Thailand[c]	Taiwan[d]	Sri Lanka[e]
Co-reside with at least one child	85	70.4	70.9	69.0	76.8 (n=2286)
From any child					
Food, clothing	84.5	63.3	89.2	12.2	77.8
Money	84.6	94.1	87.0	-	48.9
Emotional support	-	18.8	-	-	12.9
From non-co-resident children:					
Daily contact	8.8	14.1	80.6	26.2	4.39
Weekly	54.7	6.6	88.8	83.8	13.3

Sources: Chan (1999)
a 1995 National Survey of Senior Citizens, Singapore
b 1996 Philippine Old people Survey
c 1995 Survey of the Welfare of the Old people in Thailand
d 1996 Survey of Health and Living Status of the Old people in Taiwan
e 2005/2006 Sri Lanka Aging Survey (among old people with at least one child, N=2286)

2.12   **Old people receiving pension income are less likely to receive other transfers from their family members**. The receipt of pension income decreases the probability of receiving monetary support from family members in the last 12 months (Table A2.6). Old people who receive a pension are only 40 percent as likely to receive a money transfer compared to old people who do not receive a pension. This finding is consistent with international experience. In countries with mature pension systems (e.g., UK, US, Germany), pensions are the major source of income for the elderly, and the elderly receive virtually no support from their children (Table 2.2). This suggests that formal social security may displace informal support for some Sri Lankan elderly. For poor families, however, this substitution would release resources for other needs, for example, for the care of children.

Table 2.2: International comparison of major sources of income of old people

	Philippines	Thailand	Taiwan	Singapore	United States	United Kingdom	Germany
Work	30.0	37.9	20.4	17.6	20	13	2
Pension, retirement, CPF	9.1	2.3	29.2	2.2	94	100	98
Income from investments	1.9	4.4	5.9	1.8	--	--	--
Family business	4.6	--	1.6	--	--	--	--
Agriculture	23.3	--	4.0	--	--	--	--
Children or other relatives	31.1	55.4	36.5	76.6	--	--	--
Other	--	--	2.4	1.8	--	--	--

Source: Hermalin (2002).

2.13   **Women are more likely than men to receive monetary transfers from their children**. Evidence from Sri Lanka and other countries reveals that children are more likely to provide income to their mothers than to their fathers. The top line in Figure 2.6 is an average of the percentage of older women in four Asian countries that report that their children are their main source of income. There is evidence of similar patterns Singapore.10 This result may be due to the combination of altruism and greater need for income support among older women with lower pensions and few assets. Since women outlive men, the very old are more likely to be women. Typically, there are about 50 percent more females aged 75 and over than males in the population. The fact that support increases with age is not surprising since productivity declines and need increases during the aging process.

2.14   **Transfers appear to be targeted to the neediest and those with more children**. A higher share of retired elderly or those not working receives transfers from their children (Table A2.6). Children also provide transfers to those in poor health. The disabled are more likely to receive transfers than those who are not disabled. Elderly with four or more children, residing with their children are more likely to receive transfers. While not conclusive, these results suggest that the family sends transfers to the neediest elderly family members. As shown by World Bank (2007), families with more children are

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10   Chan (1998) reports that 48 percent of men and 79 percent of women over age 55 report that children are their main source of income. Very old women were most likely to depend on children.

poorer in Sri Lanka. This may explain why they receive more transfers (aside from social security motive).

Figure 2.6: Percentage of elderly reporting children as main source of income by age, unweighted average for China (urban), Indonesia, Thailand and Sri Lanka
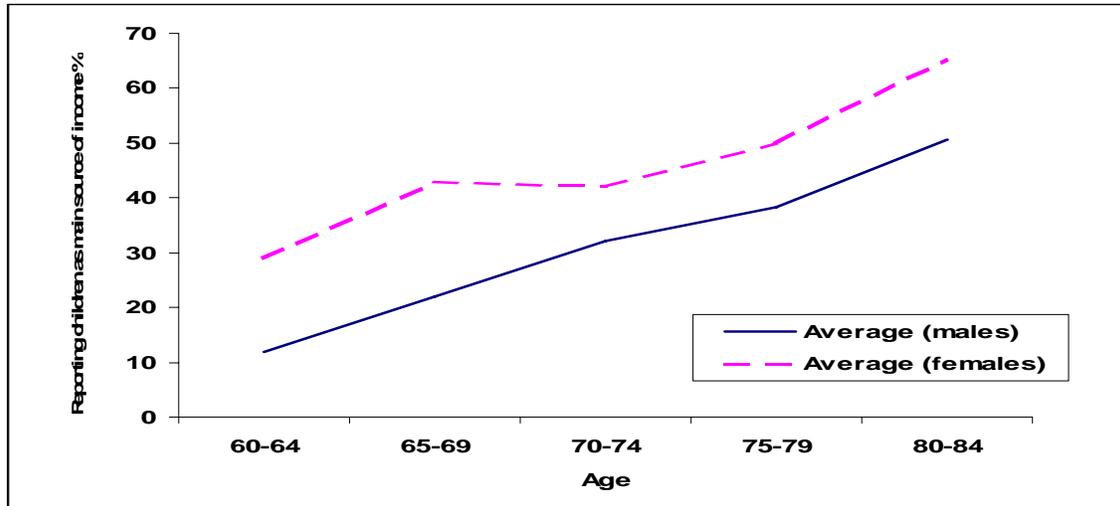
In-Kind Support

2.15   **The main in kind support provided to the elderly in Sri Lanka is food, clothing or other material goods from family members, followed by household help** (Table A2.5). The share of elderly reporting receipt of food/material goods in Sri Lanka (about 80 percent) is roughly the same as in Thailand and Singapore, but considerably higher than in Philippines and Taiwan. Once again, the more children an individual has, the more he or she is likely to receive material food or material goods from children. About eighty percent of old people with 4+ children receive food/material goods compared to about 60 percent of elderly with one child. In kind support is also higher for those with physical disabilities. Household help is the second most important type of in kind support for the elderly. Here again those in poor health report a higher incidence of support from their children. Thirty-six percent of old people who report at least one ADL or IADL limitation receive housework help compared to less than thirty percent of old people without mobility problems. Thus, as in the case of cash transfers, there is some evidence that in-kind help is received by more vulnerable elderly.

2.16   **Emotional support is the least common assistance provided to the elderly**. As shown in Table 2.1, only 13 percent of Sri Lankans report emotional support as the main support received from family members, somewhat lower than in the Philippines (19 percent). Contact with non-resident children, another indicator of emotional support, is also relatively low in Sri Lanka. Only 4 percent of older Sri Lankans report daily contact with a non-co-resident child. A slightly higher percentage, 13 percent, report weekly contact with their children. In comparison, the elderly in Singapore Philippines, Thailand and Taiwan have much higher levels of daily contact with their children. However, the Sri Lankan data does not control for the proximity of children. Children may not live very close to their parents in Sri Lanka relative to other countries.

Caring for the Elderly

2.17   Some of old people in Sri Lanka need help performing daily activities, either basic activities of daily living (ADL) such as eating, dressing, toileting, and bathing, or instrumental activities of daily living (IADL) such as cooking, shopping, housework and traveling.

2.18   **Children, spouses or sons/daughters in law assist those elderly that require support with basic activities of daily living** (ADL). On average, one fifth of old people is receiving such support – 13 percent among the aged 60-69 and 46 percent of those older than 60 (Table 2.3). Those aged from 60-69 years have access to their spouses, children, and sons/daughters in-law for ADL support. However, as elderly outlive their spouses (at ages 80 above) the burden shifts to primarily children and daughters/sons in-laws. Grandchildren also provide physical care for old people with disabilities, particularly in the case of elderly women. Those old people without children receive support from spouses (5 percent), siblings (6 percent) and other relatives (7 percent).

Table 2.3: Percent of old people receiving ADL support, by type of provider and age of older parent

ADL support indicators	Percent	By age of older parent			By gender of older parent	
		60-69	70-79	80+	Male	Female
Receive any ADL support						
Yes	20.2	13.4	21.1	45.7	17.4	22.4
No	79.8	86.6	78.9	54.3	82.6	77.6
Providers of ADL support						
Children	13.0	8.0	14.5	29.1	11.0	14.7
Spouse	4.2	4.8	3.8	2.5	8.1	0.9
Son/daughter-in-law	5.2	2.2	5.3	17.5	2.3	7.5
Grandchildren	2.3	0.9	1.8	10.7	1.4	3.2
Siblings	0.6	0.7	0.8	0.0	0.5	0.8
Other relatives	0.6	0.4	0.7	0.8	0.4	0.7

Source: World Bank 2006 Sri Lanka Aging Survey.
Note: Data are weighted to account for more than 1 old people selected by household and stratified sampling by age.

2.19   **Old people also receive help from their families to navigate through their external environment – IADL support, which also increases as they age**. Almost half of all elderly (44 percent) received help for going to the doctor, marketing, shopping, visiting friends, or using public transportation (Table 2.4). Older women are more likely (54 percent) to report receiving IADL support compared to men (32 percent)—perhaps, again, because they are older on average. As with ADL support, children are the main providers of support. Only 35 percent of older parents aged 60-69 receive IADL support as compared to 67 percent of older parents aged 80+ years.

2.20   **Primary caregivers of the elderly are women 'sandwiched' between caring for their spouse and children and the elderly**. Primary caregivers (vs. non-primary care providers) are typically middle-aged (35-54), female, currently married, employed or homemakers, and have 1-12 years of education (Table A2.7). Family care-givers of elderly in other countries also tend to be women with childcare responsibilities. For example, in Taiwan, 72 percent of primary care-givers are females, 85 percent are married, and over 90 percent live with the older disabled person (Bartlett and Wu, 2000). Perhaps not surprisingly, female primary care givers report more worries and stress in daily life (53%) relative to male caregivers (37%), with family worries being the primary source of stress for women caregivers (vs. financial worries for male caregivers).11 Providing support for the elderly potentially increases the opportunity costs of forgone labor force participation for these care-givers.

Table 2.4: Percent of old persons receiving IADL support by gender of the older adult

IADL support indicators	Percent	By age of older parent			By gender of older parent	
		60-69	70-79	80+	Male	Female
Receive any IADL support						
Yes	44.1	34.8	49.1	66.7	31.8	54.3
No	55.9	65.2	50.9	33.3	68.2	45.7
Providers of IADL support						
Children	31.6	22.4	37.9	49.8	21.3	40.2
Spouse	6.2	8.9	4.0	1.9	8.9	3.9
Son/daughter-in-law	6.6	3.6	8.1	14.4	3.0	9.6
Grandchildren	3.5	2.1	4.0	7.5	1.5	5.1
Siblings	0.5	0.7	0.3	0.0	0.5	0.5
Other relatives	1.0	1.2	0.9	0.8	0.5	1.5

Source: World Bank 2006 Sri Lanka Aging Survey.

Support from the Elderly

2.21   **The support from children to elderly is not one way**. About half of the elderly—46 percent—provide childcare for their grandchildren, consistent with evidence from the Philippines (38 percent), Thailand (32 percent) and Taiwan (23 percent) (Biddlecom, Chayovan and Ofstedal, 2002). Almost all old people interviewed, 99 percent, said that they enjoyed providing childcare, and 80 percent believe it is their duty to take care of their grandchildren. Old people also provide help in kind such as housework or cooking help (18 percent) or provide food/clothes (8 percent) to family members. A smaller percentage of old people, 7 percent, provided money to their family members in the last twelve months (Table 2.5). However, after age 79, probably because of ill health, very few parents provide any kind of transfer to their children.

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[11]   A higher share of male caregivers report stress (10%) relative to male non –care givers (6%).

Table 2.5: Percent of old people providing transfers to adult children within previous 12 months, by age

Type of transfer	Percent providing	60-69	70-79	80+
Money	6.7	6.7	5.5	5.2
Housework help	17.8	18.9	18.5	11.0
Food or material goods	8.1	11.5	5.9	0.9
Child care	45.9	46.1	50.5	29.3

Source: World Bank 2006 Sri Lanka Aging Survey.
Note: Sample is old people with at least one child by birth.

2.22   **Monetary transfers provided by the elderly to their children are lower in Sri Lanka than in other Asian countries**. In the Philippines and Thailand, the percentage of elderly providing monetary transfers to their children is much higher. Nearly 67 percent and 55 percent of elderly provide cash transfers to their children (Biddlecom, Chayovan and Ofstedal, 2002). The share of elderly providing transfers to their children in Taiwan is more similar to Sri Lanka, where only 10 percent, of old people, provide monetary transfers to their children.

C.   RESPECT AND AUTHORITY WITHIN HOUSEHOLD AND SOCIETY

2.23   Aside from cash and in-kind transfers, the respect with which families and societies treat the elderly, and the ability of the elderly to influence allocation decisions (within the family) or public policy (in society), is also an important indicator of elderly welfare.

2.24   **Old people determine their own basic needs, but they are not involved in major financial decisions**. The involvement of elderly in household decisions is one measure of the respect accorded to them within the family. The World Bank 2006 Sri Lanka Aging Survey finds that about two thirds of older adults discuss important matters in their families. This corroborates Siddhisena's (2005) observation that old people in Sri Lanka are consulted when important family events take place. Similarly, a large percentage of old people have a say in domestic decisions relating to expenditure on their own clothes and food eaten at home (Table 2.6). However, the participation in more important decisions like large expensive purchases for the household and monthly savings is limited. The decision-making power with respect to these matters seemed to rest with the children (predominantly male child).

Table 2.6: Level of participation in family decision making process

Expenditures	Elder	Spouse	Son/ daughter/ daughter-in-law/ grand child	Not applicable
Food eaten at home	37.5	21.5	39.0	0.9
Your clothes	41.9	10.8	44.8	1.6
Expensive purchases for the household (i.e., refrigerator or TV)	15.3	6.5	45.9	29.2
Money for monthly savings	19.4	6.0	28.8	42.2

Source: World Bank 2006 Sri Lanka Aging Survey.

2.25   **However, elderly heads of households with access to income or assets influence household decisions** (Sivamurthy, 2001). Being the head of a household allows individuals to influence intra-household allocation decisions. A large share of elderly in Sri Lanka report that they (59 percent) or their spouse (15 percent) are the head of household. The likelihood of headship is significantly higher if the

elderly individual is presently working, receives a pension, or owns a house (see Table A2.8). Thus, the access to outside income is important for the elderly to influence household decisions.

2.26   **In focus group interviews, the elderly report a declining respect for their age group in broader society**. The elderly noted that globalization (access to computers, TV) has changed for the worst the way children behave towards them. The previous mode of behavior—respects for teachers and parents—has changed. Today, children show little respect towards authority figures, such as the elderly (Box 2.1). Some elderly reported that increasing alcoholism in society has also changed for worse the way in which families behave with each other and towards the elderly.

2.27   **The elderly also do not appear to be very influential in society**. The extent of participation of older persons in a community is one measure of social integration of elderly. In Sri Lanka, only half of all elderly belong to an organizations and groups including political parties, village development societies, and senior citizen's clubs. However, the social groups with the highest participation of elderly are the death donation society (27 percent), Samurdhi (14 percent) and religious organizations (11 percent). The elderly have very limited participation in more influential groups like the village development society, agricultural society and political parties. Thus, while the elderly participate in some social organizations, they do not participate in those that drive the political or social agenda.

2.28   **Nevertheless, elderly Sri Lankans are generally satisfied with the respect accorded them among families and friends**. Sri Lankan elderly feel that they are important to their families (92 percent) and friends (80 percent). When asked about their satisfaction with their family life, 80 percent report being extremely happy, very happy or somewhat happy. This situation does not always prevail in East Asian societies. In Hong Kong, Republic of Korea, and Singapore, suicide rates among older persons aged 75+ are four to eight times higher than among those aged 15-24. In fact, Hong Kong has one of the highest suicide rates among older persons in the world (Phillips, 2000; Ruzicka, 1998).

Box 2.1: Voices of old people suggest a decline in their respect and authority

The general feeling among old people is that old people as a group are losing positions within their families. In line with classic modernization theory, old persons lose their authority and decision-making power in modernizing households. Exposure to western values is often cited as a primary reason for this change. Focus groups reveal the following sentiments.

"In the old days, there was a head of family in each family. All others members are under him and his decision is final in all matters. Today that structure has vanished and the young do not see any reason to seek advice from old persons. The younger generation spends more time on TV and they model themselves according to what they see. They generally watch programs which do not set good examples (FGD_Group 1, educated males, urban)."

"There are quite a lot of difference between our young days and today. When I see my teachers, even now, if it is in a bus I get up even without my knowing. But today's youngsters do not care much about respect. They are more knowledgeable because of computer and other things. When we go on the road, there may be young boys and girls talking to each other blocking the way. But they will not move and give room for us to pass. We have to go around them. If we ask them to move they make jest of us (FGS_Group 2, educated females, urban)."

"I have the same feeling. When getting old, young generation declines to accept us. Care or respect to the older people is weak among some youngsters. Even our children behave with us in this way." (Kandy, rural, educated males)

2.29   **The overwhelming majority of elderly (95 percent) in Sri Lanka consider that children are responsible for taking care of parents during old age** (Table 2.7). Very few (5 percent) of old people view themselves as primarily responsible for care in old age. Within this group there are some variations by demographic characteristics. Older males are more likely to view themselves as primarily responsible for their welfare in old age (4 percent) compared to females (2 percent). Old people with twelve or more years of education (and presumably more income) consider themselves responsible for their own welfare in old age, supporting earlier results that better educated (and presumably wealthier) elderly will likely prefer not to co-reside with their children in the future.

2.30   **The elderly are very confident (albeit not fully) of obtaining support from their families for their main needs in the future**. The main worries of the elderly relate, in order of importance, to financial matters, inter-family relationships and health. However, virtually all elderly believe they would receive some type of cash or in kind support in case they fell ill, while a slightly lower share of elderly is confident of financial support in case of need (87 percent). Finally, a fairly large share of elderly believes that someone would be available to talk to them about any problem they may confront. In most of these cases, the elderly report that they would rely on their child, spouse, and then son and daughter in law (in that order) for support.

Table 2.7: Attitudes of old people and adult children on who should be primarily responsible for taking care of parents during old age

	Independent	Children	Others	(Total number in sample)
Report of adult children				
Total (n=609)	0.1	99.9	0.0	609
Report of old person				
Total (n=2413)	2.6	95.6	1.9	2413
Gender				
Males	3.7	94.6	1.7	1063
Females	1.6	96.4	2.0	1350
Educational level				
No education	1.9	94.9	3.3	352
1-12 years	2.2	96.3	1.5	1914
12+years	8.7	88.3	3.0	147

Source: World Bank 2006 Sri Lanka Aging Survey.

2.31   **The expectation that children will provide financial support in old age is also the case in other Asian countries**. Evidence from Indonesia, Republic of Korea, Philippines, Taiwan, and Thailand, suggests that a very high share of old people expect that their children will take care of them in old age (Table 2.8). Between 85-89 percent of older adults, expect financial help from their children in old age in

these countries. This is in marked contrast to the US, where only 12 percent of elderly expect their children to support them in the future.

Table 2.8: Percent of old people who expect financial help from sons and daughters

	Mothers		Fathers	
	From Sons	**From daughters**	**From Sons**	**From daughters**
Indonesia	85	83	79	77
Rep. of Korea	85	46	78	42
Philippines	86	85	82	80
Singapore	39	31	31	25
Taiwan (China)	85	39	76	29
Thailand	89	87	78	75
Turkey	91	78	84	64
United States	12	11	12	11

Source: World Bank (1994); Palacios (forthcoming).

2.32   **Such expectations may change, as they have in Japan**. While many individuals expect financial support from their children, Figure 2.7 provides clear evidence that expectations can change over time. The data reported by Ogawa and Hodge (1992) for Japan show a huge decline in the percentage of married women of childbearing age in Japan expecting to rely on support from their children. The increased income of the population, a higher share of well educated women and the advent of social security are some factors explaining this trend. While almost one third expected their children to support them in 1950, less than one fifth did by 1988.[12]

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[12] At the same time, children's view of supporting the elderly also changed. The percentage of children who considered it a natural duty or a good custom to care for their parents were stable till 1986, but it then fell sharply thereafter. A growing concern about population aging by the public and the government and the cutbacks in social security to address rising public expenditures are some reasons given by the authors to explain this trend.

Figure 2.7: Expectations of support from children over time:
Japanese married women of childbearing age, 1950-1988
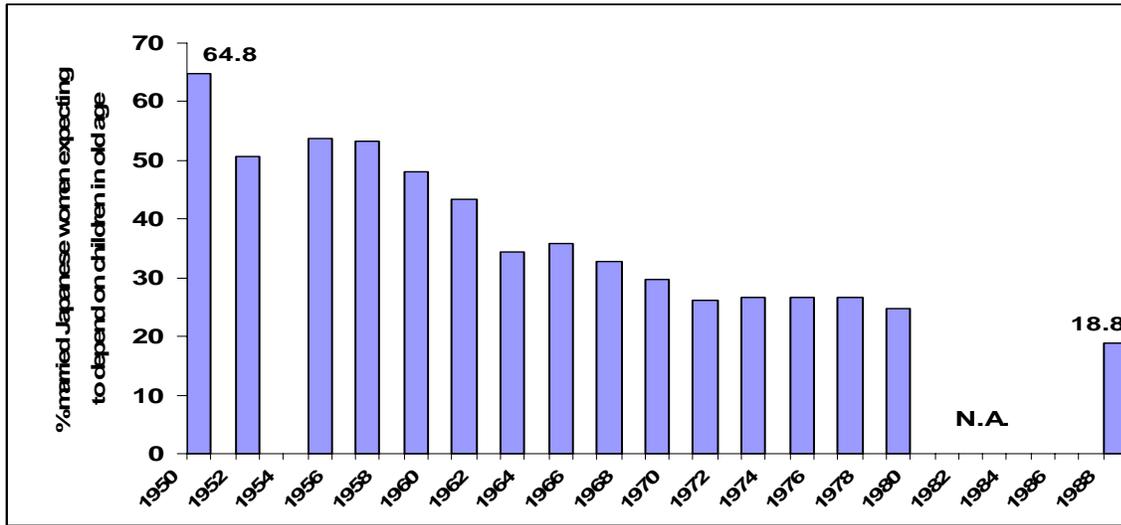
Source: Ogawa and Hodge (1988).

E.   FORMAL CARE FOR THE ELDERLY

2.33   As the population ages, fewer working age individuals will be available to provide long-term care for a larger number of elderly. Families may require formal support for caring for their elderly parents, ranging from full institutionalization of elderly, to community-based care or in-home care. What are the opinions of elderly about formal care and what are the current options for formal care for the elderly in Sri Lanka?

2.34   **Old people regard institutionalization as a last resort**. Although most old Sri Lankans (91 percent) have heard of nursing homes, the majority (76 percent) do not consider joining one. Despite the fact that the majority of adult children report that it is the duty of children to take care of parents (see above), Siddhisena (2005) reports that during the last two decades the number of institutionalized old people has risen considerably suggesting rising demand for care. Interviews with institutionalized old people gave some insight into the reasons for these changes. The elderly cited having fewer children, the demands of formal sector employment on their children, and changing values as the main reasons for their institutionalization. They reported that the current younger generation is more likely than previous generations to set up their own separate households after marriage (see Box 2.2).

2.35   **Local NGOs are the primary providers of institutional care**. These NGOs manage an estimated 300 elders' homes in the country (Samarasinghe 2007). Of these, the National Secretariat of Elders – the body overseeing such homes of the Ministry of Social Services and Welfare – has registered only 162 such homes. Religious organizations, philanthropic families or trusts mainly manage elders' homes. The number of places per facility ranges from 2 to 156. Homes with 30 places or less comprise 62 percent of all facilities. Homes with 50 beds or more comprise 18 percent of the total facilities and account for 43 percent of the total number of places. The majority of homes do not discriminate between sexes. A few restrict admission to the Buddhist clergy. Only one in the registered list of institutions is fee levying though many are in active business.

> **Box 2.2: Changing perceptions of old parents by their children**
>
> Focus group interviews with older institutionalized women reveal a feeling that respect for older parents has decreased over time. One parent noted the importance children place on their own work over and above looking after one's parents.
>
> Respecting the parents is very weak. Now, parents are not taken care of. No respect. Very rarely one person does respect. Now they (children) discard parents stressing that they can't do even their work. Lower fertility is also an issue. Fewer children available to live with and a decline in co-residence with extended family members are given as reasons why children do not co-reside with older parents.
>
> Respect is less. When we were small, grand parents, uncles, aunties lived in our houses. Now it is not so. Now there are few in the family. Those days, parents were well respected. They (parents) were kept closed. Now…parents are not kept with them (children).They (parents) are left in old persons' homes.

2.36   **Elders' homes cater to the needs of the younger, better-abled and more active persons**. In essence elders' homes provide residential or hostel facilities to this category of elders (Balasuriya, 2001). They provide a level of care and supervision for people who are unable to live by themselves or within the community and who do not need 24 hour nursing care. Nonetheless, it is generally believed that though the screening processes favor the young and the better-abled, once admitted, the institution is fully responsible for the care of the individual to whatever level the health status deteriorates. In this regard little is known about the scope of care, the mechanisms of delivery, or who bears the costs.

2.37   **There is little data on the level and sources of funding of elders' homes**. Among the known sources of income are grants provided by the state for capital works, purchase of equipment, clothes for inmates and linen (Jegarasasingam, 2004), and various donations from individuals and corporate bodies. The state provides an annual capital grant of Rs. 7 million and a monthly grant of Rs. 300 per head for residents of elders' homes. This year an additional Rs. 10 million has been provided for capital works and refurbishments. In 2005, there were budgetary provisions of Rs. 7 million for establishment of village level committees and Rs. 2.5 million for the establishment of day centers and for the provision of grants for income generating activities but the respective expenditures were only Rs. 2.7 million (39%) and Rs. 0.7 million (28%). In addition, HelpAge, Sri Lanka (HASL) supports selected NGOs with quarterly grants of Rs 1,000 per head. Denominational homes and facilities run by religious organizations are supported by the parent bodies and through donations. There is no information on the average cost per day for elders' homes and no assessment has been made on the sufficiency of funding.

2.38   **Day centers, an alternative to institutionalization of the better-abled elderly, are few**. It is estimated that about 23 percent of surveyed elderly are possible candidate to attend such centers (National Secretariat for the Elders 2004). Centers supported by the state are set up following a needs assessment. Generally, the state uses the village temple or a vacant building for this purpose. The centers provide a place for elders to spend the day and an opportunity to meet their contemporaries and participate in social and religious activities while retaining family support. Also, the center provides a venue for undertaking health promotion and the conduct of physical exercise and screening programs. It does not provide day care services. In all, the country has 147 Day Centers some established under the aegis of the Village-level Elders' Committees while others have been set up independently. Details of their regional distribution are in Table 2.9. The community-based program for the care of the elderly has made slow progress since its inception in 2000 and needs careful evaluation.

Table 2.9: Distribution of day centers for elderly, by province

Province	Number of day centers
Western	31
Southern	21
Central	27
North-Western	12
North-Central	32
North-Eastern	05
Sabaragamuwa	15
Uva	04
Total	147

Source: Samarasinghe (2007).

2.39 **Attempts to introduce trained volunteers has met with little success** in spite of the prospective trainees being selected by the Village-level Elders Committees from members of their community and receiving a stipend of Rs.1,000 per month from HASL. The certificate they receive is their passport to the labor market. There are no formal arrangements for professional support from either the Department of Health or the Department of Social Welfare. Nor are their programs for developing the skills of care givers.

2.40 **According to available data there are no institutions providing specialized, long-term 24 hour or intermediate care** that are specially geared to support those with problems of mobility and difficulties in performing ADL. In a way, a small number of institutions, which are generally a more expensive form of long-term care, make it easier to develop more cost-effective, long-term care options for the elderly. However, for now, the responsibility of providing care to this category of elderly seems to still lie with the household.

F.   POLICY RECOMMENDATIONS

2.41 **This chapter documents that most Sri Lankans live with their children in old age, but that the family support system is showing some signs of being strained**. Parents support their children when the latter are young while children take care of their parents when they grow old. Parents also continue to support their children in old age, mainly through child care, but also material support. Most children and elderly are satisfied with these arrangements and expect them to continue. Despite this optimistic assessment, traditional family support systems are already strained. Primary-care givers, mainly women, are facing increasing stress in caring for the elderly, while also working and taking care of their own families. For some families institutionalization is already an option and this type of care has reportedly increased.

2.42 **These strains will likely increase as the population ages and the number of elderly per working member increases**. An aging population tends to have higher health care requirements because of higher demand for ambulatory, inpatient and chronic care, including care for mental illnesses, in later years. As people live longer and have less ability to carry out daily activities in later life, the demand for long-term care will increase. Unless measures are taken, this could impose a high opportunity cost in terms of forgone income for younger care givers, and raise the cost of health care. While future trends are difficult to predict with full certainly, future increases in income and education in the working age

population may also reduce the preference for co-residence among Sri Lankan elderly. Sri Lanka could start to put in place cost effective long term care systems to provide greater support to the elderly and their children. In this respect, Sri Lanka can consider the following options for strengthening support to the family and community. The issue related to the impact of aging on public health system is taken up in chapter 4.

2.43 **Strengthening of incentives for families to continue to provide support to the elderly**. Without some kind of support, smaller and overburdened (generally female) care giving population may opt for more expensive longer term support, e.g., institutional care. Societies such as Sri Lanka may wish to encourage co-residence, but without distorting incentives for families to live together or provide financial support. Incentives to care givers are provided in many countries. For example, Singapore and Malaysia provide tax and housing subsidies to encourage co-residence or quasi co-residence (living in close proximity to parents). These policies have indeed proved effective in supporting family support by rewarding caregivers. In Japan, tax incentives are also provided although co-residence has continued to decline. in Nordic countries, informal care givers receive pension credits. The exact model for Sri Lanka would have to be developed carefully taking into account the country context.

2.44 **Improving provision of social welfare and care services to provide cost effective community-based care of elderly**. Supporting elderly to live their lives with their children and families in the communities would help reduce the burden on children, particularly working women. Sri Lanka should invest in developing models and approaches for providing community and home-based support services for the sick and frail elderly. These services which include psychosocial support, rehabilitation service for disabled, IADL and ADL support, and nursing, if provided within the community, would allow the country could reduce the demand for expensive institutional care, and enable the elderly to continue to live and participate in the community. However, there is currently no consensus on affordable models of care, including the mode of financing as well as delivery (e.g., though public private partnerships). Alternate models of services need to be piloted and evaluated, building on the experience of recent projects, and scaled up once successful.

2.45 **The government should also explore ways to increase capacity of nursing homes for old people**. Although institutionalization is regarded as a last resort by old people, and is the option of last resort given that experience from around the world suggests it is the most expensive care option, the demand for such facilities will rise for a small proportion of the population that is severely disabled, or requires chronic care that is not be possible to provide through family- or community-based care. Options for cost-effective ways to provide institutionalized care will need to be considered, including modes of financing and delivery.

2.46 **Elderly living alone (mainly widowed women) warrant specific policy attention**. Elderly women require targeted support from social welfare and care services—including psychosocial support, health needs, and assistance for ADL/IADL limitations needs. Elderly women not covered by the pension system may require cash transfer support through the safety net or through social pensions, an issue taken up in the next chapter.

2.47 **Reducing the burden on the family and providing for a healthy and productive aging in Sri Lanka also involves actions in three other areas**, which will be covered in the following chapters:

- **Providing fiscally sustainable mechanisms to allow formal and informal workers to smooth consumption over the lifetime need consideration**. In the absence of formal social security systems, Sri Lankan individuals smooth their consumption through family arrangements. These arrangements mean that many elderly continue to work (as childcare providers or informal sector workers – see labor chapter) until their health fails them. A financially viable formal social security

system that allows the elderly to smooth their consumption over their lifetime could help them enjoy more leisure and better health in old age. We discuss the feasibility of this option in Chapter 3.

- **Improving the health of the elderly** will also be critical to enable elderly to live more productive lives and reduce the burden of care on families, a topic taken up in the Chapter 4. Promoting a healthier elderly population will be the most effective way to ensure better health and lower expenditures of long term care. Measures such as life style changes especially promotion of regular exercise and control of diet and weight are important. Equally important is ensuring the public health system is sufficiently ready to take on the challenge of the health needs of an aging population.

- Similarly, creating conducive labor market conditions would **provide more workers access to formal sector employment** and thus also reduce reliance on informal support, because such access would no only ensure expanded social security coverage but also increase productivity of old workers, the point further discussed in Chapter 5.

ANNEX 2.1: TABLES

Table A2.1: Living arrangements of elderly

	Alone	With spouse only	With spouse & children	With children only	With spouse and others	Other living arrangements
Total (N=2336)	123	226	914	913	76	84
In percent	5.8	10.2	39.7	37.1	3.8	3.5
Age						
60-69 (N=1182)	3.9	12.3	50.2	26.9	3.4	3.3
70-79 (N=861)	7.4	7.9	31.7	45.7	3.5	3.8
80+ (N=293)	4.4	4.8	17.4	67.4	1.9	4.1
Gender						
Men (N=1037)	3.4	14.5	62.0	14.9	4.2	1.0
Women (N=1299)	6.7	6.0	21.4	57.9	2.5	5.6
Location						
Urban (N=692)	3.3	8.9	39.1	41.6	1.6	5.5
Rural (N=1515)	5.7	10.0	39.3	38.4	3.8	2.8
Estate (N=129)	10.4	10.0	37.6	33.3	6.0	2.5
Marital Status						
Currently married (N=1470)	2.1	15.7	63.3	13.0	5.3	0.7
Widowed (N=822)	9.7	0.0	0.1	83.8	0.0	6.4
Other (N=44)	24.4	0.5	2.0	29.8	0.0	43.3
Number of children						
0 (N=70)	37.6	22.3	0.0	0.0	11.2	28.9
1 (N=203)	5.7	8.5	40.4	41.7	1.6	2.2
2-3 (N=737)	3.8	12.8	45.1	32.5	2.5	3.3
4+ (N=1326)	4.4	7.5	37.6	44.3	3.6	2.7
Educational level						
No education (N=339)	8.1	6.0	18.4	61.9	0.9	4.7
1-12 years (N=1855)	4.5	9.7	41.9	36.7	3.8	3.4
12+ years (N=142)	8.3	17.5	52.0	17.3	1.9	3.0
Work Status						
Retired (N=970)	5.9	11.4	44.9	30.7	4.7	2.5
Employed (N=426)	6.0	12.7	58.4	15.7	4.5	2.6
Never worked (N=940)	5.5	7.6	25.0	54.4	2.5	5.0
Income Adequacy						
Adequate (N=666)	6.9	10.1	40.9	36.4	2.6	3.1
Inadequate (N=1501)	5.7	10.9	40.5	34.7	4.7	3.5
Self-assessed health status						
Excellent/Very good/good (N=788)	5.3	9.8	47.9	31.0	2.6	3.4
Fair/poor (N=1547)	6.0	10.4	35.5	40.2	4.4	3.5
With at least one ADL limitation						
Yes (N=394)	3.5	8.5	25.3	56.0	1.8	5.0
No (N=1942)	6.2	10.5	42.5	33.3	4.2	3.2
With at least one IADL limitation						
Yes (N=670)	4.8	6.2	26.8	56.0	2.3	3.9
No (N=1666)	6.1	11.8	44.8	29.6	4.5	3.3
At least one difficulty with mobility						
Yes (N=1467)	6.2	9.0	33.0	44.1	3.6	4.1
No (N=869)	4.9	12.3	51.8	24.4	4.3	2.3
At least one chronic illness						
Yes (N=1484)	5.7	10.2	35.7	40.5	4.3	3.6
No (N=852)	5.9	10.3	47.0	30.6	3.0	3.2

Source: World Bank 2006 Sri Lanka Aging Survey.

Table A2.2: Trends in household composition among those aged 60 and over

Country and year	Lives alone	Live with spouse only	Lives with children	Other composition	Total
Philippines					
Nat. Demographic Survey					
1988	4	10	68	18	100
1993	3.3	9.1	69.3	18.3	100
Old people Surveys					
1984 (subnational)	2	3	74	21	100
1996	5.5	7.9	70.4	16.1	100
Thailand					
Old people Surveys					
1986	4.3	6.7	76.2	12.8	100
1994	3.6	11.6	72.8	12.0	100
1995	4.3	11.9	70.9	12.9	100
Taiwan					
Survey of Inc. and Expend.					
1976	8.8		83.7	7.5	100
1985	17.3		78.3	4.4	100
Old people Surveys					
1989	10.2	12.6	70.7	6.6	100
1996	9.6	16.1	69.0	5.2	100
Singapore					
Old people Surveys					
1988	2	3	88	7	100
1995	3.3	5.9	85.0	5.8	100

Source: Knodel and Ofstedal (2002).

Table A2.3: Multinomial regression predicting living with children only, and living with spouse and children, versus other living arrangement (n=2336)

Variables	Living with Children only versus Other living arrangement	Living with Spouse and children versus Other living arrangement
Age		
60-64	Ref	Ref
65-69	1.5*	0.8
70-74	1.3	0.5***
75+	2.1***	0.6*
Gender		
Male	0.5***	2.2***
Female	Ref	Ref
Marital Status		
Currently married	Ref	Ref
Widowed	6.0***	0.0***
Divorced/ Separated / Never married/	3.6*	0.0 **
Number of children		
0	0.0***	0.0***
1	Ref	Ref
2-3	1.2	0.9
>=4	1.8*	0.9
Educational Level		
No education	Ref	Ref
1-12 years	1.1	1.5 *
12+years	0.6	1.5
Working status		
Employed	Ref	Ref
Retired	1.5*	1.1
Never worked	1.8*	1.7*
Income adequacy		
Adequate	1.2	1.1
Inadequate	Ref	Ref
Owning house		
Yes	0.6***	0.7*
No	Ref	Ref
Self-assessed health status		
Very good/good	Ref	Ref
Fair/poor	0.9	0.7*
Having at least one ADL limitation	1.2	1.0
Having at least one IADL limitation	1.6*	1.1
Having At least one difficulty with mobility	0.5***	1.0
Having at least one chronic illness	0.8	1.0

*p<.05   **p<.01 ***p<.001
Source: World Bank 2006 Sri Lanka Aging Survey.
Note: The reference group is "Other living arrangement." Data are weighted to account for more than 1 old person selected by household and stratified sampling by age.

Table A2.4: Characteristics of old people living alone: total sample, men and women

Characteristics	Total sample, N=123	Men, N=31	Women, N=92
Gender			
Male	25.2	--	--
Female	74.8	--	--
Age			
60-69	36.5	28.4	39.8
70-79	54.1	54.7	53.9
80+	9.4	16.9	6.4
Marital Status			
Currently married	24.3	34.6	20.1
Widowed	66.6	49.3	73.6
Never married/Divorced/Separated	9.1	16.1	6.3
Education Level			
None	27.7	11.8	34.2
1-12 years	67.8	72.8	65.8
12 years & above	4.4	15.4	0.0
Work Status			
Currently working	18.5	25.3	15.8
Never worked	36.7	3.5	50.1
Retired	44.8	71.2	34.2
Self reported income			
Adequate	35.2	50.4	29.0
Inadequate	64.8	49.6	71.0
Self-assessed health			
Excellent, Very good, good	30.4	41.9	25.8
Fair, Poor	69.6	58.1	74.2
Mobility problems			
Yes	69.7	54.1	76.0
No	30.3	45.9	24.0
Presence of at least one chronic illness			
Yes	64.7	56.9	67.8
No	35.3	43.1	32.2
Presence of ADL limitation			
Yes	10.1	6.3	11.7
No	89.9	93.7	88.3
Presence of IADL limitation			
Yes	23.9	12.6	28.4
No	76.1	87.4	71.6
N	123	31	92

Source: World Bank 2006 Sri Lanka Aging Survey.

Table A2.5: Percent of old people receiving transfers from adult children

Characteristics of older parent	Monetary transfers	Housework help	Food/material goods	Emotional support
Total receiving	**48.9**	**30.6**	**77.8**	**12.9**
Age				
60-69	48.3	30.7	73.2	10.6
70-79	50.1	30.7	82.1	15.3
80+	47.3	30.0	83.4	14.4
Gender				
Male	46.1	25.0	76.7	9.3
Female	51.2	35.3	78.8	15.8
Marital Status				
Currently married	48.1	27.3	76.8	11.8
Widowed	50.8	36.8	79.7	14.8
Div/sep/ Never Married	21.3	16.2	75.1	13.2
Number of children				
1	31.6	33.8	58.3	10.2
2-3	44.2	29.2	74.3	12.4
4+	54.5	31.0	83.1	13.6
Living arrangement				
Living Alone *	47.9	17.1	78.6	8.0
Living with spouse only	46.8	16.1	71.4	5.7
Living with spouse & children	48.5	29.9	77.0	12.1
Living with children	51.0	39.9	82.6	16.8
Living with spouse and others	48.7	10.3	74.4	7.0
Other living arrangements	39.8	12.4	56.4	13.7
Work status				
Working	35.9	24.0	69.3	8.3
Retired	49.5	30.1	77.8	12.2
Never worked	54.1	34.3	81.9	15.5
Self-assessed health status				
Excellent/very good/good	47.2	29.0	76.3	10.9
Fair/poor	49.7	31.4	78.6	13.8
Presence of at least one ADL limitation				
Yes	45.3	36.4	78.4	16.3
No	49.6	29.4	77.2	12.2
Presence of at least one IADL limitation				
Yes	50.0	35.5	82.6	17.6
No	48.4	28.6	75.9	10.9
At least one mobility difficulty				
Yes	52.5	30.9	79.6	15.2
No	42.2	30.2	74.7	8.6
At least one chronic illness				
Yes	50.8	31.9	79.2	14.8
No	45.2	28.1	75.3	9.1
Urban location				
Urban	52.6	29.5	77.6	15.1
Rural	48.7	31.6	80.1	13.2
Estate	43.6	19.9	49.5	3.3

Source: World Bank 2006 Sri Lanka Aging Survey.
Note: n=2286, sample is old people with at least one child by birth.

Table A2.6: Odd ratios for logistic regression predicting money received from adult children (n=2286)

Variables	Model 1 Demographic characteristics	Model 2 Demographic characteristics and SES	Model 3 Health effects
Age			
60-64	Ref	Ref	Ref
65-69	1.1	1.0	1.0
70-74	1.0	1.0	0.9
75-+	1.0	0.9	0.9
Gender			
Male	0.7***	0.9**	0.9
Female	Ref	Ref	Ref
Marital status			
Currently married	Ref	Ref	Ref
Widowed	1.0	1.0	1.0
Never married/	0.4	0.4	0.4
Divorced/ Separated			
Number of children			
1	Ref	Ref	Ref
2-3	1.6**	1.8***	1.7**
>=4	2.6***	2.6***	2.6***
Living arrangement			
Living with family members	Ref	Ref	Ref
Living alone	1.0	1.0	1.0
Location			
Urban	1.1	1.1	1.1
Estate	1.4	1.3	1.2
Rural	Ref	Ref	Ref
Education level			
No education	-	Ref	Ref
Primary	-	1.2	1.2
Secondary/Tertiary	-	0.8	0.7
Work status			
Employed	-	Ref	Ref
Retired	-	2.4***	2.3***
Never worked	-	2.1***	2.0***
Income adequacy			
Adequate	-	1.3*	1.3*
Inadequate	-	Ref	Ref
Receipt of pension	-	0.4***	0.4***
Self-assessed health status			
Excellent/Very good/good	-	-	Ref
Fair/poor	-	-	0.8
Presence of at least one ADL limitation			
Yes	-	-	0.8
No	-	-	
Presence of at least one IADL limitation			
Yes	-	-	1.0
No	-	-	
At least one difficulty with mobility	-	-	1.5***
At least one chronic illness	-	-	1.2
-2 Log-likelihood	3090.342	2997.207	2974.486

Source: World Bank 2006 Sri Lanka Aging Survey

Notes: Data are weighted to account for more than 1 old people selected by household and stratified sampling by age.

Sample is those old people with children.

Table A2.7: Characteristics of primary caregivers to old people, by gender

Caregiver	Caregivers N=438		Non-caregivers N=268	
	Male	**Female**	**Male**	**Female**
Age				
<=20	1.5	2.3	9.1	8.7
21-34	36.5	27.2	45.7	48.4
35-54	56.0	57.0	45.1	41.0
>=55	6.0	13.2	0.1	1.9
Marital Status				
Currently married	72.4	57.8	52.1	43.6
Widowed	0.2	8.6	0.4	2.3
Never married / Divorced/ Separated	27.5	33.6	47.5	54.1
Educational level				
No education	0.3	3.1	0.0	2.3
1-12 years	78.8	68.9	80.5	51.2
12+	20.8	27.6	19.5	46.5
Working Status				
Employed	85.0	41.8	66.3	40.1
Housewife	--	38.4	--	26.1
Retired	--	1.7	--	--
Others	14.4	18.1	29.3	33.8
Self-assessed health				
Excellent/very good	42.9	44.4	44.4	30.7
Good	36.4	34.1	47.2	45.2
Fair/poor	19.9	21.5	8.4	24.1
Feel worried in daily life				
A lot	9.7	17.0	6.4	8.7
Some	27.3	35.5	28.7	35.7
Very little	33.1	22.1	32.5	29.2
Not at all	29.9	25.4	32.5	26.3
Main source of worry or stress				
Financial problems	53.8	43.7	50.3	42.
Health	7.5	4.0	8.8	5.5
Family	13.1	33.4	12.7	16.5
Work	14.6	3.6	11.8	20.1
Others	11.1	15.3	16.4	15.0

Source: World Bank 2006 Sri Lanka Aging Survey.

Table A2.8: Logistic regression estimates of determinants of headship of household

Independent Variable	Coefficient
Age	0.93**
Sex (male)	1.56*
Marital status	
Widowed	
Currently married	2.89**
Work status	
Retired	
Presently working	2.02*
Never worked	1.26
Pension	2.75**
Income from business or agriculture	1.56
Assistance from children	0.86
Ownership of residential house	6.54**
N	1849
-2 log likelihood	1538.26

Source: Own calculations based on World Bank 2006 Sri Lanka Aging Survey.
Note: * p<0.05 **p<0.01

3. INCOME SUPPORT PROGRAMS FOR OLD AGE

The previous chapter finds that there is a possibility that family support may decline in Sri Lanka as the population ages. It also suggests that the ability of individuals to smooth income through cost effective formal social security systems or safety nets in old age may offset this decline in support and also strengthen the position of elderly in the household. Formal support mechanisms may prove beneficial to poorer households with competing needs (providing for their children), and facilitate the labor force participation of care givers. Coverage expansion can be improved through labor market policies that reduce constraints to individual participation in the formal sector (a topic taken up in the final chapter) coupled by the development of innovative approaches for coverage expansion of the informal sector, including strengthening the safety net for very poor elderly, e.g., widows. This expansion will need to be cost-effective. Aging will increase the fiscal pressures from the formal pension system and make the creation of an affordable pension system an important policy issue. This chapter provides an overview of the formal pension system in Sri Lanka and assesses how it can cover an aging population, both in the formal and informal sector. The first section provides an assessment of the current system: its coverage, adequacy and fiscal sustainability, portability, and ability to provide support to the poorest elderly. The second section provides policy options for reforming the current system and for creating a fiscally affordable base for expanding coverage to the informal sector.

A. ASSESSMENT OF CURRENT SYSTEM

3.1   The various programs that comprise Sri Lanka's system of income support for the old people are among the most studied and well documented in Asia. Most of the work has been done by Sri Lankan researchers but a significant number of reports by the World Bank and others have covered the same ground – in some cases, several times.[13] With this in mind, the assessment presented here does not attempt an in depth analysis of each program. Rather, it draws from previous research and attempts to synthesize the policy implications within a single framework. This framework is then used in the next section to formulate an alternative set of policies.

(a)   Providing a minimum income to the old people

3.2   **The aging of the population in Sri Lanka will result in a growing number of poor old people that will either have to depend on their children or become dependent on social assistance**. This would be true even if the coverage of contributory pension schemes suddenly became universal since those approaching old age today would not have enough time to accumulate adequate pensions. In any case, coverage in the contributory schemes is not likely to become universal in the near future.

3.3   **The last chapter found some evidence that the strain on traditional family support systems is already being felt**. As the ratio of old people to working age persons grows, it will be

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[13] Studies by Sri Lankan researchers include Rannan-Eliya et. al., (1998), Rannan-Eliya and Eriyagama (2003), Eriyagama and Rannan-Eliya (2003a), Eriyagama and Rannan-Eliya (2003b), Gaminiratne (2004) and Karunarathne (2005). World Bank reports include World Bank (1997, 2000, 2005, 2006, 2007).

increasingly difficult for families in the lower half of the income distribution to deal with the tradeoffs that arise in joint family structures. Also, households with more dependent members – children, disabled and old people – may have higher rates of poverty.

3.4   **The current program that can potentially address old age poverty is Samurdhi, the most important social assistance scheme in Sri Lanka today**. An increasing number of countries are introducing cash transfer programs aimed specifically at the old people. These 'social pensions' play an important role in countries such as Mauritius and South Africa and are increasingly important in Bangladesh and India. In contrast to this type of program, Sri Lanka provides cash transfers to the old people as part of a broader social assistance scheme that includes all poor households in the same program.14 This approach is attractive in several ways, especially in the context of high-co-residence rates.15 Despite the fact that the old people poor are not singled out, the expansiveness of Samurdhi results in a similar proportion receiving the means-tested benefits as shown in Table 3.1 below. The last column compares the potential impact using an index. Again, the payments to old people by Samurdhi are similar in terms of the index. Both indicators are low when compared to Mauritius and South Africa where social pensions play a major role in the overall system.

Table 3.1: Comparison of social pensions in selected countries

Country	Type of program	Beneficiaries/ population 65+ (%)	Social pension impact index (%)
Bangladesh	Means-tested SP	22	1.6
India	Means-tested SP	14	1.4
Nepal	Universal flat SP	21	4.7
Sri Lanka	Means-tested as part of general SA	23	1.2
Mauritius	Universal flat SP	Over 100%	27.1
South Africa	Means-tested SP	86%	27.3

Source: Palacios and Sluchynskyy (2006) and own calculations based on Gaminiratne (2004).

3.5   **One potential policy option, recommended by some experts, is the creation of a new social pension program**. Gaminiratne (2004), for example, finds that the cost of a universal social pension equivalent to 15 percent of GDP per capita would cost 1.7 percent of GDP in the first year, rising to 5.9 percent of GDP by 2050. Applying a means test reduces spending sharply, but would still cost about x percent of GDP by 2030. The simulation does not address the question of administrative duplication nor does the author enter into the implications for the future role of Samurdhi vis- a-vis the old people.

3.6   **There may be some rationale for treating the old people poor differently, but it should not come at the cost of duplication of administrative expenses**. There is, it could be argued, a significant difference between paying a cash transfer to a 75 year old widow as compared to a healthy, 30 year old. The unwanted incentive effects on savings and labor supply would obviously be much more of a concern in the latter case. The underlying cause of the poverty is also different. In the younger person's case, it is possible for productivity to rise through, for example, a microfinance loan. The low productivity for the 75 year old is a largely a biological phenomenon and therefore a permanent state. (This is particularly

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[14] There is also a separate program called Public Assistance which covers poor old people, among others and pays very low benefits – around 135 rupees per month. It is a much smaller program than Samurdhi however.
[15] See Palacios and Sluchynskyy (2006).

true of those in the informal sector as shown in Chapter 5.) One reason to distinguish beneficiaries by age may be the possibility for healthy, working age individuals to transit out of the program.16

3.7   **The failure of the Samurdhi scheme to provide a minimum income for the old people today would not be remedied by the creation of a new social pension**. A series of studies have pointed out that benefits of the program are too low and very poorly targeted. Despite the fact that close to 45 percent of households receive the transfer, more than 40 percent of the bottom consumption quintile is excluded and 44 percent of spending is on the top three quintiles.17   Gaminiratne (2004) shows that targeting among old people recipients is worse than for the general population. Importantly, the author also shows that more than 70 percent of the old people belonging to the bottom income quintile are excluded from the program. Improving the targeting and coverage of the Samurdhi scheme for all households, including those with old people members, would be the first step in achieving this goal. However, as the population ages, it will be important to find ways of controlling future spending flows. The possible approaches are discussed at the end of this chapter.

(b)   **Smoothing consumption over the life-cycle**

3.8   **In Sri Lanka, there are four pension or provident fund schemes designed to meet the second objective of a pension system, namely to shift income from the working years to old age**. The key indicators for each of these four schemes are compared in Table 3.2 below. Three important conclusions are supported by these figures. First, the entire system covers less than four million workers from a labor force of more than 8 million. In fact, this is an upper bound since the number of inactive accounts in the informal schemes is not known. Second, both assets and combined spending in the three, immature schemes for the informal sector come to less than 0.1 percent of GDP while the assets of EPF dominate as does the spending of the CSPS. Finally, the smaller schemes are either expensive to run as in the case of the SE scheme or understaffed as is the case with the F&F. Next, we look at the schemes in terms of our criteria of adequacy, financial sustainability and coverage.

Table 3.2: Key indicators for the five earnings-related schemes in Sri Lanka

	EPF/APPF	CSPS	Farmers	Fishermen	Self-employed
Members (000s)	2,350	825	680	48	53
Beneficiaries (000s)	94	419	14	0.5	2.2
Mode of payout	Lump sum	Un-indexed Annuity	Flat nominal annuity	Flat nominal annuity	Flat nominal annuity
Financing	12% employer/ 8% employee	Government budget	Schedule with flat nominal amount by age	Schedule with flat nominal amount by age	Schedule with flat nominal amount by age
Spending/GDP (%)	0.7	2.0	<0.01	<0.01	<0.01
Admin costs per member (rupees)	199	n.a.	236		326
Assets/GDP (%)	18	0	<0.01	<0.01	<0.01

Source and *Notes*: See Table 3.1.

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16 Some advocates of the old people such as HelpAge International have also argued that paying benefits directly to the old people can ameliorate intra-household allocation that may be biased against the old people, although there is little evidence of this effect.
17 See Glinskaya (2000), World Bank (2006) and World Bank (2007).

3.9   **Workers in the formal private sector also are covered for death and permanent disability through the Employees Trust Fund (ETF)**. Although not part of old age income support, ETF provides important complementary protection for formal sector workers enable increasing their consumption smoothing capacity. Financed from an employer contribution of 3 percent of wages (self-employed can also join subject to a minimum contribution threshold), the death benefits are set at 10 times the monthly average wage of the member during the final three months of coverage up to 50,000 rupees. Permanent disability triggers a payment of up to 24 times the average monthly salary of the last three months prior to the accident up to 150,000 rupees, along with withdrawal of balance. The scheme covers accidents that result in loss of limb or vision, 30 types of industrial disease and, since 1993, paralysis. Aside from death and disability, ETF contributions cover five additional benefits including three health related benefits (heart surgery, hospitalization, and intra-ocular transplants), as well as an education and a housing benefit.

(i) Adequacy

3.10   **An important feature of Sri Lanka's pension system is that the four schemes discussed here lack of a standard target replacement rate**. The target replacement rate is defined as the ratio of the pension to earnings that the scheme is designed to produce for workers participating throughout their working lives. Recently, the OECD has developed a standard methodology for comparing replacement rate schedules and these have now been calculated for more than 50 countries. The simulations are not meant as a prediction of what people will actually receive but rather allow policymakers to be explicit about the target benefit levels as well as allowing for better international comparison. The findings, as reported in Whitehouse (2006) show a wide range of benefit patterns across countries, suggesting that there are subjective and country specific rationale for the degree of consumption smoothing mandated.

3.11   **At first glance, this measure when applied to Sri Lanka places it among the countries with the highest target replacement rates**. This result is driven by the fact that the contribution rate to the EPF is relatively high.[18] However, there are at least three reasons that this is misleading. First, the EPF is not actually converted into an annuity at retirement as is the case in the majority of countries (including most of those with DC schemes.) Second, the EPF can be withdrawn for various purposes while the simulations assume that no withdrawals occur. Third, for purposes of comparability, Whitehouse assumes the same differential – 1.5 percent – between the net rate of return and wage growth in the cross-country simulations. Historically, the performance of the EPF has resulted in a lower differential.[19]

3.12   **The same metric is useful for comparing the EPF targets with those of the CSPS which covers civil servants**. Since the Civil Service Pension Scheme (CSPS) is a defined-benefit scheme, the problems of annuitization, withdrawal and rates of return do not arise. On the other hand, as the simulations are always presented in real terms, the standardized replacement rate schedule for the CSPS is misleading in a different way. Indexation of the pension is done on an ad hoc basis, so there is an added element of uncertainty. Nevertheless, it has tended to keep up with inflation and that is what is assumed in Figure 3.1, which compares the EPF and CSPS benefit schedules for two workers entering service today. For the EPF, we show the outcome for a lower rate of return based on the historical investment returns.

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[18]   The discussion here referring to the EPF is also applicable to the approved, private provident funds (APPF) unless otherwise noted throughout the rest of the text.
[19]   According to Gaminiratne (2004), the real annual rate of return between x and y was approximately, x percent. Karunarathne (2005) shows that replacement rates generated by the EPF could have been substantially higher if balances were invested in a diversified portfolio.

3.13   **The CSPS benefit formula has also been shown to be generous relative to other countries in South Asia**. One study found that both pension wealth and implied replacement rates were higher in Sri Lanka than for any other country in South Asia. Indian replacement rates were about half of those in Sri Lanka.20 However, the same study showed that the ratio of civil service wages to average incomes was much higher in India, suggesting that pensions in Sri Lanka may be used as a kind of deferred compensation for compressed wages21. As shown in Figure 3.2 below, most pensions are concentrated between four and ten thousand rupees per month or between 40 and 100 percent of income per capita. Some of the lowest values are found among the oldest pensioners, often surviving spouses. Albeit a very small proportion of the total, a few of these individuals may have consumption levels that would classify them as below the poverty line.

Figure 3.1: Pension value in real terms for F&F scheme by age of enrollment

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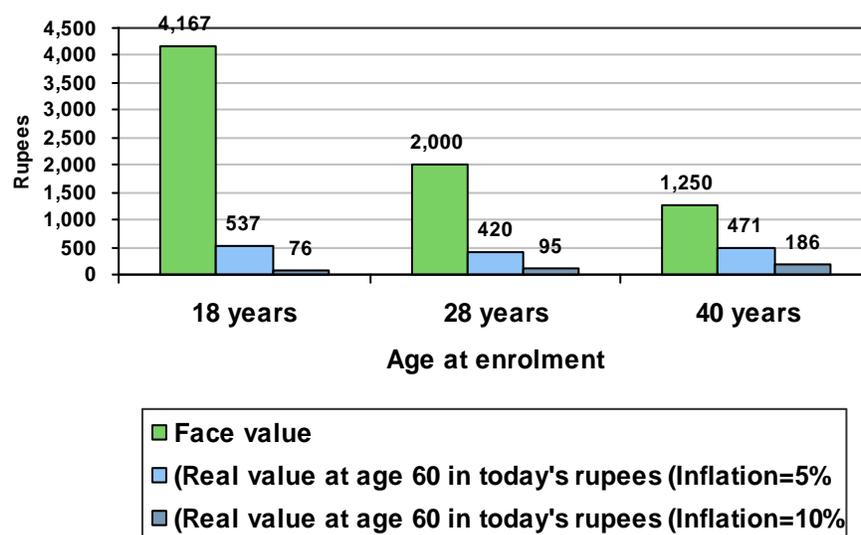
20 World Bank (2005), p. 11.
21   Another element that complicates comparison between the two schemes is contributory nature of the survivors benefit in Sri Lankan Public Sector, while India offers such benefit at no extra cost to its Civil Servants.

Figure 3.2: Distribution of monthly pensions of civil servants
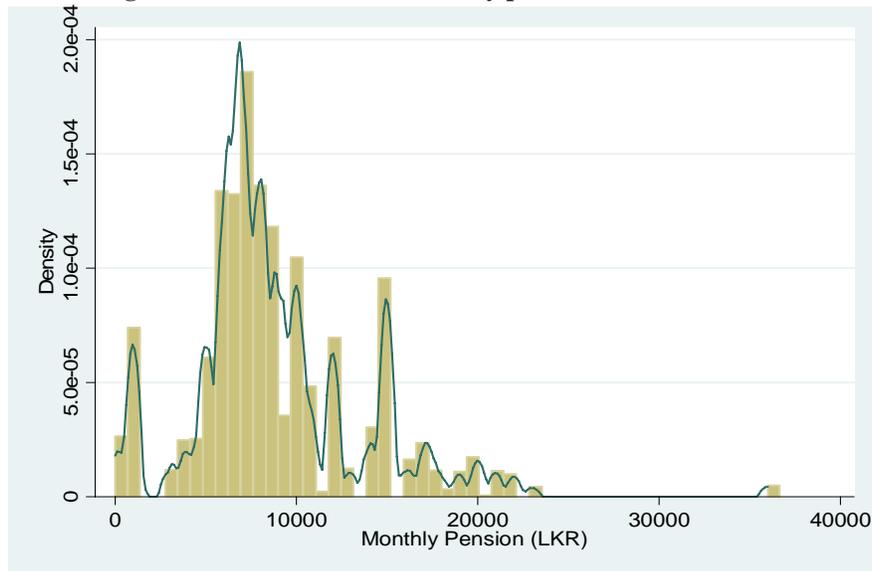
Source: World Bank 2006 Sri Lanka Aging Survey.

3.14   **In the last few years, the Government has attempted to change the CSPS parameters including a reduction in the accrual rate and the introduction of an employee contribution**. The contributions collected were to be managed by the EPF, along with its other reserves, under the supervision of the Central Bank. These were positive changes although they were applied only to civil servants hired from 2003 onwards. In 2006 however, a circular was issued reversing even this modest reform and the old benefit formula will continue to be used.

3.15   **Thus, target replacement rates for formal sector workers are relatively high, especially in the case of the CSPS**. In contrast, the replacement rates generated by the two informal sector schemes for a young farmer or fisherman today are highly uncertain but potentially much lower than those of their formal sector counterparts. This is because the table that is used for determining the benefit amount is stated in nominal terms and with current rates of inflation, the real value of these promises will be negligible by the time they are old. On the other hand, future governments may continue to raise the minimum benefit as they have already done several times as its real value has been eroded by inflation.

3.16   **Two important policy conclusions arise from this brief review**. First, there is no consistency across the four pension schemes in terms of adequacy or public policy objectives.   The implicit replacement rate targets vary widely. Features such as the lack of annuitization in the EPF and the lack of automatic indexation of the CSPS along with the use of nominal benefit schedules for the two informal sector schemes result in a high degree of uncertainty.   Second, the parameters of the formal sector schemes suggest relatively high replacement rate targets while the nominal values promised by the two informal sector schemes will not be adequate for younger workers today under any reasonable inflation rate scenario.

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(ii) Coverage

3.17   Figure 3.3 below divides the broadly defined working age population into formal, informal and other types of workers. In some cases, such as students and housewives, participation in a contributory pension scheme is not expected. However, it can be seen that among potential participants, the majority are found in the informal sector. Yet only around 720 thousand out of the five million informal sector workers belong to a pension scheme and many of those will end up in default. Together, the EPF, CSPS and the three informal sector schemes cover approximately 28 percent of the labor force.

Figure 3.3: Coverage of the workforce with old age income support programs
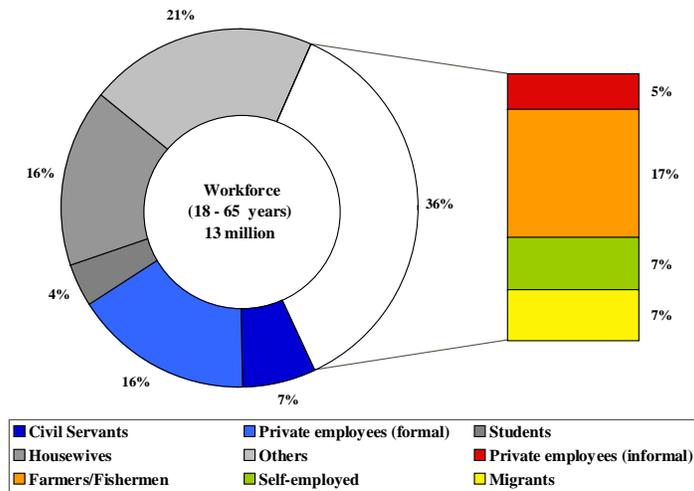
Source: Rannan-Eliya (2006).

3.18   **The share of the labor force covered is slightly higher than what would be predicted at Sri Lanka's income level based on a cross-country regression**. This does not provide much reason for optimism however due to the rapid aging of the population. The Figure 3.4 shows how dramatic this process will be for Sri Lanka. By 2030, the percentage of the population aged 60 and over will more than double and will exceed that of any Asian country except for Hong Kong, Japan and Singapore. In slightly more than a decade, Sri Lanka will have the same proportion of old people in the population as found in the OECD countries today where pension scheme coverage is practically universal.

3.19   **There has been some progress in the last decade on expanding coverage, in particular, through the operation of the Farmers and Fishermen (FF) pension schemes**. Along with the scheme for the self-employed (SE) managed by the Social Security Board (SSB), the special schemes have helped raise coverage by about 8 percentage points of the labor force. This may appear to be a modest gain, but is impressive given the fact that few countries have managed to entice workers in the informal sector to make voluntary contributions to a pension scheme. This has been difficult partly due to the design of traditional schemes which do not work well since most of these workers do not receive a regular salary. This makes it impossible to apply standard models of contribution collection or to apply a defined benefit formula.

Figure 3.4: Share of population over age 60 in selected Asian countries, 2000-2030
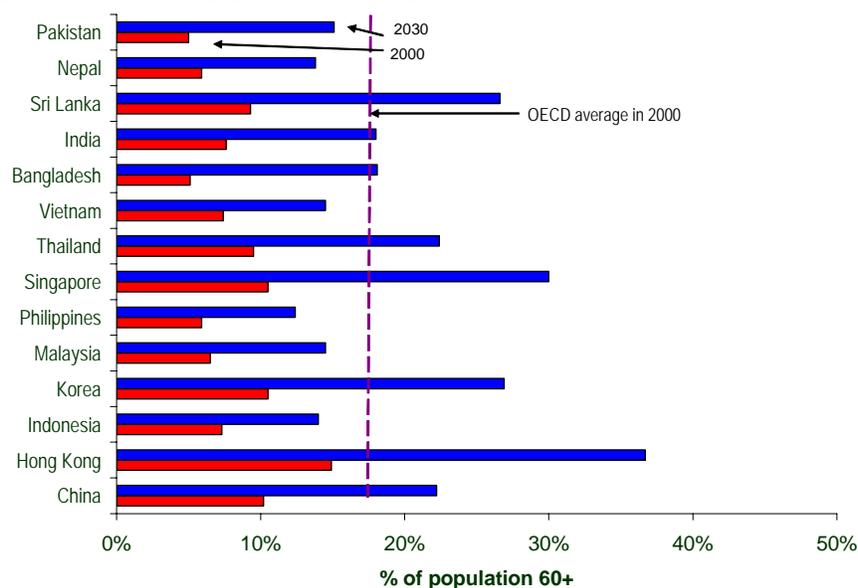
3.20   **The three special schemes set up for these workers in Sri Lanka overcome this problem by applying a table that specifies fixed contributions and promises fixed benefits at retirement for new entrants depending on their age**. There is no need to monitor or verify their actual incomes. This design solves one problem but creates another that undermines the schemes financial sustainability (see below). Another flaw in design of these schemes is the requirement of continuous and uninterrupted participation to maintain eligibility status. Some workers may find such contributory mandate too demanding and difficult to comply with. For example, sudden temporary health shocks may disqualify individuals from participation in the program. This deficiency is illustrated by extremely high default rates on payments of contributions.

3.21   **The conclusion is that expanding pension scheme coverage should be a high priority but that the current approach of creating multiple, actuarially unsound schemes is not the solution**. The management at the EPF has recently formed a task force to find ways of extending coverage. Similarly, the Social Security Board (SSB) has come out with several initiatives on launching new schemes. While attempts to expand coverage are certainly warranted, in the final section of this chapter we will argue that these efforts should be part of a comprehensive approach (see Box 3.1 on international experience with coverage expansion to informal sector workers).

(iii) *Financial sustainability*

3.22   **Four of the schemes – the CSPS and the three schemes for informal sector workers – generate unfunded pension liabilities**. The CSPS scheme (except for the survivors benefit) is financed directly out of the budget and can be considered 'mature' in the sense that those retiring today have always been covered. During the last decade, spending as a share of GDP has stabilized at slightly below two percent of GDP. Future spending trends depend on the internal demographics of the civil service and crucially, the way pensions are adjusted. The age structure of the civil service is known, but the practice of discretionary indexation introduces significant uncertainty to any projection.

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Box 3.1: International experience with informal sector pension coverage

In most countries, mandated pensions have applied to formal sector workers for decades (see table below). Despite this fact, the 'coverage gap' has stubbornly remained. In low income countries, the share of the labor force that contributes to any pension scheme is often below 20 percent and rarely above one third. Of course, low coverage is not limited to pensions and is related to the broader issue of informal labor market activity.

In recent years, a number of countries have set up special pension schemes aimed at the informal sector – self-employed, small firms, farmers, casual laborers etc. These schemes recognize that informal sector workers tend to have volatile incomes and lack the reference wage that is necessary for standard defined-benefit plans. By their nature, informal sector workers must be enticed to participate since mandates are difficult or impossible to apply. The schemes fall generally into two categories. The first mimics a defined benefit scheme in the sense that the pension level is pre-defined in some way. It may be a multiple of the minimum wage or a flat absolute amount. The second type is defined contribution and these may involve a matching contribution. The following table lists some of the schemes:

Special pension schemes for informal sector workers in selected countries

Country	Scheme type	Status
China	Subsidized DC	Implemented early 1990s, 50+ million members
Dominican Republic	Subsidized DC	Law passed but not implemented
Ghana	DC	Planned for piloting
India (West Bengal)	Subsidized DC	Implemented; 650,000 members in 2005
India (Kerala)	Mixed DB and DC	Implemented
Indonesia	Mixed DB and DC	Law passed but not implemented
Mexico	Subsidized DC	Law passed but not implemented
Sri Lanka	Pseudo DB	Implemented; 650,000 members in 2005
Thailand	Undecided	Law under consideration
Tunisia	Pseudo DB	Implemented
Turkey	Pseudo DB	Implemented
Vietnam	Subsidized DC	Draft law under consideration

Source: Palacios (2007)

Despite these attempts, little progress has been made in attracting voluntary participation with the possible exception of China where more than 50 million farmers are believed to be participating in the rural pension scheme. Even in this case however, the vast majority of farmers and rural workers do not participate.

Little research has been done to date in this area, but there appear to be two key issues. First, transaction costs must be kept very low given the small monetary amounts involved. Yet, many informal sector workers have limited interaction with the formal financial sector and may be in remote areas with little infrastructure. The second key question is the incentive needed to attract workers with high discount rates to think about old age. Tax benefits are standard in OECD countries to spur voluntary participation but are irrelevant for informal sector workers in developing countries. In India and Mexico, new initiatives have been launched in 2007 that involve matching DC contributions and these may shed some light on the incentives needed to extend coverage.

3.23 **Assuming that pensions are increased as they have been in the recent past, spending should increase as a share of GDP over the medium term and the unfunded liability today is roughly sixty percent of GDP**. Figure 3.5 shows spending peaking at around 3.5 percent of GDP. The lower spending line shows the impact of the parametric reform that has now been abandoned (see Box 3.2). The civil service pension liability in Sri Lanka is by far the highest in South Asia.

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Figure 3.5: Spending as share of GDP without reforms, 2002-2050
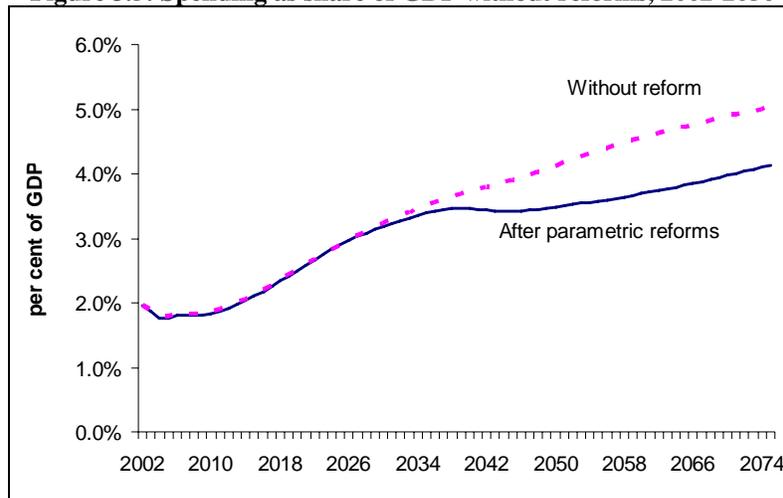
Source: World Bank staff calculations.

3.24   **The situation is quite different for the SE and FF schemes because they do collect contributions and are still immature**. Spending is still low and these schemes are running surpluses and investing their reserves. However, projections show that they will start running deficits in the near future. The extent of those deficits depends on several factors. First, it is possible that coverage could expand which would broaden the contribution base and postpone deficits. Of course, the eventual deficits would be even larger because, at an individual level, the contributions are not sufficient to fund the benefits. The second important factor is the macroeconomic environment and specifically, inflation and interest rates. The table of nominal contributions and benefits implies a certain internal rate of return. If inflation and nominal interest rates are higher than this IRR, the scheme will have a smaller liability at the cost of lower real benefit levels for pensioners. It is also worth noting, for reasons discussed below, that the reserves of all these schemes are invested almost exclusively in government bonds.

3.25   **Gamaniratne (2004) calculates that, under plausible assumptions, the liability has already reached as much as 17 percent of GDP**.22 If the program was to be scaled up or similar programs added in order to expand coverage to new groups, the liability would simply grow even larger. At some point, there would be a stark tradeoff between allowing real benefit levels to collapse or bailing out the schemes finances. This is a good example of the interplay between sustainability and adequacy.

3.26   **The significance of these explicit and implicit pension debts – which may sum to almost one year of GDP the effects of which in the context of an aging population is twofold**: First, a pension system that does not allow long term savings to be channeled into the economy is a missed opportunity to contribute to economic growth. Lower growth will mean fewer resources will be available at a time when the labor force will be shrinking and demand for health and pension spending will be growing. The second related point is that future fiscal decisions will increasingly involve tradeoffs between bailing out pensioners and other priorities. The fear of intergenerational conflict is growing in rich countries with large pension debts, prompting many to trim their defined benefit promises and setting

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22 An actuarial report by Watson Wyatt as far back as 1998 pointed out the huge gap in the long-term finances of the scheme for the self-employed.

up new prefunding instruments.23   The stakes are arguably higher in a country that will age before reaching a high income level. This appears inevitable. For example, in order to achieve Japanese income levels today by the time Sri Lanka reaches the current stage of Japanese aging would require incomes to grow at more than double the rate they have been growing during the last two decades.

Box 3.2: The aborted reform of the CSPS

Sri Lanka's parametric reform went into effect in 2003 and included adjustments to contributions and benefits. A contribution of 8 percent for employees and 12 percent for the government as employer were required from all new entrants to the civil service. The benefit formula was changed such that a 70 percent replacement rate would be generated after 32 years of service. In other words, the accrual rate was reduced from 3 to 2.1875. The lump sum payment of 24 months remained as did other key parameters.

Figure 3.6 shows the projected spending before and after the parametric reforms. Prior to the reform and assuming that pensions were adjusted in line with inflation, the implicit pension debt was about 60 percent of GDP. Since the reform applies only to new entrants, the impact on the stream of spending takes a very long time to appear as illustrated by the line labeled 'post-reform'. Assuming that the employee contribution was not offset by wage increases, then the overall savings from the reform would be somewhat greater. In short, the savings generated by a parametric reform that affects only new entrants appear only in the distant horizon.

The new contributions are to be accumulated in a fund that would be invested by the Employee Provident Fund or EPF which currently handles the provident fund (defined contribution) balances for private sector workers. The sustainability of the new contributory scheme depends on the differential between the net rate of return and wage growth. The investment policy has, to our knowledge, not been defined as yet, making projections highly speculative. Our own baseline projections suggest that assuming a rate of return equivalent to wage growth, the scheme begins to run cash flow deficits in about 45 years. In the meantime, the reform would not have had any effect on the projected spending until today's new entrants begin to retire in about 30 years. This modest effort to control the pension liability was abandoned in 2006 when, according to government officials, a circular was issued mandating that the EPF return contributions and that the scheme would be abandoned.

The EPF, in contrast, is a defined contribution scheme where in principle, the assets match the liability, although this is somewhat misleading due to the use of these reserves to finance Sri Lanka's fiscal deficits. In fact, a substantial share of domestic debt is held by the EPF. While very difficult to prove, it is plausible, even likely, that governments with direct access to a captive source of lending will consume more than they would have without it. This is the situation in the case of the EPF whose management is under the direct control of government. In short, the Government can count on borrowing these funds to finance its consumption, offsetting any positive national savings effect. Eventually, as the demographics of the EPF reflect the aging of the population, the bonds held by EPF accounts will have to be paid off. The major distinction is that these show up as explicit government debt while the unfunded liability of the other four schemes does not appear anywhere in the fiscal accounts

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(c)   **Summary**

3.27   **The current system fails to provide Sri Lanka's old people a minimum income and helps only a small portion of the labor force to smooth consumption effectively**. As the population continues to age, the problems of low coverage, inadequate pensions and a growing pension liability will weigh heavily on society, potentially straining intergenerational relations. These programs have evolved independently over time and are not coordinated under an umbrella policy framework. New initiatives, such as a new social pension scheme or more parallel schemes for the informal sector, would only add to the confusion. In the second part of this chapter, we present a hypothetical integrated pension system. It is meant only as an illustration since the key parameters are a matter of public policy that can be determined only by an open discussion among stakeholders in Sri Lanka.

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[23] Examples include Canada, Germany, Ireland, Italy, New Zealand and Spain.

B. AN INTEGRATED APPROACH TO PENSION POLICY

(a) Providing a minimum income to the old people

3.28 **A coherent policy for income support for the old people would begin with a defined set of objectives for the two functions of the pension system – providing a minimum income and smoothing consumption**. The minimum income target for the old people is ultimately a subjective matter for social policy, but for the purposes of this illustration, we adopt an initial target of 15 percent of per capita income. This is roughly equivalent to the official poverty line and consistent with the scheme proposed by Gaminiratne (2004). In principle, a substantial part of this could be covered through the existing spending of the Samurdhi program.

3.29 **However, and as mentioned above, current Samurdhi benefit levels are very low and paid to over 40 percent of households**. Analysis has shown that paying higher benefits to a smaller, better targeted part of the population could have a major impact on poverty.24 For example, if targeting concentrated all transfers towards the bottom quintile, the transfer could be raised from four to eight percent of income per capita within the current budget envelope.

3.30 **This would still fall short of our illustrative 15 percent of income per capita target benefit level**. The difference could be made up by a special social pension supplement paid to households per old people member. Some of the justifications for a specific transfer based on old age were mentioned earlier in paragraph x. The incremental cost would be limited as long as the eligibility age was not set too low. For example, if the supplement per old people person was paid to households in the bottom quintile with members 65 year or older, the additional cost would be around 0.1 percent of GDP. The benefit would be price indexed.

3.31 **This approach has the advantage of avoiding the duplication and cost of setting up a new social pension scheme but whether it is feasible or not depends on improving the targeting of the Samurdhi program – a major challenge that goes beyond pension to broader social protection policy**. An alternative that has become increasingly popular in the international community is a universal flat pension that would be paid to all old people in Sri Lanka. This would avoid the need for a broad means-test and therefore, the issues that have confounded the Samurdhi program. On the other hand, the cost of the 15 percent of income per capita benefit target would start at 1.7 percent of GDP and rise to x by 2030. This would be a major fiscal challenge, especially as health expenditures rose with the aging population. It may also be difficult to justify targeting on the basis of age when the poverty rates tend to be lower for the old people today in Sri Lanka. Nevertheless, this could change over time and a shift to such a scheme combined with a reduction in the replacement rate targets of contribution-based schemes could be a valid option under the right circumstances. Furthermore, some narrow individual means-testing could apply, e.g., by offsetting social pension by the amount of public pension benefit.

(b) Smoothing consumption over the life-cycle

3.32 **The first challenge facing the four income replacement schemes is to clearly define their objective**. This involves choices as to the age where the income support should become available, target benefit level and the mode of payment. Once again, these are largely subjective decisions and policies

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24 World Bank (2007).

vary greatly across countries. Table 3.3 shows the average retirement age, replacement rate for average earners and mode of payment for the main pension programs in selected regions. A few patterns emerge:

- First, countries with higher life expectancies tend to have higher normal retirement ages. Intuitively, this would make sense in that workers in these countries should generally be healthier at older ages and therefore, able to work.
- At the same time, it should be noted that many of the richer countries have raised retirement ages in order to reduce pension liabilities.
- Second, the vast majority of countries pay benefits in the form of some kind of annuity, often indexed.
- Third, there is a huge range of average replacement rate targets across countries. There appears to be some correlation between the role of the state and these replacement rates as the higher figures are associated with more paternalistic governments.

Table 3.3: Regional patterns for selected retirement parameters

Region	Normal retirement age (Men/Women)	Net Replacement Rates	Percentage countries with minimum annuitization
High Income OECD Countries	64.8 / 64.6	68%	100%
Eastern Europe and Central Asia	62.8 / 60.8	73.3%	100%
Latin America and Caribbean	62.4 / 59	66%	87%
Middle East and Northern Africa	60 / 57	88%	100%

Source: Based on Whitehouse (2007).
Notes: Average retirement ages calculated by authors.
Replacement rates are net (after tax pension relative to after tax wage) for average income earner.

3.33   **In terms of retirement age, Sri Lanka's health achievements have led to a life expectancy that is atypical of its income level (and part of the reason for its rapidly aging population).** This suggests that the normal retirement ages applied in Sri Lanka are relatively low in comparison, especially in the case of the EPF at 55 for men and 50 for women. Moreover, the contribution rates required to generate a reasonable income in retirement depend directly on the ratio of contributing years to years in receipt of a pension. In order to avoid excessive contribution rates then, retirement ages should increase along with life expectancy. In this illustration then, we assume that the retirement age would be gradually raised to 60 for both men and women. This is already the retirement age in the other four schemes.

3.34   **Regarding mode of payment, the rationale for mandating annuities is based on the market failure in the voluntary annuities market as well as the public policy objective of ensuring that people do not outlive their savings or 'longevity insurance'.** It could also be seen as a safeguard against moral hazard where the state guarantees some minimum income. Empirical evidence for Sri Lanka also provides some support for mandated annuitization. As shown below in Table 3.4, more than half of EPF members spent their accumulated balances while only one in ten invested or saved the money. The data also reveal that those who did not spend their balances tended to be workers in higher income households. Three fourths of the bottom expenditure quintile spent their EPF balances.

Table 3.4: Use of EPF balances

How was the EPF balance used	Percent
Saved/Invested	10.74%
Bought durables	8.02%
Spent it	52.72%
Paid off debt	6.05%
Distributed among children	10.41%
All were lost/expended	0.16%
Given as a loan to someone else	0.24%
Donated for religious activities/purposes	0.29%
Didn't receive any such money	0.87%
Other	10.49%
Total	100.00%

Source: World Bank 2006 Sri Lanka Aging Survey

3.35   **The public policy objectives and the observed behavior of EPF members suggest that some minimum level of mandated annuitization is desirable**. Moreover, the mandated annuity level should take into account the minimum guaranteed income level which, in this illustration, was set earlier at 15 percent of GDP. There should not be an incentive to spend down the savings from the contributory scheme in order to take advantage of the social pension. With this in mind, the recommended level of minimum mandated annuity would be set higher than the social pension. Under reasonable assumptions of wage growth and assuming a price indexed pension, the minimum mandated annuity level might be set at around 30 percent of income per capita. Of course, a greater degree of annuitization could be encouraged, for example, through favorable tax treatment.

3.36   **With regard to the CSPS, it should be recognized that although the target replacement rates are relatively high, the lack of automatic indexation can result in uncertainty and the possibility of low real pension values**. In this sense, a price-indexed annuity would reduce uncertainty. There is no obvious reason why the minimum mandated annuity should be different for civil servants and private sector workers. On the other hand, the starting point for members of the EPF and the CSPS is different and allowing commutation within the CSPS context might have negative short term budgetary implications. For this reason, there may be a rationale for phasing in the commutation.

3.37   **In terms of target replacement rates, the degree to which income should be shifted from youth to old age is a subjective matter and varies across countries**. A useful way of expressing the public policy objective is the net replacement rate (NRR). The NRR compares after tax pension income to after tax earnings. The average for the 30 countries in the OECD was roughly 68 percent, comparable to what EPF members would get in the absence of withdrawals and better investment returns and less than what is promised to civil servants when they retire.

3.38   **A fundamental policy question is why should target replacement rates be different for public versus private sector workers in Sri Lanka**? It is sometimes argued that higher pensions are compensation for lower wages in the civil service. In fact, when taking into account skills, experience and education level, this is not found to be the case in Sri Lanka except at the highest levels.[25] To the extent that this were to be the case, however, the solution would be an overall compensation reform that would place public sector pay and pension scales on a comparable level for comparable workers.

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[25] See World Bank (1999) for discussion of the wage premium for public sector jobs.

Replacement rate targets are based on society's view on how much income government should encourage or mandate individuals to shift from their younger to older years. There is little reason why this target would be different for a civil servant or a factory worker.

3.39 **In order to be sustainable, the replacement rate target for the EPF must be consistent with the contribution rate**. The current contribution rate is relatively high at 23 percent of wage (after taking into account the ETF). At the current rate, assuming that 20 percentage points were allocated only to providing retirement income at age 60, the EPF would have the potential of providing an NRR of between 50 and 60 percent.26 This is higher than the implied target for the EPF under the existing retirement age rules, investment rules and withdrawal conditions. In fact, survey data reveals balances that today would result in very low annuities. Almost half the 60-64 year olds had balances below Rs. 100,000 when they retired while another 45 percent had between 100 and 500 thousand.

3.40 **In this illustration then, the proposed target NRR for a full career worker, retiring at age 60 would be around 60 percent**. This would apply to both the CSPS and the EPF members. In the case of informal sector workers, the lack of a reference wage leads to a slightly different approach to the target RR. The objective is to aim for a reasonable minimum level of retirement income without imposing a severe burden on informal sector workers, many of whom are of limited means. The target then, for these workers would be 15 percent of income per capita. Over time this target would increase in absolute terms and would exceed the price indexed social pension benefit. As coverage of informal sector workers increased and as the labor force in general became more formalized, the need for the social pension would be reduced.

3.41 **Under reasonable assumptions, the required contribution in 2005 rupees required to achieve the target annuity is around seven percent of income per capita for somebody who joins the labor force today**. This contribution would be automatically adjusted with incomes over time. The amount is much higher than what is paid now into the informal sector schemes, since the tables were set up years ago and inflation has eroded their value. On the other hand, the benefit that can be sustained for these workers in the long run is much lower as mentioned above. To the extent that a subsidy is needed to attract members, this could be achieved through a more transparent process whereby the individual accounts of members were 'topped up' by a matching flat contribution. The same administrative criteria applied today in terms of land holdings or fishermen assets etc., could be applied for the purposes of determining the eligibility for the subsidy. Based on current membership, a matching government contribution would require an expenditure of approximately 0.1 percent of GDP. On the other hand, the growing liability of these schemes may eventually result in an even more expensive government bailout.

(c) **Towards an integrated pension system**

3.42 **The integrated pension system that emerges from these various parameters is summarized in Table 3.5 below**. The contributory schemes all have the same minimum target annuity, inflation indexed and payable at age 60. Workers in the formal sector, where wages tend to be higher and more regular have target replacement rates of around 60 percent, but have the flexibility to commute part of this as long as they have met the minimum annuity conditions. They pay the same contribution rate of 20 percent. Workers in the informal sector pay an indexed flat contribution of around 7 percent of income per capita and receive the same kind of indexed annuity as their counterparts in the formal sector. Finally, informal sector workers that are not able to contribute because they are too poor will receive a subsistence pension set roughly at the poverty line and paid from age 70.

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[26] This depends on the differential between the net rate of return on investments and the underlying wage growth. It also would depend on whether annuities were sex-specific which would result in lower annuities for women.

	Current policy			New policy		
	Target RR	Payout mode	Financing	Target RR	Payout mode	Financing
EPF/APPF	Uncertain	Lump sum at age 55/50	Contribution 20 % of wage	50-60% of wage	Mandated minimum annuity of 30 % of pci	Contribution of 20% of wage
CSPS	>90% of wage	Unindexed annuity at age 60	Budget	50-60% of wage	Mandated minimum annuity of 30 % of pci	Contribution of 20% of wage
F&F	Uncertain	Unindexed annuity at age 60	Flat nominal contribution by age	15 percent of income per capita	CPI indexed annuity	Contribution at 7 percent of income per capita
SE	uncertain	Unindexed annuity at age 60	Flat nominal contribution by age	ɔercent of income per capita	CPI indexed annuity	Contribution at 7 percent of income per capita
Lifetime poor households	uncertain	Unindexed benefit	Budget	15 percent of income per capita CPI indexed	Means-tested payment at age 70	Budget

3.43   **The system used for this illustration achieves a number of the original objectives set out in this chapter**.   In terms of adequacy, the social pension would reduce old age poverty significantly, although success depends on matters of targeting the Samurdhi scheme that lie beyond the scope of pension policy. Meanwhile, adequacy in terms of consumption smoothing would be achieved through a reasonable (if subjective) target that applied to all formal sector workers and an affordable minimum target for informal sector workers.   Note that the target benefit is higher than the current minimum pension relative to income per capita. All covered workers could count on longevity insurance through price indexed annuities.

3.44   **With regard to sustainability, there are several improvements over current policies**. First, the civil service scheme would be financed explicitly through contributions rather than continuing to accrue hidden liabilities for the budget. Gradually, the unfunded liability would disappear and future budgets would not be burdened by an aging civil service at a time when a growing number of poor old people would need income support and health provision.   Similarly, the unfunded liabilities of the informal sector schemes would cease to grow and instead, any subsidies would be paid up front. With regard to the EPF, the situation would not change significantly unless, as discussed below, government stopped relying on the EPF as a source of credit to finance deficits and effectively tax its members. Finally, a better targeted Samurdhi focused on the bottom quintile is a goal in itself and the addition of a social pension to alleviate old age poverty under these conditions is affordable.

3.45   **This system also allows for a two-pronged approach to coverage expansion depending on fiscal constraints**. The system described above would, without further changes, still leave almost half of the current aging labor force outside scope of the pension system. Many could end up adding to the number of social assistance beneficiaries in the future while others may not end up in poverty, but would have missed an opportunity to smooth their consumption more effectively. The lack of pension income for a large share of old people in a rapidly aging country could also prove socially divisive in the future.

For these reasons, expanding coverage of contributory schemes could become a priority for the government although these would compete with other expenditures.

3.46 **In moving to a new system, a number of challenges would arise with regard to the transition**. In the case of the EPF, for example, the shift to mandated annuities and higher retirement age could be phased in gradually to accommodate the fact that members have made plans based on the old parameters. Similarly, the reduction in target benefit levels for civil servants could be phased in gradually. Starting only with new entrants as was the case with the previous attempt at reforms may be too slow however. Instead, younger workers, not already vested could be included and their initial contribution covered through a one time wage increase. Older workers might be given an option to shift under the same terms. To the extent that workers place value on automatic price indexation and partial commutation, some may take the option.

3.47 **The informal sector schemes would have to replace the current nominal contribution and benefit schedules with the new, indexed contribution raising the question of how to value pension rights already accrued under the current regime**. One option would be to deposit a notional present value of the projected benefits into the individual's account. The value of this 'recognition bond' could be calculated as if the individual had been contributing at the new rate during his entire membership period. Alternatively, the present value of the projected benefits could be calculated and deposited into the individual's account. In either case, the uncertainty regarding the real value of the nominal benefit that is currently promised and the fact that the new regime was beneficial for the worker would have to be made clear.

3.48 **Another challenge is that older informal sector workers would not have sufficient time to accumulate funds to generate the target replacement rate**. This could be remedied by allowing higher contributions from these workers and even allowing for a larger matching contribution. Another transition measure that could be considered would be to relax the means-testing criteria for social assistance so that they would not include pension income from the informal sector schemes for say, the next 10 or 15 years. This would increase incentive for older workers to participate in the scheme even as the social pension was being introduced.

3.49 **For younger workers with more years of accumulation and fiscal incentives, this disincentive should dissipate over time**. Younger workers may also be enticed by a government matching contribution which would almost certainly be required in order to attract more contributors. The cost of the matching government contribution would be proportional to the take up among informal sector workers. For example, the match for a number of contributors equivalent to one quarter of the labor force or about two million workers would cost around 0.3 percent of GDP. Over time, participation could be increased so as to cover the majority of the informal sector workforce.

3.50 **In addition to meeting the three original criteria, a truly integrated pension system could provide ancillary benefits including full pension portability and reduced administrative costs**. There is no reason that each of the four contributory schemes could not operate as defined contribution arrangements under the same or at least very similar regulatory framework and rules. This would allow complete portability so that a taxi driver who took a job in a factory would simply continue to have the same individual account accumulating until his retirement. In the very long run, such a system would also seamlessly deal with rural-urban migration as a member of the farmers' pension scheme would simply transfer the account balance to the EPF or perhaps, a PSPS account. Portability would not only facilitate saving for retirement for individual Sri Lankan workers, it would also lead to greater overall labor market efficiency as one impediment to mobility was removed.

3.51   **Another major side benefit of an integrated approach is a potential reduction in administrative costs**. The international evidence suggests that there are important economies of scale in recordkeeping and back-office operations of pension schemes. The recent tendency in Sri Lanka to create new schemes has led to small, expensive operations where administrative expenses consume a disproportionate share of the contributions of members. Even if separate schemes are maintained, a unified recordkeeping apparatus could be used that would reduce overall costs to the benefits of members. The next section discusses the implementation issues and opportunities that would arise with this kind of integrated approach.

(d)   **Implementation issues**

3.52   Moving forward with a complete overhaul of the pension system in Sri Lanka will be a difficult task requiring both political will and investment in human and physical capital. Garnering public support is necessary in Sri Lanka's democratic setting, but it is difficult to convince workers, especially younger ones, to focus attention on old age income support issues. Analysis of data from the World Bank Retirement Planning survey in 2006 show that around 58 percent of workers aged 29-59 are not planning for their retirement. As shown in Table 3.6 below, the problem is particularly acute amongst casual workers and the self-employed. In a country aging as rapidly as Sri Lanka, there appears to be little public awareness of the importance of saving for old age.

Table 3.6: Sri Lankan workers' retirement plans, by type of employment

	mandated savings	voluntary savings	No retirement plan	share of sample
	% by type of employment			
Regular	81	5.7	13.4	26%
Casual	6.7	11.9	81.4	27%
Contract	11.9	21.2	67	3%
Employer	0	22.6	77.4	5%
Self-employed	0.6	24.7	74.7	29%
Unpaid family	3.3	38.6	58.2	9%

Source: World Bank Retirement Planning Survey (2006).

3.53   The challenge of increasing public support for pension reforms also involves education on issues ranging from retirement age to investment policy. For example, the Retirement Planning survey finds that Sri Lankan workers expect to retire in their early 50s, i.e., even lower than the normal retirement age. This is inconsistent with the amount of savings that would be available to draw down over remaining life expectancy at that age. To the extent that the outcomes of contributory schemes are a result of successful investment, this will also be an important area of public awareness. This is particularly true for informal sector workers with low education levels that may come into a funded system.

3.54   **Old age income support policies often fail because of deficiencies in administration, most importantly in the areas of recordkeeping and the management of pension reserves**. With regard to the latter, several studies have already highlighted the problems with the current investment policies of the EPF and the informal sector funds.[27] The current investment policy is almost exclusively concentrated in government debt and the rate of return is essentially determined by the Central Bank. Recommended changes based on international experience[28] might include (i) an investment policy that

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[27] Eriyagama and Rannan-Eliya (2003a and b), Gaminiratne (2004) and Karunarathne (2005).
[28] See Carmichael and Palacios (2003).

allowed for diversification and higher, risk-adjusted returns (ii) partial contracting out of asset management and (iii) the introduction of a professional board at arm's length from government with a mandate to invest in the best interest of members. Implementation of such changes would require training of staff, especially with regard to 'managing the managers'.

3.55   **In contrast, there has been very little in-depth analysis on issues that affect all of the schemes such as recordkeeping, payment systems and processes of collection of contributions, benefit payments, etc**. Improvements in these areas can reduce costs, improve service to members and even facilitate expansion of coverage, regardless of other policy changes. Moreover, an integrated old age income support policy of the type described above will require an infrastructure that is at least harmonized and coordinated. In fact, we argue that in certain areas, a common platform will be preferable.

3.56   **Administration and governance of the pension programs in Sri Lanka is very fragmented**. The EPF is jointly managed by the Central Bank and Department of Labor (DOL): while the DOL is largely responsible for member enrollment and registration, functions of the Central Bank include asset management and administering individual accounts. CSPS operations are supported by the Pension Department. The Self-Employed Scheme is managed by the Social Security Board (SSB), and the Agricultural and Agrarian Insurance Board (AAIB) is in charge of both the Farmers' and Fishermen's Pension Schemes.

3.57   **In addition to the multiple operational mandates for each sector, a number of policy initiatives that cross sectoral boundaries are under way and lack coordination**. This generally results in poor operational capacity, lower service quality, and higher overall costs. It also hampers efforts to expand coverage. In the context of the kind of holistic reforms described above, it would be useful or even necessary to define a strategy for modernizing and streamlining pension provision across these schemes. Such an effort would include refining policies towards member identification, contribution collection, record-keeping, eligibility verification, benefit disbursement and portability, etc. Next, we discuss each of these in turn.

3.58   **Existing member identification mechanisms are fragmented, outdated and inefficient. This may have implications for benefit portability both within and across programs**. For example, EPF identifies employees by their affiliation with a particular employer. When an employee moves to another job, there is a risk of a new account opening, which seems quite common. There is no photo ID issued as part of registration; thumb imprints get collected but not digitized. The SSB's member registration system also seems quite rudimentary, with numbers composed of Divisional Secretary-specific prefix and a sequential number. Both EPF and SSB do collect and store the National Identification Card (NIC) numbers of the members but the information is not fully utilized, as some members do not have such number. The Samurdhi program too seem to be plagued with inefficiencies of member tracking: anecdotal evidence suggests that beneficiaries of the program get are cut off when they leave their place of origin. In the Farmers and Fishermen schemes, however, it is the NIC number that is used to identify members. Given NIC is an intelligent number containing birth details of the individual, the age eligibility as well as age-specific premium can be assessed instantly.

3.59   **Several options could be considered to address the issue of universal identification within and across the programs**. Having a completely new numbering system(s) for the members (as had once been considered by the EPF management) would require a considerable operational effort, political support, and, ideally, endorsement of multiple programs. Alternatively, existing National Identity Card (NIC) numbers could be more actively promoted for universal and exclusive use. For example, the Pension Department in charge of the CSPS is already planning for integration of its various registration

systems using NIC as a common identifier.29 The issue of foreign workers (e.g., an estimated 100,000 individuals participating in the EPF scheme) who are generally not eligible to obtain NIC card would have to be addressed. This could be achieved through a parallel but structurally compatible system for such individuals operated by the EPF. Such a system could also provide for an interim ID issue for Sri Lanka nationals who failed to obtain NIC (although that should be a measure of last resort). These recommendations are conditional on a more detailed study of the NIC registration system and success of the project of its modernization.30

3.60   **Incorporating the biometric based member identification mechanisms into the operation will further strengthen administrative capacity of the programs but the process should be well coordinated**. The DOL is looking to experiment with uses of fingerprint technology in verification of the EPF member's identity. This is an emerging international practice facilitating, e.g., control for duplicate accounts and eligibility verification at retirement. Such a strategy however, would require significant investments in infrastructure. At the same time, the NIC modernization effort envisions establishing a database of digital fingerprints, which therefore suggests that as the schemes mature operationally and dependency on the NIC registration would grow over time, it would be more important to rather get the NIC modernization process right so that all other programs then could also benefit.

3.61   **All pension programs reviewed in this note have a contributory component in their operation.31 While effectiveness of the collection mechanisms remains to be more thoroughly assessed, the EPF stands out as an agency showing a fair effort to provide extra service and to accommodate various operational heterogeneities on the side of employers**. The EPF collection process operates on a monthly (and semi-annual) cycles. Reporting is paper-based; at the same time, EPF follows the practice of data entry outsourcing and obtains all data in electronic format. Some 200 large employers already submit data directly in electronic format. A special web portal with real-time e-filing is a work in progress. Most payments are made using checks, some involve money orders, and some 20 companies have authorized the EPF to process payments in a form of direct debit of their accounts. No contribution gets credited to individual account unless payments are received and reconciled.

3.62   **There are notable redundancies between EPF and ETF schemes, however**. In the latter, employers contribute 3 percent of the payroll on behalf of the covered employees to a special savings scheme. While full operational integration of these schemes is unlikely (given differences in the benefit structure), considerations could be given to consolidation of the collection mechanisms.

3.63   **Other programs, in the pursuit of operational efficiency, outsource the function of enrolment to various local agents**. The SSB has authorized the Divisional Secretaries (DS) to operate as agents responsible for enrolment of prospective members. In addition, SSB collaborates with other public corporations and non-governmental organizations in promoting the scheme. SSB also seeks to provide a diverse range of mechanisms of contribution collection, availing three payment options: in Post Office

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29 More active use of the NIC may require an explicit agreement with the Department of Registration of Persons on the data sharing provisions

30 The National Identification Card (NIC) is a prime national population registration and identification system. The cards are issued to individuals upon attaining age of 16. The NIC number incorporates information on the year of birth, date of birth and gender. The registration process is handled by the Department of Registration of Persons. While some data is stored electronically, overall operation of registration seems heavily based on manual paper processing. At present, the technology of card issue is inadequate too: the card is a simple paper laminate. As part of the modernization effort, the Information and Communication Technology Agency (ICTA) is working on developing the database, introducing modifications into the number structure, and setting up the data collection process including the thumb imprint capture.

31 The Civil Service Pension Scheme has a contributory component where employees contribute up to 7% of their salaries towards the cost of survivorship benefit.

branches (prevailing method, with 15% transaction charge applied), DS offices, and Commercial Banks (with no charges applied). The Farmers and Fishermen schemes operate through the network of local centers and grass root level staff of the Agrarian Department who facilitate public awareness and enrollment into the program, deciding on eligibility of the applicants. All successive premiums get collected by the program agents – rural cooperative banks – who make records of contribution payments in special passbooks. While the rules require defaulters to be disqualified from participation in the program, the lack of ability to consistently track and update records (see below) limits capacity to fully implement this policy.

3.64   **Using the Post Office branches as financial intermediaries to collect premiums has shown mixed results**. The National Post Office operates some 4,500 outlets across the country. While it does not operate any form of personal financial accounts itself, the network of its branches serves as a backbone infrastructure and front-end facility for the financial transaction processing system for some commercial banks. The NPO reports high utilization of financial transaction services in rural areas. Hundreds of thousands of pension payments of various types get channeled though its network each month. While imposing fees which are quite high on the pension related transactions for the SSB and the Farmers and Fishermen schemes, no fee is imposed on government pension payments. At the same time, the network of Post Offices is not computerized, which affects the quality of the services offered. Anecdotal evidence suggests significant delays with transferring premium payments and information on such member payments to the Self Employed Pension scheme, which impacts both financial performance of the scheme and its ability to effectively account for its active members. Clearly, the Post Office will remain an important player in facilitating operation of the pension provisions but more needs to be done to improve transparency and quality of its operations.

3.65   **While the EPF and the PSPF provide for lump sum benefits, the intrinsic challenge with the benefits of the SSB and FF schemes is efficiency and cost of the regular payment mechanisms and post-eligibility verification**. There must be efficient mechanisms to follow up and discontinue payments in cases of death of the members. No agency in Sri Lanka has a mandate to operate the death registration in a centralized and coordinated manner; rather it remains in responsibility domain of the local authorities. Therefore, it will be important to test and see in the future if some data exchange mechanisms could be established with the local authorities. For now, in case of the SSB scheme, benefits are disbursed through a network of agrarian cooperative banks who also verify the post-eligibility of the recipients. In the case of Farmers and Fishermen schemes, payments get disbursed through the Post Office branches (against the Rs. 5 charge per payment); they are also responsible for tracking deaths. Survivor benefits provided by these schemes should further encourage families of the deceased members to report deaths cases. Still, the schemes are quite young and no sufficient experience has been accumulated in enforcement of the post-eligibility provisions. As they mature, it may become a major operational risk, if not properly addressed now.

3.66   **For the Pension Department, ensuring efficiency and transparency in benefit payments (over 400,000 payment cases) is a concern that cannot be ignored. Several modernization initiatives have already been implemented**. The Civil Service Pension Scheme provides for two modes of regular benefit disbursement. The legacy process applies to those retired prior to 2001. Divisional Secretaries issue paychecks locally to the involved payment agencies and keep records on paper. In contrast, those retired after 2001 are paid through a highly centralized sanctioning process. Records first get consolidated on a central database, and consolidated payment instructions with details of individual accounts of retirees get issued centrally to the participating banks. Life certificates must be submitted to the Divisional Secretaries every three months to be forwarded to the center to support continuous payments. Special criteria apply to pensions paid abroad (an estimated 20,000 cases). For example, those who receive pension by means of bank transfer from the local banks in Sri Lanka are now required to regularly submit life certificates by post, etc. Finally, the Pension Department has recently announced a

transition to payments for all through banks only. That process will involve collection and consolidation of data previously store on paper.

3.67 **EPF and CSPS have been working on modernizing their IT facilities**. A very recently procured SAP system provides a modern accounting core for reconciliation, investments, and some other functions of the EPF scheme. Another two related databases, a legacy system operated by the Central Bank that supports member accounts management and the DOL database for member registration, require an upgrade and better integration. (Both agencies note the need and urgency to integrate their operational infrastructures). Finally, EPF has recently launched the web site to provide a wide range of services to both employers and employees. To manage CSPS, the Pension Department has developed an Oracle database. It is viewed however as an interim solution as it does not meet all of the quite complex needs of the operation. The 'E-pensions' project was launched to support a comprehensive modernization of the current government pension scheme. The upgrade will cover all forms of pensions, including the Armed Forces and survivors, and various allowances. It is also expected to provide connectivity to the Divisional Secretariats.

3.68 **At the same time, the SSB and FF schemes still operate on quite outdated legacy platforms. Significant investments and some strategic thinking will be needed if the programs were to sustain their operations**. Electronic records of the SSB are consolidated on a centralized IBM system but it is outdated and inadequate. For instance, some contribution records from the commercial banks come on diskettes and the software cannot automatically upload these records on the database. Only over a dozen workstations operate in the center, and no computers or network facilities available in the districts. There is a clear comprehension of a need to develop a new IT system, provide district offices with a network access, and critically assess and re-engineer current processes. The same platform seems to be in use with the Farmers and Fishermen schemes, although installed more recently. Still the operation is largely paper based. Very few staff members have regular access to the database in the HQ and only one terminal is available in each district. However a significant backlog of data that has not been entered has been accumulated. There is simply very limited capacity at the district level to consistently and expeditiously update electronic records. A random check revealed that some members may have only the first premium amount recorded on the database, the rest would remain only in the member passbook and would not be recorded until the time of application for benefit, providing a major operational risk for the program. As an alternative strategy of modernization, consideration could be given to taking advantage of the efforts of the CSPS and EPF (the CSPS system is expected to have connectivity with the DSs) and utilize their new systems as a common platform for the member accounting.

3.69 **More generally, our recommendation would be to pursue a greater operational integration and promote synergies across the programs**. At the minimum, as already discussed, a common national identifier could be used across various programs. Aiming for some common IT and operational platform would be a more aggressive although not unrealistic strategy. It is important to think in modular terms when analyzing business process of any pension program. Functions of promoting public awareness, enrolment, registration, premium collection, investment management, eligibility assessment, and benefit payment – all do not necessarily have to be operated by a single agency. It may be a new concept but it is a healthy proposition when considering both a great diversity of various sectors and limited public resources available to support operations of multiple schemes. *Different agencies could dealt with different sectors on the interface of client relations but the back-end operation of record-keeping, accounting, investment, and even benefit payment, could be operated from one single common core*. Such strategy would prevent administrative duplication and allow taking greater advantage of experiences developed within the existing programs.

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3.70   **These measures would greatly facilitate benefit portability across the schemes and support more flexible labor markets**. Some policy changes would also be required. For instance, today the rules of the Farmers scheme stipulate that if a farmer finds employment in the government sector or with an employer with pension or EPF coverage, he will be disqualified form participation in the Farmers scheme and would be able to reclaim the net contributions and the accumulated interest, subject to the waiting period of 2 years from the date of the new appointment. This clearly defeats the purpose of the policy of retirement savings.

3.71   **Ultimately, this integration and modernization strategy could lead to operational cost savings and better services for the members**. Annex Table A3.1 presents various operational parameters of the schemes, including administrative expenses for some programs. In case of the SSB scheme for the self-employed, having an operational budget higher that the contributions the scheme can collect for some would defeat the purpose of its existence and even then its current operation not state of the art. At the same, in relative terms, the operations of the Farmers scheme are not very expensive, although some cost covered by operational subsidies from Budget may remain hidden. This is deceptive however, since low costs come hand in hand with very weak systems and poor quality services provided to members.

3.72   **In short, there are clearly good reasons to improve the administrative machinery of each of the schemes and to do it in an integrated fashion**. The cost of upgrading will be very high if each scheme pursues it individually. Some of the required efforts will be duplicated and in the end, there will still be parallel systems that are not compatible with each other, hampering portability. Moreover, it may be difficult to muster the political support for these changes on an individual basis rather than as part of a new vision that aims to better serve the members of the scheme.

Summary

3.73   **The programs that Sri Lanka operates to provide income support in old age suffer from a number of problems in both design and implementation**. A series of studies, mostly by Sri Lankan experts, have documented the deficiencies in design and cited the need for reforms in each program. With the exception of the civil service pension scheme, the benefit or pension levels provided in old age are not adequate. None of the programs provides secure longevity insurance through an indexed annuity. With regard to sustainability, the schemes for the informal sector can be sustained only at the expense of future real pension levels. Spending on civil service pension is already very high and will likely consume a larger share of the budget in the next two decades. These schemes create unfunded liabilities that do not appear in the fiscal accounts but are very real nonetheless. In contrast, the EPF holds paper assets of close to 20 percent of GDP and the debt is explicit. The combined weight of this growing pension debt will make it more difficult for future governments facing tough choices in the context of a rapidly aging population.

3.74   **In addition to failing to meet the criteria of adequacy and sustainability, the current system does not cover the majority of the population**. Altogether, the four consumption smoothing schemes reach less than one third of the labor force. While there has been some success in coverage expansion through the special schemes for informal sector workers, these efforts still leave a large part of the workforce without a source of income from retirement. These adults will live longer and have fewer children than their parents.

3.75   **Piecemeal reforms could improve the system at the margin, but the recommendation here is to quickly develop a national strategy that can be implemented across all sectors before the demographic window is closed**. An illustration of what such a strategy might look like was discussed earlier. In terms of the design or parameters of a new system, it would consist of clear and explicit

objectives for benefit levels, mode of payment and financing. The key implementation issues such as investment policy and recordkeeping would also be addressed in an integrated fashion. The end result would be a seamless and harmonized pension system that allowed portability, provided good service to members and efficiently collected, invested and paid out funds.

Table A3.1: Key Indicators of Sri Lankan Pension Schemes

	EPF	APPF	ETF	PSPF	PSPS *	SSB	Farmers PS	Fishermen PS
Year of data	**(2005)**	**(2005)**	**(2005)**	**(2004)**	**(2005)**	**(2005)**	**(2002)**	**(2002)**
Type of system and benefits	DC / Lump-sums at retirement, disability or special events; collateral for housing loans a	DC	DC / Savings accounts, life insurance	DC	DB / old age, disability, survivors b, death gratuity	DB/ old age, disability, survivors, death gratuity	DB/ old age, disability, survivors, death gratuity	DB/ old age, disability, survivors, death gratuity
Statutory retirement age	55/50	55/50	NA	NA	60	60	60	60
Covered sector	Formal sector	Formal sector	Formal sector	Government sector	Central & local government employees, teachers, armed forces	Low income informal sector in selected occupations	Agriculture workers in selected categories with limited land ownership	Fishermen with limited assets
Financing	12% (Employer) + 8% (Employee)	Min 12% (Employer) + 8% (Employee)	3% (Employer)	12% (Employer) + 8% (Employee)	None for old age; up to 7% to Widows and Orphans scheme	Multiple schedules with fixed amounts according to age of joining	A schedule of fixed amounts according to age of joining	A schedule of fixed amounts according to age of joining
Participating employers	56,000 c	200 m	45,911	Government sector	Government sector	-	-	-
Members	2.1 mil active / 8.7 mil inactive	250,000	1,500,000[d]	173,000	824,465[e]	52,778 active	680,000 enrolled [g]	48,000 enrolled [g]
Beneficiaries (Claims)	93,841 claims	NA	122,000 claims[c]	NA	418,923[f]	2,208 [k]	14,271 regular	460 regular
Annual contributions	Rs 27,315 mil	NA	Rs 5,000 mil[c]	NA	Rs 3,447 mil[e]	Rs 12.6 mil [h]	NA	NA
Annual payouts	Rs 17,024 mil	NA	Rs 3,000 mil[c]	NA	Rs 46,543 mil[i]	Rs 12.9 mil	Rs 166 mil	Rs 6 mil
Administrative expenses	Rs 418 mil	NA	NA	NA	NA	Rs 17 mil [n p]	Rs 61 mil	NA
Assets	Rs 427 billion	106.2 billion	58.6 billion	8.5 billion [n]	-	Rs 183 mil	Rs 2.5 billion	Rs 0.3 billion

Sources:

Employees' Provident Fund Annual Report, 2005 (The Internet: www.epf.lk).

Statistical reports of the Pension Department (The Internet: www.pensions.gov.lk).

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Notes:

b Public Sector Pension Scheme (includes Civil Servants, Teachers, Military, and their survivors)

a High rate of defaults is reported

b Technically separate, Widows(ers) and Orphans contributory pension scheme

c Preliminary estimates

d Data for 1999

e Contributors to the Widows(ers) and Orphans Scheme.

f Includes 249,740 Civil Servants, 33,433 Armed Forces, and 107,601 W&OP beneficiaries of the central government.

g There are estimated 30 to 50% defaulters

h Amount dropped from Rs 22 mil in 2004

i Does not include payments to pensioners and dependants of the Armed Forces (Rs 1,471 mil in 2003)

k May be a cumulative amount

m Estimated number of Funds.

n 2002 data

p Includes Own SSB expenses fully subsidized by Treasury transfers and Commissions paid to DSs and Post Offices (less than 10% of the total).

Annex Table 3.2: Current and proposed implementation arrangements

Current practice

Awareness, Eligibility, Enrollment	Record keeping	Investment Management	Premium collection & Benefit payments
DOL/CB for EPF			
Line Ministries for CSPS			Banks
DS officers	Multiple disconnected databases with limited access from the fields	Multiple decision making bodies and executive units	Post Office
Officers & agents of SE scheme			Program agents
Officers & agents of FF scheme			

Proposed

Awareness, Eligibility, Enrollment	Record keeping	Investment Management	Premium collection & Benefit payments
DOL/CB for EPF			
Line Ministries for CSPS			Banks
DS officers	Single database of members and beneficiaries; Multiple rules of affiliation	Rationalized investment policies; Efficient outsourcing arrangements	Post Office
Officers & agents of SE scheme			Program agents
Officers & agents of FF scheme	NIC Database		

4. HEALTH STATUS, PUBLIC HEALTH, AND HEALTH CARE OF OLD PEOPLE

Aside from increasing social security needs, the aging of the population will change the demand and supply of healthcare services. Universally, older people tend to be in poorer health and need more medical services than the young. For persons above 80 years, evidence shows that the incidence of frailty and physical dependence increases substantially. An increase in the percentage of older people may result not only in a change in the volume of services needed, but also in the type of services that must be provided. The health system will need to move from the provision of mostly acute treatments for infectious disease to managing chronic treatment for non-communicable disease. Addressing the fiscal costs imposed on the health care system by an aging population will become an increasingly important issue. This chapter evaluates the health status of the elderly population and the ability of the current health system to address their emerging health care needs. The first section evaluates the prospects for healthy aging in Sri Lanka. Section B discusses the adequacy of healthcare services in old age. The prospects for sustainable healthcare financing are discussed in section C. The final section analyses how the health system should respond to the aging challenge.

A.   WHAT ARE THE PROSPECTS FOR HEALTHY AGING?

4.1   **Sri Lanka has made important strides in improving the health status of its population, but with this mortality from non-communicable diseases has become predominant**. As noted in Chapter 1, life expectancy of the Sri Lankan population is already higher than in some OECD countries. Consequently, Sri Lanka's mortality pattern is already closer to that of OECD and European countries than it is to the rest of the region, and would be almost identical, if not for a high level of deaths due to injury (Figure 4.1). In 2001, NCDs accounted for 71% of all deaths in Sri Lanka, compared with 18% due to injuries, and 11% due to communicable disease, maternal and perinatal conditions.[32] Heart disease (35%), cancers (12%), cerebrovascular conditions (6%) and diabetes (5%) were the leading causes of NCD deaths in descending order. Of these, heart disease death rates appear to be relatively higher in Sri Lanka than developed countries, whilst deaths due to cancer appear to be less frequent. However, it would be wrong to think that this is the inevitable result of an increase in NCD mortality rates with income growth. In fact, on an age-standardized basis (Figure 4.2), both NCD and communicable disease mortality rates tend to be higher the lower a country's per capita GDP (Adeyi et al., 2007). Recent analysis by IHP of Sri Lanka's mortality data for 1991-2001 confirms this, with age-standardized mortality rates for NCDs being currently 20-30% higher in Sri Lanka than in developed countries. Moreover, such analysis suggests that NCD mortality rates have been increasing during the past decade. Whilst Sri Lanka appears to do have done particularly well in international terms in lowering communicable disease mortality with increasing income, it has done less well in the case of NCD mortality.

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[32] The mortality data presented here is from an ongoing analysis of the Registrar-General's mortality data at the Institute for Health Policy, as communicated by Ravi P. Rannan-Eliya.

Figure 4.1: Composition of mortality by major cause in Sri Lanka compared to European and South-East Asian regions of WHO
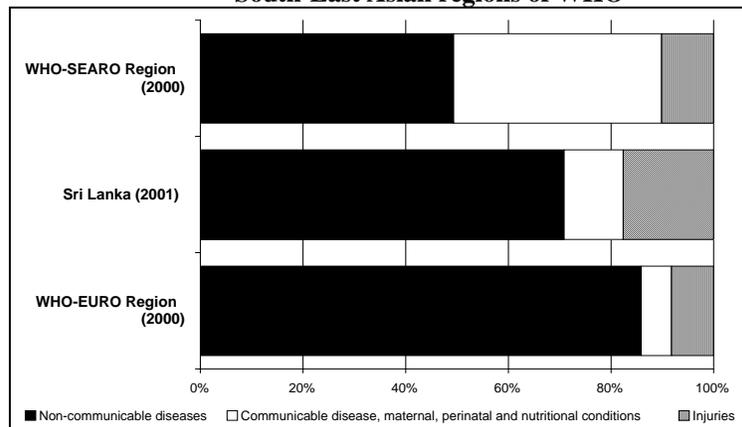
Source: Analysis of Registrar-General Department and WHO mortality data by Institute for Health Policy.

Figure 4.2: Ratio of age-standardized death rates in low and middle-income countries to those in high-income countries, 2005
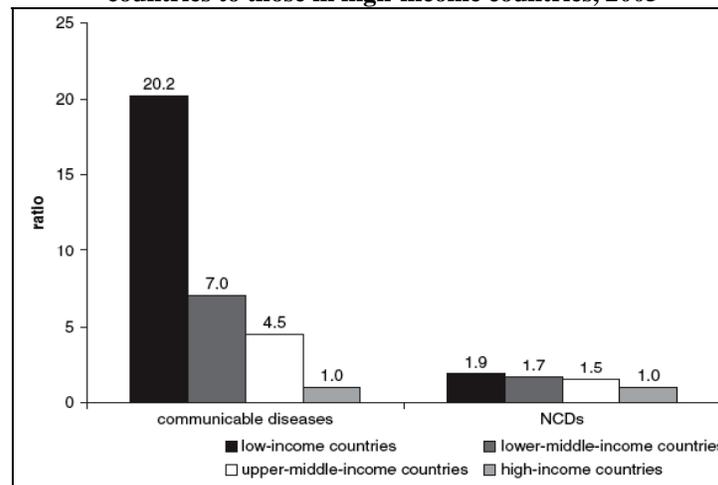
Source: Adeyi et al. (2007)

4.2 **The higher prevalence of NCDs in Sri Lanka can be partially explained by (i) increases in certain risk factors, and possibly (ii) the legacy of fetal and early childhood under-nutrition**. Although reliable population data are limited, the available evidence suggests that some risk factors are increasing.

- Overall obesity levels are comparable to many developed countries, although not currently higher. Wijewardene et al. (2005) found that 20.3% of men and 36.5% of women aged 30-65 years were obese by US standards (BMI>=25, compared with 25.0% and 24.7% of men and women in the USA, and 12.0% and 28.5% of men and women in Russia. WHO recommends the classification of obesity at smaller body mass weights in Asian populations than in European populations, so obesity may be a worse problem in Sri Lanka than these data suggest.

- Abnormal lipid levels are higher than in India, and comparable with most developed countries. Data collected in the World Bank-funded risk factor survey of 1998-2002 found that total cholesterol levels were 200-236 mg/dl in the Western Province (Sri Lanka Medical Association,

2004), compared with levels of 200-240 reported from developed countries. Similarly, LDL-cholesterol levels were found in the same survey to be 117-151 mg/dl, which are again comparable with developed countries. High levels of saturated fat in the Sri Lankan diet could be contributing this scenario.

- Wijewardene et al. (2005) found that 14.2% of men and 13.5% of women were diabetic in their population survey, according to the WHO/American Diabetic Association definition of diabetes (fasting blood glucose level of 7 mmol/L or higher). This is high by international standards, and compares with an average level of 9% in the US population.

- At the same time, Sri Lanka might expect some increase in NCD rates simply because of the poor levels of nutrition of its population and in particular its mothers in previous decades. The legacy of past and continuing maternal and fetal under-nutrition will be an increased incidence of NCDs in adulthood for many decades to come (Barker and Robinson, 1992; Eriksson, 2005).

4.3   **However, certain risk factors for IHD, such as smoking and hypertension, are at modest or decreasing levels for Sri Lankan adults**. The percentage (21%) of the adult Sri Lankan population who smoke (WHO, 2007) and the mean number of cigarettes consumed per capita are low in comparison to developed and most other developing countries, and has been declining in the past two decades (Rahman and Ramaboot, 2003; Central Bank of Sri Lanka, 2005). The World Bank-funded population survey of cardiovascular risk factors in Sri Lanka in 1998-2002 (Wijewardene et al., 2005) found that the age standardized prevalence rate for hypertension (defined as systolic blood pressure ≥140 mmHg and diastolic pressure ≥90 mmHg) was 19% in Sri Lanka, with little difference between men and women. These levels are lower than those reported for most developed countries (Wolf-Maier et al., 2003), such as the USA (28%) or in Europe (44%).

4.4   **The self-reporting of non-communicable disease appears to be lower in poorer quintiles** according the results of the World Bank SLAS, but the level of health is lower for the poor, and we should be cautious in taking self-reports as an indicator of underlying disease prevalence given potential social disparities in awareness and access to medical diagnosis. In the SLAS data, the concentration index for age-sex standardized self assessed poor health is -0.10, which indicates prevalence of the perception of having poor health is higher in poorer quintiles, whilst chronic disease was associated with a positive concentration index indicating greater prevalence in higher quintiles (Table 4.1).

Table 4.1: Distribution of health status by socioeconomic quintiles

Age Sex Standardized Indicators	Expenditure Quintile					Concentration Index	Std. Err
	1	2	3	4	5		
ADL index	0.8386	0.8369	0.8315	0.8357	0.8483	0.0018	0.0037
Poor Health	0.3904	0.3307	0.3275	0.2846	0.2160	-0.1012	0.0207
Chronic Disease	0.6157	0.6242	0.6078	0.7205	0.6972	0.0326	0.0099
Acute Disease	0.4850	0.4924	0.5009	0.4554	0.4346	-0.0235	0.0152

4.5   **Physical disability rates in the elderly in Sri Lanka have also increased in the past two decades**. Sri Lanka lacks longitudinal population health surveys, but we can make a crude assessment of trends in extreme physical disability using data from the national population censuses conducted in 1981 and 2001. Census data suggest that levels of most forms of extreme disability in the Sri Lankan elderly increased during 1981 to 2001. The exception was blindness in the elderly, which declined amongst the young elderly (50-69 years), but significantly increased in the older elderly (70+ years) between 1981 and

2001(Figure 4.1). In contrast, disability in arms and legs and in hearing and speaking substantially increased in all elderly age groups (Figures 4.2 – 4.4).

Figure 4.3: Age-specific prevalence of blindness by number of persons per 10,000 population, Sri Lanka 1981 and 2001
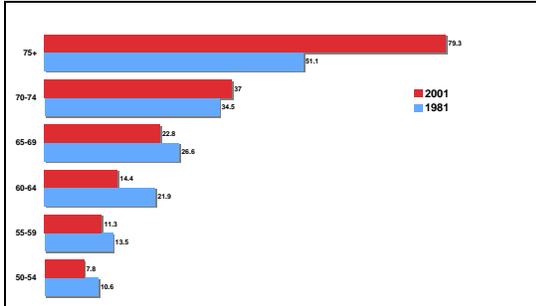
Source: Population Census 1981 and 2001

Figure 4.4: Age-specific prevalence of disability in hands by number of persons per 10,000 population, Sri Lanka 1981 and 2001
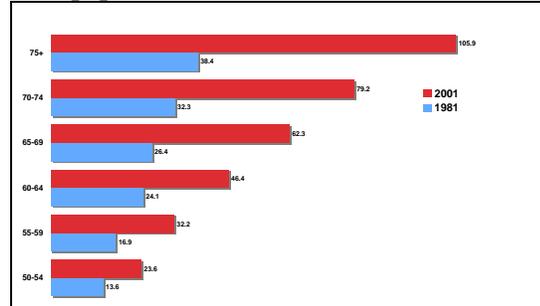
Source: Population Census 1981 and 2001

Figure 4.5: Age-specific prevalence of disability in legs by number of persons per 10,000 population, Sri Lanka 1981 and 2001
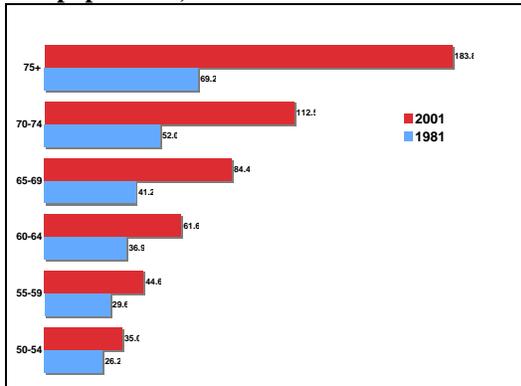
Source: Population Census 1981 and 2001

Figure 4.6: Age-specific prevalence of deafness and dumbness by number of persons per 10,000 population, Sri Lanka 1981 and 2001
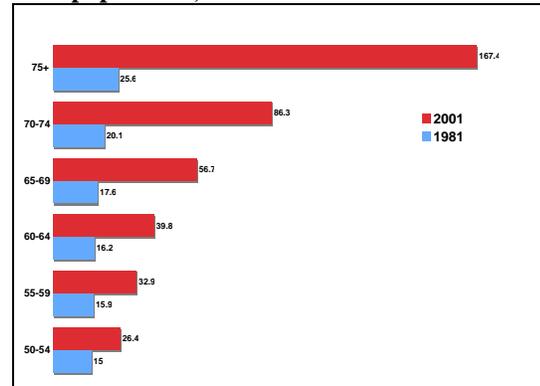
Source: Population Census 1981 and 2001

Figure 4.7: Age-specific prevalence of blindness by number of persons per 10,000 population, Sri Lanka 1981 and 2001
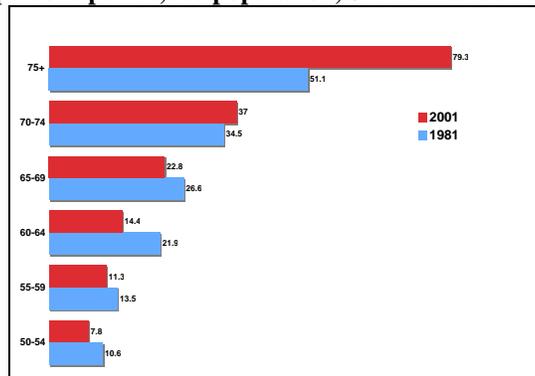
Source: Population Census 1981 and 2001

Figure 4.8: Age-specific prevalence of disability in hands by number of persons per 10,000 population, Sri Lanka 1981 and 2001
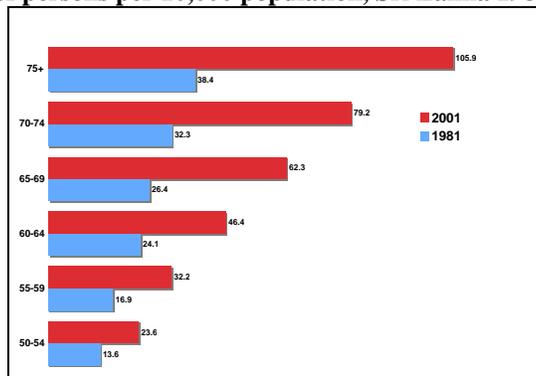
Source: Population Census 1981 and 2001

Figure 4.9: Age-specific prevalence of disability in legs by number of persons per 10,000 population, Sri Lanka 1981 and 2001
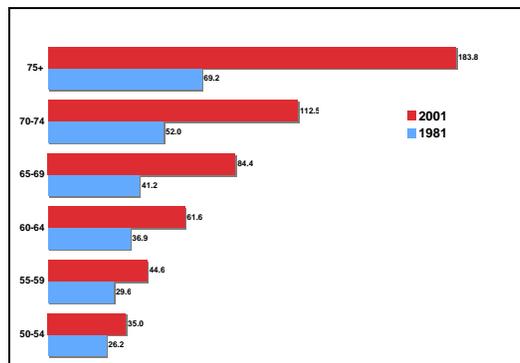
Source: Population Census 1981 and 2001

**Figure 4.10: Age-specific prevalence of deafness and dumbness by number
of persons per 10,000 population, Sri Lanka 1981 and 2001**
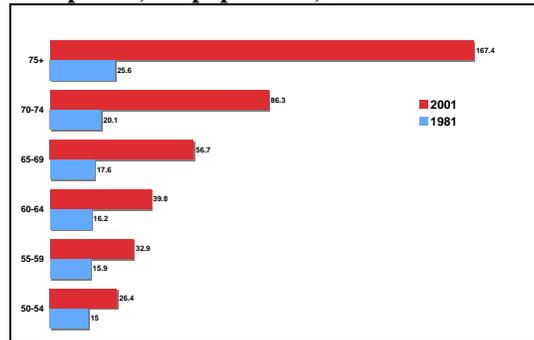
Source: Population Census 1981 and 2001

4.6   **Does aging mean that the burden of illness of the population will increase**? While the elderly are more ill on average than the young, the increase in the elderly might not result in an equivalent increase in the burden of illness, owing to morbidity compression. In the USA, disability in adults has been declining at two percent a year since the early 1990s (Manton and Gu, 2001), and the decline in elderly adults is twice as fast as the decline in mortality (at one percent a year). Similar declines in elderly disability rates has been reported from several OECD countries with longitudinal population health surveys, including Australia, France, Germany and Japan (Jacobzone et al., 1998). Further evidence comes from the decline in age-specific morbidity and mortality rates for many non-communicable diseases in developed countries. In the USA, age-adjusted death rates from cardiovascular disease have declined by 60% since 1950, and similar declines are reported for strokes. If these trends occur more widely, the older populations resulting from aging may not be any worse off in terms of health outcomes than their predecessors. Unfortunately, the international evidence does not extend to developing countries, this being an area which is high priority for future global research (Rannan-Eliya and Wijesinghe, 2006), largely owing to the lack of suitable data, and it is unlikely that the developed country experience applies to countries such as Sri Lanka, given its level of economic development and lack of well-developed health services for the elderly.

B.   HOW ACCESSIBLE AND ADEQUATE ARE THE HEALTHCARE SERVICES FOR THE ELDERLY?

4.7   **Sri Lanka has an extensive healthcare system**. Public healthcare services are financed and provided in an integrated fashion by the central Ministry of Health and nine Provincial Council Departments of Health, and span the full range from preventive and basic primary care activities to complex hospital-provided tertiary care. The largest part of private sector provision is ambulatory. This is supplemented by a small private hospital sector which provides inpatient and tertiary services, much of which is concentrated in the Greater Colombo area. The public sector dominates inpatient provision, but the private sector has become predominant in outpatient care in recent years (Table 4.2).

Table 4.2: Sources of treatment used by sick persons

Source of treatment	1978/79	1981/82	1986/87	1996/97	2003/04
Western government sector	42.6%	45.6%	44.1%	50.7%	43.5%
Ayurvedic government sector	1.9%	2.2%	1.9%	2.0%	1.2%
Western private sector	34.3%	34.2%	37.2%	38.1%	45.1%
Ayurvedic private sector	16.1%	12.1%	12.9%	7.6%	5.0%
Others	5.1%	6.0%	3.8%	1.7%	1.6%

Source: Computed by Institute for Health Policy from data of Central Bank Consumer Finance Surveys.
Note: The percentages are for those who reported falling ill during a 14-day reference period, and used any source of treatment, excluding those who did not seek treatment. Western private includes pharmacies.

4.8 **There is a large network of public sector facilities across the country**. The network of curative care institutions ranges from teaching hospitals with ultra-specialized services to small central dispensaries, which provide only outpatient services, all of which are funded from government budgets. The health ministry grades facilities according to three major levels:

- Primary level: Central Dispensaries, Maternity Homes, Rural Hospitals, Peripheral Units and small District Hospitals are designated as primary healthcare institutions.
- Secondary level: District Hospitals with specialist services and Base Hospitals function as secondary care institutions.
- Tertiary level: Teaching and Special Hospitals and Provincial Hospitals form the tertiary care institutions.

4.9 This network covers all areas of the island, with the government funding and operating even the health facilities in LTTE-controlled areas, and delivers a high volume of basic services in quantitative terms (Table 4.3). The large public and cost-efficient provision of health care explains in part the low level of health expenditures in Sri Lanka as a share of GNP in comparison with countries in the region or with comparable demographic indicators (Table 4.4).

Table 4.3: Distribution of institutions and patient turnover by level of facilities, 2003

Facility type	Number	Beds (%)	Admissions (%)	Outpatient visits (%)
Teaching hospitals	18	25.8	28.7	11.2
Provincial hospitals	6	7.8	10.6	4.2
Base hospitals	38	17.3	23.0	14.9
District hospitals	159	24.1	21.6	26.3
Peripheral units	98	7.8	6.7	10.9
Rural hospitals	183	7.7	6.5	13.1
Others	505	9.6	2.9	19.4
Total number		59,262	4.0 m.	43.8 m.

Source: Medical Statistician, Ministry of Health.

Country	Life expectancy at birth, 2004 (years)	Population aged 60+ years, 2004 (%)	Total expenditure on health, 2003 (US$ per capita)
Bangladesh	62	6	14
India	62	8	27
Sri Lanka	71	11	31
China	72	11	61
Turkey	71	8	257
Mexico	74	8	372
Korea	77	13	705
Slovenia	77	20	1,218
USA	78	16	5,711

Source: World Health Organization (2006).
Note: Countries ranked in order of increasing GDP per capita.

4.10 **Most public sector *curative care and primary care services* are provided by hospitals**. Outpatient care in hospitals is provided by both general and specialist outpatient departments (OPDs). General OPDs are staffed by medical officers with only basic medical training, and patients are seen on a first-come-first-served basis. OPDs are busy and crowded in large hospitals, and patients typically see the doctor for less than five minutes each. Specialist OPDs are run by specialists, and patients must first be referred and registered before they can access these services. There is no publicly-funded or organized family practitioner service.

4.11 **Public sector *preventive healthcare services* are primarily provided through a network of local level units**. The main focus these services is to provide maternal and child health (MCH) and family planning services. Their organizational model was developed in the 1920s and provides maternal, infant and family planning services in a vertical fashion, through teams consisting of medical officers, community midwives and others. Although there is a formal referral system in the public sector with patients expected to use primary level services as the first point of contact, this is not enforced for reasons of practicality and equity. Patients seek care in the medical institution of their choice. Consequently, with growing patient awareness, there is an increasing tendency for patients to seek care from higher-quality facilities (Table 4.2). Higher-level facilities have been gradually expanded and gradually upgraded to meet this demand.

4.12 **The private sector provides mostly general outpatient services, but the supply of inpatient and specialist services is increasing**. Most private sector outpatient care is provided by 5,000-7,000 government medical officers who engage in private practice in their off-duty hours. About a thousand full-time private independent practitioners, who provide mostly general practitioner services, supplement them. They are mostly located in urban areas, so in most private provision in other provinces and in rural areas is by public sector physicians.

4.13 **There is little systematic evidence on the clinical quality of care**. However, in comparison with other regional and lower-income countries, the limited evidence suggests that clinical quality in the public sector is substantially better than average. Private sector clinical care is likely to be comparable, since most private provision is by the same public sector clinicians, whilst one study has suggested that quality of care of full-time private general practitioners may be comparable to those in developed countries (Jayawardhane et al., 2002; Rannan-Eliya et al., 2003).

4.14   **Healthcare in Sri Lanka is funded equally by public and private sources**.   Total expenditure on health was Rs. 100 billion in 2005, of which 10% was capital investment.33   This amounted to about 4.2% of GDP or Rs. 5,100 per capita (US$50 per capita). Reliance is primarily on taxation and out-of-pocket expenditures (approximately 47% each) as financing sources. Sri Lanka does not use social insurance as a means of financing and private insurance financing accounts for less than 2% of total financing.   Since 1990, total expenditure increased from 3.3 to 4.2% of GDP, and the Government's contribution from 1.4% to 2.0%. In 2005, 1.9% of GDP was spent on health by MoH and by provincial health departments. Most inpatient care and almost all preventive care are funded by the government, whilst most private expenditures are for outpatient services and purchases of medicines from pharmacies. Note that catastrophic illnesses are thus covered by public funds that provide hospital, outpatient, and public health care – to the extent that they can provide the needed services. The quality of care in these situations, however, may be limited by low government funding and unavailability of some services.

4.15   **Although public sector services are nominally free, in accordance with official policy government healthcare facilities routinely ask patients to self-purchase medicines and supplies from private suppliers, when these are not in stock at public facilities**. Exact figures are not available, but this may affect half of public outpatient visits. Consequently, use of both public and private facilities can impose costs on patients, although private sector provision remains substantially more expensive for patients than public provision. In the Sri Lanka Aging Survey, elderly patients were asked about what out-of-pocket expenses they personally incurred when using different providers. This showed that public dispensaries are the least expensive with a mean LKR 220 of out-of-pocket payment per visit, followed by public hospitals (LKR 278), private clinics (LKR 467), and private hospitals (LKR 1,351). Private specialists are the most expensive with LKR 1,808 per visit. There are additional costs in terms of waiting time. The mean wait is shortest in public dispensaries (26 min) and longest in public hospitals (68 min) – see Table 4.5.

Table 4.5: Average out-of-pocket costs, travel and waiting times for outpatient-care by facility type

OP provider	Average OOP (LKR)	Average Travel Time (min)	Waiting Time (min)
Public Hospitals	274	48	69
Public Dispensaries	220	38	24
Private Hospitals	1351	68	52
Private Clinics	467	23	29
Private Specialists	1808	49	32
Ayurvedic Hospitals	265	47	27
Ayurvedic Doctor	823	58	50

4.16   **Key strengths of the Sri Lankan health system are that it performs well in terms of equity, macro-efficiency and effectiveness** (Hsiao and Associates, 2001; Fernando et al., 2004). Sri Lanka does better than most, despite its limited resources, in minimizing health inequalities. This is evident with respect to maternal and child health differentials, but the situation is less clear with respect to the elderly, owing to lack of data. When we turn to other measures of equity, Sri Lanka again does comparatively well, with its performance better than other countries at its income level, and comparable with the best performers in Asia (Rannan-Eliya and Somanathan, 2006). In particular, the health system effectively protects the population against catastrophic financial risks arising from medical treatment (van Doorslaer

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[33] Figures based on the January 2007 estimates from Sri Lanka's health accounts database maintained by Institute for Health Policy, which is designed to report health expenditures according to the OECD System of Health Accounts standard, as described in Fernando *et al.* (2006).

et al., 2006; van Doorslaer et al., Forthcoming), and government health spending in practice does reach the poor (O'Donnell et al., 2007), unlike in most developing countries. The critical factors behind this good performance appear to be the high level of physical access of the poor to modern medical services afforded by the extensive public sector infrastructure, the long-standing explicit policy of not charging fees for public sector services, and the implicit policy of encouraging the richer patients to voluntarily opt out of the public sector to use private services (Rannan-Eliya, 2001).

4.17   **Most weaknesses in Sri Lanka's health system can be traced to one major problem, which is an inadequate level of public financing**. Public funding has not increased sufficiently with time and in line with the role adopted by the public sector. In fact, as a share of GDP the government health budget has fallen since the 1960s, and at just 2.0% of GDP is markedly less than in countries with similar demographic indicators. This under-funding prevents the system from engaging in major organizational changes to improve patient responsiveness and efficiency, which will be major challenges as the population ages, as well as constraining introduction of major new programs that the elderly may need. Successive analyses of the sector have confirmed this, including the most recent World Bank-funded sectoral analyses and public expenditure reviews, and the recently completed Health Master Plan project (Hsiao and Associates, 2001; Fernando et al., 2004; Ministry of Healthcare and Nutrition, 2007), and have recommended substantial increases in public financing. Although the need is now accepted at the policy level, actual implementation of the necessary budgetary increases remains to be seen.

Diagnosis of NCDs in primary care

4.18   **The diagnosis rate for NCD in Sri Lanka is similar to developed countries**. Results of the SLAS suggest that less than 69% of those with diabetes have been diagnosed and are aware of their condition (Table 4.6), which is comparable with an estimate of 76% in a 2000 survey in a suburb of Colombo (Malavige et al., 2002). These proportions are similar to that found in developed countries. At the same time, it needs to be recognized that under current conditions in Sri Lanka, the better-off have better access to medical services, and so the poor are less likely than the non-poor to have their NCDs detected and treated. This implies that the burden of ill-health from untreated NCDs will affect the poor more than the non-poor, indicating that the Government of Sri Lanka and World Bank, who admit to specific concerns for the poor, will need to ensure that there is some improvement in primary care services for those who cannot afford private services.

Table 4.6: The prevalence of diabetes and prior diagnosis in elderly aged 60-65 years

Population	Prevalence (%)	Self-reported (%)	Undiagnosed
Women	21.6	17.9	17%
Men	17.2	9.4	45%
Total	19.4	13.6	31%

Source: Prevalence in population is derived from findings of population survey reported by Wijewardene et al. (2005), and percentage of population who self-reported diagnosis is computed from 2006 World Bank Sri Lanka Aging Survey data.

4.19   **Whilst diagnosis of all persons is not possible, it is important to focus both on health interventions that prevent NCDs and those that mitigate their impact once they have been diagnosed**. From a cost-effectiveness perspective, more benefit will come from good treatment/clinical care of all those currently diagnosed than from a heavy focus on finding undiagnosed cases and then providing marginal/suboptimal care. For example, studies in the USA have found that cost-effectiveness of screening and early detection of diabetes is unfavorable (Hoerger et al 2004). The elderly can benefit from health promotion efforts for obesity control, healthy lifestyle, and smoking reduction, whether or not they are aware of an underlying chronic disease, but it needs to be borne in mind that with the exception of smoking cessation, the promotion interventions for diseases such as diabetes and heart disease are

either not as cost-effective as secondary prevention of established disease (Gaziano et al., 2006), or of uncertain feasibility in developing countries (Narayan et al., 2006). Thus, public provision of healthcare needs to focus on both primary prevention of NCDs, as well as secondary prevention which involves providing direct medical care to individuals in a clinical setting to screen for NCDs, control risk factors clinically, or provide treatment (Adeyi et al., 2007). Treatment in secondary prevention consists of use of a combination of one or more of four major drug types: aspirin, beta-blockers, ACE-inhibitors and statins. For a considerable percent of elderly at risk or already diagnosed as having NCDs, screening coupled with secondary prevention can ease the burden of complications that arise at later stages of the disease, which require further expensive treatment. A dual focus on both preventing and also mitigating established NCD illness through clinical treatment must be an integral part of Sri Lanka's strategy for combating NCD.

The case of IHD treatment

4.20   The policy challenges raised by the growing burden of NCDs in Sri Lanka are complex and not unique to Sri Lanka, since they face increasing numbers of developing countries (Adeyi et al., 2007). What makes it particularly complex are (i) the diversity of the diseases that comprise NCDs, which implies that any response cannot be generalized across all NCDs, and (ii) the general limitations of existing knowledge about the biology and economics of most major NCDs. However, as the medical and economic evidence base expands, it is becoming easier to identify potential policy options and their trade-offs. This is most advanced in the case of ischemic heart disease (IHD), where not only have there been significant improvements in mortality in the developed countries in recent decades, but there also have been substantial improvements in our understanding of what is driving these mortality reductions. Since IHD happens to be where the production possibility frontier has expanded the most in recent decades, and where the evidence base is the most developed, and since IHD is by far the largest NCD in terms of morbidity burden in Sri Lanka, the following section focuses on what is known about IHD and its management in Sri Lanka. This focus on IHD is intended to begin to identify key policy issues for NCDs in Sri Lanka, whilst not implying that the implications for IHD can be generalized to other NCDs. Finally, it should be noted that IHD, as with most NCDs, affects the elderly more than the young, with prevalence rates rising considerably after age 40 years.

4.21   **The greatest reductions in NCD burden in recent decades in developed countries has been with cardiovascular disease (CVD), and clinical interventions have played a significant role in this**, as noted by the World Bank in "Public Policy and the Challenge of Chronic Noncommunicable Diseases" (Adeyi et al., 2007). Figure 4.5 shows how in developed countries, such as Australia, the bulk of overall and NCD mortality reductions in the past three decades has been due to reductions in mortality from CVD, in particular IHD. Research into high-income countries' success in improving IHD outcomes in recent decades has accorded a significant role to clinical interventions. In most developed countries, studies have estimated that treatment interventions have accounted for approximately 35-55% of all mortality reductions from IHD in the past three decades. Ford et al. (2007), in the most recent analysis of trends in the USA, have shown that slightly more than half of all observed mortality reductions was due to medical treatments, with the largest contribution being from the use of medicines for secondary prevention, and with the largest single contribution from changes in risk factors being due to the reduction in smoking. Finland and Poland are often cited examples of countries that have rapidly improved NCD outcomes based on a large role for non-clinical interventions; however, their initial conditions were characterized by high levels of risk factors. This, along with variations in both capacity and social contexts (including literacy rates), suggests a need for caution against generalizing the Finnish and Polish experiences to developing countries (Adeyi et al., 2007).

Figure 4.11: Changes in age-sex standardized mortality rates by disease group, Australia 1922-2000
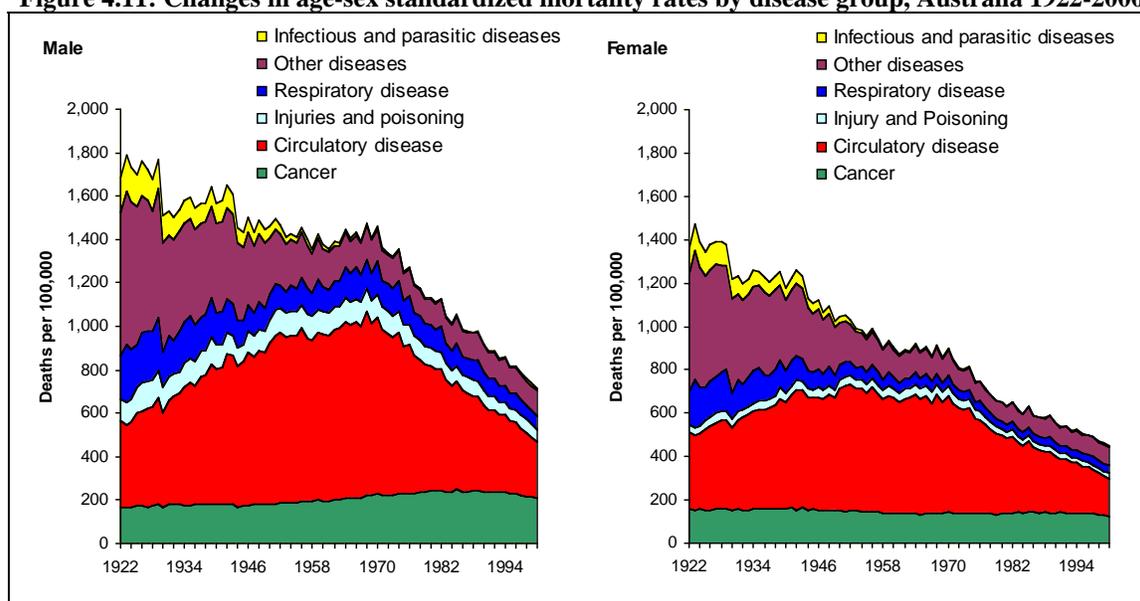
Source: Presentation by John Goss, Principal Economist, Australian Institute for Health and Welfare at the OECD/Korea RCHSP/APNHAN Regional Health Accounts Experts Meeting, Seoul, Korea 27 July 2006.

4.22   **Public policy in Sri Lanka has made a substantial contribution to preventing NCDs through the impacts of tobacco control policies, but this makes it more likely that substantial future gains are more likely to come from secondary prevention and treatment**. National tobacco control policies have included tax increases on cigarettes and tobacco products, restrictions on sales to youth, restrictions on public and mass media advertising of tobacco products, and since 2007 new restrictions on smoking in public places. These have clearly been effective in reducing smoking prevalence. Smoking rates in Sri Lanka might be considered low in comparison with other comparable developing countries, and at 21% of the adult population (WHO, 2007) are in fact lower than in developed countries such as the USA, which have had successful tobacco control policies. Certainly, public policies should continue to press the reduction in smoking in the population, particularly in the male population. However, their considerable success to date makes it more likely that the potential gains from expanded secondary prevention and treatment are likely to be more substantial than from increased tobacco control efforts.

4.23   **With the growing burden of NCDs, the need for acute treatment of IHD in Sri Lankan hospitals is already high**. In 2003, 62,000 admissions in government hospitals were IHD cases, equivalent to a rate of 330 admissions per 100,000 (this is without considering IHD admissions in the private sector, which may add a significant number, since IHD admission rates are higher in Colombo district). These rates are comparable to those in OECD countries of 330-1,200 per 100,000 (Moïse, 2003). Given that the Sri Lankan population is younger than OECD countries, this rate will be higher on an age-standardized basis than admission rates in many developed countries.

4.24   **Though the demand for treatment for late-stage complications is high, the resources available are limited, and such interventions of low cost-effectiveness are currently limited in the public sector provision**. For example, invasive procedures, such as coronary artery bypass grafts (CABG) and percutaneous transluminal coronary angioplasty (PTCA) are needed for the treatment of late stage IHD. In Sri Lanka, except for some private sector provision, these procedures are available only in the public sector, where only a small number of facilities are equipped to provide them. Currently, approximately 1,000 CABGs are undertaken in government hospitals each year, which translates into a

rate of less than 20 per 100,000 persons aged 40 years or more, which can be compared with rates of 40-600 in OECD economies. At the same time, more cost-effective interventions, such as medications for high-risk patients, are currently not systematically provided for in the public sector, indicating a misbalance in current public provision.

4.25   **Once patients are identified with IHD in Sri Lanka, they are under-treated with appropriate medications**, and treatment levels are low even in comparison with other developing countries. The extent to which IHD patients being treated at health facilities receive adequate secondary prevention was assessed in ten developing countries, including Sri Lanka, by Mendis et al (2005). They found that patients in most developing countries are inadequately treated, but surprisingly, that levels of treatment were lowest in Sri Lanka. For example, only 8.7% of IHD patients in Sri Lanka were receiving beta-blockers, compared with 34-72% in the other countries studied. Similar disparities were reported for the use of aspirin, ACE inhibitors and statins. Despite Sri Lanka's vaunted good access to health services, IHD patients receive worse treatment than in most developing countries, including those with weaker health systems.

4.26   **The use of known cost-effective medicines for management of IHD patients is very low in Sri Lanka** is due primarily to stringent rationing and under-financing in the Sri Lankan public sector, and to a lesser extent the lack of appropriate treatment guidelines. In OECD economies, the uptake of cost-effective medicines that reduce IHD mortality is dependent on the extent to which they are financed by public budgets (Dickson and Jacobzone, 2003). Without public financing, citizens in rich OECD economies will under-purchase these essential drugs. For example, ACE inhibitors are only provided to MoH peripheral units and higher-level hospitals. This particularly affects medicines for NCDs, since the rationing approach of MoH is to prioritize supply of medicines for emergencies and acute treatment over medicines over other medicines. This situation is exacerbated by the lack of treatment protocols for most NCDs, which makes it less likely that patients will be prescribed needed medicines.

4.27   **The systematic under-financing of chronic disease medications is the cause of the most significant gap in provision of health care services sector**. The consequences of this situation are: (i) that public sector patients who use lower-level facilities are not provided the full range of basic drugs recommended for IHD patients; (ii) that most IHD patients face considerable financial burdens if they wish to take the minimum set of drugs recommended for their condition; and (iii) that there are substantial inequities by income in the receipt of appropriate care for IHD patients, since only those who can afford to pay will receive the full range of medications. This situation has the effect of ensuring a considerable burden of avoidable mortality from IHD, as well as contributing to significant income inequalities in health outcomes.

4.28   **Pervasive under-treatment with known, effective medical therapies of the increase in chronic diseases might explain the failure to observe declines in disability rates in the elderly in Sri Lanka**. The natural history of chronic diseases and associated conditions is that it will result in a high burden of disability. Such impacts range from blindness, physical immobility to loss of use of limbs. In addition, under-treatment of chronic diseases may also contribute to higher levels of frailty in the elderly. Frailty in the elderly has a high economic cost, because it leads to physical dependency, which is the most important reason for needing long-term care. (Newman et al., 2006). The implication of this finding is that better secondary prevention of chronic diseases may also have long-term pay-offs in terms of reducing the burden of long-term care costs.

4.29   **The current strategies in Sri Lanka for responding to the chronic disease noted above – based on curtailing/rationing care are outdated and not based on best available evidence**. While the Government's effort to promote prevention as the main method for combating NCDs is welcome, it cannot alone address chronic disease. The implicit decision has been to curtail access to treatment

interventions for IHD, by curtailing supply of both medical therapies and procedures. At the current time, the Sri Lankan public sector does not provide secondary prevention to most of its patients who should be receiving it according to international guidelines. This rationing may be valid for expensive interventions such as CABGs and PTCAs (Gaziano et al., 2006), but no longer remains so for the use of medicines in secondary prevention and management of chronic IHD patients. The past decade has seen four important developments:

- First, a considerable body of scientific evidence established that management of IHD patients with a package of three to four basic drugs is both cheap and effective in substantially reducing IHD mortality (Wald and Law, 2003).

- Second, as the evidence on the benefits has increased, the price of many of these drugs in developing countries has fallen, and made the cost-effectiveness case for their use in poor countries much stronger.

- Third, WHO research has established that a large proportion of the avoidable mortality from IHD in developing countries is due to inadequate secondary care of IHD patients in health facilities.(Mendis et al., 2005).

- While there has been a recognition that population strategies are important for controlling IHD, targeted approaches for secondary prevention interventions in large populations is also important (Manuel et al., 2006).

4.30 **Cost-effective interventions now exist to reduce IHD mortality in diagnosed IHD patients, even in the South Asia setting**. Individuals who have suffered previous heart attacks (a marker of established IHD) and cerebral vascular events are at much higher risk of suffering a recurrence. Effective, low-cost treatment regimens do exist, and if taken will substantially reduce subsequent mortality in this population(Wald and Law, 2003; Gaziano et al., 2006). Secondary prevention of IHD using aspirin, beta-blockers and ACE inhibitors in the South Asian context is highly cost-effective in terms of dollars per DALY gained. (Jamison et al., 2006).

4.31 The main reasons that these trends have not yet influenced MoH policies appear to be a lack of awareness by senior planners of the most recent scientific and health economics evidence, plus the delay by WHO in revising its recommendations for developing countries to match the conclusions reached by its technical experts (Anonymous, 2006). However, it should be noted that the World Bank's new framework for developing strategies for NCDs (Adeyi et al., 2007) does play significant emphasis on the need to balance prevention of IHD with its clinical care in developing countries.

How do Elderly Avail Healthcare Services?

4.32 **The elderly, as with the rest of the population, use both public and private health care facilities, but they rely more on public services than do younger adults**. According to the World Bank Sri Lanka Aging Survey, 37% of all healthcare visits by the elderly were to a public hospital, 33% to public outpatient facilities, 11% to private hospital, and 23% to a private specialist (the elderly also have access to Ayurvedic medicine as well). The 70% of visits that were to government facilities compares with the 44% of visits reported for the overall population in 2004 (Table 4.2). This indicates that the elderly rely substantially more on public sector services for their healthcare than do the non-elderly. In addition, the data also show that most public sector outpatient care is provided by government hospitals, whilst private doctors dominate private sector outpatient provision.

4.33   **The overall distribution of the use of public sector facilities by socioeconomic quintiles in the case of the elderly is similar to that in the overall population**. The utilization of all public sector facilities (especially public hospitals) is higher in poorer quintiles (Table 4.7). The concentration indices for use of public services as reported by the elderly in the Sri Lanka Aging Survey were all negative or close to zero, indicating that the poor are more likely to use public services than the rich. Concentration indices were most negative in the case of public sector outpatient facilities, and essentially zero in the case of hospital inpatient treatment. These results are not statistically different from the results obtained for use of public services in Sri Lanka by the whole population, as reported by O'Donnell et al. (2007). They also confirm the finding of O'Donnell et al. that utilization of public services in Sri Lanka is more pro-poor than any low and lower-middle income country in Asia, indicating that in terms of equity Sri Lanka's government health services do creditably well. It would be useful to be able to standardize these utilization patterns according to need. However, as no objective indicators of need were collected, and since self-reported illness is known to be a poor measure of socioeconomic differentials in need in developing countries, this is not shown.

Table 4.7: Distribution of facility utilization by socioeconomic quintiles

Age Sex Standardized Utilization Indicators	Expenditure Quintile					Concentration Index	Std. Err
	1	2	3	4	5		
Public Hospitals: Outpatient Access	0.4887	0.4067	0.3351	0.2647	0.1470	-0.1183	0.0150
Public Dispensaries (OPD)	0.0316	0.0478	0.0150	-0.0013	0.0003	-0.2138	0.0913
Public Hospitals: Inpatient Access	0.0079	0.0576	0.1639	-0.0214	0.0574	-0.0004	0.0348

4.34   **Multivariate regressions show that a lack of schooling, lack of access to pensions or health insurance and unemployment reduce the utilization of public health care**. The probability of utilizing health care is 9% lower for elderly with no schooling, at mean variable values (Table A4.1). The elderly who continue to work after retirement are more likely to utilize public sector, compared to those who are not working. The utilization of public sector decreases with age, and is reduced for people with pensions, and health insurance (Table A4.2). The multivariate regressions confirm our earlier findings: poorer quintiles have a higher probability of 0.38 of compared to the richest of using public sector, at mean variable values.

4.35   **However, public health services are not organized to provide integration and continuity of care for older adult patients at the primary care level**. As a consequence most elderly lack access to a regular doctor, and there is no infrastructure to ensure regular screening for illness and disability. With the exception of mothers and children, there is no system to assign dedicated physicians or health workers to look after the health of individual adults, or to coordinate their medical care in an integrated and continuous fashion. There is also no system of general practitioners in the public sector.

4.36   **Many elderly patients who need secondary prevention do not obtain it**. The proportion of elderly, who have diagnosed arthritis (22%), diabetes (30%), a previous heart attack (24%) or heart problems and hypertension (29%), and have doctor they can see on a regular basis is quite low. As shown in Table A4.2, the elderly with diabetes or IHD are not any more likely to be having access to such a service than the average elderly person.

4.37   **Still, despite the lack of continuity of care, most diagnosed patients do obtain some level of regular physical tests**. Ninety-four percent of elderly with diabetes reported having had their blood

sugar measured in the past 12 months, and 93% of those with hypertension reporting having their blood pressure measured in the previous 12 months (Table 4.8). These relatively high rates reflect a high level of motivation and health awareness in the Sri Lankan elderly population, which is an important asset that can be mobilized to improve treatment in future (Malavige et al., 2002).

C.   WHAT ARE THE PROSPECTS FOR SUSTAINABLE HEALTHCARE FINANCING?

4.38   In OECD economies, forecasting future healthcare costs using projection models has been found to be useful in order to identify and present the issues and the relative importance of key cost drivers (Martins, de la Maisonneuve, and Bjornerud, 2006). Aging has been associated with an increase in per capita health care expenditure in developed countries. However, the magnitude of this effect is debatable. Some researchers conclude that the effect is lower than expected (Fogel 2003; Zweifel, Felder and Meiers 1999). At the disaggregated level, health improvements of individuals for a given age can offset the rise in expenditure due to changes in the age structure of the population. However, the overall expenditure is expected to increase due to increasing rates of expenditure for a given morbidity (Dormont and Grignon 2006).

Table 4.8: Proportions of elderly who have been diagnosed with chronic disease who have had relevant tests done in past 12 months

Group	Diabetes (%)	IHD (%)	Hypertension (%)
Sex			
Male	90	77	93
Female	97	95	94
Residence			
Colombo	94	89	93
Other districts	96	83	96
Income tertile			
Poorest	96	82	89
Middle	93	90	94
Richest	97	92	98
All	95	88	93

Source: Computations from SLAS data. Relevant tests were blood sugar measurements in case of diabetes, blood pressure measurement in case of hypertension, and either in case of IHD.

4.39   **Does this hold true for Sri Lanka? This section includes the results of a projection model developed which is described in more detail in Box 4.1 and Annex 4.2**. As noted in the earlier sections, the level of public health financing in Sri Lanka is low compared to other countries with similar health indicators, and use of known cost-effective management of NCD patients in Sri Lanka is limited and rationed due the under-financing. Any pressures on health spending which are driven by demographic change and need will thus be likely to exacerbate the current situation unless public financing is increased. In addition, since many of the cost-effective interventions for NCDs, such as IHD, require long-term medications, it is possible that the increased need for NCD treatment, including secondary prevention, may increase the numbers of people who face substantial out-of-pocket expenses, and thus reduce the health system's current ability to protect against financial risk.

4.40   **Medical price inflation and productivity change are two factors which are most amenable to policy control and which have substantial impacts on the level of health spending**. For any given level of demand for healthcare, which aging will tend to increase, the net cost of delivering medical services will depend on the price or unit cost of the service delivery. If medical price inflation is greater

than economy-wide inflation, or if health services productivity change in the public sector is negative or minimal, this will exert further upward pressure on health costs. If the reverse is the case, then such trends can mitigate the impact of aging. A comparison of USA and Japan will suffice. Japan has the older and faster aging population, but overall medical price inflation in Japan is substantially less than in the USA (Anderson et al., 2003), so most projections of future health spending find that Japan will face smaller increases in future health expenditure than the USA. However, when dealing with public provision dominated systems such as Sri Lanka, changes in health service productivity are the key. In the case of the UK, the most recent projections of future healthcare costs show that much or most of the impact of aging will in fact be mitigated by a modest increase in productivity of only 1-2 percent per year, which happens to be within the historical trend rate for the UK (Wanless, 2002).

Box 4.1: Actuarial health cost projection for Sri Lanka, 2005-2101

Of the different approaches available to project national health spending, actuarial cost projection models have proven the most reliable and feasible (Technical Review Panel on the Medicare Trustees Reports, 2000; Office of the Actuary, 2006), and they are the most widely used in developed countries for official forecasts such as in the USA, UK (Wanless, 2002) and New Zealand (Ministry of Health, 2004). These models have the advantage that they most closely correspond in structure to our current understanding of how aging affects healthcare costs, and are more amenable to modeling different policy scenarios with respect to key cost drivers. The main alternative is econometric modeling, but this has not proven as reliable in general, and requires much more data than exist in many countries. At the same time, actuarial models have rarely been applied to developing countries, so using them in the Sri Lankan context presents significant technical challenges. Fortunately, Sri Lanka is one of two developing countries, where such models have been developed, the other being Thailand (Ogawa, Poapongsakorn, and Mason, 1988).

Actuarial projection models work by projecting health spending as a function of (i) number of people in each specific age and sex group, and (ii) mean expenditure per person in each group. Most models then elaborate by decomposing the latter into separate subcomponents of the rate of service utilization and the mean unit price or unit cost of a service. These are then separately forecasted, as the outcome of different trends, such as price inflation, productivity change and technology uptake.

This projection model treats the following factors as independent age-sex specific variables, each with its own forecast trend: (i) per capita rates of use of outpatient and inpatient medical services, (ii) productivity change public sector outpatient and inpatient delivery, (iii) medical price inflation in the private sector, and (iv) extent to which patients opt to use the private sector. The forecasts for each are based on historical trend analysis, and are included in the form of three scenarios in each case to account for the range in plausible trends. For example, the model allows for scenarios in which per capita outpatient service use increases at rates of 0.0-1.0% per annum, or in which annual public sector productivity change ranges from -1.0% to +2.0%. Different permutations of scenarios are then combined to produce three main projections for 2005-2101, each of which envisages a different policy scenario in the country (A – strengthening of the public sector, B – shift to a private sector reliance, C – continuation of current policy or status quo).

The demographic scenarios used by the model consist of the updated population projections for Sri Lanka, used elsewhere in this report. It should be noted that the model does not incorporate as cost drivers important trends such as changes in the relative health of the elderly or of disability, nor does it reflect differences in the relative resource intensity of treatment episodes by age, owing to lack of suitable data. Consequently, a key limitation of the model is that it assumes that there will be no changes, such as morbidity compression.

4.41   **Aging, the increase in the share of the elderly in the population, will add only 0.7-0.9% of GDP to Sri Lanka's health spending by 2051, on top of current levels of 4.2%**. Figure 4.5 shows the impact of aging on overall costs under the three different demographic scenarios considered, assuming that all other variables do not change. The increase is modest, because elderly-induced cost increases will be partly offset by savings from the reduction in numbers of young children. As will be seen, there is not

much difference between the scenarios, as there is not too much uncertainty in the overall demographic scenarios to 2051.

4.42 **The main cost driver may be increasing health awareness, and as a result, a higher propensity to consume medical services**. This is illustrated in Figure 4.13, which compares the range in impacts on national spending by 2025 implied by the model's various scenarios for key cost drivers. In combination, non-aging-related changes in rates of use of inpatient (-0.1-+0.3%) and outpatient (0.2-0.5%) services are likely to have a larger impact than aging alone (0.4%). Changes in health awareness and ensuing demand may increase costs by 0.5-1.5% of GDP by 2051. Age-adjusted rates of use of medical services have been rising at 1-3 percent per year, and have reached the equivalent of five physician contacts per capita per annum. Given that this is already high in comparison with other lower-middle income economies (underlining that Sri Lankans are highly medically conscious), it is plausible and reasonable to expect that as Sri Lanka's health system develops in coming decades, rates will continue to increase to reach levels at the upper end of those seen in developed economies today. The most appropriate comparators would then be Japan and Hong Kong, where annual physician contacts number 14-16 per capita. With even a slow increase of only 1 percent a year, this increasing demand would increase national health spending by 1.0-2.0% of GDP by 2051. This result of the projection model is in fact similar to other forecasts, for example in the UK, which have found that increasing health awareness and use of services have a larger impact in the medium term than aging itself (Wanless, 2002). Unfortunately, these behavioral trends would not be appropriate targets for reduction by policy, since they are for the most part contributing to health improvement through earlier detection and treatment of illness.

4.43 **Public sector productivity change could mitigate much the impact of aging on health costs**. If productivity in the public sector improves at its historical trend rate of 0.5-1.5%, it can potentially negate completely the impact of aging on costs. However, it is uncertain whether this past performance can be sustained, as the increasing incomes in the population may well exert growing pressures for increased quality of service provision, and this can only be obtained through increases in the unit cost (and unit prices) of services.

Figure 4.12: Trends in national health expenditure under different demographic scenarios, 2005-2051
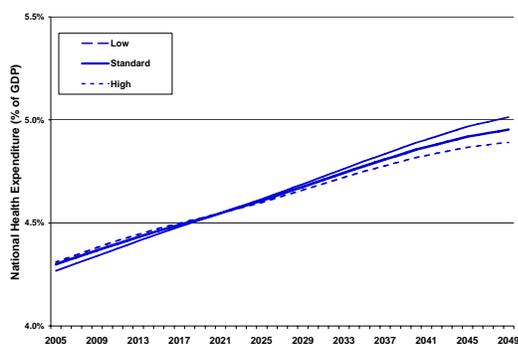
Source: own calculations

Figure 4.13: Impact of aging versus other cost drivers on future health spending by 2025
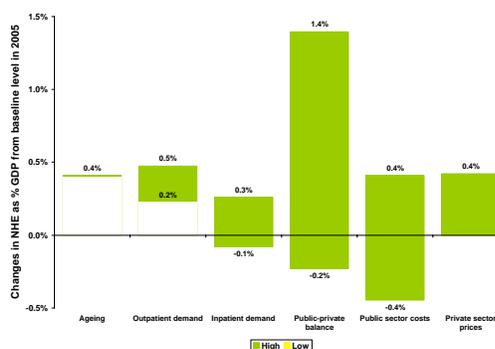
Source: own calculations.

4.44 **Medical price inflation in the private sector and the private share in provision are two factors, which may substantially increase future health spending**. There exists evidence of significant price inflation for some private medical services (Kalyanaratne and Rannan-Eliya, Forthcoming). Coupled with a significant shift in outpatient demand from the public sector to the private sector in the past decade, this has contributed to rising health spending, since private services are more costly than the public sector alternatives. If current government commitments to increase public expenditure National

Health Master Plan (Ministry of Healthcare and Nutrition, 2007), are realized, it is possible that the shift to the private sector may reverse, but if public expenditures are not substantially increased, then it is likely that private financing will increase its relative share, and this will in turn drive inflation in medical spending.

4.45   **Overall health expenditures will increase the most in scenarios where private sector involvement increases substantially**, and will increase the least when the public sector is strengthened. The side benefit of this is that the equity of access will improve. Figure 4.14 presents the projected trends in spending under each of the three major model scenarios (A, B and C), while Figure 4.7-4.10 show the trends in key variables assumed in each of these. What this shows is that the greatest potential for cost escalation comes not from aging, but from a situation where there is a significant shift towards private sector responsibility for healthcare, coupled with significant price escalation in the private sector. These two trends are more likely to occur together as the experience of countries such as the USA is that a reduced role for the public sector generally makes it more difficult to control price escalation. In fact, in scenario B (private sector reliance), the trend in national health expenditures would parallel that seen in the USA since the 1950s, reaching almost 14% of GDP by the middle of the century. The increase in national healthcare costs is least in a scenario where there is an active effort to strengthen the public sector, increasing its share of responsibility in the health sector, coupled with strong efforts to maximize productivity in public sector provision, with efficiency gains being used to pay for quality improvements. This is illustrated by scenario A in Figure 4.14, in which total spending would be kept below 6% of GDP in 2050. Interestingly, this would produce a trend in spending similar to that observed in Hong Kong (Leung et al., 2006), where the health system organization is very similar to that in Sri Lanka. In Hong Kong, the government gradually strengthened public sector provision through a mix of hospital reforms and increased budgetary spending, but overall expenditures (total and public) still remain far lower as a share of GDP (5.5%) than in other high-income economies.

4.46   **Several weaknesses in Sri Lanka's health system can be traced to one major problem, which is an inadequate level of public financing**. Public funding has not increased sufficiently with time and in line with the role adopted by the public sector. In fact, as a share of GDP the government health budget has fallen since the 1960s, and at just 2.0% of GDP is markedly less than in countries with similar demographic indicators. Under-funding prevents the system from engaging in major organizational changes to improve patient responsiveness and efficiency, which are both emerging issues, as well as constraining introduction of major new programs. (Rannan-Eliya and de Mel, 1997; Ministry of Healthcare and Nutrition, 2007), and recommended substantial increases in public financing. Although the need is now accepted at the policy level, actual implementation of the necessary budgetary increases remains to be seen.

4.47   **Under-financing and rationing of medication in the Sri Lankan public sector results in the unavailability of cost-effective medicines for management of NCD patients**. Without public financing, citizens in rich OECD economies will under-purchase these essential drugs. Most patients who are hospitalized or receive chronic care in Sri Lanka do so in the public sector, and these public sector patients tend to be poorer and older than average. Uptake of these medicines is thus dependent on the extent to which they are supplied in public sector facilities. However, availability is limited, primarily because the budget allocation for medicines in MoH is usually only half of estimated needs. Faced with shortfalls in funding, MoH rations supply by restricting overall procurements, and by using internal distribution controls to restrict the distribution of drugs that are purchased. So ACE inhibitors are only provided to MoH peripheral units and higher-level hospitals. This particularly affects medicines for NCDs, since the rationing approach of MoH is to prioritize supply of medicines for emergencies and acute treatment over medicines over other medicines. This situation is exacerbated by the lack of treatment protocols for most NCDs, which makes it less likely that patients will be prescribed needed medicines.

4.48 **According to the Sri Lanka Aging Survey, households with an elderly person spend around a greater share of their non-food expenses (10%) on healthcare than other households (7.2%)**. However, these data should be interpreted with caution, as this type of survey, which focuses on healthcare use, is likely to be overestimating the share of health spending versus other non-food spending, which other studies have estimated at being 5% or less (van Doorslaer et al., Forthcoming). Nevertheless, the survey suggests that the elderly face larger out-of-pocket burdens than the younger households, and if financing needs for the overall healthcare system increase as implied by the projection model, they will be likely to face the largest burden, unless public spending increases.

Figure 4.14: Projected national health expenditure in main model scenarios (% of GDP)
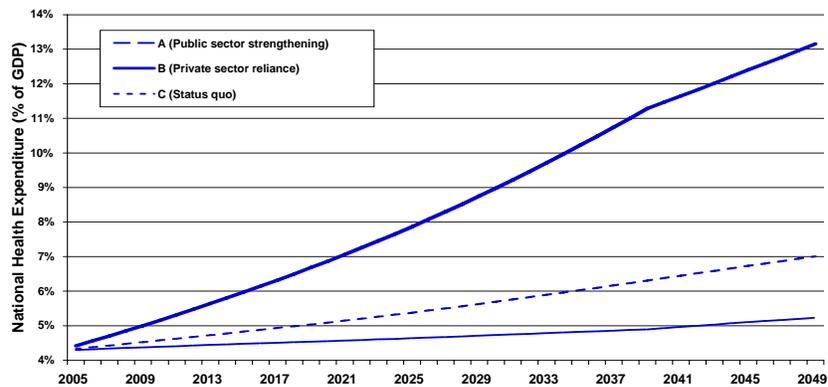
Figure 4.15: Trends in outpatient utilization rates in main model scenarios (visits per capita per annum)
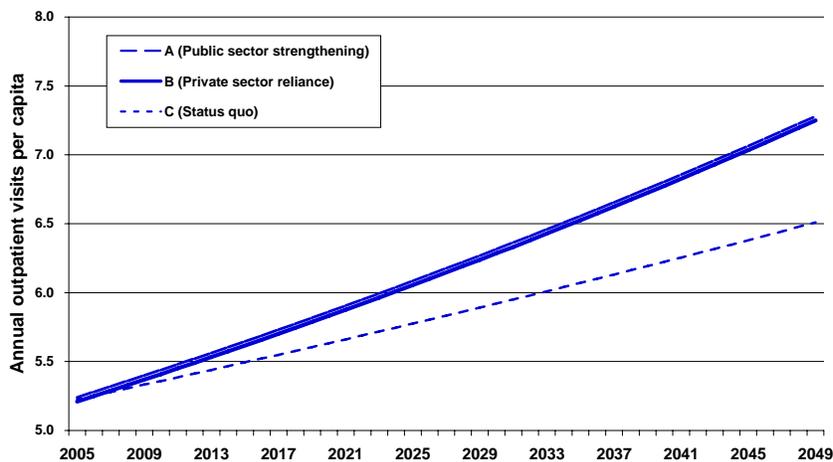
Figure 4.16: Trends in public sector inpatient productivity in main model scenarios (unit cost of average admission)
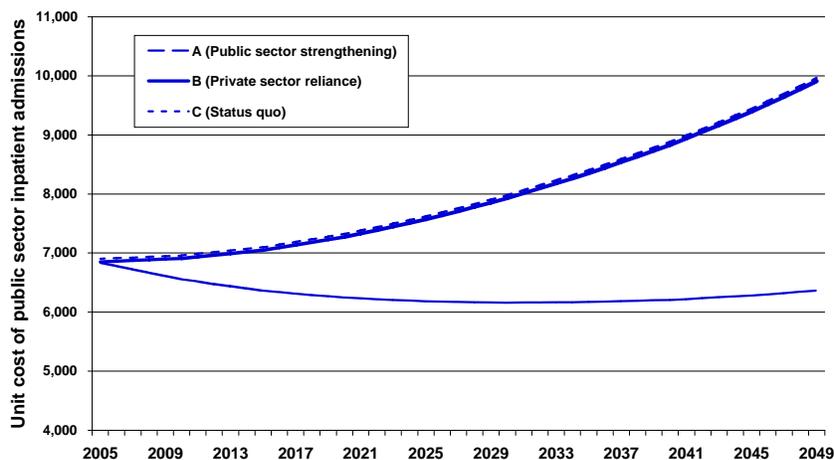
Figure 4.17: Trends in public sector share of outpatient provision in main model scenarios (% of total)
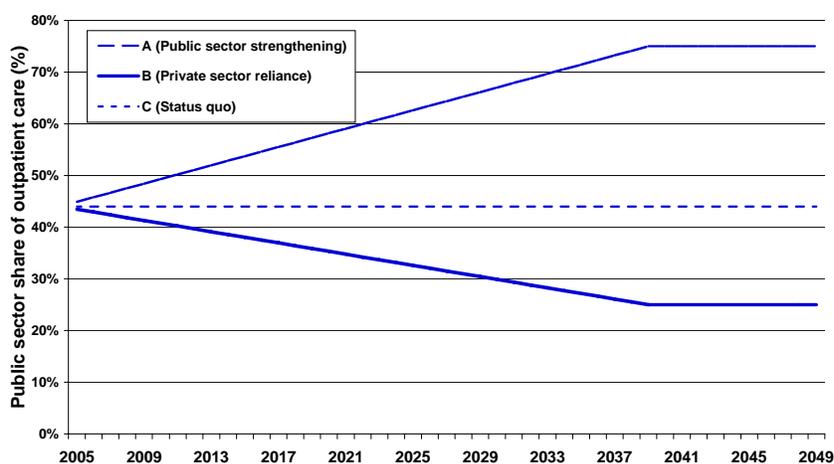
D.   HOW SHOULD THE HEALTH SYSTEM RESPOND?

4.49   **In developing a health system response to aging, there should be three key goals**:

(i)   **To enable Sri Lankans at all ages to achieve healthy aging** – The central challenge of aging is that it changes the balance of contributions and burdens between the working and the dependent populations. Healthy aging directly counters this, both by enabling workers to remain economically productive longer, and by reducing directly and indirectly the fiscal and economic burdens imposed by those in retirement in the form of health and long-term care needs.

(ii)   **To minimize the cost of the health system to the economy** – The increasing health and long-term care needs of the elderly are inevitable, but an efficient health system can do much to minimize the costs of meeting those needs

(iii) **To minimize out-of-pocket catastrophic health expenditure** – The health system needs to part of a social protection framework that mitigates the risk of large healthcare expenses of the elderly in poverty. The international evidence is that minimizing catastrophic health expenditures will require greater levels of public financing.

4.50   **A dual focus on preventing and also mitigating established NCD illness through clinical treatment must be an integral part of Sri Lanka's strategy for combating NCD**. The Sri Lankan evidence, presented in this chapter, shows that NCDs are under-treated even with the known cost-effective interventions, and therefore under-provision of care should be a concern as in other developing countries. An exclusive focus on prevention may lead to unrealistic expectations of a disease-free future, and thus a lack of readiness for emerging challenges (Adeyi et al., 2007). This evidence suggests that for Sri Lanka to mitigate the impact of future increases in NCD and chronic disease mortality and morbidity, it will need to invest more in both low-cost NCD curative care services at primary and secondary levels, as well as preventive activities for NCDs. Otherwise, the elderly population with ill health and poor NCD outcomes may increase more than it would have, posing additional burdens on both families and the public health care system.

4.51   **Integrating management of primary prevention and primary care for the elderly is essential**. The primary care network should be used for geriatric assessment, prevention, and rehabilitation. Many aspects of chronic disease care can be managed at the primary care level, if services are appropriately staffed and equipped, and management of chronic diseases at primary care level is more cost-effective than outpatient hospital care or inpatient care. Teaching and training of health care workers and public health workers on geriatric issues has to be provided, not as a "speciality', but as part of good primary care and community care. However, this will require major restructuring, as the backbone of the current primary care network, which is the MCH service, is not suitable for providing more general primary care services, and adding elderly care to its responsibilities is likely to destabilize its current effectiveness in MCH. For this reason, Sri Lanka may need to design a new primary care system based on use of trained family practitioners, which can manage the new emerging healthcare needs.

4.52   **For secondary prevention and associated clinical care, the quality of service and provision of inputs at public outpatient facilities needs improvement** in order improve diagnosis and proper treatment of poor and the marginalized elderly. As elders in extreme age groups or with disability would not be able to access or afford care far from their homes, provision of close-to-contact services through public sector field officers would improve compliance of treatment regimes and reduce complications.

4.53   **The MoH has initiated a number of activities and pilot projects to promote the concept of active aging** aimed at reducing the burden of NCDs, but there remains lack of a coherent strategy or sustained follow-up. In 2000, a pilot project was started in 50 MOOH areas to develop new community driven elderly-focused activities. These included improving the care-giving capacity of the family using trained volunteers, strengthening inter-sectoral collaboration within each area, encouraging community participation, creating awareness of active aging in the community using advocacy groups, and working with the community to identify needs. Some rapport was built-up between the elderly in these areas and the public health midwives, and in some areas day care centers were established. Despite their importance, health promotion activities to maintain and improve health of the elderly are limited in Sri Lanka. The pilot program on active aging implemented by the Ministry of Health needs to be reviewed, strengthened, adequately financed and, more importantly, formalized. Prevention should focus on lifestyle, dietary issues, and smoking. This would entail its acceptance as a national program, providing the structure and the full complement of resources for its smooth delivery, strengthening the roles and responsibilities of public health staff.

4.54   **Treatment of chronic disease will require adequate public financing for outpatient medicines and services**. This will be important for chronic disease patients to reduce future mortality and morbidity from these diseases, and the financial burdens of public sector patients. Public financing is also to be preferred over private, as MoH can purchase most of these medicines at far lower cost than the private sector through centralized procurement. Public financing will also be necessary to reduce observed inequalities in access to vision and hearing aids, and screening.

4.55   **However, the improvement and expansion of services in the periphery would entail increase of funds and changes to funding and the delivery structure**. The tax-financed system has not been able to provide services completely free of cost to patients as evidenced by the substantial amounts of out-of-pocket payments. Alternate models of financing health care have been considered (e.g., private insurance, community financing, social insurance) in recent evaluations by both the Government of Sri Lanka (Ministry of Healthcare and Nutrition, 2007) and World Bank (Hsiao et al., 2000), but all have concluded that the only feasible options that will improve the current system and overall equity will involve either increased tax-financing or introduction of social insurance. However, Hsiao and associates (2000) advised that it is not clear whether social insurance is feasible in Sri Lanka, and how much it would cost in additional public spending, and this option remains to be considered more fully. Certainly, the current structure of funding and managing hospitals by the central Ministry of Health may not be compatible with tangible increases of quality at the peripheral level that will be required to meet the challenges of aging, without increased public financing. How this will be resolved is an important policy question that needs to be answered. In containing the expenditure of the healthcare system, additionally the public policy should: (i) develop a proactive agenda that prioritizes attention to achieving productivity change in public sector health service delivery; (ii) recognize that failure to increase public health expenditures in line with current commitments is likely to increase overall healthcare spending as patients shift demand to the more expensive and cost-inflationary private-financed medical sector.

4.56   **The health information system must be expanded to deliver the information and evidence that are required to support and monitor the responses to aging**. The existing system was designed to respond to the problems of acute and communicable disease. There is no routine information generated for chronic disease, and there is no mechanism to track morbidity and risk factors for non-communicable disease on a systematic basis. Sri Lanka should develop: (i) regular adult health surveys, and (ii) a primary care morbidity surveillance system. Semi-annual health surveys of the adult population are needed to monitor trends in risk factors (including biomarkers), chronic disease and disability. These should be modeled on the national surveys conducted in many OECD economies, such as the USA, Australia and UK. This can be thought of as the elderly counterpart to the existing series of demographic and health surveys. The second is a system to track morbidity at the primary care level using surveillance systems similar to those in Australia and Europe (Britt et al., 1999), feasibility of which has already been demonstrated (Rannan-Eliya, Jayawardhane, and Karunaratne, 2003).

4.57   **The formulation of a coherent policy for addressing the health challenges of aging is a major need**. Until the 1990s, there was no explicit recognition of the need for an organized approach to the elderly, and no agency designated with specific responsibility. In 1998, MoH did appoint for the first time a director with responsibility for planning, implementing, monitoring and coordinating delivery of healthcare services to the elderly. In addition, the other departments in the ministry that should contribute to new policy development are currently under-staffed and under-resourced. As the needs of the elderly or planning for active aging are not high on the policy agenda of the MoH, the division for elderly healthcare needs to be strengthened within the MoH to lead advocacy on public policy, technology uptake, and research agenda. A summary of the proposed aging activities with suggested prioritizations is presented in Table 4.8.

Table 4.9: Proposed Aging activities, with prioritizations, in the area of healthcare

Issue	Key leads	Activities	Comments
1. Immediate Priority			
Increase awareness of aging issues to GoSL	MoH	Communications to policymakers and political leadership and make economic case for investment in coordination led by work by local policy analysts.	Critical step for creating advocacy and gaining support for policy
Directorate for aging activities	MoH	Establish and support an empowered Aging Directorate in the MoH to lead prioritizations, planning, coordination, and implementation across all sectors	Currently this unit exists but is not fully charged.
Pilots for active aging, including both public health and primary care components	MoH	Complete evaluations and formalize as national program	Should be driven by needs assessment and currently available data
Pilots for sick and frail elderly	MoH, others	Focus on sustaining functional state and quality of life	Immediate need and potentially rapidly growing need in future
Health information systems	MoH,, Ministry of Registry, others	Needs assessments, develop special studies, develop and implement surveillance systems for baseline information and tracking trends	Build on current information systems, supplement where gaps are present
NCD drug availability	MoH, MoPlanning	Assessment of drug needs and supplies, procurement, and distribution, and introduction of rational protocols for NCD clinical care, perhaps building on recent innovations in the Maldives designed by Sri Lankan experts.	Develop protocols, and address acute drug shortages, then develop a sustainable plan with adequate funding supported by increased public budgets.
Donor partners and aging	GoSR, MoH, DPs, and others	Develop strategies to address aging issues, and link up with other supportive partners such as WHO Representative, and HPN NCD team.	Current DPs expertise and interest are more in MCH issues
2. Intermediate term			
Education and training for aging in public health and primary care training	MoH, MoEd, others?	Develop aging track for public health, community-based nursing, and physician	Incorporate in standard training and curricula
Labor issues for aging	MoLabor	Productivity and labor force participation	Increasing life expectancy may lead to longer working years or other labor force roles.
Aging care and management financing	MoH, MoPlanning, MoFinance	Strategies and schemes to prevent health induced poverty from aging and from chronic diseases	Need to focus first on poor who are most susceptible
3. Medium term			
Institutionalization of aging issues in PH and Health care delivery system	MoH	Long term financing, medical training, planning	Should be part of the aging strategy and discussed early on
Aging research	GoSL, MoH, others	Understanding best ways for addressing aging issues in the future	Can learn much from developed countries and other middle income countries
4. Long term			
Public health and primary care for the aged	MoH, MoEd academia,	Assessment of current skills among PH and health care workers, explore options for introducing new primary care model adapted to aging and NCD issues and develop protocols with potential introduction of the concept of the family medicine trained physician.	Develop human resource to conceptualize immediate needs, plan for longer term

ANNEX 4.1: REGRESSION RESULTS

Table A4.1: Probit Model for the access to outpatient-care

	Coefficient	Standard. Error	dy/dx	Std. Err.	P>t
Age	0.00	0.01	0.00	0.00	0.53
Gender- Male	-0.14	0.09	-0.06	0.03	0.10
Expenditure Quintile 1*	0.02	0.13	0.01	0.05	0.87
Expenditure Quintile 2*	-0.11	0.12	-0.04	0.05	0.33
Expenditure Quintile 3*	-0.18	0.11	-0.07	0.05	0.12
Expenditure Quintile 4*	0.05	0.11	0.02	0.04	0.62
Acute Disease	1.17	0.07	0.43	0.02	0.00
Chronic Disease	1.17	0.08	0.44	0.03	0.00
Pension Receivers	0.09	0.11	0.03	0.04	0.43
Partially Retired**	0.09	0.15	0.04	0.06	0.53
Not Retired**	-0.16	0.11	-0.06	0.04	0.15
Without Schooling	-0.23	0.11	-0.09	0.04	0.04
Health Insurance	0.11	0.30	0.04	0.12	0.72
Have a Married Partner	-0.04	0.17	-0.02	0.07	0.82
Have a Child	-0.08	0.09	-0.03	0.03	0.37
Constant	-0.66	0.42			
Number of observations	2356				
F statistic	9.24				
Prob > F	0.00				
Base*= Expenditure Quintile 5					
Base**= Not Working					

Source: Own computations based on 2006 World Bank Sri Lanka Aging Survey.

Table A4.2: The likelihood of having a family doctor or other physician who can be seen on a regular basis, Sri Lanka Aging Survey 2006 (odds ratios)

Characteristic	Adjusted -OR		95% CI	
Place of residence				
Colombo	1.835	***	1.309	2.572
Other districts	1.000	a		
Age				
60-74 years	1.167		0.854	1.594
Over 75 years	1.000	a		
Income quintile				
Poorest quintile	0.577	*	0.325	1.025
2nd quintile	0.694		0.409	1.177
3rd quintile	1.000	a		
4th quintile	1.993	**	1.301	3.053
Richest quintile	2.336	***	1.547	3.527
Gender				
Male	1.000	a		
Female	1.162		0.869	1.553
Chronic disease				
Arthritis , rheumatism	1.030		0.758	1.400
Diabetes	1.182		0.809	1.725
Heart problems	1.135		0.734	1.756
Hypertension	1.747	***	1.322	2.307

df = 2315, F(11, 2315) , Prob > F = 0.0000

* Wald p value<0.1; ** Wald p value<0.01; *** Wald p value<0.001

a Reference categor y

Table A4.3: Probit model for the selection of provider type

	Coefficient	Standard. Error	dy/dx	Std. Err.	P>t
Age	-0.02	0.01	-0.01	0.00	0.00
Gender- Male	0.04	0.10	0.01	0.04	0.67
Expenditure Quintile 1*	1.05	0.15	0.38	0.06	0.00
Expenditure Quintile 2*	0.70	0.15	0.26	0.05	0.00
Expenditure Quintile 3*	0.41	0.14	0.15	0.05	0.00
Expenditure Quintile 4*	0.25	0.14	0.09	0.05	0.07
Pension Receivers	-0.31	0.14	-0.12	0.05	0.03
Partially Retired**	0.41	0.20	0.14	0.06	0.04
Not Retired**	-0.17	0.16	-0.06	0.06	0.28
Without Schooling	0.16	0.13	0.06	0.05	0.22
Health Insurance	-0.43	0.26	-0.17	0.10	0.10
Constant	1.34	0.46			0.00
Number of observations	2356				
F statistic	9.20				
Prob > F	0.00				
Base*= Expenditure Quintile 5					
Base**= Not working					

ANNEX 4.2: THE IHP HEALTH EXPENDITURE PROJECTION MODEL

Modeling approach

The Institute for Health Policy's Health Expenditure Projection Model (Rannan-Eliya, Forthcoming) was developed to model health spending in Sri Lanka, with the funding support of the US National Institutes of Aging, the Sri Lankan health ministry and the United Nations Department for Economic and Social Affairs. Its approach is that of an actuarial cost model, where expenditure requirements are modeled as a function of changes in age-specific demand for services (Mahal and Berman, 2001). Widely used in the OECD, this is robust and flexible in a wide range of settings (Rannan-Eliya and Wijesinghe, 2006). Examples of its use include annual projections of health care spending by the United States government (Heffler et al., 2003), and official projections in the UK (Wanless, 2002), New Zealand (Ministry of Health, 2004), and Hong Kong SAR (Department of Community Medicine and School of Public Health, 2005). The Sri Lanka implementation is the most extensive in a developing country. By directly incorporating population size and demographic structure, the model permits simulation of the impact of aging effects and policies on overall health expenditures.

Model structure

The model treats separately expenditures that are for collective services and those that are linked to individual patient services. The former consists of preventive, other collective, and capital health expenditures. On the basis of trend analysis of Sri Lankan data, plus recent work on the pattern of preventive and capital expenditures in OECD economies, preventive and collective health expenditures are projected in the model as a fixed share of GDP, whilst capital expenditures are projected as a fixed ratio to other non-capital expenditures.

Patient treatment expenditures are projected as the product of: (i) the volume of a service, and (ii) the unit cost or unit price of that service. Each of these components is projected on the basis of trend analysis, and costs are estimated separately for public and private sector expenditures. The volume, Q, of a service in terms of patient visits is projected as follows:

$$Q_{j,s,t} = \sum_{n=1}^{N} P_{n,t}.U_{j,n,t}.R_{j,s,t}$$

where:
Q is the quantity of patient visits for service type j, in sector s at time t;
N is the number of demographic (age-sex) groups that the population is divided into, each of which is represented by the subscript n;
P is the size of demographic group n at time t;
U is the per capita rate of use of service j, in by demographic group n, at time t;
R is the share of visits for service type j at time t which is treated in sector s.

The unit cost or unit price, C, of a service j in sector s at time t is projected as Cj,s,t. Unit cost is used to refer to the mean unit cost of services delivered in the public sector, and unit price is used to refer to the mean price paid for services purchased in the private sector.

Model parameters

The model divides the population into 17 age groups within each sex (5-year groups up to 79 years, and one age group for 80 years and above). The population data at baseline correspond to the results of the 2001 national population census. The future size of each group is derived from the latest demographic projections prepared by de Silva (2007) which provide a range of three demographic forecasts for the period 2001-2101. These forecasts provide the three different demographic scenarios for use in the model.

The model recognizes two service types: inpatient treatment and outpatient treatment, and two treatment sectors: public and private. The aggregate per capita rates of use of each service in the baseline years (2001-2004) are estimated by triangulation of the available administrative and survey data from providers with household survey data. The pattern of age-sex specific rates was derived from the Central Bank Consumer Finance Survey 2003/04. Finally, trend analysis was done for the period 1981-2004 to assess the historical pattern of change in per capita use rates. This was then used to develop three alternative scenarios of future trends in health care use.

The baseline unit costs and unit prices of public and private services in the model are derived from IHP's Sri Lanka health accounts database (Fernando, Rannan-Eliya and Jayasundara, 2007) and the baseline estimates of per capita service use rates, using the identity between total expenditures, service volume and unit costs/prices. Both unit costs and prices are specified in terms of per capita GDP, so as to avoid the need to explicitly model general inflation. Trend analysis of public sector productivity changes during 1935-2003 and private sector price trends during 1990-2003, and consideration of observed trends in other economies was then used to generate the model's scenarios for changes in unit costs/prices.

Future changes in the shares of patient visits that are treated in the public and private sectors are treated in the model as largely policy determined, with the contrast being made between a gradual increase in private sector responsibility for funding and the opposite strengthening of the public sector role. However, in the scenario with greater private responsibility, the limits to the role of the private sector are set by past experience in Malaysia and Hong Kong SAR, whose health systems are closest in structure to that of Sri Lanka.

Table A4.4 summarizes the key trends that are assumed in the model's three main scenarios.

Table A4.4: Summary of key parameters in model scenarios

	Scenario A	Scenario B	Scenario C
General description	Public sector strengthened	Increase in private sector reliance	No change in current status quo
Demography	Standard projection of De Silva (2007): TFR declines from 2.0 in baseline to 1.5 by 2030 before recovering to 1.7 by 2050. LEB		
Outpatient demand Inpatient demand	Improved primary care provision leads to increases in outpatient use rates, and reductions in inpatient use rates, shifting use patterns closer to those in Hong Kong and Japan currently: outpatient contact rates increase at 0.75% p.a., and inpatient contact rates decrease at 0.25% p.a.		Continuation of current trends: age-sex specific outpatient contact rates continue to increase at 0.5% p.a., and inpatient rates remain stable.
Public sector productivity	Constant productivity gains, with cost savings being fully spent to increase quality, with 0% change in net unit costs.	No pressure to achieve productivity gains, with 1% p.a. increases in inpatient and outpatient service unit costs.	
Private sector price inflation	Price stabilization: no change in unit prices	Price escalation owing to lack of public monopsony power to control prices: +1% p.a.	Price stabilization: no change in unit prices
Public share of patient visits	Public sector strengthened: public shares increases to 75% (outpatient) and 97% (inpatient) by 2040, and then plateaus.	Private sector strengthened: public shares decrease to 25% (outpatient) and 75% (inpatient) by 2040 and then plateaus.	No change in baseline public shares of 44% (outpatient) and 96% (inpatient)

5. LABOR MARKET AND POPULATION AGING

This chapter analyzes the impact of population aging on the labor market, one of the key channels through which aging affects growth and welfare, and draws policy implications. The analysis focuses on current labor market outcomes and attempts to identify both the work incentives of old people and the constraints faced by them (such as poor health and lack of employment opportunities). Driving this analysis is a concern to promote choices available to old workers, choices that would both improve job prospects of those who would like to work as well as reduce pressures on those who are forced to work. The chapter is organized as follows. Section A shows that as a consequence of population aging, labor force growth will slow down and may start to shrink after 2030. Unless countervailing policies prevail, aging of population will thus act as a drag on country's ability to grow. Section B describes main labor market outcomes for old workers and the patterns of their withdrawal from working life, including pathways to retirement, that is, typical ways in which old people transit from full-time employment to complete retirement. Section C explores the determinants of work activity of old workers with multinomial logit models. Section D discusses possible obstacles for employment of old workers, including labor market legislation, wage-setting practices, adverse working conditions, and ill-health. Section E concludes with policy implications.

A. LABOR FORCE PROJECTIONS: SHRINKING OF THE LABOR SUPPLY AFTER 2030

5.1   **Population aging will translate into slowdown of labor force growth and its contraction, potentially slowing down GDP growth**. Labor force projections show that Sri Lankan labor force will continue to grow for another two decades, and it will shrink thereafter in a foreseeable future. Applying constant current labor force participation rates to population projections, Figure 5.1 shows that labor force will stop growing around 2030 (in 2027, 2032, and 2037 for the low, standard, and high population scenario, respectively), and will thereafter start to shrink, dropping to the current size of the labor force in about 30 years under the standard population scenario.34 Population aging will also significantly change the age composition of the labor force, with the share of workers younger than 30 years significantly shrinking and the share of those older than 50 years strongly increasing (Figure 5.2). As noted in Chapter 1, to reach Japan's GDP at the same point in aging, Sri Lanka would have to grow at a very rapid rate.

5.2   **Some caveats need to be made regarding the above labor force projections**. First, will LFP rates remain constant as assumed by projections? Over the 1992 to 2004 period, the age and gender specific LFP trends in Sri Lanka have indeed been largely constant (see below). However, comparisons with developed countries in Asia (Japan, Malaysia and Thailand) show that Sri Lanka's LFP rates are lower for all age groups for females of as well as for 50 to 65 year old males (and similar for other groups). If these groups gradually catch up with developed countries and increase their participation rates, the shrinking of labor force would be delayed by a few years (see below). Second, will changes in temporary migrations have an effect o the labor force? According to Sri Lanka Bureau of Foreign

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[34] These calculations assume constant future labor force participation rates and apply age and gender-specific labor force participation rates (averages for 2000-04 period) to population projections.

Employment, there have been about 200,000 registered yearly departures for temporary work outside Sri Lanka in recent years.35 As labor force participation rates are calculated only for individuals working within the country, these individuals are not reflected in the labor force statistics of the Department of Census and Statistics. If temporary migration trends continue to increase at the current rate, the labor force would start to shrink a few years earlier. However, given that at present the number of temporary migrants is about 3 percent of the labor force each year, changes to temporary migration trends would not affect labor force projections drastically. And third, will permanent migration trends in the country affect labor force calculations? Although there is little information about the number of permanent migrants from Sri Lanka, these numbers in all likelihood are much smaller than those on temporary migrations from Sri Lanka, and as such they are likely to affect labor force projections only marginally.

Figure 5.1: Labor force projections, 2001-2070
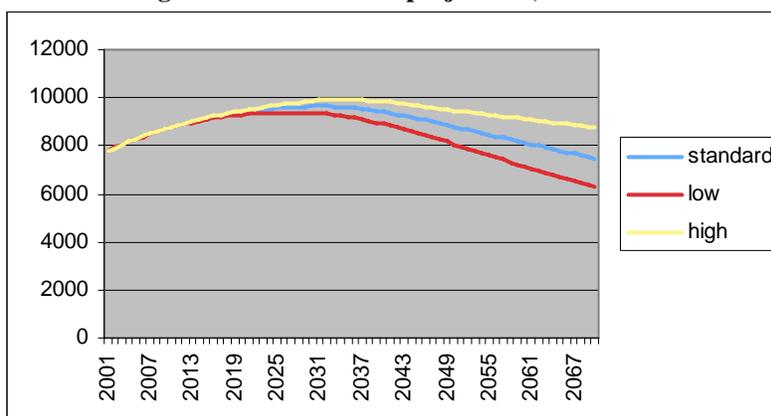
Source: Calculated using population projections by De Silva (2007) and labor force survey data by the Census and Statistics.

Figure 5.2: Age composition of standard labor force projections, by gender (2001-2070)
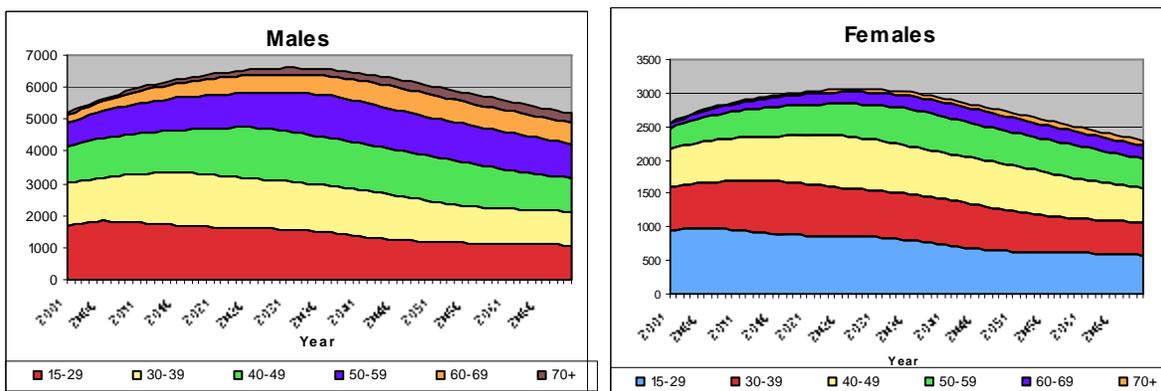
Source: Calculated using population projections by de Silva (2007) and labor force survey data by the Census and Statistics.

5.3   **With labor force growth being one of the sources of economic growth, the slowdown of labor force growth and its shrinking after 2030 may contribute to a slowdown in GDP growth**. While simulations that would determine the aging-induced "tax" on GDP growth is beyond the scope of this report, it is instructive to present some estimates of this tax for other countries. For example, Martins

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[35] Since not all migrant workers register with the Bureau the actual number of temporary out migrants is somewhat larger.

et al (2005) estimate that in the next half century, the decline of their workforces will reduce the per annum growth rates by 0.2 to 0.5 percentage points in France and Germany, and by 0.8 percentage points in Japan. Moreover, because of the raising share of inactive population, the economic growth with slow down by additional 0.2 to 0.3 percentage points, compared to growth under a stable age structure of the population. Martins et al. also attribute about one quarter of the growth of OECD countries in recent decades to labor force growth.

5.4   **Population aging, however, may not necessarily reduce economic growth, if countervailing factors prevail**. A drag on economic growth created by population aging could be countered by higher overall (multifactor) productivity, increases of labor quality, or increased labor force participation. While it is hard to predict the changes of multifactor productivity, recent trends show that education level of workforce has improved significantly in the recent 15 years (as shown in Figure 5.3, the share of workers with finished A level or above has increased by 5 percentage points, and with commensurate reduction of workers with less than 5 years of schooling), and the quality of workforce is likely to improve further in the future.36 Another plausible countervailing factor is the increase of labor force participation rates – for example, simulations show that the increase of women's participation rate by 20 percent could delay the reduction of labor force by 15 years.

Figure 5.3: Education structure of the labor force, 1990 and 2004
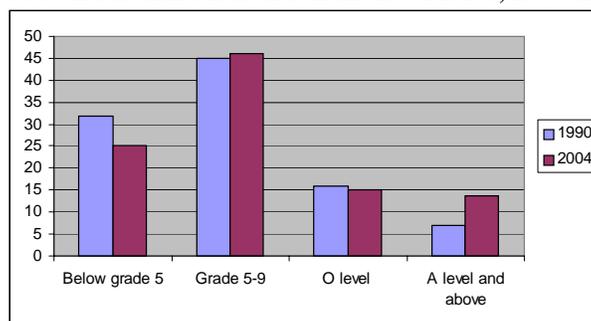
Source: Department of Census and Statistics (2004b).

B.   WORKING IN OLD AGE

5.5   Below we describe key labor market outcomes for old workers, focusing on the timing of retirement, work load, manner of retirement (how quickly people transit from full-time employment to complete retirement and the use of part-time work before reaching complete retirement), changes in the sector of work and occupation, and reasons for retirement.

(a)   **Labor force participation and unemployment of old people**

5.6   **During 1992 - 2004, labor force participation of old workers remained stable, men's participation rate by far exceeded women's, and the withdrawal from a labor market occurred rather late in the life cycle** (Figure 5.4). The only exception in regard with stable trends was a rising LFP rate of females aged 50-59, increasing from 26 percent in 1992 to 33 in 2004; in contrast LFP for

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[36] In most economies, growth is largely driven by developments of multifactor productivity. This productivity is influenced by aging through changes in the structure of consumption (shifting the supply toward service industries which have lower productivity growth may slow down the overall productivity growth. Moreover, increased health spending may create pressures on public finances and divert resources from other areas (including infrastructure) which may also reduce overall productivity growth.

males in that age show no pronounced trend and remained in the 51-56 percent range (Figure 5.5). Workers were withdrawing from the labor market rather late in the working career – starting with the age group 60-69, for males, and with the 50-59, for females (Table A5.1). For males, LFP rates for all age groups in the prime age (20-59) exceeded 80 percent, dropping to the 50s in the age group 60-69 and to around 20 percent in the age group over 70. Withdrawal for the women starts somewhat earlier – in 2004, LFP rates in the age group 40-49 were about 44 percent, dropping to 33 percent in the age group 50-59, to 14 percent in the age group 60-69, and to 3 percent in the age group over 70.

Figure 5.4: Labour force participation, by age and gender, 1992 and 2004 (in percent)
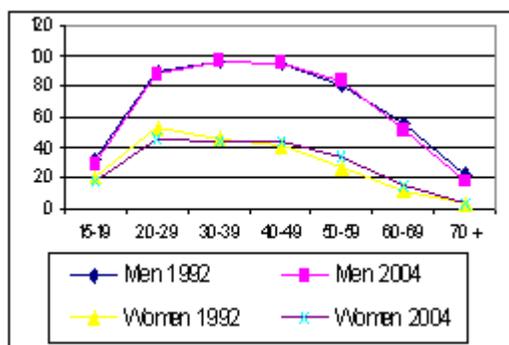
Figure 5.5: Labour force participation of old workers, 1992-2004 (in percent)
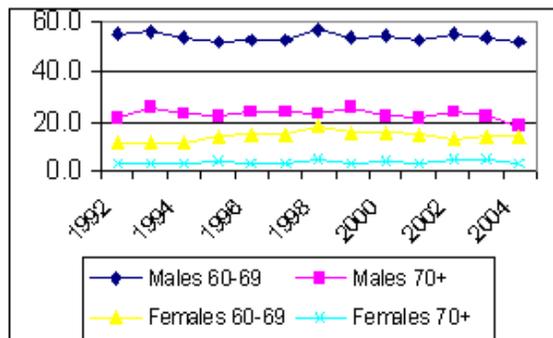
Source: Own calculations based on various Labor Force Surveys of Sri Lanka.

5.7 **Confirming that working careers determine also the retirement fate of workers, regular public and private sector workers withdraw from the labor market much earlier than casual and self-employed workers**.37 More than two thirds of workers holding regular jobs in the public sector in their prime age, and 57 percent of workers holding jobs in the private sector, completely retired when they were 60 years old. In contrast, only 23 and 18 percent of workers who were casual workers or self-employed in their prime age retired when they reached the age of 60, with the gap in retirement status widening with the age of workers (Figure 5.6). When they reach 69, virtually none of the workers who have spent their careers in the formal sector is still working full time; in contrast, nearly half (47 percent) of their counterparts who were casual workers and self-employed are still working full time.38 Note that in terms of occupations, the first two categories comprise mostly of white-collar workers (officials, managers, clerks and professional), in contrast to predominantly blue-collar workers comprising the casual and self-employed (who were mostly skilled agriculture and fishery workers, craft and related workers, and workers in elementary occupations). The observed pattern of retirement is thus contrary to the one found for OECD countries, where blue-collar workers and less-skilled workers are more likely to retire earlier (see OECD, 2006).

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[37] Exploiting the panel nature of our sample, we trace retirement paths – typical sequences of labor market arrangements between full-time work late in the working career and a complete retirement/withdrawal from active working life – for four key groups of workers. According to the pre-retirement employment status, we are able to follow the total sample of 1060 individuals, consisting of 276 regular public sector workers, 138 regular private sector workers, 223 casual workers, and 424 self-employed (the data are right censored).

[38] A log rank test showed that the survival curves for the four sectors of employment – that is, regular public sector workers, regular private sector workers, casual workers and self employed – were statistically different.

Figure 5.6: Retirement status, by prime-age employment type and age
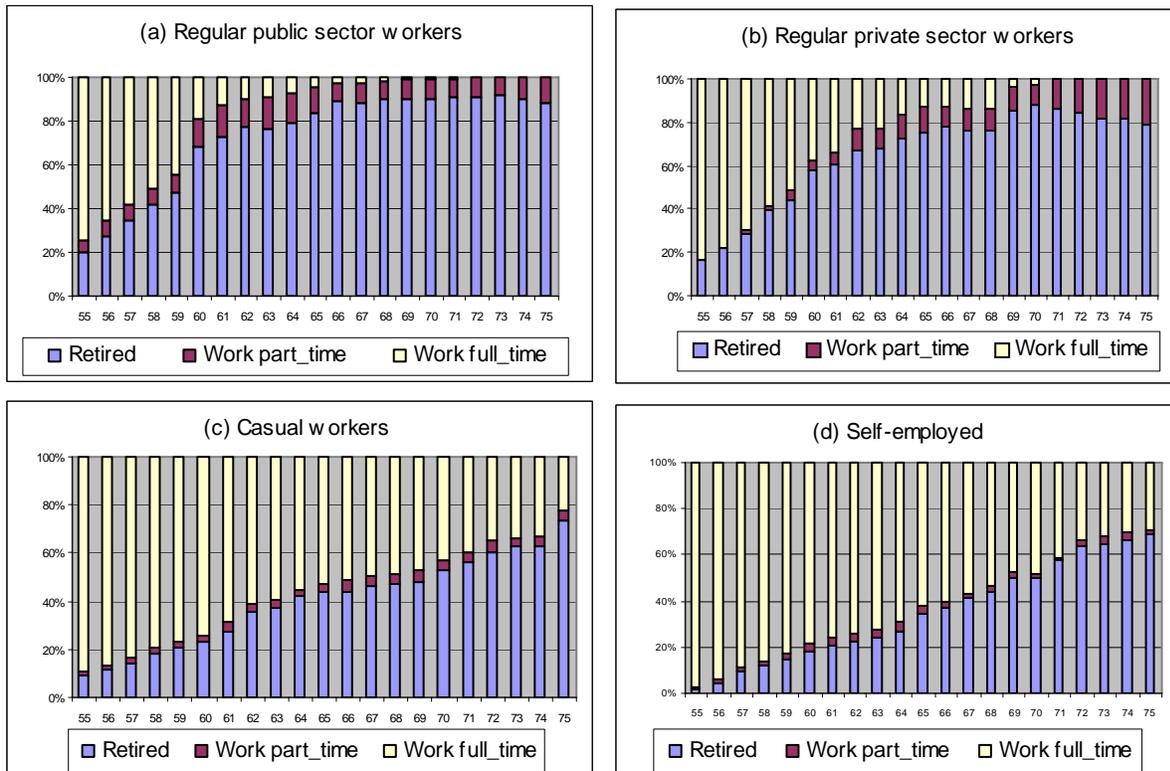
Source: Own calculations based on World Bank 2006 Sri Lanka Aging Survey.
Note: The employment status refers to employment status at age 54. All workers were working full time between ages 51 to 54.

5.8 **Unemployment among old Sri Lankans is a rather uncommon phenomenon**. During 1992-2004, unemployment rates for males aged 60-69 were typically well below 1 percent and virtually 0 for those over 70 years; unemployment rates for old women were even lower (Table A5.2). These figures reflect both the fact that when losing their jobs, old workers tend to withdraw altogether from the labor market (the phenomenon called "hidden unemployment" by OECD 2006). Unemployment rates are rapidly falling with age for both men and women (Figure 5.7). In 2004, 15-19 year olds had the highest unemployment rates, amounting to 26 and 37 percent, respectively, for men and women, with unemployment rates for older age groups monotonically decreasing and reaching single digit numbers already in the age group of 30-39 year olds.

Figure 5.7: Unemployment rates by age and gender (1992 and 2004)
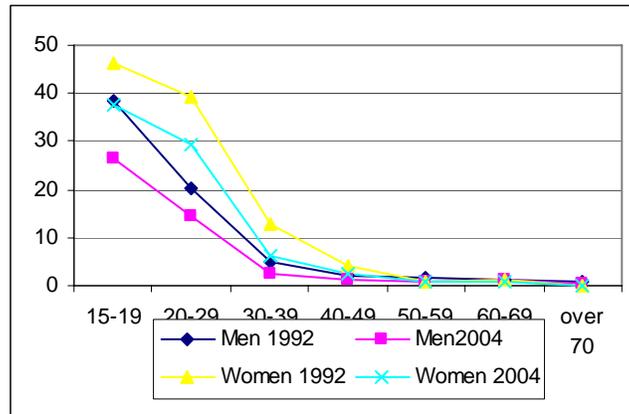
Source: Own calculations based on various Labor Force Surveys of Sri Lanka.

5.9   **More rigorous analysis confirms strong association of labor force participation and unemployment with age**. The above associations were obtained from cross-sectional data and not from observing the same set of individuals through time, and changes in the composition of persons observed in different age categories may influence the results. Accounting for such differences, probit regressions, run separately for males and females, confirm that age has a strong influence on the labor force participation and unemployment of individuals.39   Relative to labor force participation of individuals aged 20-24, the marginal effect of age is very strong in the late 20s, remaining flat till about the late 40s, and becoming increasingly negative for both males and females (not shown). Similar probit regressions also confirm the association of age with unemployment rates, with age accounting for a much larger reduction of unemployment rate between early 20s and late 30s for women than for men.

5.10   **International comparisons show that Sri Lanka's labor force participation rates for old people lag behind the rates of its regional comparators while mostly exceeding those in developed countries**. Labor force participation of older men is lower than in other countries in the region (India, Thailand, Bangladesh and Pakistan, Table A5.3), and so is participation of women, except that women's participation rate in Sri Lanka exceeds the one in predominantly Muslim countries (Pakistan and Bangladesh). Interestingly, the LFPs of old people in Sri Lanka also lag behind the rates of Japan, but they exceed other developed countries.

5.11   **Unemployment rates of old people Sri Lankans are in line with those of regional comparators and lag substantially behind developed countries**. Unemployment rates for old people – both males and females – in Sri Lanka are similar to those in India and Thailand, where open unemployment among old workers is also virtually unknown. Reflecting a different institutional set-up – above all, the existence of specialized programs providing cash benefits to unemployed that stimulate labor force attachment – unemployment rates of old workers in developed countries are significantly higher than in developing countries (although they are still much lower than youth unemployment rates in these countries). In 2004, unemployment rates for workers aged 50-64 ranged from 2 percent in Norway to 11 percent in Germany (OECD 2006).

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[39] The explanatory variables used in the regression include age, marital status, education, province, and number of dependent children and old people in the household.

(b)   **Employment status of old workers**

5.12   **Most of the old workers have full-time rather than part-time jobs**. As shown above, as they age, fewer and fewer workers remain employed. But if they do, they tend to work in full-time jobs rather than part time. In our survey of old people, 30 percent of males were employed, of whom two thirds were in full time employment and only a third in part-time employment; only 5 percent of women were employed, with 60 percent of them in full-time employment.   The proportion of part-time employment among old workers was the lowest in the 60-64 age group and then increased for older groups of workers, with the share of part time workers exceeding the share of full-time workers in the 75-79 age group (see Figure 5.8).40 Interestingly, while 11 to 13 percent of previously regular public or private sector workers held part-time jobs by the time of the survey, and only 6 percent of casual and self-employed workers did (Vodopivec and Arunatilake 2007).

Figure 5.8: Retirement status by age and gender (percent)
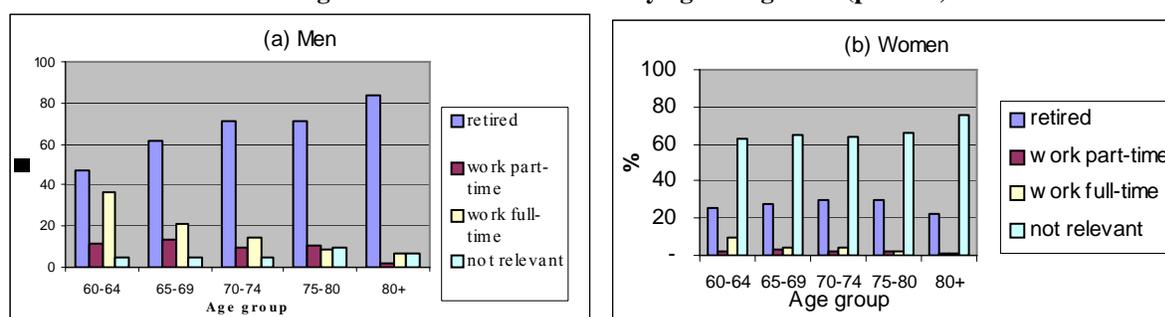
Source: Own calculations based on World Bank 2006 Sri Lanka Aging Survey.

5.13   **Earning additional income was the main reason for part-time employment for most workers**. Three in four old people in part-time employment are continuing to work to earn additional income. More females than males consider the additional income from part-time employment as the main reason for continued employment. A small percent also worked part time to keep them selves occupied (6 percent) and to be in touch with their profession (3 percent). A large share of old people working part-time does so involuntarily, as 80 percent of those who retired after doing some part-time work indicated that they would have liked to stop work completely after retirement from full-time work. (On the other hand, over a quarter of the surveyed old people indicated that they would have liked to continue doing some paid work when they retired from their full time jobs.)

5.14   **A vast majority of old workers are self-employed or casual workers engaged in the informal sector**. More than half of the working old people males and females are self-employed (Figure 5.9a). The majority of the rest of workers are casual workers, with less than 3 percent of old people working as regular workers, mostly workers in their early sixties. A vast majority of old workers are engaged in informal private sector (the main exception being men in their early sixties, with small share of them working for the government or in the formal private sector) – see Figure 5.9b.

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[40] The question on retirement status was not relevant for 66 percent of old people females. This arises from the fact that many females do not participate in market based economic activities in younger ages. According to DCS, Labor Force Survey data 60 percent of females 60 to 64 years old are unavailable work, because they are engaged in household activities. Although, this percent decreases for old people age-cohorts even at 80 plus years of age, 6% of old people females state that they are not available for work due to household work.

Figure 5.9: Old workers by type of employment status and type of employer

(a) By type of employment status

(b) By type of employer
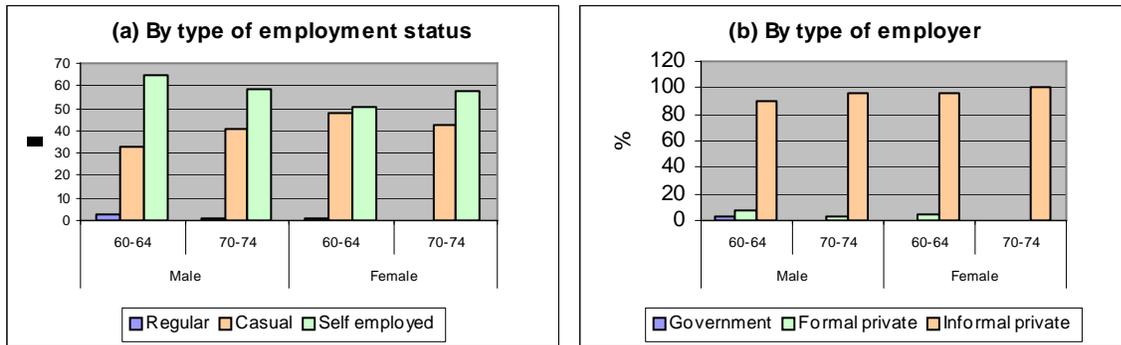
Source: Own calculations based on World Bank 2006 Sri Lanka Aging Survey.

5.15   **Old workers, both males and females, are working mostly as skilled workers in agriculture, manufacturing, and wholesale and retail trade** (Figure 5.10). A fair proportion of them, particularly of women, are working also at the bottom of occupational ladder (in elementary occupations), and a small proportion as professional workers. Not surprisingly, the composition of workers by occupation changes little with age, as does sector of work, except that the share of workers in agriculture is reduced. Interesting differences emerge again between the workers who spent their careers as formal and informal workers: while the shares of old workers in different industrial sectors remain constant for casual and self-employed workers, the proportion of those engaged in agriculture increased among workers who previously held regular jobs (Vodopivec and Arunatilake 2007). While sector of work and status for old workers working part-time does not differ much from full-time workers, a larger share of them is professional and skilled workers.

Figure 5.10: Old workers by sector of work and occupation

(a) Old workers by sector of work

(b) Old workers by occupation
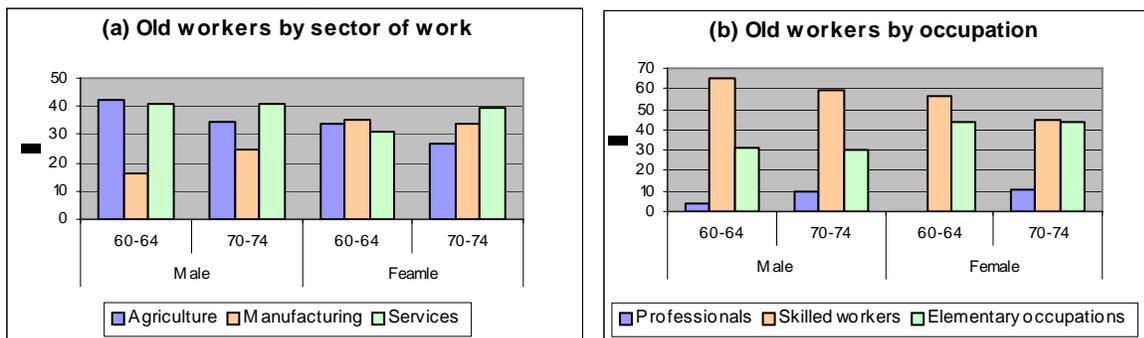
Source: Own calculations based on World Bank 2006 Sri Lanka Aging Survey.

(d)   **Reasons and pathways for retirement**

5.16   **The main reasons for retirement are on the push side: ill-health and reaching mandatory retirement age, for both males and females** (see Box 5.1 for a distinction between pull and push factors influencing work and retirement decisions). Nearly half of retired old workers stated that health reasons were very important for their decision to retire, and about 40 percent of them quoted reaching the mandatory retirement as being the second most important reason (Table A5.4). Among the push factors, work and travel stress, as well as the closure of businesses were also important factors affecting the decision to retire.

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5.17 **The most prevalent way of withdrawing from the labor market is "overnight," that is, without engaging in part-time employment**. As implied by falling LFPs and the fact that part-time work is relatively infrequent, most workers exit from full-time employment directly to complete retirement. In our sample of individuals who held stable jobs in their early fifties (see selection details below), a vast majority (89 percent) of workers who did not work full time any longer had retired "overnight," that is, they did not work part time before retirement and they completed transition to inactivity in a very short time.

Box 5.1: Push and pull factors of labor market withdrawal

Several "pull" or "push" factors influence work and retirement decisions of old workers. Pull factors are associated primarily with financial incentives facing the individual, and push factors with circumstances that restrict job opportunities available to an individual.

Among the most common factors that pull workers into retirement are financial incentives provided by pension schemes and other formal or informal early retirement schemes. In this regard, the age at which pension funds are accessible, their generosity and how additional years of work change the present value of net pension wealth play key roles in influencing retirement decision of workers. In many developed countries other welfare schemes – such as unemployment benefits and disability benefits – are also often used by workers as a means of early exit from work. In addition, private pension arrangements and joint retirement decisions of couples may also pull workers into retirement in some countries, particularly for those who value leisure. In developing countries, family obligations – such as helping with childcare of grand children – also pull workers into retirement.

"Push" factors include both firm and individual circumstances that restrict suitable job opportunities. At the firm level these include negative perceptions about the capacities of old workers, labor costs exceeding contribution to output by old workers, and difficulties firms face in adjusting employment as a result of employment protection rules. At the individual level these include skills mismatch in the face of technological and structural changes in labor demand, perceptions on low returns to further training, work related stress, poor health and inflexibility to change working hours.

Source: OECD (2006).

5.18 That pathways to retirement show strong dual patterns is best documented by the dual nature of reasons for retirement: while most workers are pushed away from jobs, **the main reason for retirement of regular public and private sector workers is mandatory retirement, but for casual and self-employed workers it is ill-health**. For regular public sector workers, the main reason for retirement at any age is work related, primarily reaching mandatory retirement age (see Figure 5.11). The same holds true for regular private sector workers, except for those aged 61-70. Overall, a slightly over a quarter of regular workers in the private sector cited reaching mandatory retirement age as a reason for retirement from full time work. On the other hand, by far the most compelling reason for retirement at all ages for casual workers and self employed was ill health (a small exception are casual workers aged 55-59, where work-related reasons slightly overweigh health reasons). Interestingly, personal reasons figured more prominently for the groups of casual workers and self employed than for regular workers.

5.19 **Among the pull factors, "doing other things (hobbies)" was an important reason for retirement, especially for females** (Table A5.4). Only females found family obligations a very important reason for complete retirement; however, it was a relevant factor only for a small proportion of females. This indicates that obligations of child-care and care for old persons do not have a large effect on retirement decisions.

5.20   **The reasons for retirement differ substantially from those in OECD countries**. Similar to workers in OECD countries, a share of workers retires upon reaching mandatory retirement age. However, unlike in OECD countries, the single most important reason for withdrawal from the labor market is poor health. A smaller share of workers is also pulled into retirement by family obligations, work stress, travel stress and work dislike. Moreover, in OECD countries there are many institutional arrangements that entice old workers to retirement or early retirement, ranging from pre-retirement pension schemes to disability and unemployment insurance benefits (OECD 2006) – the arrangements largely missing in Sri Lanka.

Figure 5.11: Reasons for retirement from full time work
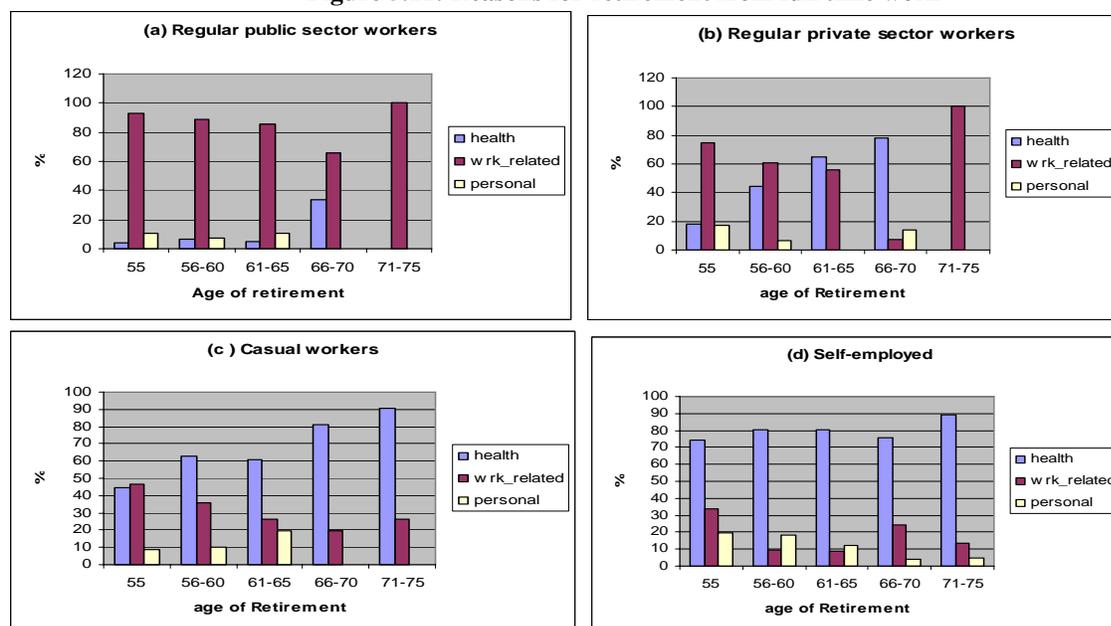
Source: Own calculations based on World Bank 2006 Sri Lanka Aging Survey.
Note: The employment status refers to employment status at age 54. All workers were working full time between ages 51 to 54. Work related reasons: work stress, travel stress, mandatory retirement, completion of contract, business closed; Health reasons: health reasons or illness, not feeling physically well. Personal reasons: retirement incentives and family obligations.

Hours worked and pay of older workers

5.21   **The number of hours worked is also reduced by age**. Reflecting retirement patterns, old workers as a group are providing less and less labor to the economy. The average weekly number of hours of work provided by old male workers decreased from 23 for 60-63 year olds to below 10 for the 72-75 year olds; and by old female workers, from 5 and 2 for the same are groups (Figure 5.12a). At the same time, workers staying active reduce the number of hours worked as they age, men from the average of 47 in their early sixties to 36 in the 72-75 year group, and women from 35 to 29 for the same age groups (Figure 5.12b). Despite these reductions, the average numbers of work for those workers who remain employed remain large even in high age. Old workers in part time jobs also work long hours – in our sample (SLAS 2006), they on average work only 12 hours less than old workers in full-time jobs (36 hours compared to 48).

**Figure 5.12: Average number of hours worked, by age and gender,
(a) including fully retired, (b) employed workers only (full- and part-time workers)**
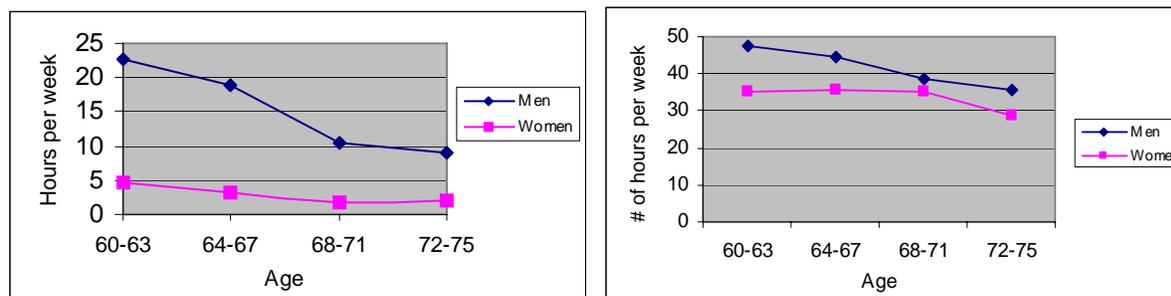
Source: Own calculations based on World Bank 2006 Sri Lanka Aging Survey.

5.22   **In comparison to younger workers, old worker are paid less, particularly in the public sector**. Wages of workers of 65 years and above are only a fraction of wages of the best paid group of workers – workers in their late 50s and early 60s, in the public sector, and in their 30s, in the private sector (Figure 5.13). Particularly strong reduction of wages of older workers occurs in the public sector, with workers aged 65 and over earning barely over 1/3 of what the workers in the 60-65 group are earning, and only about 20 percent of what workers in the 55-59 year group are earning (the latter applies for women only). In the private sector, the reduction of wages for workers above 65 years of age is more modest. Interestingly, except for women in the public sector, wages of workers in the 60-64 year group are higher than wages of the 55-59 year group.41 One salient feature of the age-wage profiles is the fact that the both men's and women's profiles of the private sector are much flatter than the ones in the public sector. Many OECD countries have hump-shaped age wage profiles, but there are many exceptions, reflecting different institutional wage-setting and other arrangements (see OECD 2006).

**Figure 5.13: Age wage profile, by sector and gender
Index (wages for 25-29 year olds = 100)**
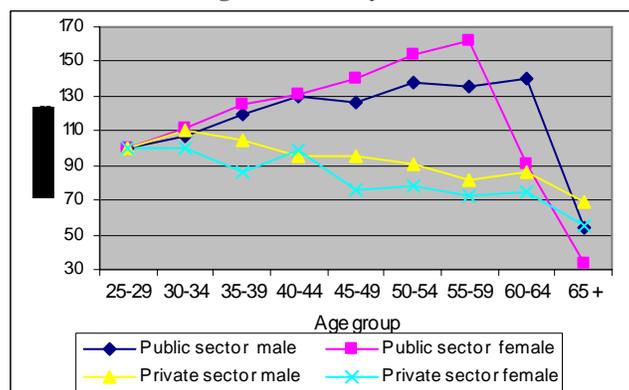
Source: Own calculations based on various Labor Force
Surveys of Sri Lanka.

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[41] Note that these profiles are derived from cross-section data and may not necessarily reflect life-cycle profiles (that is, age-wage profiles of the same workers traced through time), because these profiles may be heavily influenced by the selection of workers: other things equal, high-paid workers are more likely to withdraw from the labor market later in their career than low-paid workers. The increase of relative wages for workers in their early 60s compared with workers in their late 50s in the private sector thus reflects two opposing effects: the selection effect (that is, a higher likelihood that better paid workers stay employed) as well as the negative effect of age on wages of life-cycle wage profile, with the former prevailing (that is, better-paid workers self-select and continue working while lower-paid workers transfer to inactivity).

C. DETERMINANTS OF WORK ACTIVITY OF OLD WORKERS

5.23   The above analysis is mainly descriptive, examining the retirement from active working life through a "single lens," that is, one aspect at the time (section 5.1), and contrasting retirement patterns across workers with different employment status during their working life (section 5.2). In this section, we extend the approach to multivariate analysis, that is, to the identification of the separate influence of individual variables on retirement decisions, the influence that may be clouded in a simple, univariate analysis.

5.24   Speaking formally, **below we report the results of multinomial logit models identifying factors that contribute to the withdrawal from the labor market**. The dependent variable is the change of the labor market status of individuals holding stable, full-time jobs at age 54 years old as compared to their status when they were 61-65 year old (1060 persons in the SLAS). According to work status during ages 61 to 65, we allow three possibilities for this change (that is, our dependent variable can take three values):

- Completely retiring upon reaching 61 years and not working when aged 61-65 (in our sample, 382 individuals); this transition was taken as a baseline.

- Working at least some time during ages 61-65, either part-time or full-time if not throughout the period (in our sample, 208 observations).
- Working continuously full-time during ages 61-65 (in our sample, 470 observations).

5.25   **Among explanatory variables, labor market factors, as well as family, demographic and personal characteristics are included** (see Table A5.5 for descriptive statistics of independent variables). Of the sources of income considered in the study, inclusion of financial or in-kind family assistance could be endogenous, if one believes that the amount of help given by family vary according to other sources of income, and health status of old people. Hence, instead of using family assistance, we use a proxy variable, which indicates whether individuals have access to help if they need it. Statistically significant results of this analysis are highlighted below.

5.26   **Employment status at age 55 is the most important factor determining work activity of old workers**. The results show that keeping other things constant, compared to regular public sector workers, all other types of workers are more likely to be working full-time during ages 61–65 (Table A5.6). These effects are large for workers of all three groups – regular private sector workers, and particularly for casual and self-employed workers: workers from the first group are 40 percent more likely to work in a full-time job in their early 60s than workers who left regular public sector jobs, and casual and self-employed workers 66 and 69 percent more likely, respectively. Interestingly, while casual and self-employed workers are more likely to work full time, but they are less likely to work part time as compared to workers who were regular public sector workers at the end of their working career. In other words, while the option of working part time is open to previous regular public sector workers, this option seems to be less available to casual and self-employed workers.

5.27   **The probability of working in old age decreases progressively with (self-perceived) health problems and the presence of chronic illnesses**. The results show that relative to individuals who reported very good health, the probability of full-time or part-time work of individuals who reported good or poor health is significantly smaller – for those in poor health, the chances for full-time work are 23 percent smaller, and for part time work 4 percent smaller, in comparison to those in very good health. Similarly, the probability of full-time (but not part-time) work of individuals who reported a chronic

illness is also significantly smaller (by 11 percent) in comparison to individuals who did not report a chronic illness.

5.28   **Pension income is a major factor reducing labor supply of old people**. The results of the multinomial model show that pension income has a large and negative effect on work activity in old age. Receiving a pension reduces the probability of full-time work by 21 percent and that of part-time work by 7 percent.

5.29   **Location also affects old people work activity, but the effects are small**. Estate sector workers are less likely to work full-time during ages 61-65, relative to urban sector workers. This could possibly be due to the high level of strenuous physical activity associated with estate sector work.

5.30   **Interestingly, individual characteristics – gender, ethnicity, marital status, being a head of a household – have no significant effect of the studied labor market transitions**. The only exceptions are that men are more likely then women to make a transition to part-time jobs, as do previously married workers as compared to currently married.

D.   OBSTACLES FOR EMPLOYMENT OF OLD WORKERS

5.31   The above results allow us to probe into the possible obstacles for employment of workers – labor market legislation, relative wages of old workers, and work stress and weak employability of old workers.

(a)   **Inflexible labor market legislation**

5.32   **A wide range of outcomes in the Sri Lankan labor market is suggestive of a presence of rigidities in working hours and type of employment faced by old workers**. Above we showed that old workers work relatively long working hours – according to the 2006 SLAS, only 12 percent of old workers in part-time employment and 8 percent in full time employment were able to adjust their working hours. Moreover, only 8 percent of retired workers had the option of reducing the number of working hours in their last full-time job, and about a quarter of the old workers who retired overnight would have preferred to do some paid work before completely retiring. Other findings of the analysis above complement this picture: we showed that the main reason for retirement of many regular workers was mandatory retirement, that only a small part of workers take part-time employment jobs, and that LFP rates of old workers in Sri Lanka are lower than in regional comparators. Can we conclude from this that inflexibility of employment legislation and barriers to reduce regular work hours or to part-time work?

5.33   **There may be other reasons for apparent rigidities in labor market outcomes of old workers, and it is not clear how much labor market legislation contributes to it**. While lack of adjustment of working hours, low LFP rates, and the fact that people are retiring despite wishing to continue working in paid jobs are suggestive of inflexibilities, there may be other reasons for that. Employers may be reluctant to hire old workers on part-time basis because doing so provokes difficulties of coordinating work in teams; it may generate demands of other groups of workers to offer reduced working hours to them as well; and, possibly, runs against outdated attitudes of employers about part-time employment. Note that the obligation to pay gratuity does not work against old workers, because their relative pay is low (see the discussion of age wage profiles above).

5.34   **Sri Lanka's strict employment protection legislation, embodied in the 1971 TEWA system, however, may be a source of disincentives for employment of old workers** (see Box 5.2 on the description of the TEWA). In principle, it is not possible to predict the impact of strict employment

protection legislation (EPL) on labor market outcomes for old workers, as it may lead to both greater retention of old workers as well as to the reduction in their hiring. While the empirical evidence is weak, some recent studies report negative effects of strict EPL on employment of old workers. For example, a cross-section analysis of OECD countries shows a statistically significant association of strict EPL with reduction of employment and hiring rate of workers aged 50-64 (OECD 2006). There is also a number of country studies which identified strict EPL as a barrier to the hiring or retention of older workers.

5.35   **Mandatory retirement stipulations are provoked by strict employment protection legislation**. While in Sri Lanka there is no legally binding retirement age (except for civil servants), employment contracts typically do specify the retirement date. The reason is simple: similar to other countries with large separation costs, setting the retirement data avoids costly layoffs.[42] Because Sri Lankan employers can extend employment contracts of old workers beyond pre-set retirement dates, or hire old workers who retired from other firms, without being liable to severance payments (except gratuity), the necessary flexibility in employing old workers is achieved. Increasing the mandatory retirement age for civil servants, set currently at 55, would probably help keeping these workers employed for a longer time, but there is a host of other consideration that should be taken into account (above all, setting consistent hiring practices and considering revisions of wage scales) for this measure to be useful rather than just to increase the costs of bureaucracy.

Box 5.2: The generosity of Sri Lanka's severance pay system

Sri Lanka's severance pay system—embodied in the Termination of Employment of Workman Act (TEWA) of 1971—is one of the costliest and most restrictive severance pay systems in the world. The TEWA requires employers with more than 14 workers to seek the authorization of the Commissioner of Labor for intended layoffs. It not only requires that employers pay high compensation to laid off workers, but its discretionary nature and lengthy procedures further restrict the ability of employers to lay off workers. By ex-ante determining the amount of severance pay, the recently introduced formulas somewhat reduced arbitrariness, but payments remain well above international norms.

The March 2005 formula starts with a factor of 2.5 of monthly wages per year of service for workers with 1-4 years of service and total benefits increase with the years of service, but at a decreasing rate, with an overall maximum of 48 monthly wages for service of 34 years and above. Judged by international standards, the formula is very generous: a Sri Lankan worker with 20 years of experience is awarded by a severance pay of 39 monthly wages, in contrast to average severance pay of 16.3 monthly wages in other Asian countries, 11.9 in Latin American, 7.1 in African, 6.4 in OECD, and 4.4 in transition countries – a staggering difference!

Source: World Bank (2007).

5.36   **Absence of anti age-discrimination legislation**. While low LFP of old workers may reflect negative attitudes and age discrimination among employers, it is not clear that age discrimination laws would help. It is the implementation of the legislation that matters, and in absence of effective information campaigns and with slow judicial system, such legislation may prove ineffective. Perhaps a more productive way is the promotion of good human resource practices among employers by issuing guidelines and information campaigns.

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[42] For example, OECD (2006) reports that firms in Japan and Korea are massively resorting to mandatory retirement age in order to evade strict employment protection legislation, because this legislation does not apply to mandatory retirements.

(b)   **Are wages of old workers set too high**?

5.37   **Setting the level of wages too high could work against the employment of old workers**.
More precisely, if wage increases associated with age exceed the increases in worker productivity,
employers would prefer hiring young workers and would be reluctant to retain old workers.43 Indeed, in
many countries wages by age show a hump-shaped profile, the profile that is most consistent with high
level of employability of old workers (see OECD 2006 for a description of such profiles in OECD
countries). The hump-shape profile could be explained by rising productivity of workers as they gain
experience and falling productivity after a certain age (see Box 5.3 on the productivity of old workers).

5.38   **In Sri Lanka, relative costs of old vs. young workers appear not to create employment
disincentives**. As shown above, the age wage profile for the private sector reaches its peak for the 30-34
age group, shows a slow decrease thereafter and a sharp drop after the age of 60 for all workers. While
this drop may reflect the selection issues that are not accounted for in age-wage profiles based on cross-
section data, the magnitude of the drop of wages of old workers nonetheless suggests that the level of
wages of old workers – and thus the wage-setting mechanism – is not a disincentive to hire or retain old
workers in Sri Lanka.

Box 5.3: Are old workers less productive than young ones?

Empirical evidence suggests so, although the relationship is often very non-linear and there are large differences
across individuals and tasks.

Studies find strong evidence that after the age of 50, several aspects of physical and mental abilities (such as
reasoning and numerical capabilities) start to decline, although this decline is often progressive and can
substantially vary from one person to another. In contrast, some verbal abilities remain virtually unchanged also
late in the life cycle.

It is also very important to note that apart from ability to perform a certain task, it is the ability to adjust to
changes in the environment and to be able to work in teams that are important – the ability that old workers may
lack in comparison to young workers. A confirmation for such claims comes from productivity studies based on
matched employer-employee data sets. For example, studies of the productivity of French and American firms
found that workers aged 55 and over are less productive than younger workers.

Source: OECD (2006).

(c)   **Other factors**

5.39   **Work stress and stress of traveling to work may also be obstacles to old people
employment**. As shown above, a fair share of old people have stopped work due to work stress and the
stress of traveling to work. Work stress may be related to many factors, including inappropriate working
conditions, discrimination of old workers, or the perception of the old workers about losing their ability to
cater the needs of the market. OECD reports that large shares of old workers in OECD countries is
exposed to physically unpleasant conditions (43 percent of men and 26 percent of women aged 50-64),
and the conditions in Sri Lanka are probably no better.

5.40   **Employability of old workers**. Another likely obstacle for employment of old workers may
be their outdated skills and negative perceptions of employers about the adaptability and productivity of

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[43] Based on cross-country analysis, OECD (2006) provides some evidence of a negative impact of high relative
wages on employment opportunities of old workers (drop in retention and hiring rates of male older workers).

older workers. Even in OECD countries, improving training opportunities and the willingness to take advantage of them have been identified as a key area for strengthening employability of old workers. More research is needed to determine the needs – and the likely impact – of such training in Sri Lanka. And to change negative employer attitudes, a voluntary approach fostering public information campaigns and guidelines about employment of old people may help.

E. CONCLUDING REMARKS AND POLICY RECOMMENDATIONS

5.41   In the light of the prospects of shrinking labor force, policy recommendations thus include actions to increase both labor market supply, labor productivity and the choices of old people:

5.42   **To counter the effects of population aging, policies should be aimed at increasing participation rates**, particularly of women but also of old workers – those there are currently forced to retire. Such policies could effectively counter the effects of population aging on labor supply – for example, simulations show that the increase of women's participation rate by 20 percent could delay the reduction of labor force by 15 years. These actions include:

- Increasing labor force participation of old workers, labor market rigidities should be reduced. Among them are inflexible retirement ages that force healthy older workers out of the formal labor markets before they would otherwise choose.

- Increasing labor force participation of women, the introduction of family-friendly policies (including increasing part-time working opportunities) would be helpful, as would policies aimed at reducing their burden as primary care givers to old persons (see Chapter 4).

- Increasing employment of young people – whose unemployment rates have been historically much higher than for adults – is also an effective way in ameliorating overall employment problem arising from population aging. To this end, difficult access to formal sector job opportunities will have to be reduced (that will also increase the incentives of rural students to continue with schooling), and access to well designed training programs increased (World Bank 2007).

- Understanding constraints to employment of older workers requires examining further obstacles for employment of old workers would also be beneficial. Similarly, more work is needed to determine whether have employers' negative perceptions about the adaptability and productivity of older workers create work disincentives for old workers, and how important an obstacle is weak employability of old workers – and if so, what should be done about it.

5.43   **Improving the productivity of the labor force would help in boosting economic growth**, another factor countering the taxation of effect of population aging on growth.

- Improving skills of older workers would also help them improve their employability, through investment in life long learning

- Other possibility of making labor more productive is formalization of the economy – for example, upon making the labor market more flexible and less restrictive, so that workers could shift towards better, more productive jobs, and, at the same time, jobs that offer improved social security.

- Improving health outcomes for informal sector workers would help them to increase their earning capacity, thus reinforcing the above recommendations in the area of health.

5.44   **Improvement of choices of old workers** includes also attention to old age income support policies. Formal sector workers withdraw from the labor market early because of early retirement ages (and because they have access to pensions), while the lack of resources forces many informal sector

workers to work much longer and withdraw from the labor market mostly because of ill health. Providing old people with an independent source of income would therefore significantly improve old peoples' choices, the fact underscoring the need to extend the coverage of old age income support systems as stressed above.

Table A5.1: Labor force participation by age group from 1992-2004 (%)

(a) Males

Year	15-19	20-29	30-39	40-49	50-59	60-69	over 70	Total
1992	32.1	89.3	96.7	95.0	80.1	54.9	21.4	75.2
1993	33.8	88.7	96.9	94.6	78.5	56.0	25.6	75.6
1994	34.0	87.9	96.0	95.8	82.7	53.6	23.1	76.4
1995	31.2	87.7	96.3	94.5	82.0	51.4	22.5	74.8
1996	31.0	88.6	95.8	94.7	82.5	52.5	23.8	75.4
1997	31.0	88.6	95.8	94.7	82.5	52.5	23.8	75.4
1998	35.4	89.6	97.0	95.5	84.2	56.3	23.1	77.0
1999	36.7	89.1	96.7	95.0	84.9	53.5	25.7	76.7
2000	32.9	87.7	96.6	95.6	84.2	54.3	22.1	76.1
2001	28.8	88.1	96.0	95.6	84.8	52.6	21.2	75.2
2002	30.1	88.5	96.9	95.3	85.4	54.8	23.6	76.7
2003	29.3	87.9	96.4	94.8	83.6	53.4	22.4	76.3
2004	29.5	88.1	96.3	94.7	83.9	51.9	18.2	76.0

(b) Females

Year	15-19	20-29	30-39	40-49	50-59	60-69	over 70	Total
1992	21.1	52.5	45.6	40.8	25.8	11.5	3.6	36.2
1993	22.8	54.2	48.7	45.9	27.1	11.4	3.4	38.2
1994	21.2	53.2	47.4	41.2	27.5	11.6	3.4	36.7
1995	19.8	51.7	46.0	44.3	28.2	14.0	3.8	36.3
1996	20.1	49.9	45.4	43.6	29.6	14.5	3.2	36.1
1997	20.1	49.9	45.4	43.6	29.6	14.5	3.2	36.1
1998	23.0	54.8	51.3	50.9	34.8	17.8	5.1	40.9
1999	21.3	50.6	48.7	48.0	34.5	15.4	3.4	38.2
2000	18.2	50.1	50.4	47.3	34.8	15.6	4.2	37.9
2001	17.2	49.0	44.6	45.1	34.0	15.2	3.3	35.7
2002	19.0	50.0	45.4	47.2	35.6	13.5	5.0	37.4
2003	18.6	44.5	44.0	44.1	34.3	13.7	5.0	35.1
2004	18.1	45.4	43.7	44.4	33.1	14.0	3.4	35.0

Table A5.2: Unemployment rate by age group from 1992-2004 (%)

(a) Males

Year	15-19	20-29	30-39	40-49	50-59	60-69	over 70	Total
1992	38.5	20.4	4.9	2.2	1.8	1.1	0.8	10.7
1993	34.5	18.2	4.9	2.3	2.3	0.2	0.2	9.6
1994	35.5	18.4	5.0	2.6	1.9	0.6	0.2	9.6
1995	31.7	18.4	4.7	2.8	0.6	0.1	0.0	9.0
1996	30.1	16.9	3.5	1.0	0.7	0.7	0.0	7.6
1997	30.1	16.9	3.5	1.0	0.7	0.7	0.0	7.6
1998	25.5	13.7	2.5	1.3	0.9	0.9	0.0	6.5
1999	25.5	14.3	2.5	1.5	1.6	0.5	0.4	6.8
2000	22.1	13.5	2.2	0.8	0.8	0.2	0.0	5.8
2001	28.9	14.3	1.8	1.3	0.7	0.1	0.0	6.2
2002	26.9	15.7	2.2	1.4	1.0	0.3	0.0	6.6
2003	27.1	14.3	2.0	1.2	0.8	0.4	0.0	6.0
2004	26.3	14.3	2.3	1.4	0.8	1.1	0.6	6.2

(b) Females

Year	15-19	20-29	30-39	40-49	50-59	60-69	over 70	Total
1992	46.4	39.4	12.9	4.2	0.8	1.4	0.0	22.4
1993	44.9	36.6	15.1	5.3	1.9	0.0	2.1	21.7
1994	49.6	34.6	12.5	2.6	0.2	1.3	1.0	20.1
1995	48.4	33.6	12.7	2.9	0.3	0.0	0.0	18.9
1996	39.6	32.0	8.3	2.8	0.7	0.4	0.0	16.2
1997	39.6	32.0	8.3	2.8	0.7	0.4	0.0	16.2
1998	30.6	28.2	9.1	3.3	0.6	0.0	0.0	14.2
1999	34.1	27.0	8.0	1.7	0.9	0.2	2.2	13.2
2000	26.3	24.3	6.3	2.3	1.6	0.0	0.0	11.1
2001	31.4	25.9	6.5	1.6	0.4	0.0	1.5	11.5
2002	35.4	27.2	7.2	1.7	1.1	1.2	1.9	13.0
2003	35.6	29.1	7.5	2.4	0.6	0.4	0.0	13.2
2004	37.4	29.4	6.3	2.4	0.7	0.8	0.0	13.1

Table A5.3: International comparisons of labor force participation rates for old people

Age group	Sri Lanka	India	Bangla-desh	Pakistan	Thai-land	Philip-pines	Japan	Hong Kong	US	France	Germany	Norway	Switzer-land
Year of data	*2004*	*2001*	*2003*	*2004*	*2004*	*2004*	*2004*	*2004*	*2004*	*2004*	*2004*	*2004*	*2004*
Males													
50¬54	89.2	92	99.2	94	91.6		95.7	89.8	85.4	90.8	90.2	88.2	93.7
55¬59	76.4		97.3	88.2		88.6	93.2	75.7	77.6	67.7	80.3	81.7	89.4
60¬64	57.7	69.7	87.8	73.1	52		70.7	43.6	57	19	37.7	64.3	66
65¬69	43.0		66.1	47.5		54	45.6	9.6	32.6	4.1	7.2	26.5	22.8
70-74	25.0	49.3					29.3		19.4	1.4	3.7	5.6	12.9
Over 75	16.8						14.6		9	0.4	1.5		6.1
Over 80	7.4	34.6											
Females													
50¬54	37.9	40.9	19.9	18.6	70.3		68.4	52.1	74.5	77	76.4	81	78.7
55¬59	25.7		17.1	14.5		57.3	59.6	34.8	65.0	56.2	61.7	70.9	70.1
60¬64	16.9	26.3	13.4	13.0	28.1		39.7	12.6	45.4	16.2	19.7	52.7	38.9
65¬69	10.1		8.7	10.2		30.2	24.0	1.9	23.3	2.5	4.1	19.1	10.1
70-74	5.6	13.3					14.9		12.0	0.7	1.5	3.6	5.4
75-80	2.1						5.8		4.3	0.2	0.5		2
Over 80	1.3	8.6											

Source: ILO, LABORSTA Database

Note: Merged cells contain data for the combined age groups. For comparison purposes, labour force participation rates for 65 plus and 75 plus age groups in Sri Lanka are, males - 27.53 and 12.02 and females 5.90 and 1.72, respectively.

Table A5.4: Reasons for complete withdrawal from work of old workers

		Very important	Moderately important	Not important at all	Don't know	Total
Health reasons	Male	48	17	34	0	100
	Female	47	23	30	0	100
To do other things (hobbies)	Male	8	27	63	2	100
	Female	27	31	40	2	100
Family obligations	Male	0	11	84	4	100
	Female	3	12	78	7	100
Disliked work	Male	5	8	86	2	100
	Female	9	12	74	4	100
Reached mandatory retirement	Male	37	18	43	2	100
	Female	40	16	39	5	100
Traveling to work was stressful	Male	7	17	73	3	100
	Female	12	23	60	4	100
Business closed	Male	7	5	81	7	100
	Female	11	3	74	11	100
Work was too stressful	Male	8	13	77	2	100
	Female	11	20	65	4	100

Source: Own calculations based on World Bank 2006 Sri Lanka Aging Survey.

Table A5.5: Descriptive statistics of variables used in multinomial logit estimation

		Completely Retired 382		Working part time 208		Full time working 470		All 1060	
		Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev	Mean	Std. Dev
Individual characteristics	Male	0.70	0.03	0.72	0.04	0.75	0.02	0.72	0.02
	Sinhala	0.83	0.03	0.86	0.03	0.86	0.02	0.85	0.01
	Head of Household	0.72	0.03	0.71	0.04	0.76	0.02	0.73	0.02
Marital status	Married	0.75	0.03	0.68	0.04	0.74	0.02	0.73	0.02
	Previously married	0.23	0.03	0.28	0.04	0.24	0.02	0.24	0.02
	Never married	0.02	0.01	0.04	0.02	0.02	0.01	0.02	0.01
Education	No schooling	0.12	0.02	0.14	0.03	0.11	0.02	0.12	0.01
	Less than primary	0.23	0.03	0.36	0.04	0.39	0.03	0.33	0.02
	Lower secondary	0.26	0.03	0.22	0.03	0.37	0.03	0.30	0.02
	Passed O/Ls	0.21	0.02	0.17	0.03	0.11	0.02	0.16	0.01
	Passed A/Ls	0.17	0.02	0.10	0.02	0.02	0.01	0.09	0.01
Health - 1	Very good health	0.08	0.02	0.12	0.03	0.12	0.02	0.11	0.01
	Good health	0.62	0.03	0.55	0.04	0.58	0.03	0.59	0.02
	Poor health	0.30	0.03	0.33	0.04	0.30	0.03	0.31	0.02
Health - 2	Ever had chronic illness	0.68	0.03	0.65	0.04	0.56	0.03	0.62	0.02
Sources of support	Receiving pension	0.38	0.03	0.19	0.03	0.04	0.01	0.19	0.01
	Family Transfers (proxy)	0.78	0.03	0.80	0.03	0.79	0.02	0.79	0.02
Wealth	Adequate wealth	0.35	0.03	0.32	0.04	0.24	0.02	0.29	0.02
	Own a house	0.56	0.03	0.55	0.04	0.65	0.03	0.60	0.02
Preparation for retirement	Well	0.05	0.02	0.02	0.01	0.04	0.01	0.04	0.01
	Prepared	0.33	0.03	0.26	0.04	0.23	0.02	0.27	0.02
	Not	0.62	0.03	0.72	0.04	0.73	0.02	0.69	0.02
Pre-retirement employment status	Public regular	0.51	0.03	0.33	0.04	0.03	0.01	0.26	0.02
	Private regular	0.19	0.03	0.15	0.03	0.07	0.02	0.13	0.01
	Casual/ contractual	0.10	0.02	0.22	0.03	0.30	0.03	0.21	0.01
	Employer/Self employed	0.20	0.02	0.31	0.04	0.60	0.03	0.40	0.02
Location	Western province	0.40	0.03	0.35	0.04	0.33	0.03	0.36	0.02
Sector	Urban	0.15	0.02	0.13	0.02	0.11	0.02	0.13	0.01
	Rural	0.75	0.03	0.79	0.03	0.87	0.02	0.81	0.01
	Estate	0.10	0.02	0.08	0.02	0.02	0.01	0.06	0.01

Source: Own calculations using World Bank 2006 Sri Lanka Aging Survey.

Table A5.6: Multinomial logit estimates of transition from full-time employment1

Variable Description1		Working part time		Working full time		Marginal Effects		
		Coef2	Robust std err	Coef	Robust std err	Completely Retired	Working part-time	Working full-time
Individual characteristics	Male	0.48 *	0.29	0.43	0.30	-0.11	0.06	0.05
	Sinhala	0.47	0.45	-0.42	0.38	0.02	0.12	-0.14
	Head of Household	-0.09	0.27	-0.04	0.26	0.01	-0.01	0.00
Marital status (currently married)3	Previously married	0.60 **	0.29	0.41	0.30	-0.11	0.08	0.03
	Never married	0.97	0.70	0.90	0.74	-0.18	0.09	0.09
Education (A/levels or above)	No schooling	0.15	0.52	0.02	0.64	-0.02	0.03	-0.01
	Less than primary	0.26	0.44	0.27	0.61	-0.06	0.02	0.04
	Lower secondary	-0.30	0.45	0.16	0.59	0.01	-0.07	0.07
	Passed O/Ls	0.01	0.42	0.13	0.61	-0.02	-0.01	0.03
Health - 1 (very good)	Good health	-0.64 *	0.35	-0.96 **	0.35	0.18	-0.03	-0.15
	Poor health	-0.84 **	0.41	-1.45 ***	0.40	0.27	-0.04	-0.23
Health - 2 (no chronic illness)	Ever had chronic illness	-0.13	0.25	-0.53 **	0.24	0.08	0.03	-0.11
Sources of support	Pension income	-0.91 ***	0.34	-1.37 ***	0.38	0.28	-0.07	-0.21
	Some one to help financially	0.04	0.28	-0.02	0.28	0.00	0.01	-0.01
Wealth	Adequate wealth	0.23	0.27	0.11	0.27	-0.04	0.04	0.00
	Own a house	-0.23	0.24	0.08	0.24	0.01	-0.05	0.04
Preparation for retirement (well)	Some	0.59	0.69	-0.03	0.85	-0.06	0.13	-0.07
	Not	0.67	0.68	-0.24	0.83	-0.03	0.15	-0.12
Pre-retirement employment status (public regular)	Private regular	-0.04	0.37	1.69 ***	0.49	-0.22	-0.18	0.40
	Casual/ contractual	0.83 **	0.37	3.66 ***	0.47	-0.43	-0.23	0.66
	Employer/Self employed	0.55 *	0.33	3.72 ***	0.45	-0.45	-0.24	0.69
Location	Western province	-0.09	0.26	0.11	0.25	-0.01	-0.03	0.03
Sector (urban)	Rural	-0.10	0.29	0.26	0.37	-0.02	-0.05	0.07
	Estate	-0.21	0.61	-1.32 **	0.57	0.17	0.06	-0.23
No obs.	1060							
Pseudo R2	0.2144							

Source: Own calculations using World Bank 2006 Sri Lanka Aging Survey.

Notes: 1. Dependent variable takes three values : completely retiring upon reaching 61 years and not working when aged 61-65 (taken as a baseline); working part time (at least some time during ages 61-65, either part time, or full-time if not throughout the period, and working continuously full-time during ages 61-65.

2. Significance at 1, 5 and 10 percent levels are indicated by '***',**' and * respectively.

3. Omitted category is given in parenthesis.

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